Welcome to "Value by Design: Landscape, Site Planning, and Amenity" by Lloyd W. Bookout, with Michael D. Beyard and Steven W. Fader. This publication is an important resource for understanding the value of landscapes in urban planning and design.
ABOUT ULI–THE URBAN LAND INSTITUTE

ULI—the Urban Land Institute is a non-profit education and research institute that is supported and directed by its members. Its mission is to provide responsible leadership in the use of land to enhance the total environment.

ULI sponsors educational programs and forums to encourage an open international exchange of ideas and sharing of experiences; initiates research that anticipates emerging land use trends and issues and proposes creative solutions based on this research; provides advisory services; and publishes a wide variety of materials to disseminate information on land use and development.

Established in 1956, the Institute today has some 15,000 members and associates from 46 countries, representing the entire spectrum of the land use and development disciplines: developers, builders, property owners, investors, architects, public officials, planners, real estate brokers, appraisers, attorneys, engineers, financiers, academicians, students, and librarians. ULI members contribute to higher standards of land use by sharing their knowledge and experience. The Institute has long been recognized as one of the country’s most respected and widely quoted sources of objective information on urban planning, growth, and development.

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ACKNOWLEDGMENTS

This book and the research on which it is based were made possible by the generous support of the American Society of Landscape Architects. Like the members of ULI, ASLA's members have long believed that quality site planning, landscape, and amenities contribute both quantitative and qualitative value to real estate development. Given the two organizations' mutual desire to understand better the link between value and design, ASLA agreed to fund a substantial share of the research. This book is a direct result of that financial commitment.

We would like to extend thanks and appreciation to the members of ULI and ASLA who served on the joint advisory committee, particularly Patrick C. Moore, who conceived and instigated the project while chair of ASLA's Professional Practice Institute. Patrick also served as the primary liaison between ASLA and ULI and was instrumental in generating interest and financial support for the project from ASLA and other nonprofit organizations, including the American Association of Nurserymen and Associated Landscape Contractors of America. Many thanks are also due Karen Niles, acting executive vice president of ASLA, for her assistance and support throughout the lengthy process of conducting the research and publishing the results.

Special recognition must be given to the developers of the 11 case studies featured in this publication: without their cooperation and support the work simply could not have been completed. In each case, the lead developer of the project agreed to meet with us over a period of two days to tour the project and conduct the interviews. Besides supplying substantial information and data about the project, each developer was instrumental in putting us in contact with public officials, tenants, residents, and others who had important information and insights. We appreciate their assistance and their willingness to share experiences and lessons learned.

Thanks also go to Steven W. Fader, who researched and wrote the Mountain Park Ranch, Andover Park, and Blackhawk case studies.

Finally, we would like to thank ULI's publications staff for its skill in bringing this book together: Frank Spink, who oversaw the publication process; Nancy Stewart, who managed the manuscript's editing; Barbara Fishel, who edited the manuscript; Jeffrey Urbancic, who assisted in the book's layout; Diann Stanley-Austin, who coordinated the production of the book; Joanne Nanez, who provided word processing support; and especially Betsy VanBuskirk, who applied her considerable skills toward the book's design and layout.

And to all of those who had a hand in this research and could not be mentioned specifically in this limited space, we extend our sincere appreciation.

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Michael D. Beyard
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What value can be attached to design in determining its contribution to the value of a development project? This question has been asked over and over again: by design professionals in marketing their services, by project developers seeking to maximize the effectiveness of expenditures that will yield profits, and by the providers of financing that look with some jaundice at any request for funds where they cannot easily measure results.

A consensus has always existed among many design professionals and developers that good design makes a significant contribution to the value of a development project. But how significant? And can it be quantified?

To the extent that the contribution of design can be measured in cost savings, most often referred to as ‘value design’ or ‘value engineering,’ the measurement of the contribution can be quantified. But good design can add cost, both in terms of the cost of skilled designers and the cost of the design itself over a plain vanilla version. At this point, measurement becomes more difficult: when additional expenditures are made for design, for the design’s required materials and finishes, and for design amenities that can be justified only if they result in a higher sale price or higher lease rate that exceeds the added costs, or in the maintenance of long-term value. The difficulty expands when one recognizes the need to isolate the value of design from the value of location, the value of timing, the value of marketing skills, the value of association, and other factors that create value.

ULI, as an organization, has long asked all these questions. The Institute’s very existence is based on the belief that good or superior design and development strategy creates value; as an organization, it counts among its members a high proportion of those who support this tenet. But mutual belief by leaders in the development community is not enough to convince and convert nonbelievers who would prefer to base their decisions on factual evidence.

Thus, ULI was delighted when the American Society of Landscape Architects (ASLA) asked ULI to seek, through a disciplined research project, an answer to the question of the value of design. Through case studies of projects where a commitment has been made to design as the creator of value, researchers would determine whether common threads could be identified that set those projects over the rest of the field and would explore the feasibility of measuring and quantifying the increment of value created: an ambitious undertaking.

The results? We found no magic measurement systems, no easy quantification, which is not a surprising result when one remembers how long the basic hypothesis has stood unproven by rigorous scientific research. On the other hand, this book clearly provides evidence that good landscape design, site planning, and amenities generate added value in a variety of ways with some measurability. We found no absolutes except that good land use and development have always been an art, not a science. And when even science must rely on secondary observations to support theory, how can an art form be expected to do any better?

This outcome does not vacillate from belief but recognizes that imprecise measurements and assessments have great merit and can be used in decision making for development. They can help determine when and how much expenditures for design can add value, in relative if not absolute terms, and how relative value can be measured to some degree.

This book makes its own case. Because efforts like this one are infrequently funded, it could stand as a landmark effort. It also lends itself to proselytizing the belief that value does come from design.

Frank H. Spink, Jr.
Vice President/Publisher
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VALUE
BY
DESIGN

LANDSCAPE,
SITE PLANNING,
AND AMENITIES
A hypothesis has long existed that money spent on landscape design and site planning will provide the developer with sufficient financial return in terms of the project's increased financial performance to justify the added cost of development. Further, projects that incorporate high-quality landscape design and site planning are commonly believed to retain their value better and to contribute to the quality of life of both the eventual users of the project and the larger public long after the developer's role has ended. This research, undertaken by ULI—the Urban Land Institute with support from the American Society of Landscape Architects (ASLA), is intended to qualify the validity of these commonly held beliefs.

The research summarized in this book was obtained from case studies documenting both quantitative and anecdotal
The Woodlands

Located outside the Twin Cities on a 72-acre partially wooded site, The Woodlands achieved strong identity and market acceptance by paying careful attention to site planning, preservation of natural resources, and landscape design. Evidence suggests that lots receive about a 10 percent premium that can be attributed mostly to the project's image, site planning, and landscaping. The Woodlands also helped to trigger higher landscaping standards for new projects in the area.

experiences of selected real estate development projects. The case studies were intended to determine the extent to which landscape design and amenities add value to an array of real estate development projects. The research was further intended as a review of design techniques and features that add to the success of different types of projects; best practices relating to site planning, landscape design features, and design guidelines were to be examined and highlighted.

The first phase of the research program encompassed the conduct of 11 case studies. The findings gleaned from these case studies were intended to verify the validity of the general research and possibly point to alternative and subsequent research approaches.
SELECTION CRITERIA FOR THE CASE STUDIES

The selection criteria for the case studies were determined in a one-day workshop. Attendees were members of the joint advisory committee of ULI and ASLA members and staff from each organization.

The committee agreed on certain conditions pertaining to the selection of case studies:

- To ensure that the project included notable landscape and amenities, sufficient information about the project should be available, preferably through documented ULI/ASLA sources.

- To the extent possible, projects selected should have been already featured in more general case study publications (such as ULI’s Project Reference File) so that basic information about the project (development cost, land use, for example) was already known, giving researchers more time to focus on the issues most pertinent to the study during the site visit.

- Projects were to represent a cross-section of geography and landscape zones.

Straw Hill

Straw Hill’s cluster design and signature landscape of indigenous grasses and wildflowers were key factors in the early success of this 65-unit community of detached condominiums. During initial sales between 1983 and 1987, the price of houses increased up to 100 percent. Straw Hill fared worse than conventional detached houses during New England’s real estate recession of the late 1980s, however, because of the condominium form of ownership and associated maintenance fees. Although the project’s distinctive landscape remains important to residents and to the larger community, it has not been able to offset decreases in property values.
Blackhawk

Landscape design and active amenities were essential to the creation of identity and image for the 4,800-acre luxury community of Blackhawk. Numerous recreational amenities were combined with extensive landscaping, including densely planted street trees, a large buffer of natural landscaping, and a continuous stone perimeter wall that marks the community's boundary. Privacy, exclusivity, and proximity to open space and recreational amenities were at the heart of Blackhawk's success.

- A range of land use types and project sizes were to be included.
- Projects were to feature highly integrated site planning, amenities, and landscape design; those where the landscaping was treated superficially on a project of otherwise moderate quality were to be avoided.
- Selected projects were to be market driven.
- Selected projects were to have an adequate history so that researchers could determine how the landscape and amenities affected value.

The committee determined that the optimum mix of land uses represented in the case studies would be:
- Three single-family residential communities;
- Two multifamily residential apartments;
- One second-home residential community;
- One master-planned community;
- Three suburban office complexes;
- Two retail centers.

Although the committee suggested that up to 12 projects be studied as part of this research, budget constraints limited the number of cases to 11. Two suburban office projects were studied instead of the three projects originally targeted.
DESCRIPTION OF PROJECTS

The developers of the 11 projects selected for analysis were contacted to ensure their cooperation in, and enthusiasm for, the intended research. The projects selected as case studies are briefly described below.

SINGLE-FAMILY RESIDENTIAL COMMUNITIES

The Woodlands—Eagan, Minnesota

The Woodlands is a 122-unit community of single-family houses situated on 73 acres of rolling wooded property in a rapidly growing suburb of the Twin Cities. The project has established itself as an exceptional community in the local market through careful attention to site planning, preservation of natural resources, and landscape design.

Straw Hill—Manchester, New Hampshire

A community of 65 single-family detached condominiums on a 22-acre hillside site, Straw Hill incorporates cluster planning with blocks of open space, detention ponds, and natural landscaping between clusters.

Blackhawk—Danville, California

A 4,800-acre master-planned country club community in San Francisco's East Bay area, Blackhawk contains a total of 2,400 predominately single-family houses (2,300 completed to date), two 18-hole golf courses, two golf clubhouses, two tennis and swimming facilities, sports fields, a shopping center, and an executive office center.

MULTIFAMILY RESIDENTIAL APARTMENTS

7979 Westheimer—Houston, Texas

This project features renovation of a garden apartment complex built in 1972 that was vacant and had fallen into disrepair. The renovations took one year, with the first tenants moving in during the seventh month. The number of units was reduced from 484 to 459 and parking from 914 to 680 spaces to reduce the project's density. By increasing open space and landscaping, the project was transformed from an eyesore into an attractive and financially successful multifamily community adjacent to a major arterial.

Andover Park—Beaverton, Oregon

This luxury 240-unit rental apartment complex is designed to give residents unimpeded views of woodland. Through careful placement of the 38 buildings in a tightly organized central core and rigorous adherence to protective measures during construction, roughly half the 17.6-acre site was left undisturbed open space and 60 percent of the existing mature Douglas fir trees on site preserved.

SECOND-HOME RESIDENTIAL COMMUNITY

Harbour Ridge—Stuart, Florida

An 814-unit second-home community with private equity membership, the 885-acre Harbour Ridge includes two golf courses, a 40,000-square-foot main clubhouse, a separate swim and tennis center, three marina docks with 128 deep-water slips, and a two-mile riverfront nature walk. The project incorporates substantial preservation of natural biological habitats and a wide range of features to protect the environment.
The highly successful 7979 Westheimer set a new standard for the renovation of multifamily housing by reducing the density of units, eliminating unnecessary parking lots, and establishing a lush, semitropical landscape. Following the renovation, the project was 95 percent leased in just seven months. Primarily because of its appearance and the owner's commitment to maintenance, rents in the project are about 15 percent higher than its closest competition, and the average occupancy level of 96 percent beats competitors by about 12 percentage points.
MASTER-PLANNED COMMUNITY

Mountain Park Ranch—Phoenix, Arizona
A 2,646-acre master-planned community near the southern edge of Phoenix, Mountain Park Ranch includes the preservation of the existing desert hillsides surrounding and throughout the site. Some 3,900 houses and an extensive package of recreational and community amenities have been built. Lush, drought-tolerant desert plants were used extensively throughout the community.

SUBURBAN OFFICE COMPLEXES

The Terraces at Perimeter Center—Atlanta, Georgia
A 1.2 million-square-foot corporate office complex on a 25-acre site, this project contains two 11-story office buildings and two separate five-level parking structures with a total of 2,900 spaces. To take advantage of the site’s natural setting, amenities include lush landscaping, a full-height landscaped atrium in each building, and several water features.

Carnegie Center—Princeton, New Jersey
Carnegie Center is a 247-acre planned suburban office park that will eventually contain 24 million square feet of space. Sixteen of the 21 buildings will be located within a loop road and have frontage on a 22-acre greenway that forms a park-like pedestrian and recreational spine. The project includes a wide range of landscape, recreational, and service amenities.

RETAIL CENTERS

Reston Town Center—Reston, Virginia
An 85-acre urban mixed-used core within a 7,400-acre master-planned community, Reston Town Center features a traditional “main street.” The 20-acre first phase includes 240,000 square feet of retail space, 550,000 square feet of office space, and a 514-room hotel. Outdoor plazas, an ice-skating rink, pedestrian promenades, and fountains are prominent in the design.

Del Mar Plaza—Del Mar, California
A terraced three-level shopping center on a gently sloping 91,000-square-foot site, Del Mar Plaza houses 74,600 square feet of retail space and garage parking for 380 cars. The design takes maximum advantage of ocean views and incorporates an exceptional level of landscaping that complements architectural forms, building scale, and colors.

RESEARCH METHODOLOGY

Before conducting site visits, researchers prepared a comprehensive list of interview questions to standardize the information and data for each project (see Appendix A). Questions and requests for data were organized around three groups most directly affected by the project: 1) the project’s developer; 2) the municipal agency having jurisdiction over the project; and 3) the ultimate users of the project. As the groups believed to be the potential beneficiaries of any value that might have been generated as a result of the landscape and amenities, each group was expected to have distinct definitions, measurements, and criteria for determining the value of the landscape and amenities. Each group’s perspectives were necessary to promote a balanced and objective analysis of value.

The questionnaire was supplemented with one data form and one matrix intended for completion by the project’s developer. The data form asked for detailed construction and operating cost data for each of the key amenities included in the project (see Appendix B). The matrix asked the developer to rank the value of each key amenity.
relative to a specific kind of value that might have accrued, such as higher sale prices or rents, or faster absorption (see Appendix C).

With these materials and the information previously gathered or published about the project, researchers conducted the initial site visits over approximately six months. Field time at each project was budgeted for up to two days. To the extent possible, interviews were scheduled in advance with representatives of the development team, designers, public officials, and residents or tenants of the projects.

**SUMMARY OF FINDINGS**

The information and data gleaned from the projects studied suggest that quality landscape design and amenities can contribute substantially to both the real (as measured in financial terms) and perceived (as expressed by quality of life) value of a real estate development project. Evidence supports the hypotheses that landscape design and amenities:

- Can translate into increased financial returns for a project's developers.
- Give developers a competitive edge and increase the pace of a project's absorption.
- Help developers win public support for a proposed project, especially in contentious situations.
- Are a key factor in establishing an image, identity, and sense of community for development projects.
- Often influence decisions to buy or rent in both residential and commercial markets.
- Encompass, in the minds of residents and tenants, highly valued environmental protection features.
- Include passive amenities that are often more valued than provisions for active recreation.
- Contribute substantially to the perception of security, privacy, and place.
- Increase the long-term value of a project in the minds of residents and tenants and cause them to feel more secure about their financial investment in a project.
- Contribute to employees' increased productivity, morale, and enjoyment of their jobs.
- Generate premiums for developers.
- Lead to a higher standard of design, which often extends beyond the scope of the project.
- Can reduce the need for publicly funded improvements on site and off site.

A common ingredient in the success of the projects studied is the developer's active participation. In all cases, the developer made a considerable personal investment of time during planning and construction, closely monitoring (and often discussing) tasks that were delegated to other members of the development team and hiring consultants and contractors who would bring a personal touch to the project. This commitment of time and attention to detail were instrumental in achieving exceptional designs.

While the case studies suggest that a project's landscape and amenities contribute to its market acceptance and financial performance, it is clear that other essential factors must also be in place. The quality of a project's landscape and amenities is not likely to overcome other potentially fatal flaws, such as a poor location or bad access. This finding is particularly valid for commercial projects, where location, access, and parking are vital. Some evidence suggests, however, that residential projects might be able to overcome certain problems, such as adjacency to an arterial highway or poor access, through innovative landscape design.

Most of the case studies featured landscape design elements that complemented natural site conditions, such as existing trees, hillsides, drainage, and views. The site conditions respected by the development team offered each project an opportunity to be distinctive, thus helping the project to achieve greater market identity. Further, the developer was often able to save money in site improvement costs, for example, by minimizing the number of trees removed and site grading.

One of the most interesting and consistent findings of the research is the inability of the project's tenants and residents to isolate the amenity or design feature they valued most highly. Residents and tenants almost universally perceived the project as a whole, not as a series of parts that could individually be measured and rated. Users of the projects valued the total package and the
sense of community or image projected through a combination of landscape and design features.

Perhaps the most significant finding of this research is the importance of quality site planning to a project's ultimate success. In virtually every case, the site plan served as the glue that held together the various elements. Without a well-laid plan, it is doubtful that architecture, landscape features, or recreational amenities of any quality would contribute substantial value to a development project.

VALUE ADDED BY LANDSCAPE, SITE PLANNING, AND AMENITIES

Findings from the 11 case studies are based primarily on anecdotal evidence, that is, opinions expressed by the parties interviewed. In some instances, quantitative data also support the hypothesis that landscape and amenities add dollar value to development projects.

The value of a project's landscape and amenities can be measured by their direct and indirect return to the developer, by homebuyers' enjoyment, quality of life, and return on investment, by tenants' increased sales and employee retention, and by the value created for the larger community. While the perceived value of the landscape and amenities varied considerably among the projects studied, some common and noteworthy themes emerged. The following findings are organized under the four distinct groups that stand to benefit from the landscaping: the developer, residents, tenants, and the larger community.

Andover Park

Preservation of mature Douglas firs on the 17.6-acre site of the Andover Park apartments required close cooperation among the developer, the city, and consulting specialists. The hard costs for preserving the trees, however, were offset by savings in grading, landscape, and irrigation systems. Because of an oversupply of rental units in the market, identifiable financial benefits attributable to landscape and amenities have not yet materialized. But the environmentally sensitive design was instrumental in the developer's ability to win quick approvals from the city, despite opposition from a local preservation group.
PERCEIVED VALUE OF LANDSCAPE AND AMENITIES TO THE DEVELOPER

<table>
<thead>
<tr>
<th>Evidence suggests amenities contributed to developer's profit</th>
<th>The Woodlands</th>
<th>Straw Hill</th>
<th>Blackhawk</th>
<th>7979 Westheimer</th>
<th>Andover Park</th>
<th>Harbour Ridge</th>
<th>Mountain Park Ranch</th>
<th>The Terraces</th>
<th>Carnegie Center</th>
<th>Reston Town Center</th>
<th>Del Mar Plaza</th>
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<tbody>
<tr>
<td>Developer believes (or evidence suggests) that amenities generated a premium in sales or rents</td>
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<tr>
<td>Project planning and amenities had a positive effect on the developer's local reputation</td>
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<td>Amenities quickened sales and leasing</td>
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<td>Landscape and amenities gave project an edge over the competition</td>
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+ = High  + = Medium  + = Low

Note: High, medium, and low represent the researchers' overall impression of the degree to which the statement is supported by evidence.

