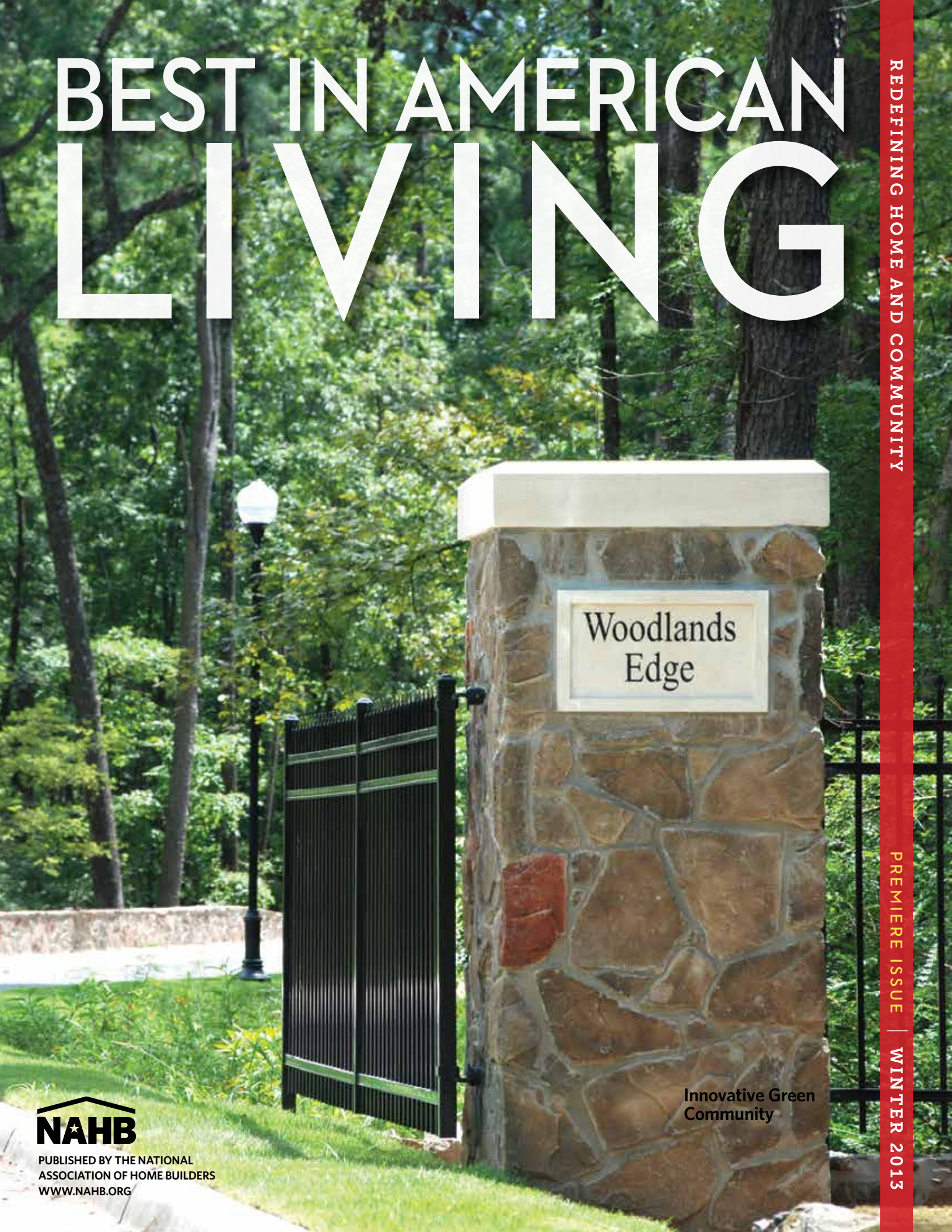
BEST IN AMERICAN LIVING



REDEFINING HOME AND COMMUNITY

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Innovative Green Community

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GETTING NATIONAL GREEN BUILDING STANDARD CERTIFIED

PROJECT PLANNERS looking for a good example of what becoming certified under the ICC 700 National Green Building Standard (NGBS) can do for the market value of a property need look no further than Woodland's Edge.

The low impact development, which is located in the foothills of the Ozark Mountains in the western part of Little Rock, Ark., was the first development in the nation to receive a Green Certified-Four Star community award based on the NGBS program.

NGBS, which was created through a partnership between the International Code Council and NAHB through a rigorous American National Standards Institute consensus process, recognizes the importance of green site development by devoting two chapters exclusively to "Site Design and Development" (chapter 4) and "Lot Design, Preparation and Development" (chapter 5).

Chapter 4 provides a stand-alone rating system for green subdivision site design and development. Chapter 5 addresses site design and development of individual lots as a component of a green home.

