Arendt as Site Designer

His design consultancy has resulted in collaborative working relationships with planning and design professionals in more than 20 states.

Growing Greener, Island Press

The drawing at left is one of many used by Arendt to illustrate the multiple benefits that can be achieved when conservation design is used in laying out new subdivisions. A significant feature of this plan is the preservation of an existing central meadow, which was "designed around" to become an important element in conserving the community's rural character. Another is the use of clustered houses on relatively small lots, enabling the retention of forested areas that can interconnect with woodlands on adjoining properties, and the protection of a greenway corridor along a high quality freshwater creek.

Villages, Neighborhoods, and Open Space: Putting Concepts into Practice

As a town planning consultant and site designer, Arendt advises communities throughout New England and across the country on how to design new development in a way that maximizes the preservation of their rural character. His site designs encompass a range of densities typically found in small town and rural areas, with most assignments ranging from several acres per dwelling (on wells and septic) to 3-5 dwellings per acre (with urban infrastructure). While *Rural by Design* encompasses that full range, two books focus on the lower density end (*Conservation Design for Subdivisions* and *Growing Greener)*, and a fourth book (*Crossroads, Hamlet, Village, Town*) blends conservation design principles with the New Urbanism.

A basic tenet of Arendt's approach to neighborhood design is that truly significant areas of high-quality open space can be conserved at no cost to the community, and with the least impact upon the environment, simply by returning to the past and applying traditional village planning principles that have stood the test of time so very well.

In many of his projects, he has used models for development drawn from patterns familiar to local residents – particularly historic villages and hamlets. With regard to the buildings constructed in these settlements, he embraces a broad range of styles, from vernacular to contemporary, greater emphasis being placed on overall form, roof shape, and proportions, executed at a scale sympathetic to the location and context.

In Arendt's view, designing more compactly not only produces more walkable, livable neighborhoods creating more vibrant communities – it is also the most cost-effective vehicle for setting aside substantial acreages of undisturbed open space, critical for maintaining healthy wildlife habitats and preserving the rural character of our growing towns.

Through both his academic and practical work over the last three decades, he has developed a special approach to town planning that combines the principles of landscape architecture with the development design process. Simply put, he advocates planning the open space systems and related conservation areas first, based on a detailed understanding of the site's most notable features.

This approach proceeds in a way that makes sense in terms of the larger picture of helping to conserve interconnected networks of open space, not only within the project area but outside it as well, by linking protected landscapes into a potentially community-wide system of trails, wildlife travel corridors, and forested habitats. That network of conservation areas constitutes the "green infrastructure" that progressive communities protect , and which other municipalities ignore at their

peril, according to Arendt's philosophy.

This planning process typically begins with a Context Map delineating potential resource areas within 2000 feet of the project boundaries, to ensure that the conservation lands on the subject parcel will be planned intelligently to link with similar areas in the vicinity. This is followed by an extremely thorough inventory of the site's natural and cultural resources that informs the design team as to the most noteworthy aspects of the property to preserve, which becomes the open space framework around which the development areas are then carefully fit. Areas for various housing options are selected based on location and topography, and a street circulation system is introduced to maximize connectivity and safety, through routes avoiding or minimizing impacts upon the property's environmental resources. The same is done with regard to the design of stormwater management systems, which emphasize treatment and recharge in addition to accomplishing basic detention objectives.

Similar care is taken at every stage of the planning process, right down to the location of neighborhood greens, the siting of individual homes, the selection of native tree and plant species, and sometimes even the architecture of the various housing types. Two of Arendt's larger current projects involve close collaboration with architects: Graham Greene, AIA, at Montgomery Farm in Allen, Texas, and Ernest Hutton, Assoc. AIA, at The Preserve in Old Lyme, Connecticut.

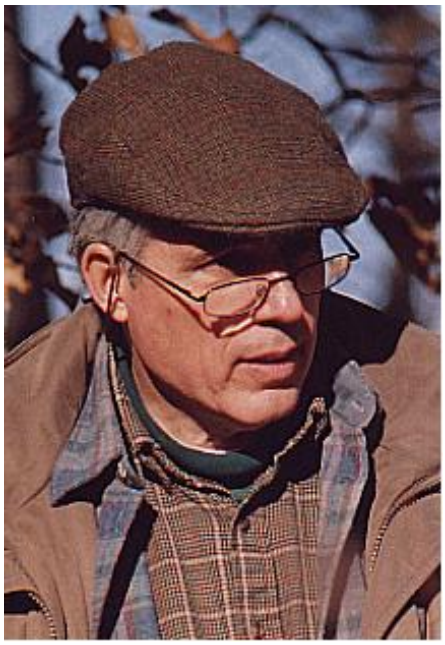


Photo by Mari Harpur

Although many of Arendt's projects are small ones (ranging from 20-50 house lots), he is currently involved in several much larger ones, such as a 650-acre development outside Dallas, a 2000-acre development just north of St. Paul, and a 1300-acre development 30 miles west of Chicago, the latter involving a blend of New Urbanist and conservation design principles. Other projects of significant scale include two in Sussex County Delaware, each covering about 800 acres, and a 1200-acre parcel in Pearl River County, Mississippi. In each case the development areas have been designed compactly so that 40-60 percent of the land area may remain as permanent greenbelt open space.