VALUE TO THE PROJECT'S DEVELOPER

Because the developer typically makes the decisions regarding the extent and nature of landscape design and amenities to be included in a project, a considerable portion of the research focused on attempts to determine the dollars returned relative to dollars invested. Researchers relied primarily on the developers of the projects studied to supply the quantitative data needed, typically costs of constructing landscape and amenities, such as plazas, fountains, gardens, recreation features, and streetscapes. Developers were also asked to provide data on operating costs for these amenities, to estimate the difference between the cost of the amenities provided and a more basic version of the amenity, and to lead researchers to potentially comparable projects.

INCREASED PROFIT

Most of the developers of the projects studied believe that the money spent on landscape and amenities helped them to attain higher profits. In several instances, project developers speculated that the landscape and amenity program added a sales or rental rate premium of about 5 percent over the local market and competition. None of the developers, however, were able to provide the hard numbers needed to quantify this belief.

Perhaps the most extensive data related to financial return were received from Carnegie Center; considerable data were obtained from the developer and other local sources to compare the financial performance of Carnegie Center with other projects in the marketplace. These data indicate that Carnegie Center obtains rental rents approximately 5 percent higher than other projects in the market that contain buildings of comparable quality but emphasize landscape and site planning less. Not all of this differential can be attributed specifically to landscape and amenities; other factors, such as location, mailing address, and a project's overall identity, are also important factors.
It was difficult to isolate landscape and amenities as functions of financial return in all of the cases studied. While in several cases it could be verified that a project was performing above the market, it was not possible within the scope of this research to isolate the precise value that was created by the landscape and amenities compared to a wide array of other factors, such as location, access, and marketing programs. Anecdotal evidence suggests strongly, however, that landscape and amenities do contribute to a project's financial success through higher sale prices or rents, higher occupancies, or faster absorption. Carnegie Center's developer, for example, believes that initial expenditures for master planning and landscaping have been key to the company's ability to achieve higher rents, lower vacancy levels, and low turnover among tenants.

Attempts to compare the costs of a given project's landscape and amenities with a similar but more basic plain vanilla version of the same program also proved difficult. Developers were unable to calculate with any precision what the costs of an alternate program would have been; they also noted that doing something less would have changed the project's entire planning and development objective and potentially the target market. Thus, it was not possible to compare apples with apples.

The developer of Del Mar Plaza was willing to venture an estimate that the high quality of landscape and amenities included in the project added about $524,000 (about 20 percent) to the project's development cost. In particular, the developer credits the large public plaza on the top level of the center as the most important contributor to the project's success and estimates that the payback for providing this plaza will prove to be about six times its initial construction cost, primarily as a result of higher retail traffic, higher rents, higher sales per square foot, and enhanced identity for the center.

While other developers were not willing or able to speculate on the precise amount of dollars returned by the landscape and amenities, most were convinced that the money spent for these amenities was a good business decision. Most also believed that the initial dollar investment was returned through the project's improved financial performance.
A COMPETITIVE EDGE AND FASTER ABSORPTION

In income-producing projects where the developer has retained ownership and management, developers and owners generally believe that the added costs for the landscape and amenities will continue to generate value for the project over the long term. They believe that their projects will increasingly outperform the competition as the project matures.

At The Terraces at Perimeter Center, for example, the supply of suburban office space has created severe competition among several large Class A office projects. The Terraces achieves rents in line with newer, competitive projects and has maintained occupancy levels slightly above the average for the market area. In such highly competitive markets, and especially when new projects come on line, maintaining the average for the market area is often difficult. The developer and owner of The Terraces believes that retaining tenants will be made easier by the project's use of large interior atria, water features, the low-rise scale of the buildings, and the strong interplay between indoor and outdoor spaces.

Based on the 11 projects studied, other evidence suggests that high-quality landscape and amenities will improve a project’s pace of absorption compared to other projects with lower-quality amenities. Like sale/rent premiums, however, it is difficult to isolate the precise extent to which landscape and amenities caused or contributed to faster absorption.

At Mountain Park Ranch, for example, the absorption rate is as much as twice the rate of competitive projects. The developer believes that Mountain Park Ranch's impressive absorption rate can be attributed largely to a combination of landscape and amenities, both in attracting attention to the project and providing a desirable residential environment. Other factors that contribute to absorption and that cannot be ignored, however, include a broad mix of product offerings and highly competitive sale prices. Throughout the cases studied, factors beyond landscape and amenities (price, concessions, product availability, extent and nature of the competition, and marketing programs, for example) played a key role in absorption rates, and it was impossible to segregate and measure each factor.

SUPPORT FOR THE PROJECT

In virtually all of the projects studied, secondary benefits could be identified for developers who were willing to exceed standard practices for landscape and amenities. Most noted was the positive relationship that the developer was able to forge with local public agencies or citizen groups. In many cases, the developer's efforts received high praise from public officials, thus improving or solidifying the developer’s reputation in the community.

The most impressive example of winning public support is Del Mar Plaza, where local residents had successfully blocked any development on the project's site for years. The developer relied heavily on the project's design and enhancement of public views, building scale, architecture, and landscaping to narrowly win approval for the project in a citywide referendum. In this case, it is highly unlikely that a project with lower-quality landscape and design could have garnered the needed public support to move forward.

Although Del Mar Plaza is an extreme example, public officials and developers in several of the cases studied believe that the landscaping and design incorporated into the project were instrumental in the developer's obtaining approvals and/or quickening the time frame in which approvals were granted. This belief is most evident in regions where real estate development is highly regulated and where public opposition to new development is most manifest (in addition to Del Mar Plaza, Straw Hill is an example). Where development approvals are easier to obtain, no clear link exists between a project's design and amenities and the ease of obtaining approvals (7979 Westheimer and The Terraces, for example). Thus, where proposed new development is likely to be controversial, landscaping and design features can effectively contribute to a developer's ability to obtain approvals.
The developers of all 11 projects believe strongly that landscape and amenities played a key role in helping to establish the project's image, sense of community, and market identity. In every case, the developer featured the landscape and amenities prominently in marketing materials. For example, Straw Hill's pastoral theme helped the project to achieve wide recognition throughout the market and to appeal to its primary market, empty nesters. Straw Hill still boasts a strong identity nearly ten years after the first sales. Overall, the project's developers believe that the landscape design and amenities were instrumental in the market's acceptance of the project and in its financial success.

The research supports the belief that real estate development projects are most successful when all of the design elements are closely interrelated. In every case studied, high-quality site planning and building architecture were linked closely to the landscape design and amenities, making it impossible to isolate and measure one against another. In none of the cases were landscaping and amenities used to dress up an otherwise mediocre project. The research is therefore inconclusive as

**Mountain Park Ranch**

Mountain Park Ranch, a 2,646-acre master-planned community, achieved distinction by preserving desert hillsides and by using predominantly drought-tolerant plants. Drainage courses channel and retain stormwater and provide areas for greenbelts, jogging trails, and bike paths. Local public agencies and residents have embraced the project's planning, landscape, and amenities. A survey of residents in 1988 revealed a high level of satisfaction with the community's aesthetic appeal and landscape.
The Terraces at Perimeter Center

The Terraces—a 1.2 million-square-foot office complex—retains a strong, positive image primarily because of its distinctive architecture, soaring atria, and the visual relationship between indoors and outdoors. Combined with the complex’s on-site services, these features have increased the owner’s ability to compete successfully for top-end tenants in an overbuilt market. Tenants value the overall “feel” of the project’s environment but cannot specify which elements of the landscape design they most appreciate.

VALUE TO RESIDENTS

Seven of the 11 case studies are primarily residential: three single-family projects (The Woodlands, Straw Hill, and Blackhawk), two multifamily projects (7979 Westheimer and Andover Park), one second-home/recreation-oriented community (Harbour Ridge), and one planned community (Mountain Park Ranch). Based on interviews with residents and sales or leasing staff, some general conclusions can be drawn.

LANDSCAPE AND AMENITIES

On the broadest level, substantial and conclusive evidence supports the contention that landscape and amenities weigh heavily in a purchaser’s or renter’s decision to locate within a particular project. Residents often cited the distinctive character of the project or community as the first feature that attracted them, with the perception based...
largely on a combination of landscape design and architecture compared to other projects in the market.

Limited surveys of residents of these communities indicate that they respond favorably to site plans and landscape designs featuring natural themes and an emphasis on preserving or enhancing natural site conditions. Several design themes proved successful with residents:

- Environmental protection (such as Harbour Ridge's eagle preserve);
- Views and preservation of open spaces (Mountain Park Ranch and Straw Hill);
- Preservation of mature trees (The Woodlands and Andover Park); and
- Use of native and/or perennial plants (Mountain Park Ranch and Straw Hill).

Evidence strongly suggests, for example, that the open space and natural landscape of Straw Hill contributed substantially to the project's initial success. At the time of first sales, Straw Hill was the only single-family detached condominium project on the market, and it was the only project featuring clusters with detention ponds, wildflowers, and open spaces between the clusters. The market responded quickly and favorably to the naturalized theme, and residents indicate that these features are key in giving the community a distinctive image and strong sense of identity. During initial sales, between 1983 and 1987, housing prices increased about 100 percent.

ENVIRONMENTAL SENSITIVITY

Several projects studied, Harbour Ridge, for example, provide evidence that the residential market is receptive to a landscape design that is sensitive to the environment. A survey of several residents reveals that they highly value preserved open spaces that serve as a natural habitat for wildlife. Residents at Harbour Ridge particularly like the eagle nesting preserve the developer set aside. An annual survey by the developer finds the community's natural beauty and landscape are among the highest-ranked reasons for purchasing a house in Harbour Ridge. Harbour Ridge is a luxury community of primarily second homes, and purchasers spend a large percentage of their time outdoors enjoying the community's recreational and open spaces.

Even in primary-home communities like Mountain Park Ranch, however, residents value the preservation of natural open spaces and habitats. Located in the desert near Phoenix, Arizona, Mountain Park Ranch has preserved natural hillsides and drains, and features desert- and drought-tolerant plants. In a survey sponsored by the developer, 99 percent of residents said they were "very satisfied" or "somewhat satisfied" with the community's aesthetic appeal.

PASSIVE AMENITIES

Overall, residents of the communities studied cite the "passive" amenities, such as views and preservation of trees and open spaces, as very important in their decision to purchase a dwelling in a particular community. In The Woodlands, for example, purchasers were attracted by the mature trees that had been preserved and the areas set aside for open space. The preservation of over 60 percent of the mature Douglas fir trees on the site of Andover Park also scored highly with tenants. According to the on-site property manager, the features residents cite most often are the project's privacy and seclusion and its character established by the mature woodland setting.

Recreational amenities for active use, such as golf courses and tennis clubs, are still expected in large, upscale communities like Blackhawk and in second-home retirement communities like Harbour Ridge, and the extent and quality of these recreational features weigh heavily in the decision to purchase a dwelling. The provision of these amenities alone might not be enough to sell the project, however. The discriminating buyers attracted to such upscale communities also want to be part of an environment that preserves the natural setting.
SECURITY, PRIVACY, AND PLACE

Regardless of the residential market targeted, research conducted for this study supports the claim that residents place considerable value on communities featuring a strong sense of security, privacy, and place. For buyers of expensive housing, such as that found in Blackhawk and Harbour Ridge, security is especially valued, and provisions for residents’ security in Blackhawk and Harbor Ridge, such as perimeter walls and guarded gates, were especially important selling features.

Urban residents like the tenants of 7979 Westheimer also highly value provisions for security, such as card-coded gates. At 7979 Westheimer, dense landscaping and a perimeter wall increase the sense of enclosure and protection from the adjacent, heavily traveled street. Leasing agents believe that the project’s curb appeal is enhanced by the walls, landscape design, and controlled-access gate, because these features suggest that management cares about residents’ security and privacy.

Even buyers and renters in relatively crime-free suburban areas, however, want to feel a sense of protection from the outside world. Residents of The Woodlands, which is located in a relatively safe suburban setting, believe that their neighborhood is well protected from outside influences by the limited number of access points to the neighborhood and by the strong sense of entry the landscape design affords. In all cases studied, residents strongly appreciate the sense of privacy and detachment from neighboring developments created by landscape edges, design of entrances, use of project identification signs, and streetscapes.

The research undertaken in this study also concludes that residents value design guidelines and controls established to ensure the community will not change substantially in appearance or quality over time. Most are willing to sacrifice some degree of individual expression to protect against what they perceive to be others’ “bad taste.”

LANDSCAPE AND AMENITIES AS LONG-TERM FINANCIAL INVESTMENTS

Overall, homebuyers believe that the quality of a community’s landscape and amenities will affect their financial investment positively over the long term. Thus, the quality of the landscaping is very important in their initial decision to purchase a house. At The Woodlands, residents strongly believe that they have made a wise purchase, based in significant part on the project’s landscaping. The limited number of resales to date, however, makes it difficult to substantiate this belief.

Also noteworthy is that residents of the communities studied are not willing to compromise on the community’s maintenance standards for the sake of lower monthly fees. At Straw Hill, for example, housing values have dropped significantly since the late 1980s, clearly as a significant result of the condominium form of ownership and the associated monthly fees. Interviews with the project’s original developer and the current landscape maintenance contractor, however, confirm that residents are not willing to cut back on landscape maintenance as a way to reduce monthly fees. Residents perceive Straw Hill’s landscape as a major component of the community’s identity, and they do not want to compromise the strong image that was in place when the project initially opened.

Many of the homebuyers and tenants interviewed as part of this study indicated that they either did, or would, pay a small premium to live in a community with distinctive, high-quality landscape design and amenities. Most interviewed could not state specifically the percentage of the premium that they did or would pay, but some residents of The Woodlands guessed that it was about 5 to 10 percent on the cost of the lot. Residents saying they were willing to pay a premium for the landscape design and amenities based their willingness on a presumption that such features will add to their quality of life and will pay for themselves over the long term through above-average increases in the value of their property.
VALUE TO TENANTS

The case studies include four nonresidential projects: two suburban office developments (The Terraces at Perimeter Center and Carnegie Center), one suburban mixed-use center (Reston Town Center), and one specialty retail center (Del Mar Plaza). Although the findings vary considerably, some common conclusions can be drawn.

Carnegie Center

Organized around a 22-acre landscaped greenway, Carnegie Center achieves rental rates about 5 percent above competitive speculative office projects. The developer and tenants of this 2.4 million-square-foot suburban office park believe that the greenway and the array of passive and active amenities set the office park apart from its competition and help it achieve higher rents and occupancy levels. Tenants particularly value passive amenities like outdoor eating areas and quiet open spaces.

AMENITY PROGRAMS

All four case studies involving commercial tenants strongly indicate that the project’s landscape and amenities were influential in a tenant’s decision to locate in the project and remain there for the long term. Perhaps the most conclusive evidence to support this finding comes from Carnegie Center, the largest of the projects and the one with the most extensive landscaping and amenities. Tenants there indicate strong satisfaction with the project’s landscape and amenities and cite them as primary reasons for locating in the project.

As with most of the residential projects, the tenants of Carnegie Center indicate that they most value the project’s passive amenities: sitting, walk-
Reston Town Center
The 85-acre urban core of the Reston planned community includes a traditional main street and large public spaces featuring fountains, gardens, sculpture, and an ice-skating pavilion. The most obvious beneficiaries of the mixed-use plan are tenants who provide entertainment and leisure services, particularly restaurants and cinema. Reston Town Center has been notably successful as a gathering place for large civic, social, and cultural activities, and large crowds gather frequently for special events.
ing, people watching, and views of landscaped grounds. This finding is based on an independent survey of tenants conducted by Setha M. Lowe, Ph.D., a professor at City University of New York, in July 1989. In this survey, a smaller number of tenants rated active amenities like gym facilities, softball fields, a par course, and jogging trails important to their employees. Office tenants at Carnegie Center, Reston Town Center, and The Terraces at Perimeter Center highly value convenient access to services like restaurants, shopping, banking, and security. Tenants typically consider access to such services as an amenity, although they are more typically a function of location than provisions by the developer.

Evidence from Del Mar Plaza strongly supports the finding that landscape design and amenities influence retail tenants' decisions to locate in a particular place. Tenants of this specialty retail center indicated that the high-quality landscaping and design weighed heavily in their decisions to locate in the project; however, they also indicated that the landscape and amenities alone would not be enough to persuade them to lease space if other essential factors were not also available, such as location, rental rates or prices, efficient space, demographics, and parking.

**PRODUCTIVITY, MORALE, RETENTION, AND VISITORS’ ENJOYMENT**

Almost universally, tenants of the projects studied believe that the quality of the project's landscape and amenities contributes to some degree to employees' morale and productivity. Although this belief could not be quantified, some tenants noted that when employees are happy with their work setting, they are more likely to be productive and content on the job. In several instances, they noted that the professional nature of the project contributed to workers' professionalism.

Tenants tend not to believe, however, that amenities affect the retention of employees. While employees appreciate the quality of their work environments, that factor is not likely to have as much impact as the job itself or its salary. Several tenants noted, however, that the poor national economy had a great impact on retention; the scarcity of jobs caused employees to consider less such matters as work environment and to consider more staying employed.

Retail tenants believe that landscape and amenities can contribute to higher sales and to customers' enjoyment of the shopping environment. Tenants at Del Mar Plaza believe strongly that the project's design and landscape features keep customers coming back and put them in a mood to buy. Limited information that could be obtained during this study seems to support this contention. Empirical evidence to support the finding was less available from retailers of general merchandise at Reston Town Center, but evidence strongly indicates that Reston Town Center's landscape, site planning, and design have contributed significantly to the success of the theaters and restaurants and to on-site recreational uses.

As for most residential projects, office and retail tenants interviewed could not specify which feature of the landscape and amenities they most appreciated. Their responses indicate that it was the total package or the project's feel that attracted them most and made them decide to locate in the project.

**PERCEIVED VALUE OF LANDSCAPE AND AMENITIES TO TENANTS**

<table>
<thead>
<tr>
<th>Amenities influenced tenants' decision to locate in the project</th>
<th>Carnegie Center</th>
<th>Reston Town Center</th>
<th>Del Mar Plaza</th>
<th>The Terraces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amenities contribute to employees' productivity or to better sales</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Amenities contribute to employees' morale or to customers' enjoyment</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Amenities contribute to retention of employees</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
</tr>
<tr>
<td>Tenants believe they pay a premium for the project's amenities</td>
<td>✦</td>
<td>✦</td>
<td>✦</td>
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</tbody>
</table>

✦ = High    ✦ = Medium    ✦ = Low

Note: High, medium, and low represent the researchers' overall impression of the degree to which the statement is supported by evidence.
A PREMIUM FOR LANDSCAPE AND AMENITIES
Tenants could not agree about whether they pay a rental premium that can be attributed to the landscape and amenities. Most tenants at Carnegie Center believe they probably do pay a premium, perhaps about 5 percent (consistent with the developer's estimate). When all four projects are considered together, however, tenants are not convinced that they pay much, if any, premium because of the soft national real estate market and the willingness of the project's owner to cut a deal to lease space. This case seems to be especially true for tenants who signed leases since 1990, when the national office and retail markets were softest.

VALUE TO THE COMMUNITY
The contributions of the projects to the larger community are diverse and difficult to generalize. Most public officials interviewed believe that the amenity program did contribute to some extent to the project's financial success or overall valuation. If that belief is valid, then the community's tax base should benefit commensurately.

Community and public officials, however, found it difficult to quantify (or even to speculate about) the fiscal impact of the project's landscape and amenities on the municipality's income. Further, public officials were unable to substantiate the degree to which projects studied might have affected property values on adjacent areas. Municipal representatives could be more specific about the public benefits that were not (or only indirectly tied) to fiscal concerns.

A HIGHER STANDARD OF QUALITY
In most of the projects studied, municipal officials believe that the project, whether residential or commercial, contributed to setting a new or higher standard of quality that other developers subsequently followed.

