

Restoration of Sites

A goal of many green building projects is to leave the land a better place than it was before. Achieving this goal requires site restoration activities, such as rehabilitating natural drainage systems, replacing wide swaths of green lawns with plants that provide wildlife habitat and replanting ornamental plants with native and adapted species that need far less water and intensive maintenance. As we complete the switch from a predominantly manufacturing economy to one based primarily on services, developers are finding attractive options in paved-over older parts of cities that once supported manufacturing, warehouses and similar industrial uses. Many of these sites were polluted with petroleum products, heavy metals, PCBs and other toxic substances that require remediation before reuse. Even paved-over but unpolluted sites can be converted to offices, retail, hospitality and housing, with considerably more wildlife habitat.

Often the task of the architect and builder is to find a way to place buildings so they don't disturb what's already working on a site. Several



GreenWorks, PC, Landscape Architecture & Environmental Design

Designed by Atelier Dreiseitl and Greenworks, Tanner Springs Park provides wildlife habitat in an urban setting.

years ago, I visited the National Conservation Training Center of the US Fish and Wildlife Service in Shepardstown, West Virginia. Located on an upper tributary of the Potomac River, this site is very hilly, like most of the state. The project designers placed 17 buildings on the site, only on the hill-tops, leaving the hollows alone. Because of a number of changes of site elevation, the design required many wooden bridges between buildings, sometimes with entrances on upper floors. However, this approach allowed the project to avoid extensive grading and degradation of wildlife habitat, while promoting the very values inherent in the Center's mission. This is a good example of a smart and wise approach to site planning.

Another interesting project is Tanner Springs Park in Portland, Oregon. Completed in 2005, this park sits on top of about 40 feet of historic fill of the original Tanner Creek. To honor its origins and to provide city residents with a natural park, the landscape architects designed a reconstructed wetlands with a boardwalk over it. This park is now habitat for many creatures including various waterfowl. It is mainly used for passive recreation and helps incorporate sustainability into the fabric of the city.



Return on Investment

Green buildings eventually will compete in the marketplace with standard buildings, so it's reasonable to ask that they be evaluated financially and economically on the same basis. Return on investment (also expressed as internal rate of return or net present value) is fundamental to evaluating economic decisions. Simply put, return on investment is how much I plan to make, either annually or totally, from an investment, with all numbers expressed in today's dollars. If I'm going to take the risk of making an investment, then my goal should be to equal the return from similar investments.

Saving energy is like buying a long-term bond. If I invest \$100,000 today in a ten-year treasury bond, I expect to make about 5% each year, before taxes and inflation, a return dictated by the bond market. This is a completely risk-free investment, but my net gain is small (imagine 20% combined state and federal taxes and 3% inflation, leaving me with a net real return of 1%).

If I invest \$100,000 in energy-savings improvements that yield \$20,000 per year in savings (a five-year payback on the incremental invest-