A small selection of Arendt's designs follow, illustrating solutions he has devised for a variety of situations at different scales, in rural and suburbanizing areas, some with public or central water/sewer, others dependent on individual systems.

"The only way I was able to proceed with my affordable housing project was because of your design work. The original plan, prepared by a local engineer, … called for leveling the site and moving 60,000 yards of dirt at a cost of $300,000 … (Y)our design, which more closely followed existing contours, reduced the dirt to be moved to less than 10,000 yards. This resulted in a saving of $250,000!"

- ***George Millard, Nacogdoches, TX***

Site Design Awards Earned by Randall Arendt:

Best in American Living Award, 1998 Gold Award, HUD Secretary's Award for Excellence, sponsored by the National Association of Homebuilders and Professional Builders Magazine

Project Name: Austurbruin

Project Location: Poulsbo, WA

Client: Kitsap County Consolidated Housing Authority, Silverdale, WA

Best in American Living Award, 2001 Silver Award, HUD Secretary's Award for Excellence, sponsored by the National Association of Homebuilders and Professional Builders Magazine.

Project Name: Hillandale

Project Location: Winslow, WA

Client: Richard Allen, Hillandale Homes LLC, Bainbridge Island, WA

Montgomery Farm, Allen, TX

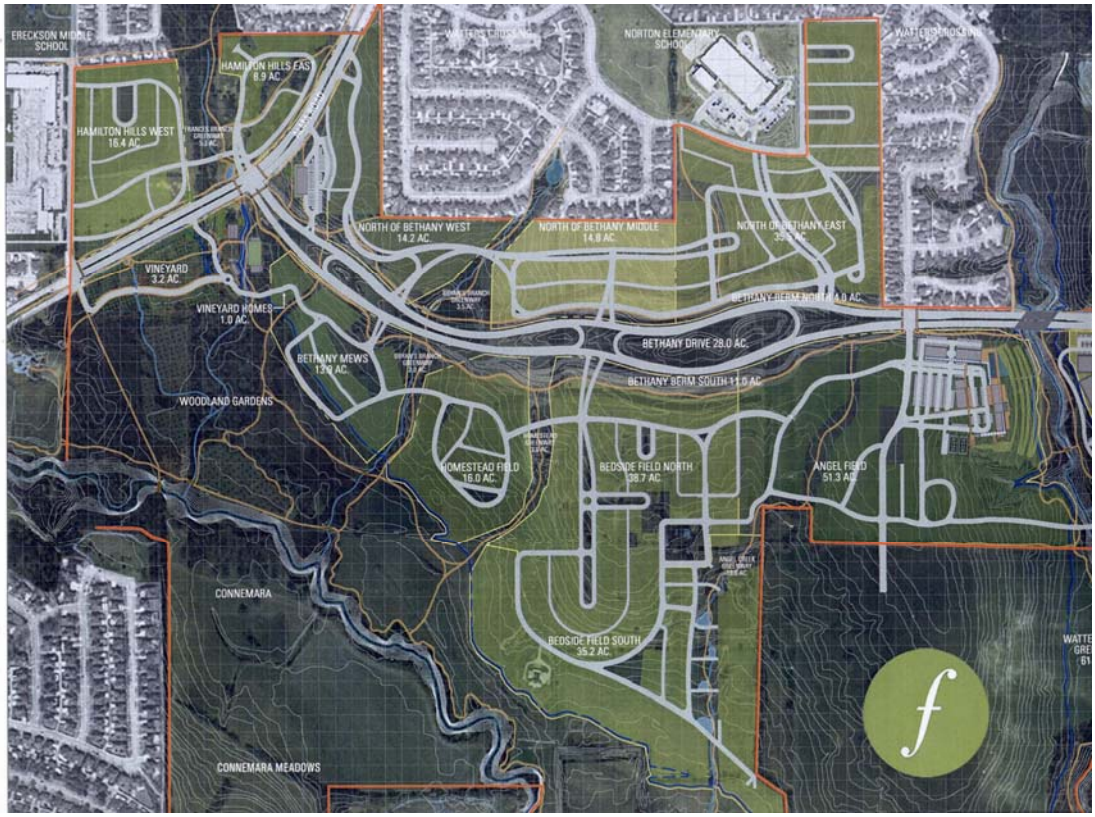
This 650-acre mixed-use project, located 18 miles north of Dallas, is almost entirely surrounded by suburban development built within the last 20 years, but adjoins an existing golf course and an 80-acre preserve created by the clients' family in the 1980s. In addition to the regulatory floodplain, the open space designed into this new community includes a variety of public parks and gardens to be landscaped largely with native-specie trees, shrubs, grasses, and wildflowers, in addition to a small vineyard, tree nursery, and equestrian facility, all linked together (and to the Connemara Preserve next door) by a network of informal walking trails. Every opportunity was taken to deliberately design around existing trees and hedgerows in this formerly agrarian landscape. Due to the densities needed to be achieved on this site, New Urbanist design principles were adapted for the street layout, but interpreted liberally and not too strictly, with many interconnected curvilinear streets, and "closes" in place of conventional cul-de-sacs (providing added opportunities for "rain garden" stormwater management.