In some cases, the project's landscaping and design caused local municipalities to upgrade their design standards or to require more sensitive development. At Mountain Park Ranch, for example, many of the project's achievements, including preservation of hillsides, drought-tolerant landscaping, and joint use of drainage facilities for recreation, have been adopted by the city of Phoenix and by other developers as current standard or required practice. Thus, for the public, Mountain Park Ranch has provided an example of the

<table>
<thead>
<tr>
<th></th>
<th>The Woodlands</th>
<th>Straw Hill</th>
<th>Blackhawk</th>
<th>7979 Westheimer</th>
<th>Andover Park</th>
<th>Harbour Ridge</th>
<th>Mountain Park Ranch</th>
<th>The Terraces</th>
<th>Carnegie Center</th>
<th>Reston Town Center</th>
<th>Del Mar Plaza</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project helped to set a higher standard of quality</td>
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<tr>
<td>Project contributed to environmental protection</td>
<td>+</td>
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<tr>
<td>Project reduced the municipality's need to fund open space or public park improvements</td>
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<td>Project reduced the need to fund off-site improvements</td>
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<tr>
<td>Project's amenities helped developer obtain approvals</td>
<td>+</td>
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Note: High, medium, and low represent the researchers' overall impression of the degree to which the statement is supported by evidence.
benefits of environmentally sensitive planning, and for developers, Mountain Park Ranch is an example of the financial benefits of such planning.

The Woodlands shows how quality site planning and landscape design can substantially and positively affect local market conditions. The high-quality design standards incorporated into the project caused developers of other nearby communities to increase landscaping standards to compete more effectively. The Woodlands also helped to break the perception of the area as a starter home community; as standards of quality have increased, so has the range of housing products offered and the associated range of sale prices.

PROTECTION OF ENVIRONMENTAL RESOURCES

One of the observations public officials voiced most consistently is that the project benefited the larger community by incorporating high standards for environmental protection. Local public officials strongly believe that the public receives a substantial benefit when the project features open space or environmental protection measures, especially for sites in sensitive habitats or on an urban fringe.

Perhaps the strongest example is Harbour Ridge, in south Florida. The project's site includes three important and sensitive habitats: coastal scrub, pine flatwoods, and wetlands, much of which have been preserved through sensitive planning. County and state officials believe the project has helped to maintain the region's diverse habitat, which directly and indirectly benefi-
fits the larger public. They further believe that Harbour Ridge has helped to set a precedent for other large projects with regard to protecting sensitive environmental resources.

Attention to site planning and to landscape and amenities also benefits the public indirectly by reducing secondary environmental impacts related to such issues as traffic, air pollution, automobile noise, and the potential for flooding downstream. At Carnegie Center, for example, the design of the project and the implementation of environmental mitigation measures have helped to lessen off-site impacts related to flooding downstream and water quality. Further, officials note that the project’s including landscaping services encourages employees to remain on site during lunch hours, thereby reducing the number of automobile trips at midday and the resulting air pollution.

REDUCED NEED FOR PUBLIC IMPROVEMENTS

Several public officials interviewed for this study noted that quality site planning and environmental design can effectively reduce the public sector’s need to fund improvements like roads and stormwater drains. When open space and recreational features are included in privately developed projects, the municipality’s need to provide comparable facilities is reduced.

Officials also noted that the public received indirect financial benefits as a result of the open space and recreational benefits included in a project. To the extent that these facilities are included in development projects, especially large ones, the need for the public sector to provide open space and recreational facilities through tax dollars is reduced.

CONCLUSION

The information gleaned from the 11 cases studied provides compelling, although anecdotal, evidence that high-quality landscape design and amenities create long-term value for project developers, residents, tenants, and local communities.

During the field research, several problems and limitations inherent in the research methodology surfaced:

- A limited number of development projects was examined. These projects covered a range of land uses (residential and commercial) in different climatic zones in different regions of the country. Because of this diversity, the findings of this study are broad and often rely on nonquantifiable information from developers, tenants, users, and public officials.
- The nature and extent of information available to researchers varied widely among the projects. For some projects, such as Mountain Park Ranch and Carnegie Center, the research benefited from existing surveys of residents and tenants about landscape and amenities the developer had already undertaken. In most cases, however, no surveys existed upon which to gauge residents’ and tenants’ perceptions, and conclusions could be based only on a quick sampling of opinions.
- The level of information available from developers also varied widely. Some developers had considerable information about a project’s costs at their fingertips; others had virtually no current numerical data upon which to base findings.
- Local public officials were unable to estimate the degree to which the subject projects affected the local tax base. Such information is not readily available and would require a time-consuming search of tax records to compare the projects with comparable projects in the local market. Further, some comparable projects, even though they are within the same market area, are located within different jurisdictions with different tax rates, methods of valuation, and accounting procedures.
Perhaps the most challenging problem researchers faced was the difficulty in obtaining data on projects considered comparable to the subject project. With only two days in the field, researchers had to rely on existing published data on comparable projects and/or the observations of local appraisers and real estate brokers and agents. Often these sources provided good anecdotal information, but not quantified evidence.

The research methodology called for comparing the subject project to other projects in the local market to help determine the value added by the landscape and amenities. Such comparisons proved difficult for several reasons. First, some of the subject projects proved so distinctive and innovative that comparable projects were difficult to identify (Del Mar Plaza and Straw Hill, for example). In other cases, it was all but impossible to compare apples to apples because each comparable project had its own distinct features that were considered both advantages and disadvantages over the subject project (The Terraces at Perimeter Center, for example). And without a very detailed and specific comparative analysis, only broad, opinion-based conclusions can be drawn.

For projects located in large cities, such as 7979 Westheimer in Houston and The Terraces in Atlanta, it was especially difficult to measure the value that the projects contributed to the community. In small communities, where local public officials are familiar with every development project, more definitive information could be gathered.

The research completed for this pilot study confirms that isolating and quantifying precisely the value that landscape and amenities contribute to a real estate development project could be an unrealistic goal. Still, the opinions expressed in this research suggest strongly that landscape and amenities do, in fact, influence the decisions of purchasers and tenants. Further, the research indicates that local residents and decision makers prefer projects with high-quality landscape and amenities.
CASE STUDIES
THE WOODLANDS
EAGAN, MINNESOTA

The Woodlands is a 122-unit planned community of single-family houses on a 73-acre rolling and partially wooded site. The community distinguished itself from competitive projects through a combination of careful site planning, preservation of natural resources, and landscape design.

GENERAL DESCRIPTION
Located on a rolling, wooded 75-acre site, The Woodlands has established itself as a distinctive community of single-family houses by paying careful attention to site planning, preservation of natural features, landscaping, and design of the entrance. Developed by Minneapolis-based Robert Engstrom Companies, the land plan was the result of collaboration between Engstrom (who has a 30-year track record as a residential developer in the Twin Cities), Jack Buxell of Architectural Forum (who prepared the land plan and oversees architectural reviews), and two local landscape architects.

Engstrom's company has built its reputation on sensitive land planning that emphasizes landscape design. These qualities have weighed heavily in the success of The Woodlands; about 115 of the 122 lots have been sold since sales began in 1988. The project's architectural guidelines have also proven to be a selling point with buyers who want the added assurance that quality design and materials will be required over the course of development.

The Woodlands is comprised of 122 residential lots targeted to young, move-up families. Instead of providing amenities like swimming pools and tot lots, the project has been marketed on the quality of its lots, community identity, relationship to its natural environment, and proximity to public schools and parks. Housing and lot prices continued to climb during the phasing; based on the success of The Woodlands, Engstrom has initiated a more upscale 42-lot community, Great Oaks, on an adjacent site to the northeast.

THE SITE
The Woodlands is located in the rapidly growing suburb of Eagan, about 20 minutes from downtown Minneapolis, 15 minutes from downtown St. Paul, and 10 minutes from Twin Cities International Airport. Despite its seemingly excellent location, Eagan did not establish itself as an upscale community until the late 1980s, in part because of a preponderance of low-cost and poorly planned subdivisions of starter houses that dominated the town's image. That image began to change with the emergence of communities like The Woodlands, which capitalized on Eagan's location and the area's natural woods and rolling terrain. Today, Eagan is perceived as a desirable move-up community for residential development and an attractive environment for corporations.

Over the past several years, Eagan has become home to several of the Twin Cities' most important employers. Blue Cross/Blue Shield, Northwest Airlines, and Cray Research, a major computer firm, have located their headquarters in the city. The largest Coca-Cola bottling plant in the nation is in Eagan. West Publishing recently consolidated its facilities in Eagan, which involved moving its corporate headquarters from downtown St. Paul. This
impressive growth in employment spawned a demand for upscale housing that The Woodlands was well positioned to take advantage of.

Between 1985 and 1992, Eagan's population grew by over 50 percent, from 34,000 to 52,000. With this growth came a sizable investment for new facilities in the city's schools (about $50 million in the seven-year period), which further stimulated new residential development. One of the new elementary schools is located adjacent to The Woodlands and a city park to the west. Other uses surrounding the project site include an existing single-family subdivision to the east, an upscale and newly developed residential community (Bridgewater) to the south across Wescott Road, and a new, expensive residential community (Great Oaks) just getting under way to the northeast, also by the Robert Engstrom Companies.

PLANNING AND DESIGN

The goal of the development team was to maximize the value of the site by creating strong community identity and equalizing the perceived quality of each lot. Other projects in the local market by the same developer had demonstrated that desirable lots, such as those backing onto woods or high-quality subdivisions, sold well, while lots perceived to be undesirable could sit on the market for many years.

Engstrom and Buxell believed that a well-planned subdivision that offered lots backing onto woods would be able to attract move-up buyers from the historical location in Bloomington and other nearby suburbs. But demographics and strong job growth indicated that Eagan was poised for attracting more affluent homebuyers with the right project. In this spirit, they set forth the following objectives for planning and design:

- Through planning and landscape design, remove the perception of undesirable lots, which could delay the project's completion and cause the target market to be concerned about the project's ultimate quality.
- Establish a strong image and identity for the project that would be memorable to prospective buyers.
- Capitalize on the site's natural resources, including the woods and the gently rolling terrain; minimize disruption to the site's features.
- Challenge architects and builders to be creative in the design and construction of houses by not creating a graded, flat building pad for each house.
- Without compromising creativity, establish enforceable architectural guidelines to ensure that no single
Creating a strong community image and identity began with the design of the entrance, which features a 20-foot-wide median extending 180 feet into the project. The median is densely landscaped with linden trees, shrubs, and brightly colored perennials.

House is incompatible with the intent of the community. (Architectural guidelines and approvals were not common in this market, and some concern existed as to whether buyers would embrace the concept.)

Promote a sense of “community” and “neighborhood” by paying special attention to the design and appearance of the street; give future residents a reason to spend time in their front yards and walking through the community, thereby encouraging residents to socialize.

Most of these objectives were realized by carefully siting roadways and lots, by preserving naturally wooded areas, and by emphasizing landscaping.

The process that led to the final plan was an iterative process that began with the developer’s own sketch of how the property could be developed. After several in-house refinements and visits to the site, the plan was turned over to an engineer for more precise platting of roads and lots. The developer and land planner took the refined drawing back to the site to walk the roadways and review the layout of lots. The preliminary plat map emerged after several iterations of this process.

ENGINEERING/APPROVALS

No attempt was made in the layout of the subdivision to vary from the city’s requirement for minimum 12,000-square-foot lots. The city did, however, grant several exceptions to its road and engineering standards. Engstrom wanted to use culs-de-sac to create a series of microneighborhoods and minimize disruption to the terrain. Initially, some concern existed that the culs-de-sac were too long and could compromise the city’s ability to respond to emergencies. The concern was overcome by locating fire hydrants at the end of each cul-de-sac and by evaluating the trade-off associated with increased grading for more through connections.

The city also permitted rolled curbing, because the precise location of driveway curb cuts could not be determined until houses were designed (after street improvements had been completed). Experience with other projects showed that curbs were frequently damaged during construction of houses and large portions had to be replaced. The rolled curbing allows construction vehicles to drive over the curb without damaging it; it has not been a problem for snowplows, which was the original concern.

Engstrom had hoped that the city would consider reducing its requirements for the width of residential streets because of the low traffic volumes that were expected, but the city did not.
Woodland Trail, the community's collector street, has a 60-foot right-of-way with 32 feet of pavement, allowing for two travel lanes and two parking lanes. The streets on the culs-de-sac have a 50-foot right-of-way with 28 feet of pavement. The full 28 feet of pavement is carried around each landscaped island.

In most areas, residential streets were aligned on points of high elevation to expand views from the street and to allow rear walk-out basements in as many houses as possible. Walk-out basements offer the advantage of being able to step houses down a hillside without undertaking massive grading and tree removal.

**MARKETING AND FINANCING**

The project was first introduced as a move-up community for young families, and Engstrom anticipated development of houses ranging from $175,000 to $225,000 in price (lot plus construction costs). Builders responded almost immediately at the top end of the range because of the overall quality of development and the individual lots. House prices have continued to escalate with the final phases, comprised of slightly larger lots with good orientation to wooded areas, and command sale prices of $350,000 to $450,000.

Marketing The Woodlands was informal, without much in the way of advertising. Drawing on his 30-year track record in the Twin Cities area, Engstrom contacted reputable builders to apprise them of the project's approval and the availability of lots. Builders responded by purchasing lots and constructing model houses on speculation. Some builders listed the houses with local real estate agents; others elected to sell directly to consumers. In the interim, builders used the speculative houses as an example of the quality that could be applied to a variety of architectural styles and floor plans. Most houses were built on the basis that the builder held a contract with the homebuyer before construction.

The Woodlands is comprised of houses constructed by over two dozen local builders. One builder, of Lifestyle Homes, is responsible for about 25 of the houses. He focused on The Woodlands because the community responded well to his target market of move-up families.

Most purchasers were financed by conventional lenders for the costs of acquiring the lot plus construction. Typically, the construction loans were for up to 65 percent of the estimated market value at completion. The remainder was covered by cash from the buyer and short-term loans from the builder and providers of materials (such as lumber companies). Upon completion, short-term construction loans were rolled over or refinanced into conventional long-term mortgages. For about half the sales, the developer has carried the financing on the cost of the lot until the long-term mortgage could be secured.

**LANDSCAPE AND AMENITIES**

The landscape plan for The Woodlands is integral to the project's overall objectives for design and marketing. To attract move-up buyers, the community needed to be distinct from existing communities of modest houses built in relatively standard subdivisions. Rather than try to create value with the addition of expensive amenities like pools, fountains, and clubhouses, Engstrom opted to enhance the community's perceived value by drawing on the resources already existing on the site.

Equalizing lot values was especially challenging. The northern two-thirds of the property had excellent possibilities for development because of the natural woods and the rolling terrain. The southern third, however, consisted of a flat corn field with no notable site features. To compensate for the disparity, Engstrom paid extra attention to the design of the project's entrance and landscaping.

The entrance to the first culs-de-sac off Woodland Trail was set back several hundred feet from the entrance on Wescott Road, causing drivers to proceed well into the site before turning off the main road and looping back to the south. Thus, drivers are exposed to the wooded areas of the property and get a sense of the terrain to the north. The considerable landscaping at the project's entrance and along the first 600 feet of Woodland Trail makes it appear that the landscape is naturally wooded.
During planning, large trees were surveyed and approximate locations for house pads identified; from there, lot lines were drawn. Much of the natural vegetation that had to be removed to make way for roads and houses was transplanted to the southern portion of the site along Wescott Road and the project's entrance. Most of the transplanted trees survived the move, helping to give the project a consistent and mature look.

The identity of neighborhoods was further enhanced by the development of a strong entrance off Wescott Road. Large spruce trees were planted to frame the entrance and to supplement the transplanted plants; beds of perennial and annual flowers provide seasonal color. The land planner and project architect used brass and copper materials on the identification sign. The lettering is mounted on a leaf-shaped background, which is mounted on a large boulder. To enhance the project's natural theme, boulders were placed around the entrance and strategically throughout common areas of the community.

The entrance is enhanced by a 20-foot-wide landscaped median that extends 180 feet into the project. Engstrom had first introduced landscaped medians to Eagan in two previous projects, Deerwood and Chatterton Ponds. Although the entrances for those projects were smaller than for The Woodlands, they successfully demonstrated that the landscaping would not pose a maintenance problem or interfere with snow removal. The entrance median at The Woodlands is planted with linden trees, low-growing shrubs, perennials (such as rudbeckia, which blooms abundantly throughout the summer), and a variety of annuals.

The emphasis on landscaping is carried throughout the remainder of the project. Key areas of the subdivision, such as at the termination of vistas, were identified during planning and were landscaped with large trees, boulders, shrubs, and flowers. Most of these areas are located on private lots and are maintained by the homeowners. The maintenance of the entrance is ensured through a landscape easement.

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To further improve the streetscape and minimize the visual prominence of driveways and cars, the covenants require each property owner to install a natural planting area of at least 225 square feet adjacent to the front lot line. Although not strictly enforced or implemented by every homeowner, the policy has stimulated creativity in the landscaping of individual lots and has worked to bring plants other than grass to the curb line. To further encourage excellence in the landscaping of each lot, the developer provides buyers with a complimentary interview with a landscape architect, who prepares a schematic landscape plan.

To provide each neighborhood on a cul-de-sac with a distinctive identity, the developer convinced the city of Eagan to depart from its street standards and permit landscaped islands at the end of each cul-de-sac. The islands—planted with trees, shrubs, flowers, and ground cover—reduce the visual impact of large areas of asphalt and reinforce the project's theme of a natural, wooded area.
and to break up large expanses of asphalt, Engstrom proposed to install a landscaped island in the center of each turnaround. Again because of concerns about snowplowing and potential increased maintenance to roadways, the city hesitated but ultimately approved the plan. Each landscaped island is densely planted with large trees and an understory of shrubs, flowers, and ground cover. The homeowners association is charged with its maintenance. The project's final phase around Linden Court at the southeast corner of the site includes a "super island." The extra size of this landscaped island and the extra landscaping along Wescott Road have allayed buyers' concerns about the quality of these lots and their proximity to the arterial.

During planning, the designers determined that an 8.8-acre low-lying area of the site should be preserved in its natural state and designated a "nature area" for the benefit of all residents. Developing that area would have required substantial earth to be moved, which would have impacted negatively other portions of the property. The site now serves as a habitat for wildlife, a detention area for stormwater, and a passive recreational area. A trail provides residents with easy access to the preserve. Another pedestrian trail connects the project with an elementary school and park immediately to the west. The latter trail has been especially important in marketing as the move-up family market appreciates the safety and convenience it provides for children walking to school.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER

The direct economic value of the project's landscape and amenities can be measured in the price that the developer received for lots and the speed at which lots were absorbed relative to competitive projects in the local market. While no organization monitors and reports on local lot sales, the developer, local builders, and real estate brokers provided a list of projects considered competitive with The Woodlands. As shown below, The Woodlands is at the top end of residential lot sales, based on average lot prices estimated by one local builder familiar with all the projects listed.

<table>
<thead>
<tr>
<th>Project</th>
<th>Average Lot Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>THE WOODLANDS</td>
<td>$55,000</td>
</tr>
<tr>
<td>Aspen Ridge</td>
<td>$40,000</td>
</tr>
<tr>
<td>Bridgewater</td>
<td>$55,000</td>
</tr>
<tr>
<td>Eagan Hills Farm</td>
<td>$45,000</td>
</tr>
<tr>
<td>Eagan Royale</td>
<td>$52,500</td>
</tr>
<tr>
<td>Safari Estates</td>
<td>$57,500</td>
</tr>
</tbody>
</table>

In only one project, Bridgewater, were average lot prices slightly higher. Bridgewater was started after The Woodlands and is located directly across Wescott Road from The Woodlands. To some extent, Bridgewater was modeled after The Woodlands and has incorporated substantial landscaping and an impressive landscaped entrance to compete. According to local sources, Bridgewater has attempted to create value not only in landscaping but also in the price of its houses. The strategy proved successful in the early phases, with housing constructed on the lots perceived to be the best; however, sales slowed substantially during later phases, with less desirable lots remaining on the market.

