Linfield Crossing Case Study

Project Information

Level of Certification: Three Stars NGBS Certified

Location: Brookfield, WI

Size of Site: 6-acre infill site

Site Details: 25 Single-Family Residential Homes

Year Site Development Began: 2013

Project Team

Developer: Neumann Companies

Designer: TRIO Engineering

Verifier: Five Star Energy Corp

Meaningful Partnerships: Tim O'Brien Homes

Key Features

Innovative Practices:

- Attained special consideration from the City of Brookfield to design lots smaller than the minimum width of 130 feet, as narrow as 75 feet.
- Provided pedestrian mass transit access within half a mile.

Stormwater Management:

- Stormwater piping avoided trees wherever possible.
- Existing roadside ditches and manholes were utilized.
- Infiltration swales incorporated engineered soil to treat the site's stormwater.

NAHB
National Association of Home Builders

Specifics

Linfield Crossing, a 25-lot subdivision, was built on the site of a 1950s-era elementary school that was left blighted and abandoned prior to development. The site contained a large asphalt parking lot, playground and centrally located building. After fully remediating building materials containing asbestos, the elementary school was demolished in 2013, allowing new development to begin. The Linfield Crossing team built a neighborhood that prioritizes the local environment through creatively treating stormwater, preserving 50-year old trees and changing local zoning ordinances allow increased density. Of significance was the team's ability to incorporate many units on a 6-acre infill site; higher density projects such as this mitigate negative impacts of development such as sprawl and promote affordability and green space.

Linfield Crossing is situated such that local water flows into the Mississippi River instead of the Great Lakes-St. Lawrence River Basin. This consideration in water supply planning led Neumann Companies to meet state and regional regulations by reducing impervious areas and treating the site's stormwater onsite.

After tearing down the blighted elementary school, Neumann was able to remove all existing impervious areas, and designed roads, lots and homes to reduce the site's total impervious area. In addition, Neumann implemented a central infiltration swale, with an engineered soil mixture that treats water before leaving the site. Berms and swales were used throughout the site to incorporate pre-existing roadside ditches and stormwater manholes into the new water treatment infrastructure, all without the use of a detention pond. Neumann avoided impact to trees when establishing the new culverts and roadway ditches, preserving four old-growth trees.

School Redevelopment

Key Features Cont.

Slope Disturbance:

- Slopes have a maximum 4:1 slope for easy maintenance and to facilitate erosion control methods.

Soil Disturbance:

- Clearing limited to areas disturbed for lot grading, other areas left in natural grass condition.
- Straw was applied to disturbed areas to protect topsoil and allowed new vegetation to be planted easily.

Trees and Vegetation:

- Existing trees protected and preserved to provide shade on homes and driveways.
- Residents are required to plant one new tree per lot, in the front yard.

Landscape Plan:

- Landscaping along walkways used local plants and groundcover.
- Worked with neighbors to salvage plants from school courtyard and bedding areas prior to demolition of facility.

Site Development

The landscape plan for Linfield Crossing featured much of the existing landscaping. The development team worked with the site's neighbors to salvage plants from the school courtyard and bedding areas prior to the demolition. When it was necessary to add new plantings, locally sensitive species that require limited maintenance and watering were chosen. The subdivision also requires that lot owners plant at least one new tree in front of their house.

Zoning standards for the City of Brookfield at the time of Linfield's construction included minimum lot widths of 130 feet. A Planned Unit Development process was required to achieve a reduction in the minimum width of the lots. With the support of the City Planning Department, City Mayor and district representatives, Linfield was granted minimum lot sizes as low as 75 feet. These minimums allowed the project to increase density and limited building footprints while promoting open green space.

In addition, Neumann Companies includes a "Green Certified" home builder, Tim O'Brien Homes, who certified every home with the Wisconsin Focus on Energy and the Green Built Home programs. This was in addition to obtaining NGBS certification.

Streetscape

All information in this case study was provided by one or more members of the project team.
For information on certifying your project to the NGBS, visit homeinnovation.com/green