

## ECO-INDUSTRIAL DEVELOPMENT IN DEVENS

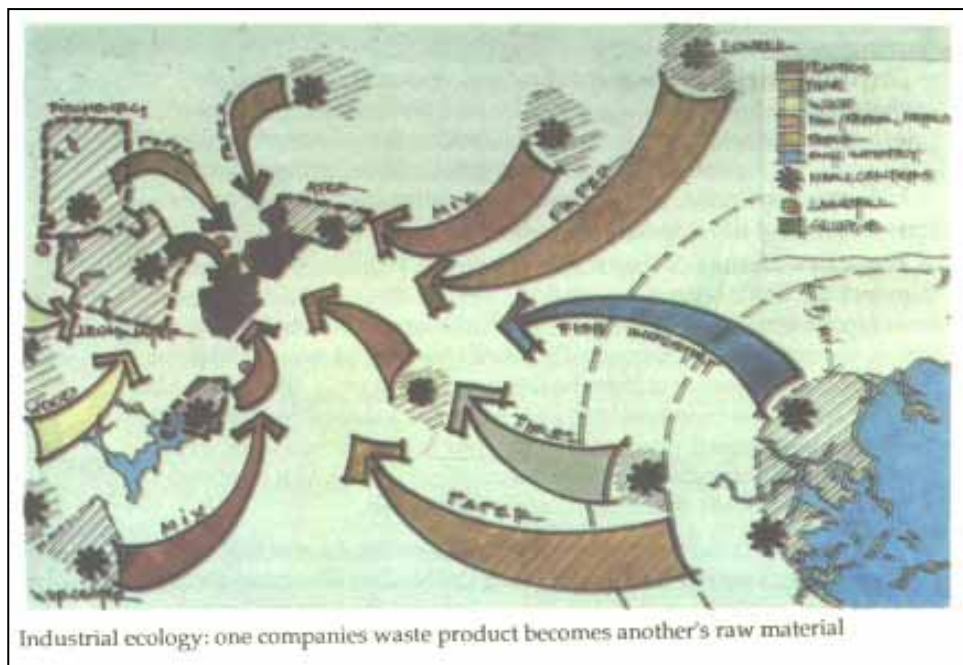
The redevelopment of Devens is focused on the Sustainable redevelopment of this former military base. At Devens we define Sustainable Development as balancing the triple bottom-line social, environmental and economic issues, while recognizing the needs of future generations.

### ***Why Sustainable Redevelopment?***

In 1993, when the closure of Fort Devens was announced, the Boston Society of Architects held a planning charette with the local public and businesses in the surrounding towns to obtain feedback and guidance on how best to approach the redevelopment of Devens for the benefit of all. A number of key concerns surfaced from this charette, including:

- Job loss and economic re-development;
- Cleaning up the contamination and ensuring environmentally responsible redevelopment;
- Remediation, monitoring;
- Focus on industrial ecology as a strategy – mimic ecological processes (zero-emissions, no waste) as a system of industries;
- Environmental protection;
- Groundwater resource protection;
- Sustainable agriculture, and implementing a comprehensive strategy;
- Reduce, reuse and recycle (efficiency and environmental responsibility)

The Reuse Plan for Devens was then developed to guide the redevelopment efforts and incorporated all of the above elements.





The principles of sustainability are also woven into the By-Laws through zoning, density, dimensional requirements, floodplain avoidance, groundwater protection, historic resource protection and innovative development options. The Devens Development Rules and Regulations provide additional guidance and direction to help ensure more sustainable approaches to development occur in all Devens redevelopment projects.