Lots in another project, Eagan Royale, are about equal in price to those in The Woodlands. They were originally priced at $70,000 to $80,000 because they are in a wooded setting and are slightly larger, but the project is also located near a freeway, which proved to be a marketing disadvantage. Prices were dropped to $50,000 to $55,000, and sales reportedly have picked up.

Local sources indicate that, overall, The Woodlands receives a price premium of about 10 percent over comparably sized lots with a view of natural woods, or roughly $5,000 per lot. These sources attribute this premium to the project's quiet location, to its proximity to a school and a park, and to the strong identity established by the entrance, street design, and landscaping in the common areas. If these estimates are correct, the total return to the developer can be estimated at roughly $600,000 ($5,000 per lot for 122 lots).

Local sources indicate that the developer will also benefit by being able to sell all of the lots within a reasonable amount of time. Historically, developers have had difficulty selling the final 5 to 10 percent of the lots, those considered the least desirable, and...
Lot buyers are encouraged to install a planting area of at least 225 square feet in their front yards, intended to improve the appearance of the streetscape by reinforcing the community's focus on nature and by helping residents to be individually creative in their landscaping. To assist residents with plans for the planting area and the rest of the yard, the developer provides new buyers with free landscape design advice.

Engstrom believes that the investment in landscape design and amenities will have indirect and long-term benefits to his company in terms of improving its reputation with purchasers, builders, and public agencies. The company strives to set a high standard for land planning and landscape design and has developed a solid reputation within the Twin Cities. The reputation and experience help the company to sell lots in new communities by drawing on its favorable earlier experiences with homebuilders and avoid having to undertake costly marketing.

The company's good local reputation also helps in its dealings with local agencies. In Eagan, for example, the successes of two earlier Engstrom projects (Chatterton Ponds and Deerwood) helped the company to receive permission to vary from several of the city's design standards (by incorporating rolled curbing, longer culs-de-sac, landscaped islands, and a landscaped entrance median). The quality and success of The Woodlands, in turn, can be expected to help the company in its dealings with the city on future development.

The length of time needed to acquire development approvals is not considered an issue with The Woodlands. Approximately 150 days were required to move from submittal of a preliminary plat to approval of a final plat, fairly standard in Eagan.
VALUE TO HOMEBUYERS AND RESIDENTS

Researchers undertook telephone interviews and personal contacts with several residents of The Woodlands to determine which landscaped features and amenities they perceived as most valuable and how that value was manifested. In general, the residents identified the following features of the project that persuaded them to purchase a lot in The Woodlands:

- The sense of an "identifiable," "discrete," and "contained" community created by the project's entrance, the street patterns, and the consistent landscaping theme;
- The overall quality of the housing;
- The architectural guidelines and covenants that protect against "poor taste" and "low quality";
- The proximity of the elementary school and park to the site and the pedestrian trail connecting the school and the project;
- The community association and its responsibility for maintaining landscaping in the common areas.

Those interviewed indicated that the project's landscaping was an important factor in stimulating their interest. The image of the project created by the entrance off Wescott Road was especially important in helping to form a positive first impression. Residents like the landscaped islands in the culs-de-sac because they help to set the project apart from other communities in Eagan. Residents also like the nature area but rarely use it; the area's primary benefit seems to accrue to the owners of the lots that back on it.

The value that residents receive from the landscape and amenities can be categorized generally as "quality of life" and "financial investment." As for the former, homeowners enjoy the appearance of their community and its still somewhat distinctive position in the market. They place high value on the project's identity and image, and when they tell people they live at The Woodlands, they usually receive a positive response. Families value the proximity of the elementary school and the knowledge that their children do not have to cross or walk along an arterial highway to get there.

Those interviewed feel strongly that they made a wise financial decision to have a house built in The Woodlands. Everyone agrees that values of new houses have increased as the community nears completion (few houses have been resold to date). Most owners also believe they paid a small premium, about 5 to 10 percent, for their lots but that it was a wise investment. Residents believe that their houses have good potential for resale, created in large part by the community's perceived quality.

Homeowners pay $140 per month to cover the association's responsibilities (insurance, taxes, maintenance of the common areas). While most homeowners are willing to pay this fee for maintenance of landscaping in the common areas, some believe that fees could be lowered if residents assume more responsibility for maintenance. In general, homeowners have seen the quality of landscape maintenance decline since the project was turned over to the homeowners; for example, less emphasis is placed on planting and caring for annuals. Homeowners believe that, over the long term, they can sustain maintenance equal to that provided by the developer.

VALUE TO THE COMMUNITY

To help understand how the project has benefited the city of Eagan, researchers interviewed a representative of the planning department, a long-time staff member and the person responsible for reviewing proposed landscape plans.

The city of Eagan has no specific standards for landscaping for residential subdivisions, so all the amenities included in The Woodlands were above the city's expectations. Some staff members initially perceived the proposals for landscaping as cause for concern. The Woodlands was one of the first projects in the city to include a landscaped median in its entrance road, a public street. Staffers were concerned that the landscaped median and landscaped islands at the ends of the cul-de-sac would add to costs of roadway maintenance and interfere with snow removal.

Experience, however, demonstrates that any increased costs for road maintenance are negligible. The features have also proven to be no obstacle for snow-
The city’s attitudes about landscaping in residential projects can also be measured in its recent approval of a subdivision of single-family houses targeted toward first-time buyers. The city permitted the developer to reduce lots from 12,000 square feet (the zoning code’s minimum) to 10,500 square feet in exchange for additional landscaping improvements to the street. The city found that the smaller lots would promote more affordable priced houses, while the landscaping would add quality and be an acceptable trade-off for the smaller lots.

Qualitative evidence suggests further that The Woodlands contributed substantially to changing the city’s image as a starter-home community that did not appeal to the more affluent move-up market. Eagan now offers a wide range of houses for a broad spectrum of incomes. Great Oaks, an adjacent new community by Engstrom, is successfully marketing lots for houses valued over $600,000. According to several sources, houses in that price range would have been unheard of in Eagan in the mid-1980s. Other factors that might have contributed to Eagan’s changed image and broadened range of housing prices are the impressive employment growth in the past several years and the large expenditures for the city’s schools.

What cannot be quantified at this time is the effect The Woodlands has had on the city’s tax base. Clearly, as lot and house prices have increased, so has the tax base. A preponderance of evidence suggests that Eagan attracts more higher-priced housing with higher tax assessments. While the difference in costs to the taxpayer for a $200,000 house and a $400,000 house is negligible, the income derived is considerable.

To the extent that The Woodlands helped to change the city’s image and helped to open up a new market for higher-priced housing, it has had a positive effect on the city’s tax base.

SUMMARY AND CONCLUSIONS

- The Woodlands helped to change Eagan’s image from a starter-home community to a community acceptable for higher-priced houses.
- It was one of the first projects in Eagan to target itself toward two-income, move-up families by offering a higher-quality community.
- The landscaping and amenities included in The Woodlands have subsequently been adapted and used in other projects throughout Eagan, thus raising the quality of new communities and subdivisions in the city (Bridgewater, for example).
- The Woodlands receives about a 10 percent premium on its lots, primarily because of the strong community identity that was created with landscaping and amenities. Over the course of the project, this premium will translate into about $600,000 in revenue to the developer.
- Absorption of lots has generally outpaced competitive projects, despite the project’s higher prices for lots. Equally important, it does not appear that the developer will be left holding a number of unsatisfactory lots that will prove difficult to sell.
WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: June 1992

DIRECTIONS
From Twin Cities International Airport: Take I-494 east to I-35E south; exit at Pilot Knob Road south and travel approximately one-half mile to Wescott Road. Turn left on Wescott, and travel approximately two miles to the entrance of The Woodlands (located on the left).
Driving time: Approximately 12 minutes in non-rush-hour traffic.
From downtown Minneapolis: Take I-35W south to I-494 east and follow above directions.
Driving time: Approximately 20 minutes in non-rush-hour traffic.

DEVELOPMENT SCHEDULE
Site Purchased: November 1986
Planning Started: November 1986
Preliminary Plat Approved: February 1987
Final Plat Approved: September 1987
Site Improvements Started: September 1987
Lot Sales Begun: December 1987
First Occupancies: July 1988
Final Lot Sales: 1994

INTERVIEWEES
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Howard Kyllo, project manager
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Lifestyle Homes, Inc.

Residential Finance Specialist
Dick Schwagman, vice president
Builders Development & Finance, Inc.

Public Agency
Jim Sturm, city planner
City of Eagan

Community Residents
Jerry and Cathy Woelfel
Barb Freeman
Sara Criger
Dick Schwagman
Jim Williams

From the outset, builders constructed houses in a price range above the developer’s original expectations, and housing prices have continued to escalate over the course of the project. The Woodlands seems to have proved that the market for higher-income, move-up housing existed in Eagan if the right kind of community were made available.

The design for the entrance (landscaping, signage, lighting) proved especially important in establishing an identity for the community.

The marketing of lots to builders was made easy with the developer’s extra site improvements, thus minimizing marketing costs.

Based on the success of The Woodlands, the developer was able to build an adjacent project, Great Oaks, for even more upscale houses.

Evidence suggests that The Woodlands helped to trigger the development of more expensive houses in Eagan and thereby contribute directly and indirectly to the city’s tax base, although the city is not able to quantify the amount of the additional taxes.

Within the project’s boundaries, landscaping improvements to Linden Court and along Wescott Road helped to offset buyers’ concerns about the quality of these lots and to quicken the pace of sales.

 Buyers seem to value most the project’s passive, visual amenities; they expressed little interest in active amenities, such as swimming pools. Views of natural woods are especially important to the primary market.

Homebuyers place considerable value on features that promote identity, security, privacy, and protection from what is perceived to be undesirable elements in the community. Architectural guidelines and an association to maintain landscaping in common areas were seen as important factors in controlling the community’s long-term quality.

According to most people interviewed, homebuyers are now more than ever concerned about the quality of a community. The consensus seems to be that shoppers look for a community first and a house second. The perceived quality of the community can be substantially influenced by the landscape design and amenities incorporated into entrances, streetscapes, and common areas.
GENERAL DESCRIPTION

Straw Hill is a community of 65 single-family detached condominiums arranged in nine clusters of five to nine houses. In its land plan, landscape design, and architecture, the community strives to reflect the character of a rural New England village. Located on a 22-acre hillside site, Straw Hill was developed in the mid-1980s with the objective of melding function, market demand, and concern for the environment.

The cluster concept provides for a series of small, social neighborhoods within a larger community. Each cluster can be reached from Straw Hill Road, a private street maintained by the condominium association. In addition to providing social scale and a manageable design, the clusters permitted logical phasing.

The community's design and initial success relied heavily on blending the houses with the landscape. Clustering created blocks of open space much like the open field that was the site before development. To accommodate needed stormwater detention, seven ponds were designed into the landscape; the areas around and between the ponds were landscaped with natural grasses and wildflowers. Besides serving as stormwater detention, the ponds and adjacent landscape provide residents with a major visual amenity.

When houses at Straw Hill first went on the market, sales were brisk. Price increases during the project's phasing were unprecedented for this conservative New England town. By the late 1980s, however, New Hampshire had fallen victim to the recession, and the region's real estate market was probably the hardest hit in the nation. By 1992, prices of resale housing had dropped 20 to 50 percent in Manchester. This case study draws upon information and interviews conducted during the boom year of 1987 and the bust year of 1992 to address the extent to which landscaping influences value at the extremes of real estate cycles.

THE SITE

With a population of about 125,000, Manchester is New Hampshire's largest city. Straw Hill is within two miles of downtown, a 15-minute drive of Concord, the state capital, and a 45-minute drive of Boston. The site is convenient to New Hampshire's major employment areas and to a range of community and commercial services. Straw Hill was built on an undeveloped site in Manchester's most desirable residential area, on the north side of town.

Surrounding the site are large single-family detached houses on quarter-acre lots. It remained an undeveloped field for years until developers George Matarazzo and Mark Stebbins acquired it in 1983. Besides its location within a respected neighborhood of Manchester, the site was well served by existing public infrastructure. The eastern half of the site contained a steep slope and exposed ledge, however, making mass grading and a con-
In conventional street layout difficult. Further, the city required that any development on the site not increase peak stormwater runoff. While these constraints caused the property to remain undeveloped for years, they also turned out to be instrumental in shaping Straw Hill's design.

**EVOLUTION OF THE PROJECT PLAN**

The design team first experimented with a plan based on the city's zoning, which permitted minimum lots of 12,500 square feet. Lots were arranged in a grid pattern similar to adjacent neighborhoods. Project engineers estimated that, to meet the city's requirements for stormwater runoff, a detention pond had to be located on the site's western edge. That pond would have required an area about the size of the existing nine-unit cluster next to North River Road. This initial plan yielded 62 units, within the developer's economic objectives, but was considered unacceptable from the perspective of design.

Instead of trying to replicate adjacent neighborhoods, the developers decided to create a community that would be compatible with them yet individual in its design. The concept that emerged was a residential village reminiscent of a small New England town, with some of the site's open field qualities retained.

Clusters were a way to accomplish these objectives, but the 12,500-square-foot minimum prohibited the optimal sitting of units in clusters. The developer's criteria for solar orientation and privacy required greater flexibility in placement of the units and setbacks than a typical approach would permit. To achieve a more flexible design, the project was structured as a condominium community of detached houses with private streets, which require less stringent design standards than public streets. And the condominium form of ownership eliminated the constraints of side-yard and front-yard setbacks from lot lines.

Although the city's zoning permitted detached condominiums, they had not previously been attempted in the local market. When area residents learned that a condominium community was proposed for the site, they assumed the units would be attached and reacted negatively to the proposed development. To dispel controversy, the developers conducted door-to-door meetings with neighbors to explain the project's objectives for design. Ultimately, neighbors supported the project with the proviso that access be gained from North River Road instead of through the neighborhood on the south as originally planned. This compromise meant that the project's main entrance could have no direct frontage onto a roadway but would have to be set back behind two existing houses and reached through a public right-of-way that existed between the two houses.
ARCHITECTURAL CHARACTER

Given the primary design requirements for maximum southern exposure and privacy, the placement of all windows, blank walls, and outdoor openings had to be carefully considered. Each unit has a blank wall, generally facing north. This wall serves to promote privacy, as in a zero-lot-line concept, and is energy efficient. Additional privacy is gained by placing fences around the limited common areas (backyards) and by strategically placing trees and shrubs between proximate units.

The southern exposure designed into most of the units proved to be a major selling point in this area, known for its harsh winters. Orientation of the units was so important to some prospective buyers that they brought compasses into each house to calculate the unit’s exact orientation to the sun. Inside, the houses feel bright and airy despite their one blank wall and few multilevel spaces. By reducing large ceiling volumes, heating and cooling costs are reduced considerably.

Architecture draws on traditional forms and materials. Grilled casement windows show a colonial influence, while wood clapboard siding, steeply pitched rooflines, and chimney treatments are drawn from rural New England. To promote variety, the color palette includes shades of brown, green, blue, yellow, and red. The architecture, clustered units, and pastoral landscape work together to promote a sense of village.

PHASING AND MARKETING

Clustering allowed the developer to phase development in small and logical increments commensurate with market demand. Phasing began at the west, adjacent to the main entrance and in the area with the lowest elevation. As the development moved up the hill to the east, house plans were enlarged and higher-quality finishes added, again in line with market demand. The success of the early phases and the pleasing appearance of the emerging community supported the increases in sale prices that went with the larger houses. The price increases also slowed absorption, but at the time the developer considered this trade-off to be financially prudent.

The decision to cluster the houses and create a series of small detention ponds instead of one large one also allowed infrastructure and the site to be improved in small increments and the improvements to be distributed over the phases. The detention ponds were developed as the primary visual amenity for each cluster or phase of development.

Because the developers had early reservations about the market’s willingness to accept condominiums, Straw Hill was promoted initially as a “single-family detached community,” with little emphasis on the condominium form of ownership. The project’s first buyers were not concerned about the condominium form of ownership; in fact, that form of ownership appealed strongly to move-down empty nesters, who did not want to give up a detached house but also wanted less responsibility for maintenance.

The first units were offered for sale in 1984 with opening prices of $90,000 to $150,000. For the next four years, prices increased steadily, peaking at $200,000 to $300,000. By 1988, however, the real estate market in Manchester (and all of New England) began the dramatic decline that still persists. Because of the poor regional and local market for housing, the developers have not completed the final phase of eight houses in the northeastern cluster.

LANDSCAPE AND AMENITIES

Early during planning, the developers decided to exclude active recreation, such as a swimming pool, from the project. Instead, they believed that the best way to appeal to their expected market would be by making the site and its landscaping the featured amenity, and they emphasized passive amenities, such as the pastoral landscape and views.

Perhaps the most immediately visible element of the landscape is the use of wildflowers and native grasses in open spaces between housing clusters and on the banks of the detention ponds. The landscaping offers a natural look and turns the detention ponds, potential eyesores, into visual amenities.

Grading requirements around the ponds and on the steep, eastern portion of the site resulted in slopes of up to a 2:1 gradient. To ensure proper stabilization for the slopes and to minimize maintenance costs, the slopes...
City regulations for lot sizes, street standards, and setbacks—together with the developers' criterion for solar orientation—would not allow for the tight clusters of houses and preserved open spaces envisioned. To circumvent the problem, Straw Hill was structured as a community of single-family detached condominiums, but the condominium form of ownership and associated monthly maintenance fee were primary contributors to the drop in real estate values at Straw Hill during the late 1980s and early 1990s.

were planted with a hydroseed mix of grasses and wildflowers. The wildflowers bloom profusely during the spring and summer, providing enjoyment to residents, a habitat for wildlife, and a colorful identity for the project.

Because streets are private and maintained by the community association, the developer was permitted to build them substantially below the city's standards. Parking for guests is accommodated in bays around culs-de-sac or in driveway aprons. To lessen the visual impact of asphalt and to increase the intimacy of each group of houses, landscaped islands are located in the culs-de-sac.

Sidewalks are not provided; they are not really needed because of the low traffic volumes and slow speeds of cars through the project. Instead of raised concrete curbs, road edges are lined with wood posts resembling railroad ties. After five to seven years, portions of the wood curbing began to decay or were damaged by snowplows or cars and had to be replaced.

In addition to the naturalized plantings around detention ponds, Straw Hill was planted with a wide variety of trees and shrubs, mostly adjacent to roadways and around houses. No attempt was made to establish a landscaped theme by using a particular species repeatedly. Trees include ash, maple, pine, and spruce, among others. Existing dogwood trees were transplanted to the detention ponds during project phasing. The project was intentionally "overplanted" for immediate effect, especially around the fronts of houses, where an objective was to create a courtyard effect around garage areas, and along the sides of houses, where screening was necessary to protect privacy.

The developer/landscape architect estimates the costs to landscape Straw Hill are approximately equal to a more conventionally landscaped condominium community of equal size, despite the use of large plants and the intense landscaping. Straw Hill was able to save on landscaping costs in several ways.

- In several areas of the site, exposed rocks had to be blasted and moved to make room for housing. Rather than trucking the rocks off site, they were incorporated into the landscape design along steep slopes and planted with native plants. In the easternmost cluster of houses, this landscape feature saved approximately $10,000 in trucking costs.
- Planting common areas with native grasses and wildflowers proved to be a relatively inexpensive but high-impact solution for steeply sloped areas around detention ponds. The total cost for hydroseeding the grasses and flowers was only about $3,000, far less than what
would have been the cost of a more manicured softscape treatment.

- Providing for stormwater runoff detention in a series of small ponds allowed for improvement costs to be phased incrementally, cluster by cluster. This strategy meant that up-front site improvement costs and the resulting carrying costs could be minimized.