: "Collaborating with Randall on the Montgomery Farm project has been an outstanding professional experience for me, as an architect who has had far more experience in building design than in site planning. I have absorbed a great deal from our working relationship, and appreciate Randall's deference to natural landforms and vegetation patterns, which he utilizes as "form-givers" shaping the ultimate layout of greenways, parks, streets, and building sites -- which he usually designs in that sequence."

- Graham Greene, AIA

This dense New Urban mixed-use community was designed around existing hedgerows, mature trees and other landscape features, resulting in a wide variety of interconnected open spaces.

The Master Plan for Montgomery Farm follows New Urban principles modified to fit Growing Greener principles developed by Arendt.



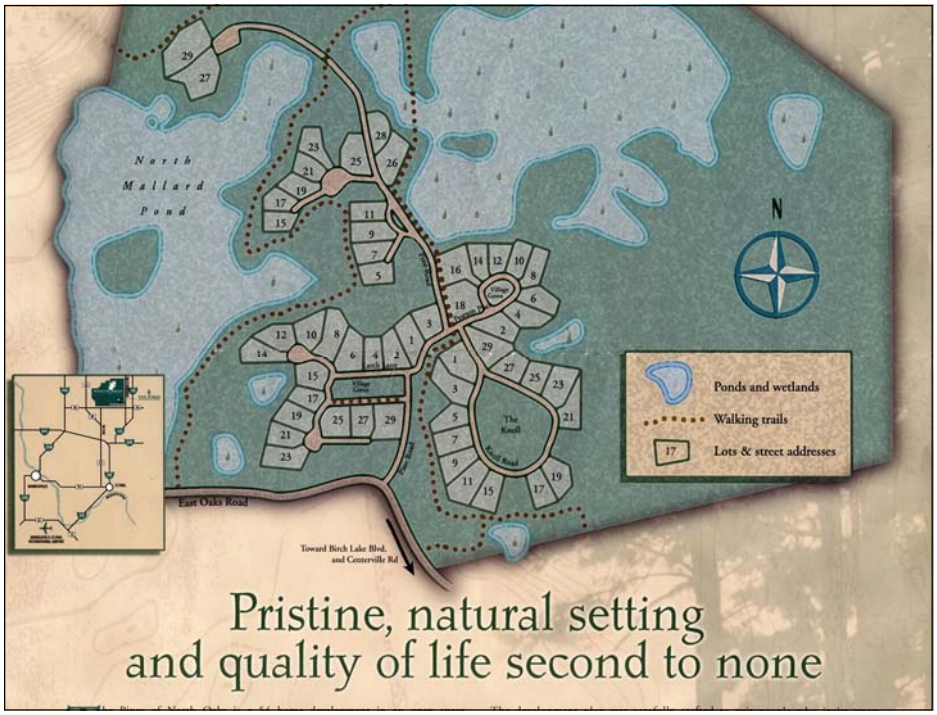
Emerson Partners, Dallas, TX

The Pines, North Oaks, MN

This is one of a number of neighborhoods Arendt has designed for the North Oaks Company on their 1800-acre property 15 miles north of St. Paul. Interpreting the site plan is difficult without the benefit of topographical information; suffice it to say that the terrain is quite bumpy, with more dry knobs and wet depressions than flat land -- accounting for the organic nature of the layout, which was also designed to avoid hedgerows, tree groups, and large specimen trees. This design approach represented a significant shift for the client, who had previously created only large (1-3 acre) lots on individual wells and septic systems. However, the presence of infrastructure near this part of his landholding, combined with a new interest in conservation planning (related to new management) spurred the company to engage Arendt, who had been conducting design workshops in nearby Stillwater. The project has proven to be a huge success both environmentally and financially ("twice green", in Arendt's phrase), with local developers outbidding themselves to purchase lots in the neighborhood, and sales being very brisk.

Small slivers of the adjoining 900-acre conservation area are only partly visible along the western and northern edge of this sketch, but delineating the boundaries for that preserve was another part of Arendt's consulting task.

Open space within the neighborhood itself consists of two village greens and a wooded knoll, thick with large red oaks, with trails linking homes to the wider conservation area and to other neighborhoods.



