DOLLARS & SENSE

BY CHRISTINA B. FARNSWORTH

Cut development costs and generate higher lot premiums with conservation design.

Most builders and developers run away from wetlands—but not Bob Brownell's Bielinski Homes.

CEO Brownell pegs his future on conservation design techniques. "It's the future ... the way we'll all need to do development," he says. Bielinski Homes scored big with its 39-acre Prairie Glen community, in Germantown, Wis., on agricultural lands that included "partially degraded wetlands." Wetland restoration planning at Prairie Glen yielded attractive riparian open space, and buyers responded favorably, perceiving the space as an attractive natural amenity and "free" landscaping. Ecological restoration also propelled the firm's 85.5-acre Auburn Hills community in Caledonia, Wis.

Brownell has joined the growing cadre of builders embracing conservation design (see "12 Principles of Conservation Design," page 246), as standard business practice. By implementing these principles, they are reaping profit, ecological benefits, and easier approvals. The results command sales premiums while garnering accolades for environmental restoration and smart growth.

And conservation design saves money. Brownell is convinced his company profits by doing good, averaging $400,000 in infrastructure savings per community (see "Balance Sheet," page 250). Total costs are typically 15 percent to 25 percent less, despite landscape expenses that can be more than three times conventional development budgets. The nonprofit Low Impact Development Center, in Beltsville, Md., reports that developing with low-impact techniques produces average savings of $6,000 per lot.

It is, Brownell says, "more cost effective than conventional development. It improves profitability, cuts infrastructure costs, and reduces long-term utility maintenance costs. And its benefits to the environment are priceless."

On the following pages are just some examples of how conservation design is taking hold around the country.

PHOTOS: JACK BROUGHTON

NATURAL TREATMENT: In the village of Germantown, Wis., Prairie Glen is an important stormwater recharge area. Nearly 60 percent of the site's 39 formerly agricultural acres are slated for restored open space. Prairie Glen's biofiltration basin (above) is part of a stormwater treatment system used to treat runoff before it reaches the wetlands. At left, a rare native wet meadow wildflower, a Turk's Cap lily, grows in the wetland area. Prairie Glen's $95,000 to $125,000 lot prices compare favorably with same-sized lots at Bielinski's conventionally planned Autumn Ridge, located just a mile to the south, and selling for under $50,000.

12 PRINCIPLES OF CONSERVATION DESIGN

Although the terms sometimes are used interchangeably, low-impact development, according to the NAHB Research Center, "is an ecologically friendly approach to site development and stormwater management that aims to mitigate development impact to land, water, and air." The principles below reflect the larger concerns of conservation design, which incorporates both low-impact development techniques and additional aspects that seek to lessen the impact of the built community on the environment.

1. Create smaller lots and cluster layout neighborhoods.
2. Design for stormwater management.
3. Reduce the quantity of water generated by a project.
4. Restore degraded ecological systems.
5. Utilize natural stormwater treatment and conveyance.
6. Minimize and localize soil disturbance during construction.
7. Use native plant species in landscaping.
8. Integrate passive (such as woodlands) and active (such as walking trails) open space.
9. Provide internal trails and external greenways for the development.
10. Develop ecological educational materials for homeowners.
11. Build energy-efficient housing.
12. Provide internal/external connections for efficient transportation.

SOURCE: BIELINSKI HOMES

GOOD FIT: Located between a wetland and a stream, the townhomes of Ascent at Talus in Issaquah, Wash., terrace along a hillside following the natural topography. The Seattle-based Hackworth Group designed the homes to fit snugly into the steep and narrow development area, achieving a density of 20 dwelling units per acre. The sensitivity to the lay of the land provides most of the homes the advantage of unobstructed views of the surrounding alpine landscape and wildlife.

GOING NATIVE: Purple coneflowers, wild lupine, and a variety of other native grasses and wildflowers add color and lushness to the backyard of a home landscaped by JFNew, an ecological consulting and environmental engineering firm based in Walkerton, Ind. Native plant species are drought and disease tolerant and help to create a self-sustaining, low-maintenance environment that attracts beneficial insects, stabilizes and restores soil, and reduces the need for heavy watering and pesticides.