- Planting grasses and wildflowers around detention ponds eliminated the need to accommodate frequent maintenance of landscaping around the ponds (such as to accommodate lawn mowers). Thus, slopes around the ponds could be very steep and more developable land made available.

The budget to landscape around houses was set at about $12,500 per unit, about twice the standard cost for landscaping around condominium units because of the size and intensity of the landscaping and because each unit required landscaping around all four sides of the building. This additional cost was compensated for by the cost-saving features noted earlier.

VALUE OF LANDSCAPE AND AMENITIES

This assessment of value is based in part on extensive interviews conducted by ULI during fall 1987 with the developer/landscape architect, community residents, and representatives of the city of Manchester. The interviews were conducted for a Project Reference File video featuring Straw Hill. Supplemental interviews were conducted for this study in spring 1992.

VALUE TO THE DEVELOPER

The direct benefits accruing to the developers as a result of the project's landscape and amenities fall into the general categories of financial return and approvals processing.

FINANCIAL RETURN

When houses first went on the market in Straw Hill, Manchester's real estate market was booming. The developers' initial strategy was to build small, moderately priced houses that would sell out over about two years. Quick sales in the first phase, however, led to a change in strategy that resulted in progressively larger and more expensive houses as new clusters came on line. As the reputation of the project became more firmly established, the developers were able to increase sale prices by almost 100 percent during the four-year development period.

The price increases sustained during 1984 to 1987 are exemplified in the Plan A unit, which has the smallest floor plan, featuring 1,820 square feet and three bedrooms. In the first cluster to go on the market in 1984, a Plan A unit sold for $87,000. In one of the last clusters to be sold in 1987, the Plan A
unit had appreciated to $175,000. (The units were identical with the exception of minor upgrades to the kitchen and the addition of a half bath to the later units. The first Plan A units were sold with an unfinished bedroom and bath on the second floor.) Larger units (up to about 2,800 square feet) with the best views received prices as high as $325,000 in the final phase of development. According to representatives of the city planning department and local real estate agents, prices over $500,000 were unprecedented for both condominiums and single-family houses in that area of Manchester. Most single-family houses on fee-owned lots in the area sold for $150,000 to $200,000.

The developers attribute much of the project's initial success to its landscaping, which the primary market of empty nesters embraced. Other factors working in its favor include a good location, attractive architecture, functional floor plans, and a robust real estate market. Still, it was the landscaping and the condominium form of ownership that set Straw Hill apart from other more typical communities of single-family houses. And it was the landscaping and the detached units that set Straw Hill apart from other more typical condominium projects.

The price increases at Straw Hill and the developers' revamped strategy to sell larger houses for whatever the market would bear did not come without a penalty. The higher prices slowed absorption and raised carrying costs, and the slower pace of absorption left the developers holding the still undeveloped cluster of eight units. Just as construction of the final phase was about to begin in 1988, the market began to soften and development was put on hold indefinitely. In retrospect, the developers believe it would have been more profitable to stick with the original pricing strategy, with all sales completed before the recession hit.

APPROVALS PROCESSING

The initial proposal to build condominiums on the 22-acre infill site was controversial among surrounding homeowners. To allay neighbors' concerns, the developers conducted a series of presentations, some of them door-to-door, to explain the project's merits. The project eventually won support based on the neighbors' new understanding that the units would be detached. The developers also used the project's proposed landscape design as an argument for its merits. Surrounding property owners responded favorably to the project's emphasis on landscaping and the preservation of blocks of open space.

The developers conceded two other points that were important in winning neighbors' support: that the project's entrance would be relocated to North River Road and that sale prices be increased from the base of $87,000 to $120,000 after the first ten houses were sold. This latter condition proved unnecessary, as base sale prices actually

Houses were carefully sited to give most a southern exposure, proving to be a major selling point for potential buyers who were all too familiar with the region's harsh winters.
While the condominium association maintains backyards, residents may landscape and maintain an adjacent area for their exclusive use and enjoyment.

increased to $150,000 without the need for an artificial bottom line.

The developers believe that the landscaping and the cluster concept were very important in winning neighbors' support for Straw Hill and avoiding delays in approvals from the city of Manchester. In total, however, landscape and planning features were probably less important than the fact that the units were to be detached and that the developers were willing to change the entrance location and to fix a minimum sale price after the first cluster sold.

VALUE TO RESIDENTS

Interviews in 1987 with the initial buyers of Straw Hill revealed strong support for the naturalized landscape. Clearly, residents placed great value on views of the open spaces and the seasonal variation of the landscape. Residents also enjoyed the birds and other wildlife that the naturalized portions of the site attracted. All of the residents interviewed stated that the open spaces (and views of them) and the natural landscape played a major role in their decision to purchase a unit in Straw Hill. Other factors important to them included the specific location within an established residential neighborhood of Manchester, the architecture and interior features of the houses, and the condominium form of ownership (requiring less time spent on exterior maintenance). Straw Hill proved to be overwhelmingly successful with empty nesters and young retirees.

During first sales, Straw Hill demonstrated that homeowners will respond favorably to the use of natural landscaping, such as native wildflowers and grasses, if they have an opportunity to see it in place before occupancy. The developers' initial experience with potential homebuyers revealed some resistance to the natural landscape, because they were concerned that the community would look unkempt. Once the plantings had become established, however, those concerns were dismissed and residents came to embrace the community's pastoral open spaces. The developers began to mow around the edges of the wild plants to demonstrate that the patches are intentional, and the condominium association has continued that practice.

According to the property manager of Straw Hill, condominium fees are based on square footage and range from about $190 to $330 per unit per month. This fee covers snow removal and maintenance of all landscaping, unit exteriors, and streets within the community. The relatively high fees reflect the necessity for greater landscape maintenance and exterior building maintenance for single-family detached condominiums. Costs for landscape maintenance at Straw Hill are decreased somewhat by the natural open spaces around the ponds and between the clusters, which mostly take care of themselves. Still, the condominium fees have had a major effect on property values. (Condominium fees were reduced slightly in 1991 because the association's reserve account was ample and insurance costs were reduced.)
Between 1987 and 1992, property values at Straw Hill decreased from 30 to 50 percent depending on an owner's need to sell, according to local real estate agents. For example, a Plan A unit that sold in 1987 for $175,000 was resold in January 1992 for $120,000, and a similar unit, considered a distress sale, had been sold two months earlier for $100,000. One of the largest units sold in 1987 for $310,000 was resold in early 1992 for $142,500. Several units were foreclosed after owners walked away from their investments.

In comparison, typical single-family houses on fee-owned lots in north Manchester have depreciated only about 20 percent on average. The primary reason for Straw Hill's greater drop is the condominium form of ownership and the monthly fees. Buyers have been reluctant to purchase a single-family condominium in light of the poor economy and have been unwilling to assume monthly condominium fees.

In its first phases, The Chase's landscape, house sizes, and sale prices were comparable to Straw Hill. After the foreclosure, less emphasis was placed on landscaping, and the visual differences between the first and last phases of the project are readily apparent. Houses at The Chase are located farther apart, giving the appearance of lower density. Like Straw Hill, The Chase has experienced a drop in real estate values of 30 to 50 percent; also like Straw Hill, very few units have been sold, regardless of price.

Local real estate agents believe that Straw Hill is the better value of the two communities because of its landscape and the strong sense of community the landscape helps to establish. Still, evidence suggests that quality landscaping has not had much influence on sale prices or the length of time a unit stays on the market. The market for detached condominiums is so poor that virtually nothing sells unless the seller is willing to accept close to 50 percent of the original sale price. Most owners wishing to relocate have opted to rent their units until the market improves. Real estate agents indicate that Straw Hill does very well on the rental market and overall outperforms The Chase; they also believe that Straw Hill has maintained an image of a desirable, high-quality community, while The Chase has a reputation as a financially troubled project.

Despite Straw Hill's decreased value, residents remain devoted to the landscaping, and no attempt has been made to reduce maintenance for the sake of...
lower fees. Residents continue to be very particular about the quality of landscape maintenance and have experimented with a number of maintenance companies to achieve that high quality.

The current value of Straw Hill's landscaping to residents appears to be in their enjoyment and appreciation of it. No evidence suggests that the landscaping has helped to offset drops in real estate values. One local real estate agent summed it up: "Landscaping is nice, but the only thing that matters in this terrible economy is price."

VALUE TO THE COMMUNITY

Representatives of the city planning department and the tax assessor's office say that Straw Hill's value to the larger community has been mixed but generally positive. In 1987, the planning department praised the project and its planning and design, believing that the plan responded to the site's natural conditions and to the neighborhood where it was located. The department also appreciated the degree to which clustering and the landscaping were able to help diffuse potential controversy from surrounding neighborhoods.

As of 1992, the planning department continued to believe that Straw Hill helped to set a high standard for land planning and landscape design for the city, believing that Straw Hill was well planned, well designed, and well executed. The positive feelings about the project's plan and landscape, however, are somewhat tempered by issues regarding property taxes that have surfaced in recent years.

Residents of Straw Hill have joined other condominium associations in Manchester to seek lower taxes based on dropping property values and on the issue of double taxation. Straw Hill residents argue that they should pay lower taxes because they pay directly for many services typically provided by the city: snow removal, trash collection, street cleaning and maintenance. As a result of residents' concerns about double taxation, the city recently reassessed many properties in the city, in-

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**PROJECT DATA**

**LAND USE INFORMATION**

<table>
<thead>
<tr>
<th>Site Area</th>
<th>22 acres</th>
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<tbody>
<tr>
<td>Total Dwelling Units</td>
<td>65</td>
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<tr>
<td>Gross Density</td>
<td>3 units per acre</td>
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<tr>
<td>Parking</td>
<td>2 garage spaces plus 2 driveway spaces per unit</td>
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</table>

**LAND USE PLAN INFORMATION**

| Buildings | 3.1 | 14.1 |
| Straits/Parking | 3.0 | 13.6 |
| Detention Ponds | 0.8 | 3.6 |
| Open Space | 15.1 | 68.7 |
| Total | 22.0 | 100.0 |

**UNIT INFORMATION**

<table>
<thead>
<tr>
<th>Type</th>
<th>Size (square feet)</th>
<th>Number</th>
<th>Initial Sale Price</th>
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<td>A+</td>
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**DEVELOPMENT COST INFORMATION**

<p>| Site Acquisition Cost | $396,000 |</p>
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<th>Site Improvement Costs</th>
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<td>Landscaping</td>
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<td>Total Hard Costs</td>
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<td>Total Soft Costs</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

1 Unit types designated with "+" are designed for hillside clusters. The "C+" unit is a customized unit designed for a specific buyer.

2 Fifty-seven of the planned 65 units were constructed as of 1992.

3 Site improvement and construction costs are for the first 57 units constructed.

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Clustering was an effective way to reduce development costs by permitting progressive phasing increments and by minimizing the site improvement costs associated with each phase of development.

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WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: May 1992

DIRECTIONS
From downtown Boston and Logan Airport: Take I-93 north to Manchester; exit at Amoskeag Bridge and bear right to Elm Street. Turn left onto Elm Street, left onto Webster Street, and right onto North River Road. Straw Hill is located about one mile on the right.

Driving time: About one hour in non-rush-hour traffic.

DEVELOPMENT SCHEDULE
Site Purchased: 1983
Planning Began: 1983
Construction Began: 1983
Phase One Completed/Sales Began: 1984
First 57 Units Completed/Sold: 1987

DEVELOPERS
George Motorozzo and Mark Stelbins
P.O. Box 4430
Manchester, New Hampshire 03108

ARCHITECT/PLANNER/LANDSCAPE ARCHITECT
Motorozzo Design
46 Newport Road, Suite 216
New London, New Hampshire 03257
(603) 526-2161

INTERVIEWEES
Developer/Landscape Architect
George Motorozzo
Motorozzo Design

including Straw Hill. Straw Hill and several other condominium projects in the city were given a tax credit to account, in part, for city services that the projects did not receive. Thus, Manchester's local tax base has been reduced. In retrospect, the city believes that the sale prices of 1985 to 1987 were not justified and that readjustments in value and property taxes in the following years were more in line with real market conditions.

SUMMARY AND CONCLUSIONS

- The project's natural landscape minimized landscaping costs and helped to give Straw Hill a distinctive identity. Despite the perception of intense landscaping, costs for landscaping were approximately equal to costs of typical "softscaping."
- Straw Hill's landscaping has become the signature design feature of the project, distinguishing it from other projects in the local market.
- It is difficult to separate Straw Hill's landscape design from the overall cluster concept. Both features of the project work in unison and support one another.
- The cluster concept was an effective way to reduce development costs by permitting small, progressive phasing increments and by minimizing the site improvement costs associated with each development phase.
- Condominium ownership of single-family detached units was an effective way to overcome constraints associated with street design, setbacks, and the placement of houses around culs-de-sac. That form of ownership appealed especially to empty nesters, because it requires less responsibility for maintenance. In recent years, however, condominium ownership and associated fees have contributed greatly to declining real estate values.
- Between 1985 and 1987, sale prices increased up to 100 percent as a result of the project's success in finding a niche in the market and to its cluster concept and landscape. Those price increases, however, slowed absorption and left the developer with eight unfinished houses just as the recession hit.
- The landscaping and clustering were instrumental in overcoming opposition to the project from surrounding neighborhoods, although they were probably less significant than the proposal to build detached houses.
- Real estate values at Straw Hill have dropped 30 to 50 percent since the peak in 1987, primarily because of the condominium form of ownership and the associated condominium fees. In comparison, conventional single-family houses on fee-owned lots have decreased in value by about 20 percent during the same period.
- Although landscaping is very important to residents and to the project's good image, it has not been able to offset dramatic decreases in property values.

Information from 1987 was gathered for a ULI Project Reference File, Volume 17, Number 18, October–December 1987, and for a ULI Project Reference File video, 1988.
GENERAL DESCRIPTION

Blackhawk is a 4,800-acre master-planned community in the East Bay area of San Francisco. The site, which is over 90 percent built out, will have approximately 2,400 dwelling units, ranging from 1,800-square-foot townhouses to 5,000-square-foot custom houses. Blackhawk has been a pioneering project in its location, at the edge of the urbanized area near Danville, California.

The project has several hallmarks: a strikingly high level of recreational amenities, intensive landscaping (particularly street trees), a large buffer dedicated to natural landscaping, and a physical identity and sense of privacy engendered by a continuous stone perimeter wall. To a large extent, these defining features are responsible for Blackhawk's success.

THE SITE AND THE PROJECT'S HISTORY

Blackhawk is five miles east of I-680 in rolling hill country. When the property was purchased in 1972, little development of any sort had occurred east of I-680. Access to the site was by two-lane farm roads. Some 20 years later, the area is highly developed with residential subdivisions, business parks, and shopping centers (most notably Bishop Ranch, a large corporate office center just a few miles to the south). Blackhawk remains today at the edge of the urban area, with state parkland and other undeveloped (mostly hillsides) lands to the east.

The 2.5-mile-long site, originally known as Blackhawk Ranch, was purchased for $16 million, or about $3,335 per acre. The site ranges from gentle, rolling hills to steeply sloped canyons. The site had few significant natural features, with the exception of three creeks and a number of mature oak trees dotting the hillsides, which were preserved.

Though the site was attractive in its own right, the project's developers, the Blackhawk Corporation, were convinced that as a community, Blackhawk had to be very different and noteworthy to attract people to this rather remote location, especially the high end of the market they sought. The keys to this distinctiveness were to be recreational amenities, especially golf and landscaping.

Master planning began in 1972. At the time, the site, which is located in the unincorporated area of Contra Costa County, was zoned for general agricultural uses. The original master plan provided for a mix of 4,800 single-family and multifamily dwelling units. The overall gross density was one dwelling unit per acre. Major areas were set aside for permanent open space reserves and for recreational and commercial facilities.

Opposition to the plan came from the Sierra Club and from a group called "Save Mount Diablo," whose principal objections were to any building on the sloping countryside, rather than to the
Two 18-hole golf courses are interwoven with residential areas. About 90 percent of the community’s residences adjoin either golf courses or open space preserves. Lots for custom-built houses fronting on the golf courses receive up to $50,000 more for their views.

Despite these objections, the approval process proceeded relatively smoothly, according to a planning official, primarily because of the master plan’s sophistication. For the county, the plan offered considerably more than the minimum in terms of open space preservation, landscaping, and site amenities. Among the county’s conditions of approval were the requirements that the developer establish an architectural review committee to prescreen applications for residential development and a homeowners association to maintain the open space.

Though the original approved master plan called for 4,800 dwelling units, by the time the developer was planning the first phase of construction in 1976, the developer's strategy and expectations for the project had changed, and a new plan was developed, halving the number of planned dwelling units. The new plan, which focused on single-family detached units and sites for custom houses, was more attuned to the evolving notion of a luxury residential community and the climate for slower growth of the times.

Site construction and lot sales for the first of five phases began in 1977. By 1986, infrastructure and lots were nearly complete, and lots were sold to builders and individuals. Presently, approximately 2,300 of the planned 2,400 dwelling units have been built. In addition, the master developer has constructed a 439,000-square-foot shopping center anchored by a museum complex and an 180,000-square-foot executive office center.

SITE DESIGN AND ARCHITECTURAL FEATURES

The site design at Blackhawk is sensitive to the hilly terrain. Major roads run along the valleys, and secondary roads and culs-de-sac fill small canyons and wind up the hills. The steepest slopes are part of a nearly 1,000-acre open space preserve or have been donated to Mount Diablo State Park. Approximately 60 percent of Blackhawk’s total area (almost 5,000 acres) is thus dedicated to permanent open space.

Two golf courses at Blackhawk (564 acres) are interwoven through the residential areas. Fairways and greens are designed around lakes (which also serve as drainage retention basins). Views from the courses include varied combinations of landscaped berms, residences, lakes, and hillsides. The 18th green at Blackhawk’s Lakeside course is actually an island linked by a footbridge to the adjacent fairway.
With the hillsides of the open space preserve surrounding the community and the two 18-hole golf courses at the core, the residential areas at Blackhawk are all close to open space areas. As many as 90 percent of Blackhawk's residences adjoin either the open space preserve or a golf course, according to the developer.

On the street side, Blackhawk has a very-well-defined system of street trees. London plane trees (a type of sycamore) have been planted approximately 40 feet on center along Blackhawk's residential streets. After 15 years, the oldest phases of Blackhawk have the feeling of much older, mature suburbs as a result of the large leafy crown of the sycamores. The closely spaced trees substantially shield the houses and soften the streetscape, creating a very pleasant public environment.

Residential design at Blackhawk is varied. Constructed by some 40 builders, the housing is designed mostly in period styles, ranging from Tudor to French chateau. A design review board ensures a common palette of building materials.

Blackhawk Plaza, the community's main commercial area, was completed in 1990. The center, which combines specialty and convenience retail stores and 115,000 square feet of office space, is designed around a series of shallow waterfalls and ponds. At the head of the site are two museums, the Behring Auto Museum and the Behring-Hofmann Educational Institute and Museum, affiliated with the University of California at Berkeley. The "mall" tenants lining the water course include a series of high-end specialty shops and restaurants. The restaurants have been well integrated with outdoor seating on peninsulas that jut out over the water. Convenience stores, a seven-screen movie theater, and a supermarket are located on the parking lot side of the center. Still in the initial leasing stage, Blackhawk Plaza is over 80 percent occupied, with more than 70 tenants.
Residents highly value Blackhawk's sense of privacy, security, and exclusivity, reinforced by the precast stone perimeter wall. The wall has become a recognizable symbol for the community, and its design has been copied in other nearby developments.

**PROJECT DEVELOPMENT TEAM**

The development entity for Blackhawk, the Blackhawk Corporation, was formed by Ken Behring and others specifically for this project. Behring had substantial experience in golf communities in Florida before this venture, which he drew on to formulate the strategy for Blackhawk. The president of the Blackhawk Corporation is Stephen P. Beinke, who worked with Behring in Florida and was brought in to direct the development of Blackhawk during early planning.

