# Garnet Oaks:
## *Mile-long Trail on 24 Wooded Acres*

*By Randall Arendt*

*Location*: Foulk Road, Bethel Township, Delaware County, PA
*Development Period:* 1992 -1994
*Developer and Builder*: Realen Homes, Ambler, PA
*Site Designer:* Michel Stadulis, ASLA, Realen Homes, Ambler, PA

Located in a zoning district with public water and sewer, where the minimum lot size was 20,000 sq. ft., Garnet Oaks was created with lots about 40 percent smaller in order to provide an attractive conservation area designed to appeal to a large and under-served sector of the homebuyer market: people who wanted to live in a neighborhood with preserved natural areas enjoyable to walk in. Two-thirds of the lots abut open space, giving them the appearance and privacy of larger lots, in this small community in the Philadelphia area (Bethel's population was about 4,000 at the time).


**Figure 1**: The Garnet Oaks site plan shows that approximately half the property, including many acres of buildable upland forest, were preserved with an environmentally responsible design that also substantially reduced the developer's costs (for tree clearing, grading, streets, sidewalks, water, sewer, etc.).

Almost 30 acres (slightly over half) of this 58-acre site are conserved as permanent privately-owned open space, within the Rachel White Nature Preserve, created by Realen Homes and conveyed to the homeowner association.

In addition to about five acres of forested wetland, the conservation area contains approximately 20 acres of upland woods that most other developers would have converted to lawns and streets, in a very conventional manner.

**The centerpiece of Garnet Oak's open space network is a nearly mile-long woodland trail that winds through the 24-acre conservation area connecting a quiet picnic grove and a well-equipped playground to the street system in three locations.** The trail traverses areas of wet soils elevated on a simple low wooden boardwalk and features numerous small plant identification tags for various trees along the trail.

**Figure 2**: Informal trails wind through mostly deciduous woodlands, where numerous small signs identify various species of trees and native plants. Simple wooden boardwalks cross wet areas.

**The developer's staff also designed and produced an attractive eight-page trail brochure for residents illustrating the flora, fauna and environmental areas, and the historic features along the trail.** It encourages walkers to look out for trees such as pin oak, ash, red maple, tulip, and black gum; shrubs such as arrowwood viburnum, and spicebush; plants such as wild strawberry, spring beauty, trailing club moss, Virginia creeper, and various ferns (cinnamon, hay-scented, royal, and Christmas); plus animals including Eastern box turtles, cottontail rabbits, Carolina wrens, and the cecropia moth. The fact that the staff included an experienced landscape architect who formulated the conceptual layout of the development and designed the trail booklet is significant, as few development firms utilize the services of landscape architects to that degree. In laying out the conservation area, specimen trees were identified through aerial analysis followed by field surveys.


**Figure 3:** Trail entrance from one of the subdivision streets. On the right, a young mother with her children explore the property's natural features along the trail network.

After viewing the model home with all its special features, prospective buyers were encouraged by sales staff to take a brochure describing the central conservation area and to spend a few minutes exploring the new trail system. Staff reported that many potential customers, visibly impressed by that short experience, returned to the model home with heightened interest, eager to begin the home purchasing process. Quite a few spoke highly of the environmental/recreational amenity, which set Garnet Oaks apart from its competition and offered buyers much more than just a house and a yard.