Rocket Properties, the developer, and Tyne and Associates, the landscape architect and planner, successfully took the project through its steps towards certification by preserving the natural and scenic qualities of the site. They accomplished this by using sustainable concepts for layout, configuration and design of lots, structures, roads, underground utility lines and other infrastructure.

The 778-acre site is characterized by rolling terrain, steep ridges and forest, and contains three pristine streams as well as wetlands. From the beginning, the planning and development of Woodland's Edge focused on preserving more than 40 percent of the land as undisturbed forest and meadow. To date, 350 acres, including 604 home sites in eight neighborhoods, have been developed. To meet the 40 percent goal, the development team employed innovative low impact development practices that reduced development costs and added

PHOTOS COURTESY OF TYNE AND ASSOCIATES

Locations and configurations of streets were chosen to preserve existing hydrology and to conserve high priority vegetation.

DLAND'S EDGE

great value to the community. Needless to say, this effort has contributed greatly to the market's positive response to the neighborhood.

While the developer does not yet have complete figures for Woodland's Edge, it relied on figures derived from Gap Creek, in Sherwood, Ark., which was developed in the late 1990s, for planning Woodland's Edge. Gap Creek is another sustainable community Tyne & Associates designed. The chart on the next page compares two different sites plans to show what sustainable practices can do.

The developer achieved points under NGBS for using the following techniques:

Planning to protect natural resources onsite: At the beginning of the design and planning process, the project team established goals and a mission statement to guide them through attaining NGBS certification. The team was trained on green development practices, and training sessions were conducted onsite to achieve maximum effectiveness. The land planners began the process with an inventory and analysis of the existing natural resources. A plan to protect

Homeowners have been instructed on how to maintain the trees in their neighborhoods.

these high-priority resources during construction was then prepared. Many of these areas became community amenities, such as trails and wildlife habitats, which added tremendous value to the property.

Using care to locate streets, buildings, utilities and other features to conserve vegetation: All features that were constructed were located to preserve the site's existing hydrology and to conserve high priority vegetation, which reduced the amount of landscaping needed. Efforts to preserve the onsite natural resources were so effective that an entire park was created with removal of only three trees. The roadways were designed to follow the natural contours of the land and located to avoid significant vegetation and other resources. This required a reduction in street width, which the city granted along with various waivers for horizontal and vertical alignment and reduced rights of way. The waivers allowed the developer to save trees closer to the roadway while also reducing traffic speeds. The result was so positive that the city has now incorporated this standard into its master street plan.

The land planners strived for maximum southern exposure on each home site, while at the same time avoiding sacrifice of topographic, hydrologic or significant vegetative resources. An existing farm utility shed was refurbished to become the maintenance building for the community association, designed within the site plan to conveniently fit adjacent to the recreation area as if it were deliberately placed in that location. Utilities were installed using alternatives to open-cut trenching. For example, boring, which is much less invasive to the terrain, was used, and utilities were located to lessen their impact on the resources.

Avoiding steep slope areas: A slope analysis was conducted to determine where roads should be placed. Aligning slopes with the natural topography minimized excessive cut and fill, and the use of 1:1 or 2:1 side slopes reduced erosion and excessive soil disturbance. Retaining walls, terracing, landscaping and restabilization techniques were used to reduce cut and fill and erosion, and to save vegetation. Exposed slopes were quickly stabilized, and construction was scheduled to minimize the length of time soil was exposed.

Incorporating native plants and vegetation: More than 1,000 trees are being planted annually in Woodland's Edge. These trees offer many environmental benefits, including reducing the need for summer cooling and reducing heat island effects. Incorporating native plants and vegetation has reduced the need for irrigation and fertilizing, and reduced extensive long-term maintenance.

To save as many native trees as possible, land planners strived to avoid critical root zones during construction. This was achieved by installing fencing around the root zones and using retaining walls and tree wells to protect trees from construction activities.

Trees cleared from roadways were harvested and used whenever possible. Waste materials and other trees were chipped onsite to make mulch, which was stockpiled and used for trail surfacing, covering construction scars, erosion control and landscaping. Mulch also was used as a bridging material on construction access through forested areas. A 12-inch thick layer of mulch absorbed the weight of heavy equipment, reducing soil compaction and allowing tree roots to live.

Aeration systems were also employed, allowing roots to breathe. The playground site was built over such an aeration layer, which eliminated excavation, soil compaction and root disturbance. This saved more trees, and provided instant shade and sun protection for the playground. Today, residents receive community and homeowner manuals on how to care for the trees on their properties.