***Eco-Industrial Development as a Sustainable Redevelopment Approach:***

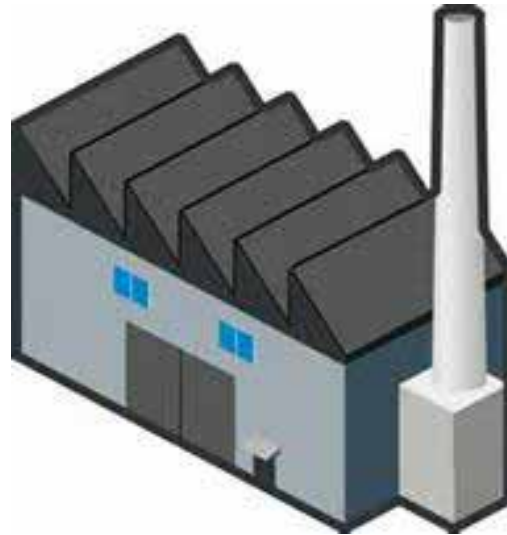
In 1999, Peter Lowitt was hired by the Devens Enterprise Commission as its Executive Director. Mr. Lowitt is an experienced planner with in-depth knowledge and expertise in the field of Eco-Industrial Development (EID) and Eco-Industrial Parks as a sustainable development approach to traditional industrial parks. The “eco” of eco-industrial relates to its key concept which is to learn from and model industrial development on natural systems ecology. Natural systems use resources so efficiently that there is no waste. All by-products produced by nature are consumed or reused by other plants, animals or organisms. By applying this efficiency/no-waste model to industrial parks, EID can decrease or eliminate pollution and waste, while improving our economy and quality of life at the same time. In contrast to traditional industrial development patterns, an EID approach aligns industrial systems with ecological systems resulting in more efficient industrial processes that:

- ❖ **Systemically** examine material and energy flows throughout industrial supply chains;
- ❖ **Maximize** efficient use of resources, energy and byproducts (through shared services and business to business networking, exchanges recycling composting and reuse/exchange programs)
- ❖ **Minimize** impacts on the environment by moving toward cleaner production practices including zero emissions and zero waste systems;
- ❖ **Apply a Life Cycle Approach** to go beyond waste minimization, pollution prevention and eco-efficiency to address the cumulative impacts of development that understand and respect the interactions and carrying capacities of earth, air and water resources as an eco-system;
- ❖ **Integrate** sustainable design features;
- ❖ **Maximize** use of renewable energy and materials.

Through these goals, EID essentially optimizes the interaction of business, community and ecological systems. Redevelopment efforts at Devens have capitalized on these EID concepts and the economic development and co-location of businesses to facilitate the development of Devens as an Eco-Industrial Park.

### ***What is an Eco-Industrial Park?***

Industry is often perceived as being at odds with environment. Here at Devens we are modeling industrial parks on natural systems. Ask yourself, how is a Plant like a Plant (factory)?:



How is a Park like a (n industrial) Park?:



Hopefully you are beginning to get the picture of an Eco-Industrial Park (EIP). Like a natural ecological system, an eco-industrial park is group of businesses and industries that work together as a system to maximize efficiencies and minimize waste by-products. Here at Devens we try to work within nature's limits:

- To use resources efficiently and productively
- To minimize use of fossil fuels and toxic materials
- To protect and restore ecosystems.

In theory an EIP is a closed loop system, where one firm's waste stream is another's source of raw materials. Without heavy resource flows, Devens has developed into a model EIP for light industrial parks (typical of what is most often found in the United States). It features businesses cooperating among themselves and with the community. The end result is an EIP that adds value to participants and to the location. EIPs are viewed as an excellent reuse and clean up opportunity for previously developed and contaminated sites like Devens – with the potential to turn waste streams into revenue streams. Value added is achieved at Devens through shared service programs that promote by-product exchanges, cooperative purchasing, marketing, incubator services, recycling, composting and reuse; programs that create a shared service model not often found in traditional industrial

parks. Facilitated by-product exchanges have been cited as a form of systemic eco-innovation 'vital for future green growth', recognizing its role as a catalyst for demand-led business innovation, helping to bring new, novel and innovative products, processes and technologies to market.

To support the eco-industrial development of Devens, the Devens Eco-Efficiency Center was created and collaborates with businesses by providing educational forums, technical assistance, waste management services and networking opportunities that result in triple bottom-line (social, economic and environmental) value added opportunities for businesses. Full details on the center are available at [www.ecostardevens.com](http://www.ecostardevens.com)

Through EID, we are guiding the redevelopment of Devens EIP as a showcase for many of the sustainable development elements that can be found throughout Devens, including material reuse, passive solar design, green roofs, low-impact development, composting toilets, reduced development footprint and preservation of open space corridors.

Devens sustainable development strategies demonstrate the triple bottom-line approach to redevelopment in Devens and show that conservation and development can be successfully integrated to meet the present needs of the natural and built environment without compromising those of the future. Take a [virtual tour of Devens](#) and learn about some of the EID concepts that local businesses and organizations are implementing to reduce their environmental footprint.