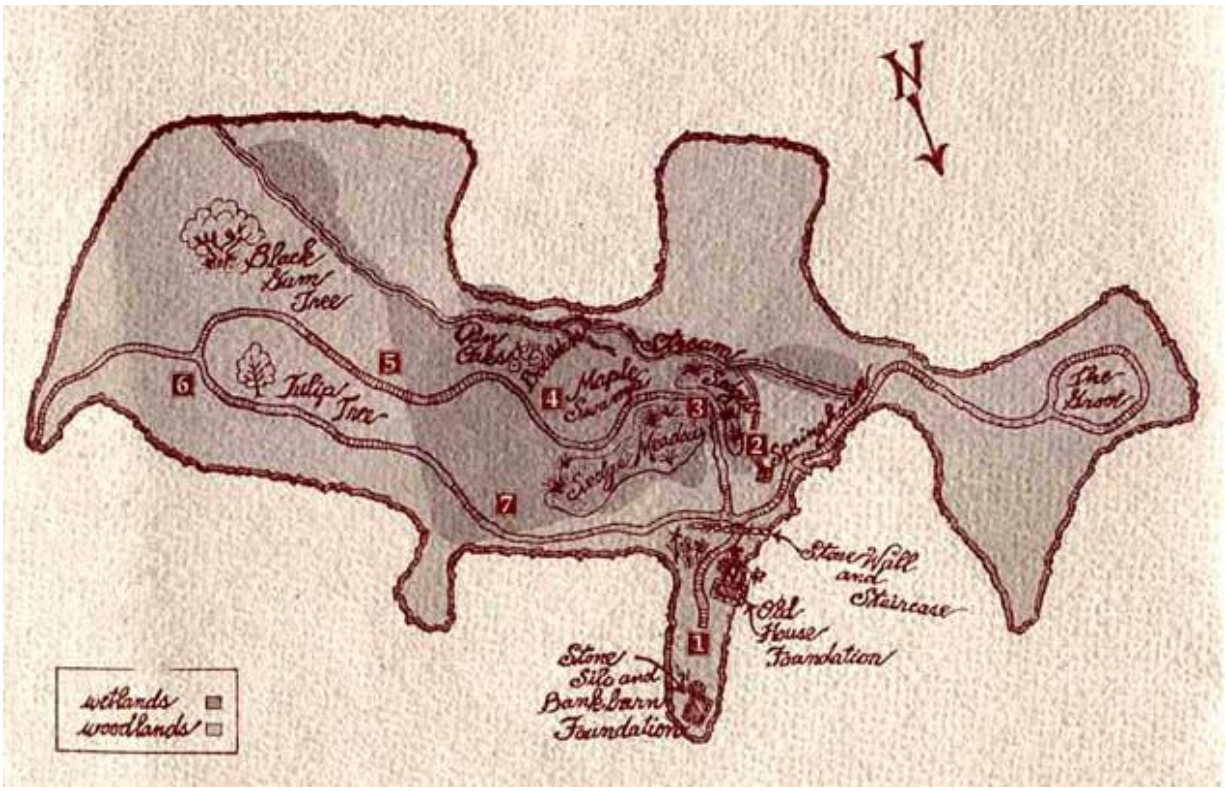
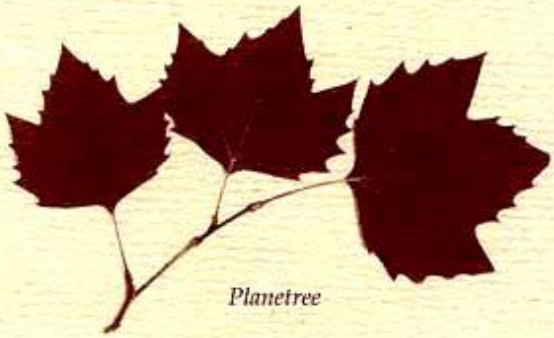



**Figure 4:** The trail map shows the locations of natural features such as a tulip tree, black gum tree, a group of pin oaks, a small stream, a sedge meadow, and a red maple swamp, plus historic features from the 19th century such as the springhouse, stone foundations for the farmhouse, bank barn and silo, and a stone retaining wall with an unusual staircase.

Three additional pages from the trail brochure can be seen in Figures 5-7, below.

WELCOME TO THE RACHEL WHITE PRESERVE AT Garnet Oaks. The preserve is comprised of almost thirty acres of woodlands which is privately owned by the Garnet Oaks Homeowners Association. Open space and conservation easements recorded at the county courthouse will assure that these woodlands will be protected from any future development. Please take extra care during your visit and do not disturb the plants and animals, so that others may enjoy them. Please refrain from leaving the boardwalks and designated trails which are intended to protect the sensitive areas from uncontrolled foot traffic.