PERMEABLE PAVEMENT: Minimizing runoff by reducing the amount of impervious surfaces is crucial to natural stormwater management. This driveway, built for a private home in Elmhurst, Ill., is constructed from permeable pavers of tumbled concrete, separated by plastic spacers to create voids, and set on an aggregate base. Rainwater that falls on such a surface infiltrates at almost a 100 percent ratio.

PHOTOS: TOP LEFT: KROGSTAD PHOTOGRAPHY; TOP RIGHT: SANDI ZEHNER; BOTTOM LEFT: JIM PATCHETT; BOTTOM RIGHT: JAY WOMACK

WATER FILTER: Elmhurst, Ill.–based Conservation Design Forum uses bioswales (left) as natural stormwater treatment devices. Planted with native grasses and sedges, the bioswale filters the water, absorbs what it can, and passes the rest into detention basins, clean and reduced in quantity. Similarly, a raingarden in Maplewood, Minn. (above) catches road and yard runoff, preventing water polluted from fertilizers and pesticides from draining into the storm sewers and endangering the community's water source. *(see page 248)*

COOL WATER: Bridges, over a pond (left) and in the woods (above) are a recurring theme in Chesterton, Ind.'s Coffee Creek Center, which features a 200-acre watershed preserve within its mixed-use development, master planned community. Prairie fields, woods, streams, and ponds arose from a degraded cow pasture in this mile-square land restoration project. The bridges, along with the paths they connect, allow residents both passive and active use of the entire site.

LOW-IMPACT DEVELOPMENT BENEFITS

Low-impact development benefits municipalities, developers, and the environment.

Municipalities:

Protects regional flora and fauna.
Balances growth needs with environmental protection.
Reduces municipal infrastructures and utility maintenance costs (streets, curbs, gutters, sidewalks, storm sewers).
Increases collaborative public/private partnerships.

Developers:

Reduces land clearing and grading costs.
Potentially reduces infrastructure costs (streets, curbs, gutters, sidewalks).
Reduces stormwater management costs.
Potentially reduces impact fees and increases lot yields.
Increases lot and community marketability.

Environment:

Preserves integrity of ecological and biological systems.
Protects site and regional water quality by reducing sediment, nutrient, and toxic loads to water bodies.
Reduces impacts to local terrestrial and aquatic plants and animals.
Preserves trees and natural vegetation.

SOURCE: "MUNICIPAL GUIDE TO LOW IMPACT DEVELOPMENT," NAHB RESEARCH CENTER

(see page 250)

PHOTOS: JAY WOMACK, ASLA

SOLAR SYSTEM: Taking energy efficiency to a new level, the homes in Tucson's Armory Park del Sol include photovoltaic electric power generating systems and solar water heaters with tankless on-demand water heater backup systems as standard features. One of the homes in the community is a zero-energy home, complete with net metering: The home's electric meter runs backwards, crediting the owner's account, when power is fed back into the grid system.

BALANCE SHEET

Savings for Bielinski Homes' Laurel Springs (in Jackson, Wis.) community are typical, the company says. The low-impact site plan will save the company more than $400,000 over the conventional plan, even though it will spend nearly twice as much for landscaping. And not only does site development cost less overall, the resulting communities sell faster and command higher prices, CEO Brownell says. The company finds that the greater "site appeal" of conservation design may garner premiums up to 25 percent to 30 percent per lot.

LOW-IMPACT SITE PLAN

CONVENTIONAL SITE PLAN

Laurel Springs:

	LOW-IMPACT COSTS	CONVENTIONAL COSTS
Grading	$358,500	$441,600
Paving	$255,760	$335,665
Concrete (sidewalks, curbs)	$259,995	$271,800
Storm sewer	$204,100	$444,300
Sanitary sewer	$385,280	$415,600
Main water line	$384,240	$405,950
Landscaping	$120,000	$65,000
Total	$1,967,875	$2,379,915
		Development cost savings: $412,040

SOURCE: BIELINSKI HOMES

TO LEARN MORE ABOUT LOW-IMPACT DEVELOPMENT, VISIT OUR WEB SITE AT WWW.BUILDERONLINE.COM. CLICK ON "THE MAGAZINES" TAB AND THEN CLICK ON "BUILDER ARTICLE LINKS."