The North Oaks Company, North Oaks, MN

Above and Upper Right: This project features houses clustered on relatively small lots so as to leave a majority of the site in its natural state, with all lots having at least one property line abutting permanently preserved open space. The plan also illustrates the potential to create interconnected open spaces from one property to another.

Lower right: Footpaths in the Village Green connect to other neighborhoods and nearly 900 acres of protected open space. Residents have said, "I may only own three-quarters of an acre but it feels as if I own several hundred acres."

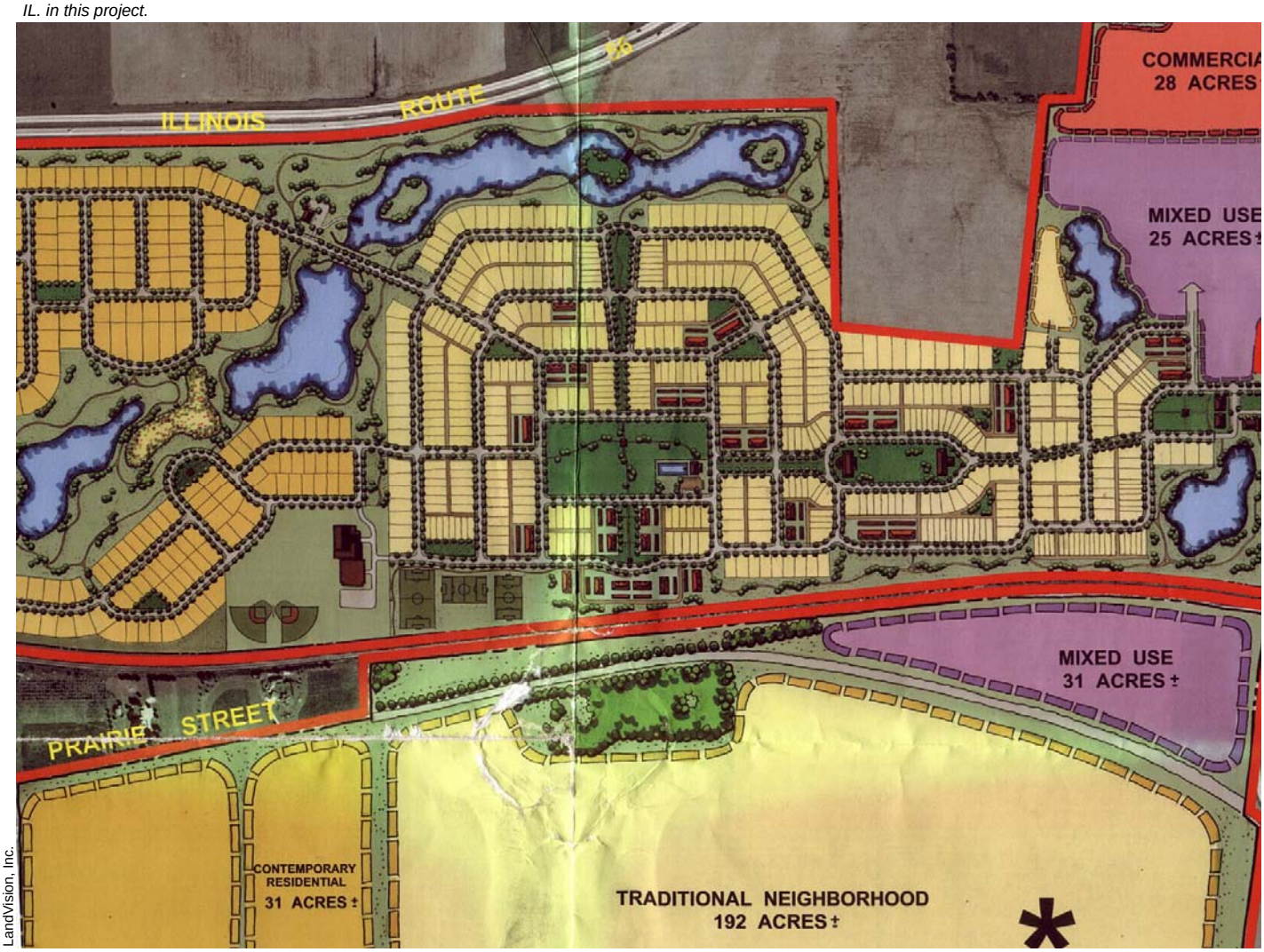
"After 35 years of site planning, what could there be that I didn't already know about site planning? But anyone serious about "designing around" significant natural resources would do well to learn Arendt's "four step design process" - not as an elixir guaranteeing design excellence, but as an organizing tool to make sure you perform the steps in the proper sequence."