The original master planner was the firm of Bryan & Murphy Civil Engineers. Doug Dahlin of The Dahlin Group in San Ramon, California, did much subsequent site planning and subdivision design. The Dahlin Group also designed the entryways to Blackhawk, Blackhawk Plaza (including the museums), and some of Blackhawk's residences. The landscape architect for Blackhawk, responsible for the design and development of the street tree program and other areas, was Thomas Baak of Thomas Baak & Associates.

**PROJECT PHASING AND FINANCING**

Blackhawk was developed in five major construction phases between 1977 and 1990, preceded by a five-year planning/approvals stage (1972 to 1976). The land was purchased in 1972 with a note and deed of trust from the seller. With approximately 20 percent down, the balance was financed for up to ten years, with phased releases. Activity during the planning period was financed through lines of credit from major lenders, using the land as security, and cash from stockholders.

Construction loans were obtained for each of the five phases, which covered lot development, amenities scheduled in each phase, and any off-site improvements required for a particular phase (in at least one instance, an assessment district was also formed). Originally lots were sold in bulk for cash to builders. Later, lot sales to builders were financed by the developer; requirements were 20 to 25 percent down and two- to three-year terms.

With an eye to balancing cash flow against marketing, Blackhawk's developer phased in amenities over time. The first recreational facility (a tennis club) was built in the second construction phase, after the first 200 houses were built. Similarly, the golf courses were phased in in relation to major residential phases.

**MARKETING**

The Blackhawk Corporation relied heavily on newspaper advertising to market its new community. For several years, a half-page advertisement was run every Sunday on the front page of the real estate section of the San Francisco Chronicle. In the early days, the ads, which cost $5,000 to $10,000 a week, constituted an awareness campaign; because of Blackhawk's remote location, it was necessary to inform the public that Blackhawk existed and to entice potential buyers off the beaten track to Blackhawk. Homebuilders contributed a percentage of the projected sale price of their houses into a marketing fund, which the Blackhawk Corporation matched. The intent was to sell the 'Blackhawk story' and 'lifestyle' rather than individual builder's products.

The images and themes of the Blackhawk story were rotated, but they always featured photographs of the hills and landscaping. Among the ads' predominant themes were security and privacy (the gates and surrounding hills), recreation (golf and tennis), social life at the club, and the community and family atmosphere. The ad campaigns and other marketing efforts were fine-tuned over the years based on exit interviews at the model homes, questionnaires on the back of visitor passes, in-depth surveys of buyers performed by the homebuilders, and real estate agents' surveys of prospective buyers.

The half-page ads continued every week for several years. In the beginning, the ads were extremely successful in generating traffic: 400 to 500 people made the trip to Blackhawk each week, wanting to see Blackhawk, even if they could not afford it or were not in the market. Later, however, during the recession of the early 1980s, few visitors came, but the Blackhawk Corporation...
continued the ads to keep Blackhawk at the forefront of attention.

By the mid-1980s, real estate had picked up again and Blackhawk's sales took off, increasing from 100 to 150 lots per year from 1980 to 1982 to 350 to 450 lots per year between 1985 and 1986. With the community well established by this time, the ads were discontinued in favor of word of mouth and other information sources.

A second form of marketing that proved successful for Blackhawk was the staging of "events" to draw potential buyers to the site. In 1987, for example, Blackhawk staged a "Tour d'Elégance." Nine houses were constructed, fully furnished and landscaped, and opened to the public for six weeks. The highly publicized event was linked to a charity fundraiser and $10 admission charged. Blackhawk's marketing department arranged for decorators and landscape designers to donate their efforts. The result of the elaborate event was that over 40,000 people toured the houses and 140 lots and houses were sold in the six weeks.

LANDSCAPE AND AMENITIES

LANDSCAPE AND HARDSCAPE

Landscape and amenities were considered key elements of Blackhawk from the beginning of planning. The developers evaluated the characteristics of several community types, according to the project's architect, and decided that they wanted Blackhawk to have the dense greenery of a typical mature suburb.

For the street trees, the developer wanted a species that had a large canopy that would shield houses and soften paved streets, was relatively fast growing, and required relatively little maintenance. They chose the London plane tree, a kind of sycamore. Fifteen-gallon specimens were planted at 40 feet on center to create the desired density. (In comparison, a more typical spacing would be as much as 60 feet on center, or one tree per lot.) Typically, the London plane tree matures to a 50-foot crown after 12 to 15 years. At Blackhawk, the street trees in Hidden Oaks, the first subdivision constructed, matured in 15 years to the point where the canopies of trees on opposite sides of the street almost touched at the center.

A similar level of attention was devoted to the hardscape at Blackhawk. To provide a sense of exclusiveness, security, and privacy, the master plan called for perimeter fencing. After some experimentation, a precast modular stone and concrete wall was developed that appears similar to a site-built, randomly cut stone wall. The precast wall is comprised of sections of shop-poured concrete with random stones cast in. The sections are joined in the field and additional stones mortared in over the joints to give the appearance of a continuous stone wall. The precast wall, which uses Bouquet Canyon stone from southern California, was so successful that it came to be called a "Blackhawk Wall" and has been copied extensively in the area.

The use of stone was carried beyond the perimeter wall and used in the construction of gatehouses at the major entries to Blackhawk. In addition, a stone bridge was constructed over one of the golf course lakes that runs under the road just beyond the gatehouse. The stonework at Blackhawk is substantial and adds to its feeling of maturity.

Blackhawk has several water courses, including four lakes developed in conjunction with the two golf courses, several small waterfalls, and one larger waterfall that is lit at night.

RECREATIONAL AMENITIES

In addition to the open space preserves and landscaping, Blackhawk includes a substantial number and range of active recreational facilities:

- Golf Courses
  - Lakeside course
    - 18 holes, 6,950 yards
    - Designed by Bruce Devlin and Robert Vonhagge
  - Falls course
    - 18 holes, 6,500 yards
    - Designed by Ted Robinson
- Blackhawk Sports Complex
  - 15 acres total
  - nine lighted tennis courts, including center court
  - two volleyball areas
  - one full basketball court
  - Olympic-size lap pool
  - tot lot and wading pool
  - snack bar, pro shop, lounge, picnic and barbecue areas
- Tennis and Swim Club
  - 11 lighted tennis courts
  - four racquetball courts
  - AAU-competition lap pool
- clubhouse with patio, lounge, pro shop, locker rooms
- Country Club
  - 40,000-square-foot full-service clubhouse for the Lakeside course overlooking the 18th island green (10,000-square-foot island) and four-acre lake
- 18,000-square-foot clubhouse for the Falls course
- two golf pro shops
- Open Space Preserve
  - 966 acres dedicated to permanent open space in addition to 2,035 acres deeded to Mount Diablo State Park
- Linear Park
- Jogging Trails
- Two Soccer Fields

CONSTRUCTION COSTS AND OPERATING EXPENSES

The total cost of construction for landscaping and recreational amenities at Blackhawk was approximately $37.2 million, or 35 percent of the $104.4 million total cost of site improvements. The golf courses, clubhouses, and tennis and sports clubs accounted for almost 70 percent ($25 million) of the $37.2 million. Other active recreational facilities added $2.5 million, bringing the total percentage of active recreational facilities to 76 percent of the total outlay for landscape and amenities. The landscape and amenities cost an average of about $15,000 per dwelling unit.

Landscaping, though highly visible, accounted for only $800,000 (less than 1 percent of total site improvement costs). Most of that amount was spent for street trees and landscaping in the parking area ($500,000), the remainder for special plantings and irrigation.

Relative to its competition and the market in general, Blackhawk has invested heavily in recreational amenities. Few, if any, projects in the East Bay offer two 18-hole golf courses or as substantial a package of recreational amenities. In contrast, the more extensive landscaping at Blackhawk, particularly the street trees, added very little relative cost. The trees, placed at 40 feet on center, result in about 50 percent more trees than the more typical 60-foot spacing, adding an extra $150,000, or less than $100 per lot.

Annual operating expenses at Blackhawk are $1.6 million. Of this total, maintenance of landscaping and amenities accounts for $586,000, or 36 percent. Almost all operating costs for landscaping and amenities are attributable to planting ($270,000), open space maintenance ($82,000), and irrigation ($67,000).
VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER

Though it is difficult to quantify, the developers of Blackhawk believe that landscape and amenities were critical to the success of their project. The area around Blackhawk was mostly undeveloped, with a semirural feel. The developer used landscape and amenities to create an image for the community, an image of a comfortable life in comfortable surroundings. The marketing program relied heavily on images of the landscape and amenities in an attempt to lure people to visit Blackhawk. Marketing relied heavily on the landscaping, the stone walls, and the recreational facilities to create an image of success and exclusivity, to define the project as a luxury community.

Once visitors came to Blackhawk, they could see for themselves that Blackhawk was different, that it had a physical coherence and maturity, and that the developer had made a substantial commitment to providing extensive recreational facilities. Visitors to the newer phases of the project could see what the newly planted sycamores would look like in five or ten years.

The developer believes that the substantial investment in amenities and landscape has paid for itself in higher sale prices and faster absorption. Because it was so different, Blackhawk attracted much attention and generated many prospective homebuyers. The result was sales of 350 to 450 units per year, sustained over several years, a level far exceeding anything else in the market area.

Lots adjoining the open space preserve and the golf courses earned premiums. Custom lots with views of or abutting the golf courses earned $25,000 to $50,000 extra. It is not possible to quantify the premiums for bulk lot sales to builders, but the developer believes they earned a premium for being located within the boundaries of Blackhawk.

Of all the landscape features and amenities at Blackhawk, the developer considers entryway planting and structures, water features, the open space preserve and linear parks, and golf and tennis facilities to be of highest value. Items considered of lesser value but still significant are jogging trails and swimming facilities, and general streetscape, signage, and lighting.

Landscape and amenities also appear to have played a positive role in the approvals process. According to the county planner, because Blackhawk was a well-planned project with substantial open space and amenities, the county advanced little opposition to the project. Though some local opposition arose to the project, the county did not require substantial changes to the project's scope or design. The donation of land to the adjacent state park was apparently significant in diffusing local concern over the project, but it was not explicitly a requirement for approval.

Design elements from the perimeter stone wall are repeated in the interior of the community in bridges, roadway medians, and gatehouses.

Blackhawk's tennis and swim club includes 11 lighted tennis courts, and another nine lighted courts are located in the sports complex. Tennis facilities have a high market value.
### VALUE MATRIX

<table>
<thead>
<tr>
<th></th>
<th>Higher Rents/Sale Prices</th>
<th>Higher Satisfaction among Tenants and Residents</th>
<th>Higher Retention of Tenants and Residents</th>
<th>Higher Occupancy Levels</th>
<th>Lower Turnover</th>
<th>Long-Term Equity</th>
<th>Faster Absorption or Leasing</th>
<th>Higher Sales per Square Foot</th>
<th>Higher Retail Traffic</th>
<th>Price Increases</th>
<th>Faster Approvals</th>
<th>Premiums</th>
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</tbody>
</table>

* = High  ○ = Medium  += Low

Note: High, medium, and low represent the developer's overall impression of the value of amenities.

### SITE IMPROVEMENT COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Grading</td>
<td>$26,400,000</td>
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<tr>
<td>Sewer, Water, Drainage</td>
<td>$15,900,000</td>
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<tr>
<td>Paving</td>
<td>$9,900,000</td>
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<tr>
<td>Curbs, Sidewalks</td>
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<tr>
<td>Landscaping, Irrigation</td>
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<td>Recreational Amenities</td>
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<td>Fences, General Conditions</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$104,435,000</strong></td>
</tr>
</tbody>
</table>

Essentially, Blackhawk gave the county more than its regulations required in terms of landscaping and amenities, which generated a certain amount of good will, in turn benefiting the developer in master planning and subsequent subdivision of lots.

### VALUE TO RESIDENTS AND THE COMMUNITY

According to surveys undertaken by the developer and several homebuilders, landscape and amenities have been dominant factors in attracting homebuyers to Blackhawk and in residents' satisfaction. Some of the most important issues to homebuyers have been security and privacy and the fact that Blackhawk is self-contained within its walls and guard gates. Earlier, Blackhawk was one of a very few gated communities in the market area.

A second group of features of major importance to residents is the active recreational facilities, particularly golf and tennis. According to Blackhawk's marketing consultant, advertisements in golf publications were a significant draw for prospective homebuyers. Related to golf in the marketing was "social life at the club," featured in newspaper advertising.

A third constellation of features prospective buyers and residents identified is the "look and feel" of the landscape. Included in this group of features are...
views of the surrounding hills, street trees, plantings in the road medians, and other special plantings. The parkway landscaping was particularly dramatic in the earliest phases of the project, in contrast to the original unpaved roads approaching the development.

An indication of how synonymous Blackhawk has become with a high level of landscape and amenities comes from a recent advertisement for another new community in a different Bay Area market, some distance away. A full-page ad that presents a line-by-line itemization comparing the new community with Blackhawk.

For the community at large, Blackhawk’s impact has been to establish new standards for high-quality development. The legacy of Blackhawk is the idea that substantial landscape design and amenities are inherent features of a high-quality community.

**SUMMARY AND CONCLUSIONS**

Landscape and amenities have clearly been instrumental in the successful development of Blackhawk.

- Landscape and amenities were critical to the creation of an identity and image for Blackhawk. The hills and tree-lined streets and the extensive golf and tennis facilities were marketed heavily to define the character of Blackhawk as a luxury community and a desirable place to live.
- The extensive facilities were responsible, according to the developer, for the above-normal interest in the community, the high number of visitors to the community, and ultimately the rapid absorption. At its peak, over 400 houses per year were sold, substantially above anything else in the market area.
- The landscape and amenities were also responsible for substantial premiums in lot and house prices, up to $50,000 for custom lots adjoining the golf courses.
- The closely spaced sycamore trees along Blackhawk’s residential streets gave the feeling of maturity to Blackhawk in a relatively short time, thus helping to sell the remaining sections of Blackhawk. In essence, the landscaping of Blackhawk’s early parts served as a marketing tool for later phases. The mature landscape also aided in maintaining resale values.
- The use of precast stone fencing was very successful and cost-effective. Prospective residents have found the stone wall aesthetically desirable and a method for establishing privacy and exclusivity.
- The use of stone in entry gatehouses and the bridge further reinforces the imagery established by the “Blackhawk Wall.”
- The water courses at Blackhawk, which double as retention basins,
Blackhawk's exclusive image and the privacy of its residents are furthered by guarded gates and restricted access.

have proven to be very attractive and cost-effective. The manmade waterfalls are similarly attractive, but maintenance costs are high, mainly because of the costs of operating the electrically powered pumps.

+ The development of Blackhawk Plaza around a series of waterfalls and pools has created a very pleasant pedestrian environment. It is too early to tell, however, whether the innovative design and mix of cultural facilities (museums), theater, and specialty and convenience shopping will be successful.

Overall, the high level of landscape and amenities appears to have been a positive factor in the approvals process. By exceeding county standards and requirements, the approvals process was less adversarial and more cooperative. Though some opposition surfaced to the project, the county approved the master plan without significant changes. Subsequent applications for development approval of each phase of construction also appear to have benefited from the good will engendered by the provision of extensive landscape and amenities.

+ For residents, Blackhawk's landscape and amenities were high on the list of factors influencing their decision to buy a house at Blackhawk. For some, the landscape and proximity to open space were paramount. For others, the privacy and/or exclusivity of the gated community was appealing. And for yet another group, the recreational facilities, particularly golf, were the most significant draw.

+ For the community at large, Blackhawk has set the tone and standards for quality for this part of the Danville/San Ramon area. As one of the first developments and one of the largest in the area, the direction it has taken in terms of landscape and amenities has been influential. The developer's provision of extensive recreational facilities has to some extent relieved the local jurisdiction of the necessity to provide them.
Originally built in 1972, 7979 Westheimer had fallen into severe disrepair before its renovation in 1989. In addition to improvements in architecture and landscape design, the renovation included a reduction in the number of units from 484 to 459 and the elimination of 234 parking spaces. Reducing the amount of covered and paved area allowed space for more landscaping and recreational amenities.

GENERAL DESCRIPTION
The thorough renovation of this 459-unit apartment complex, built in 1972, set a new standard for rehabilitation of multifamily housing in Houston. The renovated apartments, near Houston's Galleria shopping mall, have been nearly fully leased since opening and have garnered much attention and enthusiasm for upgrading other existing multifamily complexes in the Houston area.

The Houston-based Finger Companies owns and manages about 8,000 apartment units throughout Houston and is noted for its emphasis on landscaping and maintenance in its projects. The company revitalized inside and out the abandoned flat-roofed brick and clapboard buildings, which contain both flats and two-story townhouses. By adding simple design details like pitched roofs and lighter colors and increasing open space and landscaping, it turned an eyesore into an attractive, eye-catching oasis along a heavily traveled arterial highway.

The developers, Marvy and Ronald Finger, identified four major problems with the project: its rundown appearance, heavy water damage, outdated kitchens and bathrooms, and high density. But because the buildings were structurally sound, the location top-notch, and the demographics favorable, the developers were able to transform the site into one of Houston's hottest properties.

PROJECT HISTORY
In its heyday, the project, originally named Westover Square, was a popular singles complex known for its on-site nightclub. But frequent changes in ownership and inadequate maintenance caused rapid deterioration, and the property was eventually shut down by the city of Houston for a variety of code violations. At the time The Finger Companies purchased the complex, it was a foreclosed property owned by Aetna Life and Casualty.

The Finger Companies purchased the property for $6.2 million and spent $7.65 million in renovations and construction, for a cost of $16,700 per unit ($30,000 per unit, including acquisition costs). The developers originally intended to rent units for $.52 to $.54 per square foot, but, in the end, units rented for $.70 to $.77 per square foot. (In comparison, new construction in the Houston area gets $.82 to $.84 per square foot.) Today, the property is valued at about $20 million (1991 dollars). The Finger Companies obtained financing through Copley Real Estate Advisors of Boston, with which it had previously teamed for successful rehabilitation of a multifamily project.
Units on the central greenbelt are in much demand and rent for about 10 percent more than comparable units in the complex. Overall, rents at 7979 Westheimer are about 15 percent higher than for competitive projects.

BUILDING RENOVATION

One of the biggest problems in the renovation was deciding how far to carry the improvements. Daily decisions were necessary about what to save and what to alter. Much attention was focused on making the buildings watertight by reroofing them and repairing the facades. New stucco, masonry lap siding, and brick veneer work were added as needed.

The change in architectural details of the exterior and the colors throughout gave the project a much more up-to-date feeling. Decorative chimney elements outlined in blue-gray and ochre accompanied the change from a flat roof to a pitched roof with gables on the post-and-beam structure. Peach-colored awnings, new iron fencing, and blue and white highlights provide a warm contrast to the light gray, painted brick and clapboard siding. Balcony and patio enclosures were added.

The developers retained the basic floor plan of the apartments with minor modifications as needed, such as shortening the living/dining room space of the townhouses to add a washer/dryer area or opening up some of the kitchen by extending a countertop into the living room. The developers determined that the complex contained too many one-bedroom units, so they combined 36 one-bedroom apartments to form 24 two-bedroom units. Every interior space had new drywall installed as well as new carpeting, floor tiles, refrigerators, stoves, dishwashers, microwaves, washer/dryers (in the three-bedroom units only), walk-in closets, and ceiling fans in the bedrooms. Window frames were replaced as needed.

The renovated apartments are generally larger than newly constructed apartments in the market. They have good natural ventilation (each apartment extends the width of the building and outdoor space in the form of balconies and patios. Many apartments have a small front yard, providing a sense of separate entrance. In addition, the complex features valet laundry and dry-cleaning services in the clubhouse, controlled-access gates, assigned parking, on-site management and 24-hour emergency maintenance, and four air-conditioned laundry rooms.