You are at the beginning of the nature trail that winds through a variety of wonderful, undisturbed habitats. Across Colonial Drive stand the remains of the original bank barn and silo that marked the central point of the 1800's farming operation. The old Planetrees along Colonial Drive previously flanked the lane to the White farmhouse. Based on historical research, old fjelds beyond the barn were used for corn and hay, while downhill areas, including the wetlands, were most likely cleared of woodlands and used as pastureland for cows, horses, and livestock.



*Planetree*

LOOK ALONG THE TRAIL FOR

*Wild Strawberry*

Spice Bush

*Box Turtle*

Gray Catbird

Wild Grapevine

Bittersweet Vine

Black Walnut

Flowering Dogwood

**Figures 5-7:** Realen's well-illustrated trail brochure cleverly functions as both a walking guide for residents and as a marketing tool for prospective buyers. Its pages contain several images scanned from leaves gathered within the conservation area, plus woodcuts and engravings gleaned inexpensively from historic sources now in the public domain.

Trailing Clubmoss (whose spores were used for flash powder before the days of flash bulbs) need more air circulation around their roots and thus require a higher and drier location. Plants like the shrubby Arrowwood Viburnum with its toothed leaves, Spicebush, and the dominant Red Maple trees can tolerate both sopping wet and moist conditions. They grow throughout this area. Arrowwood's slender, straight stems were used by native American Indians for arrow shafts.

**5** The area that you are crossing is part of a newly created wetland. Since any development increases the amount of runoff after a rainfall, the Pennsylvania Department of Environmental Resources required a stormwater detention basin to reduce the rate of runoff and prevent downstream flooding. Rather than denude a large area of mature forest to create the basin, Realen Homes developed a basin that temporarily impounds the water in the naturally occurring woodlands. This not only saved the trees, but also increased infiltration rather than runoff. Some wetlands were disturbed by the detention basin dam, and new wetlands had to be created to replace the wetlands which were lost. The new wetlands utilize the stormwater runoff from the community to provide the water needed to establish the wetland growing conditions which you experienced at the beginning of the trail.

## LOOK ALONG THE TRAIL FOR

Christmas Fern

Hay-scented Fern

*Trailing Club Moss*

Carolina Wren

Stilt Grass

Spring Beauty

*Cinnamon Fern*

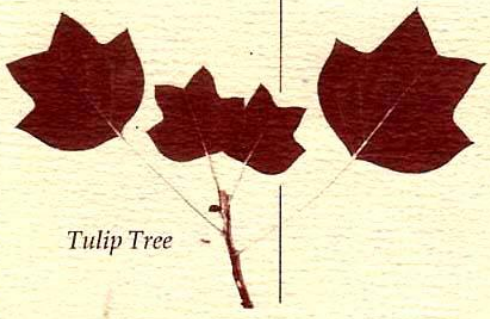
## LOOK ALONG THE TRAIL FOR

*Royal Fern*

*Cecropia Moth*

May Apple

Virginia Creeper



*Tulip Tree*

**6** Before the rainwater reaches the water table, it must filter through the soil. The most likely place for rainfall infiltration is undisturbed upland habitats. Old fields, and especially dense forests, greatly reduce the velocity of the falling raindrops and provide loose, granular soils covered with leaf litter that prevent rapid runoff. These areas encourage quick infiltration into the spongy soil layers. By contrast, roads, roofs and driveways are totally impervious to water infiltration; even our lawns provide minimal groundwater replenishment. Thus, natural wooded upland areas and gardens, in addition to wetlands, provide very valuable groundwater infiltration locations.

Look across the trail...you'll see tulip and ash trees. The large straight tulip tree, named for its orange and yellow tulip-shaped flowers which appear in the spring, is the tallest tree in eastern North America. The ash tree boasts such extremely strong wood that it is used for the "Louisville Slugger." Both these trees require drier terrain and can not compete effectively with other trees adapted to saturated soils in the wetlands. Notice the greater diversity of canopy trees here, as compared to the wetland meadows at the start of the trail. In the very wet areas it is extremely rare to find any canopy trees except the Red Maple.