- Richard Rothman, FAIA

Settlers' Ridge, Sugar Grove, Kane County, IL

This 1300-acre mixed use project also combines New Urbanist design principles for neighborhoods, with conservation design principles for the greenbelt open space. Arendt collaborated with the firm of LandVision in St. Charles IL, with that team taking the lead on the street layout and housing types, and Arendt taking the lead on planning the "green infrastructure", including the size and placement of village commons, playing fields, and trails. Approximately half of the 300 acres of tile-drained farmland on this property will be restored to native wet prairie by blocking the drains, bringing back the original hydrology, and planting suitable grasses and wildflowers in those areas, supplemented by shrubs and trees chosen from the native palette. The client, Kimball Hill Homes (the country's 20th largest privately-held homebuilding firm) has engaged a team of architects to design an entirely new range of single-family and attached residences for this landmark project. Shops, offices, civic buildings, and a future commuter station with service into downtown Chicago are all within walking distance of the denser neighborhoods.

Site Plan of 1300-acre mixed-use community with more than 3000 homes in Kane County, Illinois. Arendt collaborated with LandVision of St. Charles IL. in this project.



LandVision, Inc.

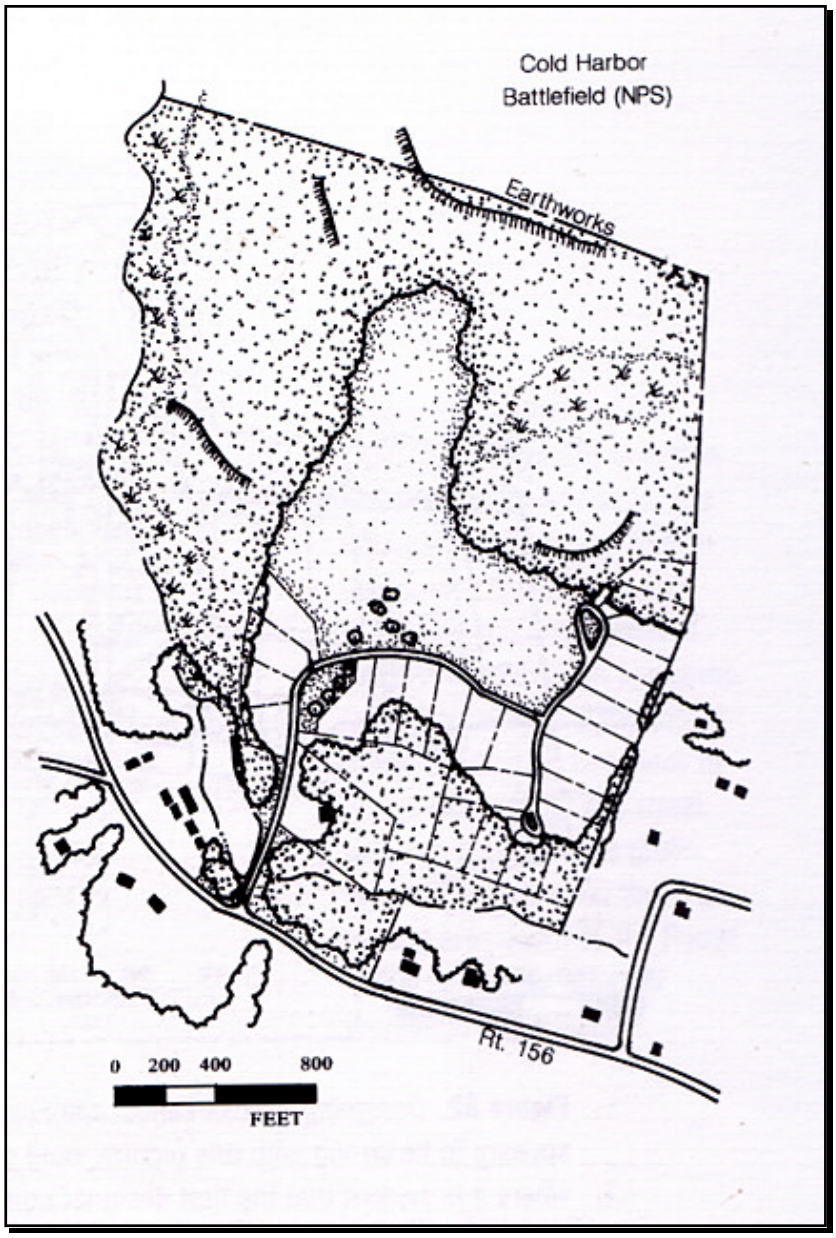
The Preserve at Cold Harbor, Hanover County, VA

Applying the principles of conservation design to this 25-lot subdivision near Richmond enabled Arendt to avoid impacting any of the site's civil war military earthworks, which had been among many such defenses hurriedly dug to defend the capitol of the Confederacy from the southward advance of Union troops.

The developer scored extra points with local officials by donating most of the conservation land to the Cold Harbor Unit of the the Richmond National Military Park. And National Park Service staff were thrilled to receive that land to augment their holdings in this key area, marking the site of one of the bloodiest days of the Civil War.