Preserving wildlife habitats and corridors: The land planners developed a plan to maintain wildlife habitat by maintaining open spaces as part of a wildlife corridor. The planner used the expertise of professionals and conservation organizations to accomplish this. For example, working with Audubon Arkansas and The Nature Conservancy, a controlled burn was conducted in a grassy meadow to improve wildlife habitat. This habitat restoration project resulted in the establishment of a wildflower meadow, creating both a neighborhood amenity and a habitat for local wildlife.

Also created as an amenity was a regional detention pond. The pond was stocked by the state's Game and Fish Commission, which provided fishing opportunities for residents.

Management of stormwater: Three pristine creeks traverse the property and are preserved in their natural state as amenities. The land planners designed a stormwater management system around existing stream flows and drainage. Concentrated flows were minimized, letting stormwater take its natural course. When stormwater was intercepted and collected, it was returned to its natural course as quickly as possible. Natural rivulets were preserved to slow and filter the water, and flumes were used in lieu of inlets and pipes.

Conclusion

Upon completion, Woodland's Edge will consist of about 800 homes interwoven with 300 acres of heavily forested green space that is traversed by miles of hiking and nature trails. Half of the homes built were pre-sold and 80 percent of the remainder will be sold before completion. This is not typical for developments in Little Rock in the current market, but Ron Tyne of Tyne and Associates attributes this success to the aesthetic appeal created by adhering to NGBS for site and lot development. The techniques used cost less than traditional site development techniques, which allowed additional amenities such as trails and parks to be incorporated.

In addition to NAHB's Green Certified-Four Star Subdivision Award, Woodland's Edge received:

- 2009 Green Development of the Year, NAHB
- 2008 Developer Award, American Trails
- 2007 Honor Award/Urban Design, American Society of Landscape Architects/Arkansas Chapter
- 2007 & 2005 Landscape Award and Best of the Best, Little Rock City Beautiful
- 2005 Award of Excellence, The National Arbor Day Foundation
- 2002 Outstanding Developer, Arkansas Urban Forestry Council

As Tyne explains: "From the very beginning, preservation of nature has been the centerpiece of our green development. Natural beauty abounds in Woodland's Edge, and the market has responded aggressively. They [potential buyers] love the green spaces." As a result, "we are experiencing both high demand and high values even in this downturned market."

For more information on how to obtain NGBS certification visit the NAHB Research Center website at www.nahbrc.com/.

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A Comparison of Two Different Site Plans

PROJECT RESULTS FROM TOTAL DEVELOPMENT		
TOTAL SITE	CONVENTIONAL PLAN	SUSTAINABLE PLAN
Lot Yield	358	375
Linear Feet Street	21,770	21,125
Linear Feet Collector Street	7,360	0
Linear Feet Drainage Pipe	10,098	6,733
Drainage Structures: Inlets/ Boxes/Headwalls	103	79
Estimated Total Cost	$4,620,600	$3,942,100
Estimated Cost Per Lot	$12,907	$10,512
ACTUAL RESULTS FROM PHASE ONE		
PHASE 1	CONVENTIONAL PLAN	SUSTAINABLE PLAN
Lot Yield	63	72
Total Cost	$1,028,544	$828,523
Total Cost Per Lot	$16,326	$11,507
ECONOMIC AND OTHER BENEFITS FROM LOW IMPACT DEVELOPMENT		
Higher Lot Yield		17 additional lots
Higher Lot Value		$3,000 more per lot over competition
Lower Cost per Lot		$4,800 less per lot
Enhanced Marketability		80 percent of lots were sold in the first year
Added Amenities		23.5 acres of green space/parks
Recognition		National, state and professional groups
Total Economic Benefit		More than $2,200,000 added to profit





LIVE. PLAY. RELAX. REPEAT.

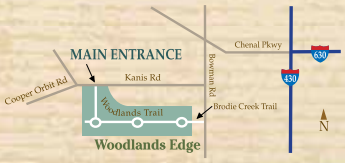
Named #1 Green Community in America — NAHB 2009

Over one-third of our heavily wooded acres will always remain as unspoiled forest. Residents can enjoy the neighborhood recreation center, tennis courts, swimming pool, pristine creeks, paved nature trails, even wildlife observation areas! New homes from $300,000 to over $500,000.

Woodlands edge

Nature's Neighborhood

From Chenal Parkway, take Bowman Road south to Kanis Road. Then right onto Kanis and west about one mile to Woodlands Trail. Then left onto Woodlands Trail and continue straight into Woodlands Edge.



Developed by ROCKET PROPERTIES, LLC
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2009 NAHB GREEN BUILDING AWARD WINNER
NATIONAL DEVELOPMENT PROJECT OF THE YEAR

NAHB GREEN CERTIFIED
HIGHEST RATING