MARKETING AND MANAGEMENT

Initial marketing was fairly simple because of the superb location. While renovations were under way, the developer put up two billboards with phone numbers on either side of the property. Within seven months, the property was 95 percent leased, mostly as a result of the drive-by traffic responding to the billboards and the complex's dramatically changed appearance. For subsequent leasing, The Finger Companies has relied heavily on the Houston Apartment Guide and apartment locator services. While it also retained an in-house marketing professional for the Houston area properties, drive-by traffic still generates the largest number of inquiries.

For now, The Finger Companies has also been helped by a local shortage of rental housing. Few multifamily units have been constructed recently, and, with the region's general economic resurgence, overall occupancy rates have risen from 81 percent to 92 percent. As a result, leasing 7979 Westheimer required no tenant concessions.

The Finger Companies has a property management arm to handle its 8,000 multifamily units at 7979 Westheimer and elsewhere. The company pays attention to such details as landscaping, building maintenance, and policies for tenants, assuming that properties will continue to produce good income in return for good maintenance and tenant services.

LANDSCAPE AND AMENITIES

SITE AND LANDSCAPE IMPROVEMENTS

The newly designed and heavily landscaped entrance, highlighted by an attractive glass-block sign, is a sharp contrast to commercial property to the east and the 60 acres of vacant land to the west on the heavily traveled (over 80,000 vehicles per day) Westheimer commercial strip. Visible from the entrance is the redesigned two-story clubhouse with its dramatic pitched roof and glass-block entrance, which serves as the health club, party room, and leasing office for 7979 Westheimer.

Many features of the original site plan were left intact, but the ends of some buildings were removed to break up the monotony and sense of enclosure caused by long rows of buildings with no intervening green space. Mature trees were left standing wherever possible. Four small 40-foot by 20-foot
pools, each located in an interior courtyard, were retiled, plastered, repaired, and landscaped. Two additional larger pools, including a 60-meter Olympic-size lap pool, were installed near the renovated two-story clubhouse, replacing an unsightly parking area.

Originally, the complex was overwhelmed with parking, with 1.88 spaces per unit. Parking was reduced by approximately 25 percent, lowering the ratio to 1.48 spaces per unit, and it was still well within the city's required parking ratios of 1.55 spaces for one-bedroom units, 1.66 spaces for two-bedroom units, and two spaces for three-bedroom units. Carports were removed and not replaced. Landscaped islands were added to break up long, unattractive rows of parked cars. Today, approximately 38 percent of the site includes landscaping and recreational uses.

**LANDSCAPE FEATURES**

The first noticeable feature of the landscape plan is the frontage on Westheimer. A 30-inch-high berm was added along the entire 600-foot frontage and was planted densely with 3,500 small plants, including juniper and holly bushes. The intent was to create a finished look along this frontage and to install a thick barrier that would decrease traffic noise and glare and discourage people from attempting to cross over the fence. Color was introduced through the use of perennials like Mexican oleander and rudbeckia around the main entrance sign. Perennial species are not commonly used in commercial landscaping in Houston, and maintenance staff had to be trained not to remove them each winter when they go dormant.
Within the complex, The Finger Companies wanted to create a landscape that would be distinctive in the Houston market and more typical of southern California. The owners believed that the emphasis on landscaping would help to create an identity for the project and maintain higher occupancy levels. To help achieve this goal, 600 mature palm trees were planted throughout the site; however, during the winter of 1989-90 while renovations and initial leasing were under way, Houston experienced an unusually severe freeze that lasted several days. Although they would normally thrive in Houston's warm climate, virtually all of the palm trees were killed during the freeze. Because of the cost and the risk, the developer decided not to replace the palm trees. The trees did, however, help to establish an identity for the project.

Working closely together, the landscape architect and developer determined early to take maximum advantage of the existing plants on the site that had survived years of neglect. About 20 mature trees and specimen shrubs were left in place. Plants that had to be removed to make way for the renovations were stored over the winter in a temporary greenhouse on a portion of the parking lot and were later replanted in other locations on the site. More cost-effective than purchasing new plants of comparable size, it also gave the project a more finished appearance than new, smaller materials.

Overall, the goal of the developer and landscape architect was to accentuate the renovation of the buildings and help sell the project with the appearance of the grounds. To this end, the number of plants installed on the site was approximately twice the number that would be found in typical Houston apartment projects. The diversity of plant species was also much greater than the norm. The landscape contractor (who also designed the landscape plan) was given considerable flexibility to select and locate species at his discretion. The designer/contractor's intent was to create a continual series of small gardens, each with its own identity; he also wanted to achieve a less manicured look than would be typical to the market.

A variety of new trees were planted throughout the site, including coast live oak, sago palms, cherry laurel and Bradford pear (around the pool), Japanese black pine, and Jerusalem thorn trees (for color and texture). Most of the new trees at the time of planting had trunks of five to six inches in diameter. To break up long lines of parked cars, landscaped fingers were cut into the parking lot, most the size of two parking spaces. Arizona ash trees were planted in those areas because of their fast growth and their ability to tolerate higher soil temperatures (which can be 15 degrees higher than in open, softscape areas).
The owners and landscape contractor also elected to use a more expensive, but more durable, mulching material throughout the grounds. "Pine straw," comprised of pine needles, was placed on all exposed soil areas and adjacent to buildings. The material is more resistant to erosion from wind and rain than more common mulching materials. It is especially effective in areas where rain runoff from building roofs can create unsightly gullies and wash away ground cover and other plants.

The design also made extra effort to go beyond the Houston standard in the project's hardscape. Sidewalks were installed five feet wide instead of the usual three feet and were constructed of concrete with exposed aggregate instead of the typical smooth concrete. The layout has many angles, corresponding to the paths that pedestrians most likely would want to follow.

The project also includes several water elements, mostly for the active recreation of residents. Two large pools, serving as the key active-use and visual amenities of the project, are located between the clubhouse and the central greenbelt. Rather than building one large pool, the designer achieved a more dramatic effect by separating the area into two pools, including one heated lap pool four feet deep and one unheated recreational pool of graduated depth. The lap pool was built at a grade about three feet above the recreational pool to give the perception of topographic relief; fountains were added to the lower pool to make it appear as though the upper pool flows into the lower pool. Three wide brick steps accommodate the change in grade; they were designed as informal sitting areas and locations for potted plants and flowers. The long lap pool was aligned in the direction of the greenbelt to accentuate the vista down the greenbelt and to reinforce the landscaped "mall" effect.

In addition to the two main swimming pools, four small pools in courtyards were repaired and retained in the plan. These pool areas are landscaped with lush, tropical plants, offering quiet areas for sitting and swimming. A landscaped water garden was created in the center of the central greenbelt at the point where runoff tends to collect. That garden is planted with water-loving plants, such as lilies and cattails.

RECREATIONAL ACTIVITIES
Active-use recreational amenities are concentrated in and around the clubhouse, with the primary focus the two swimming pools and adjacent patios. The clubhouse contains a much-used weight room, an aerobics room (classes are offered three times per week), and a party room with wide-screen television and bar that is available to tenants by reservation.

LANDSCAPE IMPLEMENTATION AND MAINTENANCE
The Finger Companies played a hands-on role during the design and implementation of the landscape program. Rather than contract with a design firm to prepare the overall plan, the owners selected a local landscape maintenance contractor with a licensed, in-house landscape architect to prepare the initial design. The owners believed that the contractor, who would eventually install and maintain the landscaping and who had considerable experience with maintaining large apartment projects, was well suited to prepare a plan that would be somewhat distinctive without being overly expensive to install and maintain. The owners and the contractor worked closely together throughout the process.

The project's landscape features a lush, naturalized look that does not require excessive maintenance. Grass that requires constant mowing and care is used in the central greenbelt but sparingly throughout the remainder of the grounds. Most shrubs are allowed to take on natural shapes, minimizing the need for constant trimming. Perennial flowers are used in combination with beds of annuals to introduce color at key locations. The maintenance budget provides for beds of annuals to be replanted twice per year, at a cost of about $1,200 to $1,500 for each replanting.

The annual budget for landscape maintenance breaks down to about $8.00 per unit, considered in line with other apartment projects in Houston. Based on rentable square feet, the budget for maintenance, irrigation, and semi-annual replanting of annuals amounts to about $.22 annually, or about 2.5 percent of the total rent generated. The quality of the project's landscape design continues to play an important role in marketing the project to new tenants. Maintenance is also important to prospective tenants, who often judge an owner's commitment to the property by the appearance of the grounds.
MARKET AREA COMPARISON

<table>
<thead>
<tr>
<th>Project Name</th>
<th>Number of Units</th>
<th>Year Built/Renovated</th>
<th>Distance from 7979 Westheimer</th>
</tr>
</thead>
<tbody>
<tr>
<td>7979 Westheimer</td>
<td>459</td>
<td>1972/1990</td>
<td>-</td>
</tr>
<tr>
<td>Westside Club</td>
<td>432</td>
<td>1977/1986</td>
<td>0.5 mile</td>
</tr>
<tr>
<td>Water Mill</td>
<td>192</td>
<td>1968/1986</td>
<td>0.6 mile</td>
</tr>
<tr>
<td>Times Square</td>
<td>129</td>
<td>1968/1991</td>
<td>0.7 mile</td>
</tr>
<tr>
<td>Waters of Winrock</td>
<td>116</td>
<td>1967/1989</td>
<td>1.0 mile</td>
</tr>
<tr>
<td>Park at Woodlake</td>
<td>564</td>
<td>1973/1991</td>
<td>1.4 miles</td>
</tr>
<tr>
<td>Beverly Palms</td>
<td>362</td>
<td>1967/1989</td>
<td>1.4 miles</td>
</tr>
<tr>
<td>Coral Club</td>
<td>220</td>
<td>1970/1991</td>
<td>1.5 miles</td>
</tr>
<tr>
<td>Woodlake on the Bayou</td>
<td>511</td>
<td>1975/1988</td>
<td>1.5 miles</td>
</tr>
</tbody>
</table>


The time required to lease the project following its renovation;
- Higher rent than competitive projects;
- Higher occupancy levels than competitive projects;
- The developer's ability to obtain long-term equity in the real estate holding.

In the case of 7979 Westheimer, the approvals process was not considered a significant factor by which to measure the value of the project's amenities, as Houston is noted for the ease with which development approvals can be obtained. Further, Houston had experienced a severe real estate recession during the 1980s, and, by the end of the decade, the city was anxious to promote development. The city was especially willing to approve 7979 Westheimer, because the property had been closed for safety code violations and was an eyesore that added little to the city's tax base.

LEASING RECORD

The project was 95 percent leased within seven months from the date leasing began. By Houston's standards, this brief leasing period is a notable success. The developer attributes the success to the project's location, an improved local market for quality rental housing, and the project's appearance from the frontage on Westheimer. The developer believes that the 80,000 vehicles traveling on Westheimer each day were the best marketing tool available. Virtually all of the initial leases were a result of drive-by traffic and the response to the new look of the complex. Although its contribution cannot be isolated, the landscaping along the Westheimer frontage and around the clubhouse (which is visible from Westheimer) was an integral part of the project's new image. The leasing staff used landscaping and grounds maintenance to help sell the project to prospective tenants, mentioning "lush and dramatic landscaping" in the project's brochure.

According to the on-site leasing manager, drive-by traffic continues to be the primary source of prospective tenants. Other visitors include the curious who are merely interested in seeing more closely the improvements made to the property.

RENTAL RATES AND OCCUPANCY LEVELS

The table above compares 7979 Westheimer to rental apartments in the Greater Houston area and the more local Galleria market area. The Galleria market area includes 16,711 units in 86 operating projects. Of these units, 14,256 (about 85 percent) were constructed before 1974, and only 592 new units have been added since 1980. Over 7,000 units, however, have been renovated since 1980. As shown in the table, 7979 Westheimer achieves substantially higher rents and higher occupancy levels than the average for either the city as a whole or for the more local Galleria market area. Compared to the Galleria market area, 7979 Westheimer

VALUE OF LANDSCAPE AND AMENITIES

Because no official tenants association or other similar structure exists through which to survey or interview tenants, this study relies on information obtained from the property manager as to the perceived value that tenants assign to the project's landscape and amenities.

VALUE TO THE DEVELOPER/OWNER

The potential value added to the project from the developer's perspective can be measured in several ways:
achieves rents of $0.77 per square foot (versus an areawide average of $0.59 per square foot) and attains an occupancy level of 96 percent (versus an areawide average of 88.6 percent). When compared to eight other specific apartment projects within a 1.5-mile radius in terms of rental rates, occupancy levels, unit sizes, amenity packages and security packages, all large apartment complexes renovated between 1986 and 1991 offering similar units, similar location, and similar recreational amenities, 7979 Westheimer stands out as having exceptional landscape features.

Indications are that 7979 Westheimer has substantially outperformed its immediate competition. As of June 1992, 7979 Westheimer achieved an average monthly rental rate of $0.76 per square foot per month and a median monthly rental rate of $0.782 per square foot per month. The eight competitive projects selected for study received an average of $0.662 and a median of $0.651 per square foot per month. The difference in rental rates is thus about 15 percent, in line with the developer/owner's belief that 7979 Westheimer achieves a premium for rental rates of 10 to 20 percent over the competition. Because the location and level of services and recreational amenities are generally comparable, the developer attributes most of the premium to the project's general appearance, including architecture, landscaping, and attention to maintenance.

Newly constructed apartments in the Galleria market area receive rents of $0.82 to $0.84 per square foot per month, about 7 to 10 percent above 7979 Westheimer. The development costs for newly constructed units, however, substantially exceed 7979 Westheimer's costs of approximately $30,000 per unit.

As for occupancy levels, 7979 Westheimer's occupancy rate of 96 percent in May 1992 substantially exceeds the average for the Galleria market area of 88.6 percent. Occupancy rates have also outperformed the eight competitive projects selected for study; they averaged 85.6 percent in May 1992.

EQUITY AND LONG-TERM FINANCIAL RETURN

The site acquisition and development/renovation costs for 7979 Westheimer total approximately $13.75 million. As of year-end 1991, the project was valued at approximately $20 million, a 48 percent gain on the original investment over approximately two years. It is difficult to estimate the contribution that the project's landscape and amenities made to this rapid appreciation, but the developer believes that the attention paid to landscaping and maintenance was essential in creating a new image for the project and the successful leasing. The landscaping, in turn, depended on the developer's decision to eliminate portions of several buildings and 254 parking spaces, which helped to eliminate the perception of high density. Further, the developer believes that the landscape and commitment to its maintenance will make 7979 Westheimer a desirable address over the long term and put it in an even better competitive position.

VALUE TO USERS

No organized tenants association exists at 7979 Westheimer, and no survey has been conducted of tenants' likes and dislikes about the project, its landscape, and its amenities. For this study, however, researchers interviewed the project's full-time property/leasing manager to determine the degree to which tenants value the project's landscape and amenities.

The property/leasing manager believes the appearance of the project from Westheimer has been essential to its successful leasing. The architecture of the first row of apartment buildings, the internally lit glass-block sign at the main entrance, the controlled-access gates, the visibility of the clubhouse with its striking internally lit glass-block pillars, and the extensive, well-maintained landscaping along Westheimer have contributed to the project's curb appeal. It is not possible to weigh the significance of each factor, as they work in unison to create a single, positive image for the project.

Once inside the main gate, prospective tenants are enticed by the extensive beds of flowers and landscaping mate-
The property/leasing manager believes that the most actively used amenities are the two main pools and the aerobics/weight rooms. The most appreciated passive amenities are the landscaped grounds (and maintenance of them) and the controlled-access gates.

**VALUE TO THE COMMUNITY**

For the most part, the benefits to the citizens of Houston (and especially the citizens of west Houston) as a result of the project's landscape and amenities are indirect. For example, the renovations and landscape have greatly improved the appearance of the site. From Westheimer, a rundown property is transformed into an attractive community featuring lush and well-maintained landscaping. Although these visual changes are hard to quantify, the occupants of the 80,000 vehicles that pass by the 600-foot frontage each day must appreciate them.

More directly, the renovations and improvements to the grounds have added substantially to the city's tax base. In 1989 (at the time of acquisition), the project was assessed at $5.5 million, which generated approximately $120,000 per year in real estate taxes. In 1992, the property was assessed at $12.5 million and generated approximately $512,000 in taxes. Thus, the difference in the annual economic return to the city is approximately $192,000 per year, or $418 per unit, although it is uncertain what percentage of this difference can be assigned to landscape and amenities versus other improvements.

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**RESIDENTIAL UNIT INFORMATION (after renovation)**

<table>
<thead>
<tr>
<th>Square Feet</th>
<th>Number of Units</th>
<th>Monthly Rent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Bedroom</td>
<td>614-748</td>
<td>254</td>
</tr>
<tr>
<td>One-Bedroom/Study</td>
<td>923</td>
<td>241</td>
</tr>
<tr>
<td>Two-Bedroom/One-Bath</td>
<td>928-1,212</td>
<td>123</td>
</tr>
<tr>
<td>Two-Bedroom/Two-Bath</td>
<td>1,682</td>
<td>16</td>
</tr>
</tbody>
</table>

**DEVELOPMENT AND OPERATING COST INFORMATION**

- Project Acquisition Cost: $6,200,000
- Renovation and Improvement Cost: $6,400,000
- Soft Costs:
  - Architecture/Engineering: $100,000
  - Project Management: $150,000
  - Leasing/Marketing: $100,000
  - Taxes/Insurance: $175,000
  - Title Fees: $75,000
  - Construction Interest and Fees: $650,000
- Total: $7,250,000
- Total Development Cost: $7,650,000
- Total Acquisition and Development Cost: $13,750,000
- Total Estimated Annual Operating Expenses: $1,275,000

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ruals around the clubhouse and by the views of the two largest swimming pools from the rental office. The property/leasing manager believes that the appearance of the grounds and the initial landscape plan and its maintenance are key factors in the project's success, as prospective tenants frequently use grounds maintenance as a gauge of the property owner's overall commitment to maintenance and service. Two full-time staff members are employed on the site for grounds maintenance, and the owners of The Finger Companies survey the grounds monthly and correct any problems immediately.

One criterion on which to measure the degree to which tenants value a project's landscape features is the amount of money they will spend for a unit adjacent to a primary landscape feature. At 7979 Westheimer, a two-bedroom townhouse unit overlooking the central greenbelt rents for $905 per month, while the exact same unit not next to the greenbelt (and without fencing around the patio) rents for $830 per month. Thus, units next to the greenbelt rent for approximately 10 percent more. Vacancies of only a few days are common for units abutting the greenbelt.
WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: May 1992

DIRECTIONS
From Houston Hobby Airport: Take I-45 north approximately four miles to 610, and go west on 610 approximately 15 miles. Exit at Westheimer Road (Highway 10F3). Travel west on Westheimer three miles past the Galleria shopping center. The project is on the left.
Driving time: 20 minutes in non-rush-hour traffic.

DEVELOPMENT SCHEDULE
Original Project Opened: 1972
Project Purchased for Renovation: May 1989
Renovations Started: November 1989
First Residents Moved In: January 1990
Renovations Completed: July 1990

DEVELOPER
The Finger Companies
99 Detering, Suite 200
Houston, Texas 77007
(713) 864-3313

LANDSCAPE ARCHITECT
Sun Landscaping, Inc.
10322 Cliffwood
Houston, Texas 77035
(713) 721-8904

ARCHITECT
Mark S. Muraneey, AIA
1964 West Gray, Suite 201
Houston, Texas 77019
(713) 524-8335

INTERVIEWEES
Dealer
Jaff Gray, vice president
The Finger Companies
99 Detering, Suite 200
Houston, Texas 77007
(713) 864-3313

Property Manager
Shally Dubois
7979 Westheimer Apartments

Rental Market Specialist
Raymond Campbell, director of sales
Apartment Data Services, Inc.

Landscape Architect
Keith Losee
Sun Landscaping, Inc.