This project was also significant because it was the demonstration model for the County's new conservation subdivision regulations, produced with Arendt's technical assistance. The Park Service has also embraced the conservation design philosophy, and has engaged Arendt to help counties adopt an "Adjoining Land Strategy" (an effort to create deep buffers in new subdivisions developed around the edges of the Park's various battlefields).

These two photos show civil war earthworks and a military road trace that were preserved within the subdivision at Cold Harbor.



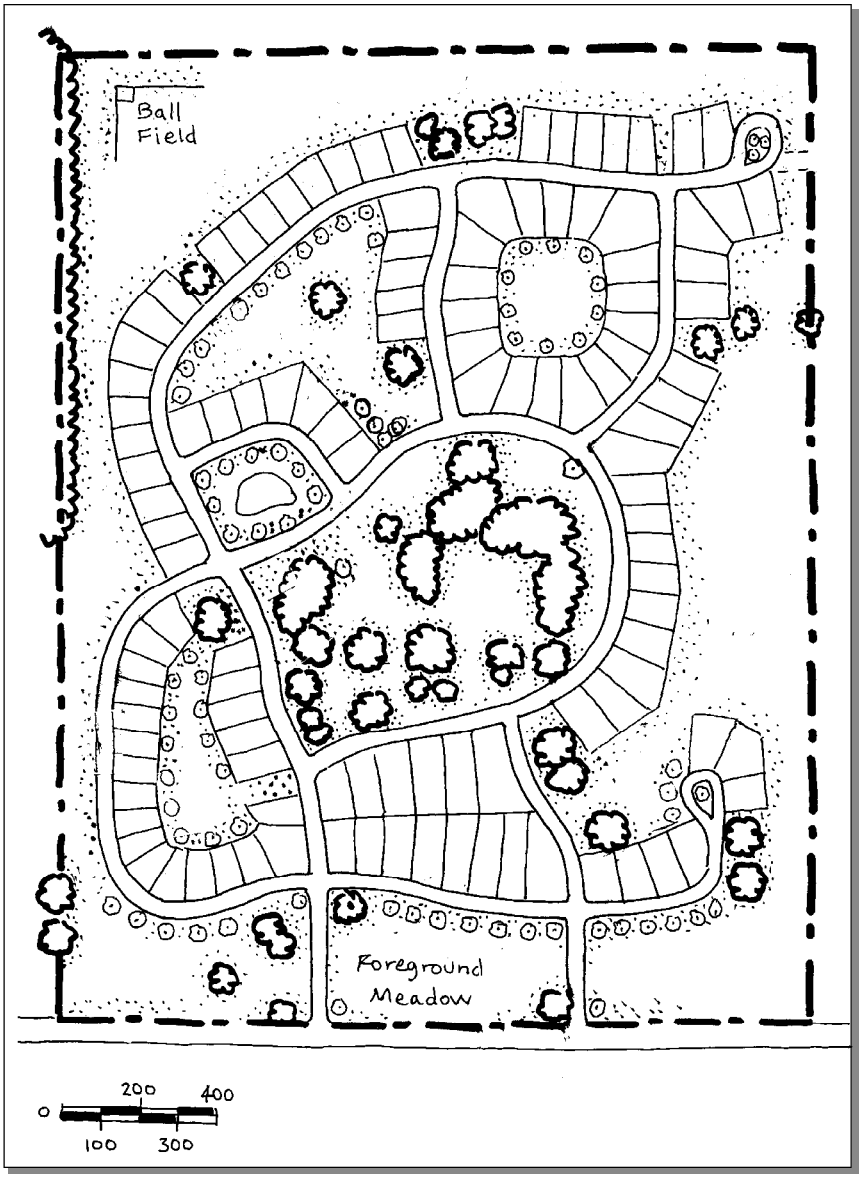
Crossroads, Hamlet, Village, Town, Ameri-

The Park at Wolf Branch Oaks, Mt. Dora, FL

Following a design workshop he conducted for Lake County, Arendt was approached by a local landowner and developer who asked him to prepare a conservation subdivision plan for his 80-acre property, zoned for 80 single-family homes. After walking the land it became clear that the mature live oaks were its most prominent natural feature. With the aid of aerial photography, Arendt designed around all but one of these specimens, centering the neighborhood on a 13-acre park containing the densest concentration of trees.

The public viewshed from Wolf Branch Road was also respected by locating homes along a "single-loaded" street, and orienting them to face that county thoroughfare across a "foreground meadow" conservation area.

This subdivision was subsequently featured on local television news, and was also the subject of an article published by the County in its quarterly newsletter.



The view from Wolf Branch Road is framed by a foreground meadow which also serves as the recharge and filtration area for the stormwater system.

Nearly all but one of the 49 mature oak trees growing on the property were preserved through this sensitive neighborhood design, adding economic value and enhancing the quality of life for residents.

