Lakes of Orange Case Study

Project Information

Level of Certification: Four Stars NGBS Certified

Location: Orange, DE

Size of Site: 95-acre infill site

Site Details: 150 lots

Year Site Development Began: 2010

Project Team

Developer: Lakes of Orange, LLC

Designer: Cawrse & Associates, Inc.

Verifier: RSA Architects

Meaningful Partnerships: Kertes Homes and Miller Homes

Key Features

Innovative Practices:

- Street widths are 26 feet including the curb.
- The site includes a community clubhouse, walking trails, tennis courts, a gazebo and a playground.

Recycled Materials:

- The site's concrete and asphalt were recycled as fill and base materials for walkways and driveways.

Wildlife Habitat:

- Bird boxes and pond are maintained with vegetation as a habitat.

Specifics

Lakes of Orange is the first neighborhood in Ohio to receive a National Green Building Standard (NGBS) certification. The 95-acre site has a 25-acre conservation easement area to protect a local stream and riparian area. The development team worked on plans that ensured the protection of sensitive natural resources during and after construction. A previously contaminated lake on site was rehabilitated, and incorporated into the site's stormwater management plan, becoming a community asset through the process.

Conserving the site's heavily wooded and steep-slope areas, and restoring the lake improved the site's windbreaks, stormwater management, erosion control and utility costs. In addition to the conservation easement area in the interior of the site, the property is surrounded with greenbelts that act as natural buffers and provide privacy for residents. Evergreen trees act as wind breaks and provide additional shade for homes, resulting in lower air conditioning costs. Trees on the site that needed moving during construction were replanted in the buffer areas.

Site Development

National Association of Home Builders

Key Features Cont.

Stormwater Management

- Geogrid, a polysynthetic mesh intended to stabilize steep slopes, was installed around the retention basin.
- Restored lake on the property is now part of the stormwater management plan, functioning as a detention basin and equipped with forebays to filter water before entering the lake.

Landscape Plan:

- Plants with similar watering needs are grouped together and put on separate irrigation zones, a practice known as hydrozoning. Shrubs and lawns are irrigated separately and controlled by rain sensors.
- Onsite tree trimmings and stump grindings were used as mulch for trails and mulch for tree root protection along the edge of clearings.

Soil Disturbance:

- Over 60 percent of the roads on the site are aligned with the natural topography.
- Only two acres of development took place on steep slope area, avoiding all other steep slope area, minimizing cut and fill.

Sensitive Areas:

- A 30-acre stream corridor and conservation easement area protects the riparian buffers and much of the heavily wooded area.

Housing Development

After conducting a survey of the site's existing wetlands and natural water features, the project team decided a certain percentage of offsite mitigation was necessary. Originally, the Ohio EPA determined that the mitigation plan did not meet their standards, which required a new wetlands delineation survey. The permitting process did not consider important site characteristics, such as the percentage of wetlands being impacted, and instead enacts the same wetland protection requirements for any size development.

For developers who choose to pursue green land development, it is beneficial to find home builders with similar goals. Those involved in this project were able to form partnerships with home builders with shared goals of energy efficiency, lower materials and construction costs and green marketability. The home builders and the Lakes of Orange development team worked together on issues such as utility easements, tree conservation and pesticide management, positively contributing towards NGBS certification.

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