

**Something in the water?
The emergence of a successful eco-industrial park in the US**

By: Peter Lowitt, AICP

“...Devens redevelopment is based on a solid plan and sound economic development strategy. Eco-industrial development is a complementary strategy which was subsumed into the underpinnings of the development plan through a long term commitment to sustainable development.”

It must be something in the water. After all, the surrounding Nashoba Valley region of northeastern U.S. was home to Bronson Alcott's Fruitland¹ farm and experiment in transcendental living and later two Shaker villages populated the landscape. Why not a fourth utopian experiment built on beating swords into ploughshares? The sustainable redevelopment of the former Fort Devens in north central Massachusetts fits nicely into this historic landscape. A highly successful redevelopment of an army base closed as part of the U.S. 1993 Base Realignment and Closure (BRAC) program, Devens' success is based on its commitment to sustainable development and its holistic application of that concept. It is an application that incorporates eco-industrial development and attempts to illustrate that economic development, social equity and environmental protection can operate harmoniously.

In 1993 the late Professor Herman Field, resident of Shirley, one of the three underlying towns that comprise the Devens Regional Enterprise Zone, and founder of Tufts University Graduate School of Urban and Environmental Policy approached the Boston Society of Architects about hosting a charette to envision the reuse of Fort Devens which had just been listed for closing through the BRAC process by the U.S. Department of Defense. Camp Devens was located near Ayer, Massachusetts, the rail cross-roads of New England, just in time for World War I (1917). It became a fort in the 1920s and remained so until 1993. Devens overlays portions of the three communities of Ayer, Harvard, and Shirley, Massachusetts. The charette process resulted in calls for a zero emissions industrial park and a commitment to sustainable development as the guiding principle for the base's redevelopment. Sustainable development was enshrined in this role through the Reuse or Master Plan; which is a requirement of the local redevelopment agency to produce as part of the BRAC process, and the Devens By-Laws (zoning) and the Devens Enterprise Commission's Rules and Regulations which govern the redevelopment process. These documents define sustainable development as balancing economic development, environmental protection and social equity.

Not many industrial parks in North America continue to house what might be termed heavy industry any longer. Much of those industries have relocated to Asia. Devens has become a model for successfully organizing a light industrial area and for involving small to medium sized enterprises as well as larger firms. In 1996 the President's Council on Sustainable Development funded the development of a number of eco-industrial development park initiatives across the United States. The vast majority of these projects have been consigned to the dustbin of history and vanished as soon as their funding sources dried up. With little federal funding available in the United States, eco-industrial development projects became local in nature and self-funded by necessity. Devens success lies, to some degree, in its holistic integration into the redevelopment process of this former army base.

¹ Fruitland was an early 19th Century utopian farm founded by Bronson Alcott and located in nearby Harvard, Massachusetts. Transcendentalism was a 19th Century intellectual movement which included such celebrated thinkers as Ralph Waldo Emerson and Henry David Thoreau. The Shakers were a utopian religious movement from the same time period.

In 2006 CoreNet Global, an internationally known organization of corporate real estate executives specializing in economic development, hailed the decision to locate Bristol-Myer Squibb's \$1.1 Billion biopharmaceutical plant at Devens as the economic development impact project of the year for the entire world. In 2007 Evergreen Solar announced that its 500,000 square feet (sf^2)² photovoltaic manufacturing facility would locate at Devens as well, joining over 90 other companies in making Devens a Department of Defense poster child for the successful redevelopment of a closed military facility.

Today, with Evergreen and Bristol-Myers Squibb under construction, the Devens eco-industrial park has over 1000 construction jobs in play and the employment numbers have improved from the 2006 data below by over 300 full time jobs. Both Evergreen Solar and Bristol-Myers Squibb are joining EcoStar and will be exploring the potential for by-product exchanges as their projects move forward.

By any rational metric, Devens is a success. Table 1 quantifies the investments made at Devens and the results (This does not include Bristol-Myers Squibb or Evergreen Solar which add an addition 1.9 billion in private investment and 650-800 jobs).