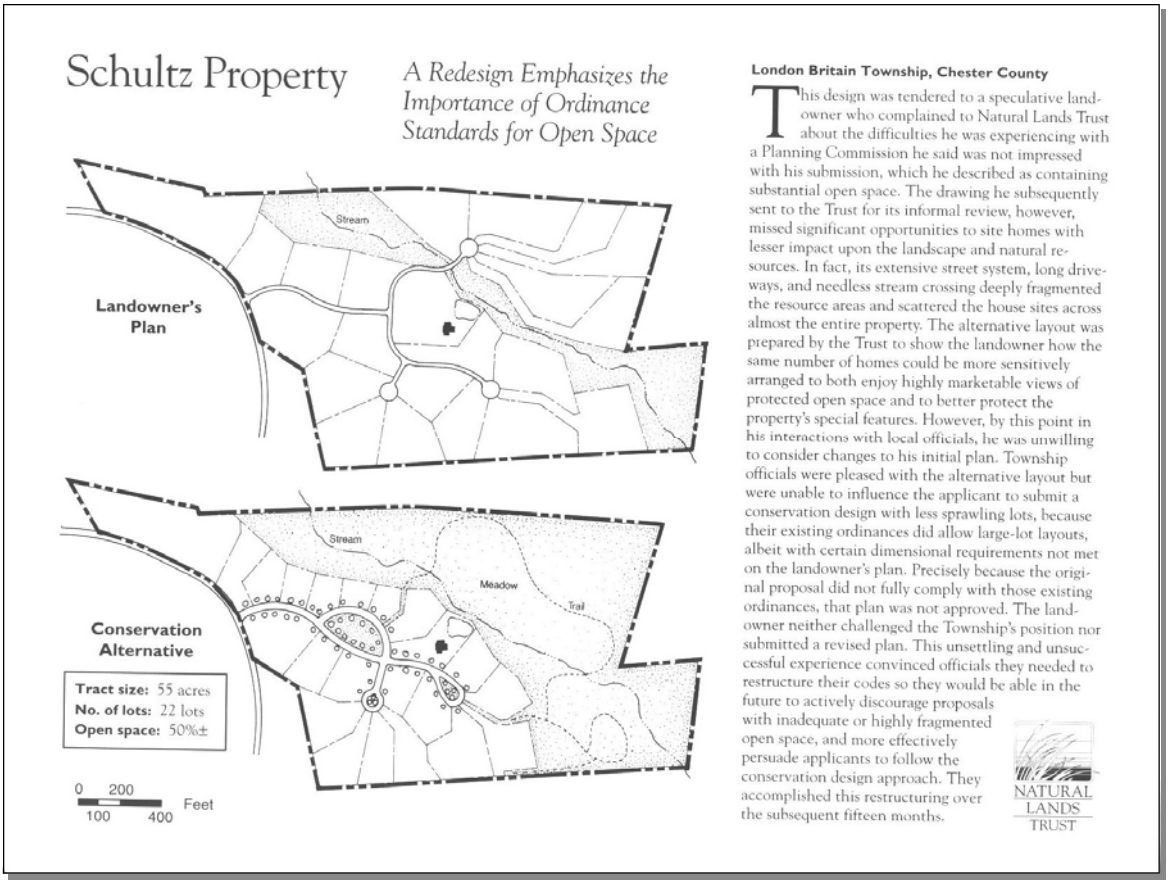
"Fortunately, your influence and accompanying land plan created a development where the average lot price started at $65,000 and has been increased to $70.000 (compared with my previous average of $45,000). Your layout creating approximately 35% open space allowed me to demand a 45% premium over the traditional land plan. The premium could be obtained due to the beauty and use of the land."

- Steven Pittman, Carmel, IN

Design Studies Portfolio

This 12-page booklet, written by Arendt and containing seven of his site designs, is included in the nomination package as part of the supplemental materials. All of the projects featured in this publication are his own designs, except for the one spanning the centerfold ("Weatherstone"), which was laid out by LRK, a design consortium.

Notably, however, LRK's layout fits neatly into the conservation area delineation (also illustrated in the Portfolio), which Arendt's support staff at Natural Lands Trust had prepared at the request of the Township Supervisors, to guide the overall development plan.



