

Cambridge Lakes

Pingree Grove, IL

Client

DRH Cambridge Homes, Inc.

Scope of Services

- Land Development
- Houseline Surveying
- Grading Design
- Stormwater Management Design
- Water Distribution Design
- Sanitary Sewerage Collection Design
- Roadway Design
- Permitting Assistance
- Construction Phasing Consultation

Key Staff

Fred Thaete, P.E.

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Project Duration

2004-Ongoing



The master-planned community of Cambridge Lakes is comprised of more than 1,900 acres of former agricultural fields, isolated woodlands, wetlands and creeks in rural Kane County, Illinois. The Cambridge Lakes plan includes approximately 4,700 residential units: a combination of single-family homes, townhouses, duplex homes, and condominium units. Prior to the development of Cambridge Lakes, the Village of Pingree Grove had a population of 124 persons living among 52 residential dwellings (2000 census). By virtue of building Cambridge Lakes, DRH Cambridge Homes, Inc. created not only a new large-scale community, but virtually an entire village.

New village infrastructure included a 1,700,000-gallon per day wastewater treatment facility, three deep wells for potable water supply, two water treatment facilities, one 1,000,000 gallon elevated water storage tank and one 800,000-gallon ground storage tank. Manhard Consulting, Ltd. designed approximately seven miles of trunk line sanitary sewer and three wastewater pumping stations to transport waste to the treatment facility.

Manhard Consulting also designed nearly nine miles of primary water main to connect the source, treatment and storage facilities with the residential neighborhood distribution systems.

Storm water management for Cambridge Lakes was a complicated process involving formal approvals from the Village of Pingree Grove, Kane County, the Illinois Department of Natural Resources – Office of Water Resources, the Illinois Department of Transportation – Bureau of Traffic, The United States Army Corps of Engineers and the Federal Emergency Management Agency. Detailed hydrologic and hydraulic analyses were completed for both the existing and proposed conditions. The existing conditions analyses covered a watershed in excess of 9.5 square miles and established a base flood elevation for over 8.8 miles of riverine floodplain. Proposed conditions analyses included the design of approximately thirty detention basins including one basin that covers over 45 acres and was designed



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to provide habitat for native sport fishes. Permitting assistance was provided to secure floodway construction permits from the Illinois Department of Natural Resources for six new bridge crossings of regulatory floodways, a Dam Safety Permit for a Class III small dam embankment and multiple Letters of Map Revision and Letters of Map Amendment from the Federal Emergency Management Agency.

Roadway improvements for the Cambridge Lakes development were designed to

maintain the sense of community yet effectively distribute and convey traffic through the development to the adjacent arterial streets. Approximately 6.5 miles of collector roadway were designed to provide access to the neighborhood communities. Over three miles of an existing rural farm road was reconstructed and widened to serve as an arterial roadway. Traffic improvements also included nearly three miles of widening improvements on three separate state highways including the design of improvements on eight highway intersections. Manhard Consulting, Ltd. provided design assistance and coordination for the construction of six new precast concrete bridge structures and the widening and deck replacement of an existing concrete deck beam bridge over a major drainage channel.

Manhard Consulting, Ltd. also provided design services for the site development of the Cambridge Lakes Learning Center, the first charter school in the State of Illinois to be initiated by a residential developer. Cambridge Lakes Learning Center opened in the fall of 2007 and was designed to accommodate 1,000 students. The Center consists of seven buildings, associated parking and drop-off facilities, plus an adjacent park to meet the recreational needs of the students.

Throughout the land planning, conceptual engineering, preliminary engineering and final engineering design processes, an emphasis was placed on creating an amenitized community that would serve as the model that all future communities in the region would strive to emulate. With the assistance of Manhard Consulting, the developer was able to set aside nearly 700 acres for both the preservation of natural resources and the development of community facilities to be enjoyed by the residents of Cambridge Lakes. Manhard Consulting provided site design for the community parks that were dedicated to the Village of Pingree Grove including facilities for soccer, baseball and softball as well as a community skate park. Within the residential neighborhoods, Manhard Consulting assisted in the design of pocket parks that included playground equipment and open spaces for the enjoyment of the neighborhood children. Manhard Consulting provided site design for three clubhouse facilities, each with their own aquatic centers. Manhard Consulting worked closely with a local golf course architect to integrate a three-hole golf course into the floodplain and storm water management of Carillon at Cambridge Lakes, the age-restricted community developed within Cambridge Lakes. Thanks in part to the efforts of the design staff at Manhard Consulting, Ltd. the developer was able to create an amenitized community that the residents of Cambridge Lakes and the Village of Pingree Grove are proud to call home.