Table 1: Commercial and Residential Development in Devens, 1996-2006

	Projected	Actual or Permitted	Percentage of total
Commercial Build-out ³ (in square feet)	8.2 million	4.2 million	51%
Jobs Created		4261	
Annual Payroll		+\$130 million	
Private Investment		\$435 million	
State Investment		\$118 million	
US Army Investment (Site Remediation/Clean up)		\$120 million	
Residential Units	282	106	38%

How much of that success can be attributed to its commitment to sustainable development and eco-industrial development? The state's economic development agency, Mass Development, owns the land and is the redevelopment agency in charge of Devens. The smaller Devens Enterprise Commission (DEC) is charged with redevelopment permitting and assuring that the sustainable development goals of the project are adhered to. From 1996 to 1999 the Commission was too busy developing its regulations and dealing with a pent up demand for permitting to grapple with its greater sustainable development mission. At that point I was hired away from Londonderry, New Hampshire where I had created the Londonderry Eco-Industrial Park and charged to refocus on the Commission on its sustainable development mission.

² One square foot (ft^2) = 0.093 square meters (m^2 , SI).

³ Build-out refers to the maximum capacity of building area (projected and permitted)

Success has resulted from a long take-off period involving a great deal of hard work and commitment from both the Devens Enterprise Commission and its staff. The results of these efforts include the following:

- Park tenants see themselves as part of a system of businesses which collaborate for mutual advantage and to the overall advantage of both their bottom line and the environment.
- The mental distance between firms has been diminished through a long, steady process of education about things eco-industrial and sustainable development.
- The DEC invested in developing an environmental branding and achievement program, EcoStar, to serve as a vehicle for creating linkages between firms.
- The *EcoStar Guidebook* took three years to develop and creates a strong foundation for our series of educational workshops and forums to support the business community in their efforts to green their operations and processes.

The long take off and development of the program began in 2000. DEC conducted a feasibility study which asked firms what it would take for them to participate in a voluntary program to better their environmental performance. The feasibility study respondents replied that they wanted their efforts to be recognized and acknowledged. The feasibility study resulted in the development of Devens' EcoStar program as an environmental branding and achievement program. Core to that program and one of its required components is having a linkage with another firm or firms. This requirement has resulted in a number of exchanges, many of which are documented on the www.ecostardevens.com web site under the title, "the Great Exchange."

For the DEC, their financial commitment and allocation of staff resources to this project required that it roll out slowly and steadily over time. As a small governmental entity with limited financial resources, the DEC was willing to support the programmatic development at the pace it could afford. A steering committee was then formed and work began on the creation of the twenty five EcoStar standards and a template for a guidebook to assist members in becoming achievers through the program. Quarterly meetings were held to keep the Devens business community informed about EcoStars' progress. A part time coordinator was hired in 2006 and the program was launched at that time. Bristol-Myers Squibb's decision to locate at Devens brought considerably more financial resources into play for the DEC, allowing for the EcoStar coordinator position to become full time and for the hiring of additional DEC staff. Success breeds success. Today EcoStar has over 35 members and has held a successful materials and by-product exchange event, "The Great Exchange", which has produced documented savings for EcoStar members; and the Devens Eco-Efficiency Center, modeled on the work of colleagues at Dalhousie University and the Burnside industrial park in Halifax, Nova Scotia, Canada, has been launched.

Part of our success can be attributed to the holistic nature of interaction with the members of the local community. DEC regulations ask firms how they will be sustainable citizens when they move into Devens. These same regulations encourage and incentivize their projects to be as green as possible. Once they are part of our corporate citizenry, they are asked to honor their commitment to sustainable development by joining EcoStar and participating in programs to green their business operations.

Another aspect of success is a commitment to lead by example. The DEC and Mass Development have collaborated to assure that future Mass Development projects at Devens incorporate the latest in green building techniques and practices. The DEC is currently revising its regulations to require additional housing to meet the Leadership in Energy and Environmental Design for Neighborhood Development criteria, assuring that it will be the greenest development in Massachusetts.

Devens redevelopment is based on a solid plan and sound economic development strategy. Eco-industrial development is a complementary strategy which was subsumed into the underpinnings of the development plan through a long term commitment to sustainable development. Then again, it could be something in the water. It could be the result of a slow steady and sustained commitment to introducing industrial symbiosis to an open minded business community and watching the seeds planted through that experience begin to germinate and grow. It could be a bit of both. I extend an invitation to my colleagues to come visit Devens Massachusetts and see for themselves.

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