Schultz Property

A Redesign Emphasizes the Importance of Ordinance Standards for Open Space

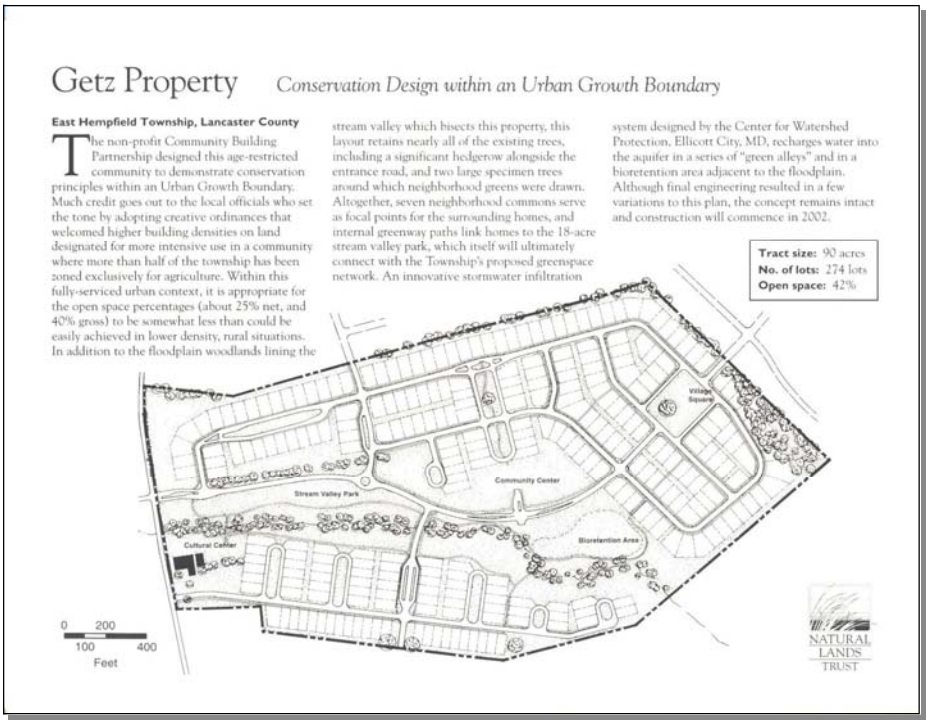
London Britain Township, Chester County

This design was tendered to a speculative landowner who complained to Natural Lands Trust about the difficulties he was experiencing with a Planning Commission he said was not impressed with his submission, which he described as containing substantial open space. The drawing he subsequently sent to the Trust for its informal review, however, missed significant opportunities to site homes with lesser impact upon the landscape and natural resources. In fact, its extensive street system, long driveways, and needless stream crossing deeply fragmented the resource areas and scattered the house sites across almost the entire property. The alternative layout was prepared by the Trust to show the landowner how the same number of homes could be more sensitively arranged to both enjoy highly marketable views of protected open space and to better protect the property's special features. However, by this point in his interactions with local officials, he was unwilling to consider changes to his initial plan. Township officials were pleased with the alternative layout but were unable to influence the applicant to submit a conservation design with less sprawling lots, because their existing ordinances did allow large-lot layouts, albeit with certain dimensional requirements not met on the landowner's plan. Precisely because the original proposal did not fully comply with those existing ordinances, that plan was not approved. The landowner neither challenged the Township's position nor submitted a revised plan. This unsettling and unsuccessful experience convinced officials they needed to restructure their codes so they would be able in the future to actively discourage proposals with inadequate or highly fragmented open space, and more effectively persuade applicants to follow the conservation design approach. They accomplished this restructuring over the subsequent fifteen months.

NATURAL LANDS TRUST

That conservation planning process was, in turn, guided by the "Growing Greener" zoning provisions and subdivision design standards that Arendt had previously prepared for Township adoption. The result is that the development footprint fits neatly into the conservation area layout like a hand in a glove (to mix a metaphor).

The seven designs by Arendt illustrate a variety of projects from rural ones reliant on individual wells and septic fields, to others at higher density serviced by public water and sewer. The former tend to be looser and more organic, reflecting his third book (*Conservation Design for Subdivisions*), while the latter are closer to the designs promoted in his fifth book (*Crossroads, Hamlet, Village, Town)*.



Getz Property

Conservation Design within an Urban Growth Boundary

East Hempfield Township, Lancaster County

The non-profit Community Building Partnership designed this age-restricted community to demonstrate conservation principles within an Urban Growth Boundary. Much credit goes out to the local officials who set the tone by adopting creative ordinances that welcomed higher building densities on land designated for more intensive use in a community where more than half of the township has been zoned exclusively for agriculture. Within this fully-serviced urban context, it is appropriate for the open space percentages (about 25% net, and 40% gross) to be somewhat less than could be easily achieved in lower density, rural situations. In addition to the floodplain woodlands lining the stream valley which bisects this property, this layout retains nearly all of the existing trees, including a significant hedgerow alongside the entrance road, and two large specimen trees around which neighborhood greens were drawn. Altogether, seven neighborhood commons serve as focal points for the surrounding homes, and internal greenway paths link homes to the 18-acre stream valley park, which itself will ultimately connect with the Township's proposed greenspace network. An innovative stormwater infiltration system designed by the Center for Watershed Protection, Ellicott City, MD, recharges water into the aquifer in a series of "green alleys" and in a bioretention area adjacent to the floodplain. Although final engineering resulted in a few variations to this plan, the concept remains intact and construction will commence in 2002.

Design Studies Portfolio, Natural Lands Trust, Media,