Public Agency
Marlene Gaffick, staff planner
Houston Planning Department

SUMMARY AND CONCLUSIONS

The developer believes the decision to eliminate 25 apartments and 234 parking spaces was vital to the project's eventual success. The decision allowed for a larger portion of the site to be landscaped and helped to reduce the feeling of high density. The project's most important amenity, the central greenbelt, was built on what was previously a large parking lot.

The frontage on Westheimer proved to be the project's most important marketing tool and helped the project to attain 95 percent occupancy within seven months. Virtually no other marketing costs were incurred during this period. The extensive landscaping installed along the frontage was an important factor in establishing the project's new, updated appearance from the street, although it cannot be separated from the new architecture, signage, and fencing added at the same time.

The project's landscape and amenities continue to play an important function in marketing. Landscape maintenance is equally important to prospective tenants, who often judge an owner's overall commitment to the property by the quality of grounds maintenance.

The owners achieved a distinctive landscape by assuming a hands-on role in the design and implementation of the project. The landscape contractor's personal involvement in design and implementation helped to reinforce the plan, distinct in the Houston apartment market.

Despite the extra landscaping (about twice the plants found in comparable Houston projects) and the commitment to maintenance, landscape maintenance costs per unit are comparable to other Houston apartment projects. Maintenance costs are minimized by the more naturalized landscaping, minimizing pruning and trimming, and the decision to limit large areas of grass, minimizing mowing and fertilizing.

The developer/owners have seen an approximate 45 percent increase in equity on their original investment because of the project's ability to maintain high rents and low vacancy levels. This success is attributed largely to the project's location and attractive appearance. Within two years of opening, the project was achieving rents about 30 percent lower than the competition by over 12 percent over the original pro forma.

Units on the central greenbelt receive a rental premium of about 10 percent, indicating that those tenants are willing to pay the additional cost to live adjacent to a featured amenity.

The developer estimates that the project achieves an overall premium of 10 to 20 percent over comparable apartment units in the market area, attributable mostly to the project's appearance and the owners' commitment to maintenance.

The project receives rents about 15 percent higher than its most closely competitive apartment projects. Occupancy levels of 96 percent for 1992 Westheimer outperformed the closest competition by over 12 percentage points.

Information comparing 7979 Westheimer to projects in the greater Houston and Galena market areas was obtained from Apartment Data Services, Inc., as reported in "Apartment Market TRAC," April 1992.

The comparative analyses of 1992 Westheimer and eight comparable projects in the local market was prepared for ULI specifically for this research by Apartment Data Services, Inc. of Houston, June 11, 1992. A copy of the report is on file at ULI's office.
Andover Park is a luxury apartment complex of 240 units located on a wooded site 12 miles from downtown Portland. The developer preserved as many as possible—about 60 percent—of the mature Douglas fir trees existing on the 17.6-acre site. An arborist was retained to determine which trees should be saved and to advise the developer during site planning and construction.

**GENERAL DESCRIPTION**

Andover Park is a 240-unit luxury rental apartment complex nestled in a wooded site outside Portland, Oregon. GSL Properties, Inc., the developer, went to considerable length to preserve as many of the existing Douglas fir trees as possible, resulting in an unusually sensitive environmental design. The design of the dwelling units is similarly distinctive, echoing the vertical lines of the fir trees. Unlike many projects, a clear harmony exists between the architecture and the landscape, and, unlike many projects, the sum is greater than the parts.

**THE SITE**

Andover Park is located 12 miles southwest of downtown Portland in the city of Beaverton, corporate headquarters for Nike and Mentor Graphics. It lies within the borders of Murrayhill, a 379-acre planned community that contains a variety of housing types and a mix of supporting commercial uses and recreational amenities. Within a five-minute walk of Andover Park are Murrayhill’s 156,000-square-foot retail and professional center, a community recreation center with tennis courts, and a lakeside park.

The 17.6-acre site of Andover Park is on a knoll, with a band of wetlands at the base and Douglas fir woodlands above. In 1988, when GSL commissioned a tree survey for the site, it contained approximately 1,000 trees of six inches in diameter or greater. Though predominantly forested with Douglas firs, the wooded areas also included maples and other species and a variety of undergrowth. Some of the firs, which stand over 100 feet high, are more than 100 years old. The crown of the hill had previously been logged, and the tree cover there was generally thinner than on the slopes.

Surrounding Andover Park and Murrayhill is a rapidly growing suburban area with new single-family and multifamily subdivisions interspersed with open fields and forested hillsides.

**THE PROJECT'S HISTORY**

Murrayhill was originally developed by Columbia Willamette, a subsidiary of Portland General Electric (PGE). Fisher-Friedman Architects was the master planner. Looking at the wooded, sloping Andover Park site, the master planners decided that it was best suited for multifamily development, which could be clustered to save the trees. Thus, the Andover Park site was designated as one of two multifamily sites in Murrayhill’s master plan.

Among the conditions for approving Murrayhill’s master plan were four that affected development of the Andover Park site: 1) preservation of the perimeter wetlands, 2) only one road crossing the wetlands, 3) a tree survey conducted by an arborist, and 4) a tree...
preservation plan in place before any development occurred. When GSL acquired the site in 1987, it understood the city would require preservation of at least half the mature trees on the site.

To design Andover Park, GSL retained the same architects who had designed the Murrayhill master plan, Fisher-Friedman Associates. The design and approvals process, which took approximately eight months, required intensive collaboration among several key players: developer, architect, civil engineer, landscape architect, project arborist, city arborist, and city planners. The city was kept informed and involved in the design process and became an advocate for the project with community groups. Based on the approved schematic design, working drawings for the buildings were prepared while site preparation and initial site improvements were under way.

Before the start of construction, snow fencing was erected around the drip lines of individual trees and groups of trees designated for preservation. The contractor and crew undertaking site-work were required to attend an orientation meeting at which the details of the tree protection program were explained, and any worker thereafter found in violation of the prescribed measures was fined.

Construction lasted approximately 15 months, from August 1988 to November 1989. At the time the units were being delivered, however, the Beaverton area was in the midst of an unprecedented multifamily building boom, and lease of Andover Park, like other complexes in the market area, was relatively slow. Leasing to stabilized occupancy took approximately 30 months, an average of eight units per month. Since December 1991, Andover Park's occupancy has ranged between 98 percent and 100 percent.

LANDSCAPE AND AMENITIES

THE DESIGN

A topographic and tree survey was the starting point for planning and design. The surveyors noted the locations and the species of all trees six inches in diameter or larger. The arborist evaluated the condition of each tree and color-coded it as "save," "save if possible," and "cut."

With the survey in hand, the land planners worked with the developer to test a variety of planning alternatives for 240 units, the maximum permitted. Alternatives ranged from a concentrated arrangement, which was judged too urban in character to be marketable, to a dispersed arrangement, which was judged as detracting from the site's distinctive quality.

The selected alternative provided a concentration of parking and service...
areas in a relatively clear area atop the knoll, with most buildings oriented outward to take advantage of the views downslope. The residential units were clustered into 38 buildings of four to eight units each. In many cases, buildings were then grouped together in twos and threes, resulting in a series of building "pods." Clustering allowed the planners to minimize the required site coverage and maximize the area that could remain undisturbed. It also allowed for flexibility in siting, as each pod could be sited where it fit most easily in the sloping and wooded terrain.

Maximizing the preservation of trees, which is difficult on a flat, two-dimensional site, was even more difficult in three dimensions on the sloping site. The problem required repeated site visits and a high level of coordination between the designers and consultants. The result, however, was the preservation of more than 60 percent of the site's mature trees.

One complicating factor was the seeming conflict between the Murrayhill master plan's requirement that only one path cross the perimeter wetlands and the Beaverton Fire Department's requirement that each residence have two access points for fire vehicles. The solution was to provide an extra-wide entry road (four lanes) crossing the wetlands, which then feeds a two-lane loop road providing access from two directions.

The final site plan for Andover Park preserved trees and a distinctive residential environment. Entrance to the project is via the four-lane boulevard, which then winds its way upward to the clubhouse and apartments. Though the parking courts on the crown of the hill are very public, the units themselves have a very secluded feeling because of the large windows that look out on the wooded slopes.

The apartment pods have a vertical orientation, further minimizing the area needed (and thus the tree cutting required). In cross-section, the typical apartment building provides three stacked units, with one unit above grade, one at grade, and one below the entry grade on the downslope. The top unit typically has a double-height living room and loft. Building exteriors are grey clapboard with white pipe rail balconies and crimson fireplace stacks.

The tall, exposed chimney stacks further recall the tall trees beyond.

To further distinguish the project in the marketplace, the architects incorporated a number of features to upgrade the interiors. First, the units were made larger to give a feeling of more spaciousness. Second, each unit was provided with 50 percent more glass, not only providing for more views, but also adding light, considered a real benefit in Portland's cloudy, rainy climate. Third, extra sound insulation was provided, particularly around plumbing pipes and between floors, to enhance the acoustic privacy of the units.

**PRESERVATION OF THE LANDSCAPE**

The landscape design of Andover Park runs from "wild" at the site's perimeter to "controlled" at the crown of the hill. At the bottom of the slopes, the existing wetlands were left essentially undisturbed. On the slopes, where trees were removed to make way for construction or where the slopes were previously logged, the remaining trees were less protected and more vulnerable to wind load. To correct for this
The landscape plan varies from natural, at the site perimeter, to manicured, at the crown of the hill. Where possible, natural understory growth in the wooded areas was maintained along with mature trees and extended into areas of construction to help bring a sense of the forest into the project.

"wind sail" effect, many of the remaining trees were thinned; that is, selective intermediate branches were removed. In general, preserving the trees included pruning dead branches, removing hazardous lower branches, and some additional feeding and watering during construction.

During construction, roots of some trees had to be cut back to accommodate foundations or other work, and occasionally roots were accidentally crushed or otherwise damaged. In those cases, the roots were carefully sawn and treated under the supervision of the project arborist. In each instance, the arborist had to assess the stability of the tree to determine whether retaining the tree would create a hazard.

Retaining walls were used in some instances to equalize grade levels where buildings were constructed close to existing trees. As a rule, buildings were planned to be as close as four feet to existing trees to minimize the clearing required around new construction. In the field, however, because of the tight design tolerances and the inevitable imprecision in identifying exact locations and sizes of trees, building sites had to be adjusted and retaining walls added, requiring the continuing close cooperation of the architect, arborist, developer, and contractor throughout construction.

Where possible, understory development in the wooded areas was maintained along with the mature trees and extended into the edges around the new construction to bring the forest into the project. To do so, a seed mix of semiwild grasses, shrubs, and trees was introduced in these areas. According to the developer, this attempt has not been very effective to date, because the first to germinate are the grasses and the tenants have not been pleased with the unkempt appearance of the wild grasses.

Landscape materials used for parking areas and street edges are also related to the existing woodlands. Douglas firs, maples, and other species were used to fill in where trees had been cleared for parking areas and where the natural vegetation was sparse. Rhododendrons, azaleas, and other shrubs and ground covers were used to soften the paved edges of the project.

RECREATIONAL FACILITIES AND SERVICES
Recreational amenities at Andover Park are focused on a clubhouse and pool. The 5,960-square-foot clubhouse includes a racquetball court, weight room, tanning bed, showers, lockers, sauna, lounge and kitchen, card/TV room, conference room, and computer room. Adjacent to the clubhouse are a swimming pool and jacuzzi nestled into the edge of the woods.

Andover Park also offers a range of services to its tenants, including laundry and dry cleaning pick-up, shoe repair, copier and fax machines, airport shuttle, firewood, and daily continental breakfast. The package of services, which changes based on the amount of tenants' use, is coordinated through the project's leasing and management office.

CONSTRUCTION COSTS
Total construction costs for landscaping and amenities at Andover Park were slightly over $1 million ($4,688 per dwelling unit), or 8.6 percent of the $11.7 million total development cost. Of the total costs for landscape and amenities, $489,000 (43 percent) was for landscaping, $475,000 (42 percent) for recreational facilities, and $30,000 (3 percent) for preservation of trees.

On balance, tree preservation apparently cost less than the more typical site clearing and relandscaping. Costs were higher for the arborist ($12,000 during planning and construction), initial pruning, thinning, and related tree work ($30,000), temporary fencing to protect the trees during construction ($15,000), and retaining walls required solely for preservation of trees ($40,000). On the other hand, costs were probably lower for Andover Park for irrigation, landscaping, and grading, because small areas were involved, the wetlands and woodland did not require irrigating, and large, level building pads were not necessary.
COSTS OF LANDSCAPE AND AMENITIES AT ANDOVER PARK

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Construction Cost</th>
<th>Operating Cost</th>
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<tbody>
<tr>
<td>Landscaping, Irrigation, Fine Grading, and Plantings</td>
<td>$489,000</td>
<td>$28,000</td>
</tr>
<tr>
<td>Signage</td>
<td>19,600</td>
<td>NA</td>
</tr>
<tr>
<td>Hardscape (sidewalks, miscellaneous paving, trails)</td>
<td>33,625</td>
<td>1,320</td>
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<td>Lighting (decorative/safety)</td>
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<td>Other Features</td>
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<td>Retaining Walls</td>
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<td>Irrigation Water</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$1,125,225</strong></td>
<td><strong>$61,540</strong></td>
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</table>

1 included with landscaping.
2 Seasonal.
3 Included with recreation center.
4 Required for landscaping.
5 Pruning, pruning and feeding roots.
6 Insufficient amount.

OPERATING EXPENSES

Annual operating expenses for landscape features and amenities were $61,540 in 1991. Fifty-six percent of this total ($34,300) was for landscape maintenance and seasonal plantings. Operating expenses associated with the preservation of the trees are minimal and include minor maintenance, such as occasional tree trimming and pruning, and periodic cleaning of roof gutters clogged by tree needles. Like capital costs, operating expenses for landscape maintenance at Andover Park appear to be less than those for more traditional projects because of the relatively smaller planted area, resulting in lower costs for irrigation water and labor.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER

Market conditions in the initial years following Andover Park's completion have strongly affected Andover Park's operating results. When Andover Park entered the market in 1989, suburban Portland was witnessing a huge expansion in its multifamily inventory. New multifamily units in the Beaverton/Tigard area, which had been averaging 461 per year between 1980 and 1988, suddenly shot up to 1,567 per year in 1989 and 1990.

For Andover Park, the result of this building boom was slower-than-planned leasing and depressed rent levels. In this climate, Andover Park and most other projects were forced to provide incentives to lease units: at Andover Park, one month's free rent and discounts on garage space and washer/dryers. Andover Park's rent and occupancy levels were competitive with the market and did not exceed it significantly.

Thus, at least initially, the landscape and amenities at Andover Park appear to have been of minimal financial benefit to the developer. Gradually, however, as the market tightens, Andover Park has begun to experience full occupancy. The developer expects that the tightened market will eventually generate rental premiums and that occupancy will continue to be high.

The landscape preservation program at Andover Park has benefited GSL in other ways, however. According to both the developer and the Beaverton city planner, the approvals process was extraordinarily smooth. Design and ap-

![Operating expenses associated with the preservation of trees are minimal and include such maintenance functions as occasional tree trimming and cleaning of roof gutters clogged by pine needles. On the whole, operating expenses are estimated to be less than those of projects with traditional landscaping because of the relatively small area devoted to manicured landscaping.](image-url)
The city's cooperative response during design extended to the construction period. The city's arborist spent a considerable amount of time working with the developer's arborist during planning and construction. During construction, whenever a question arose in the field, the city responded quickly because of the rapport that had been established with the developer.

This rapport and positive working relationship had begun with earlier projects, benefiting the developer in subsequent negotiations with the city on other projects. The developer also benefits from being able to point to Andover Park as a concrete example of how to manage environmental preservation in a development project.

The developer believes that, over the long term, the environment at Andover Park will help the project maintain its value and create longer-term equity. For major institutional buyers of apartment real estate like insurance companies, the quality of the project is significant, according to the developer.
The site plan provided for the preservation of low-lying wetlands located around most of the site’s perimeter. Environmental provisions made it possible for the developer to receive approvals in only eight months, unusual for a multifamily project in this locality.

**VALUE TO THE COMMUNITY AND TO RESIDENTS**

For the community, a primary benefit of Andover Park has been the preservation of a vanishing environment, the mature Douglas fir woodlands. Until Andover Park was developed, the typical method of developing wooded land was to log the site for the economic value of the timber, grade the site flat, and then relandscape it. In the case of Andover Park, careful planning of design and construction resulted in over 60 percent of the mature trees’ being saved.

From the city’s perspective, the process and product of Andover Park were influential in the development of the Beaverton Tree Ordinance, which was subsequently adopted. Andover Park provided the city with an example of what was possible, in terms of numbers and of quality, resulting in new standards for preservation of trees for all subsequent projects.

For residents, the environment of Andover Park appears to be one of its attractions. According to the on-site building manager, the features residents like most are the project’s privacy and seclusion, and its “unique character.” It is difficult, however, to separate the landscape from the architecture in these references. What seems clear is

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*Includes 168 garage spaces and 73 carport spaces.*
that residents are aware of and appreciate the environment of Andover Park. To date, however, it has not manifested itself in a willingness to pay significantly higher rents (after adjusting for the larger size of the units) or in lower-than-normal turnover rates.

**SUMMARY AND CONCLUSIONS**

Andover Park has successfully married development of the land and preservation of the landscape, creating a superior multifamily project and preserving more than half of the giant Douglas firs on site.

- To achieve this successful mix, collaboration was required among the several consultants, the developer, and the city. Extra effort was required of all parties to create a design that preserved the environment.
- Despite the project's critical success, financial benefits have not yet materialized for the developer. To some extent, it has been the result of an oversupply of new rental units on the market. For price-sensitive renters, amenities and environment could be secondary issues. As the market tightens, however, the impact of amenities could become a more critical factor in the project's performance.
- Thus, the financial value of landscaping and amenities at Andover Park might be more fully realized in the longer term.
- At Andover Park, the project design oriented toward preservation cost no more than traditional forms of site development; possibly less. The increased costs of retaining an arborist, preserving the trees, and building additional retaining walls appear to be offset by the smaller resulting areas to be graded, landscaped, and irrigated.
- The landscape and amenities program has been of value to the developer in several nonmonetary ways. Despite opposition from a local preservation group, the developer was able to win approval for Andover Park from the city, in an unusually short time, essentially because the developer was committed to environmental preservation.
- Establishing a track record and credibility with the city has benefited the developer in other ways. According to the city's planner, as a result of the developer's efforts at preservation and the superior results achieved, the city has received favorably subsequent projects by the developer.

**WHERE, WHEN, AND WHO**

**CASE STUDY CONDUCTED:** August 1992

**DIRECTIONS**

From downtown Portland: Follow Sunset Highway (Route 26) approximately five miles west to Murray Boulevard. Exit and follow Murray Boulevard south for approximately 4.5 miles to Murrayhill's main entry, Teal Boulevard. Turn right and proceed west on Teal Boulevard for approximately 1,000 feet; the entrance road to Andover Park is the first left.

**Driving time:** Approximately 25 minutes.

**DEVELOPMENT SCHEDULE**

- Planning Started: September 1987
- Site Purchased: December 1987
- Construction Started: August 1988
- Leasing Started: August 1989
- Project Completed: November 1989

**INTERVIEWEES**

- **Developer**
  - David Bell, executive vice president
  - GSL Properties, Inc.
  - 2164 S.W. Park Place
  - Portland, Oregon 97205
  - (503) 224-2554

- **Land Planner/Architect**
  - Robert Geering
  - Fisher-Friedman Associates
  - 333 Bryant Street, Suite 200
  - San Francisco, California 94107
  - (415) 981-6076

- **Landscape Architect**
  - Paul Lettieri
  - Anthony M. Guzzardo and Associates, Inc.
  - 836 Montgomery Street
  - San Francisco, California 94133
  - (415) 433-4672

- **Arborist**
  - William L. Owen
  - Portland, Oregon 97201
  - (503) 222-7007

- **Planning Official**
  - Nadine Smith, planner
  - City of Beaverton

- **City Arborist**
  - Scott Plamondon
  - City of Beaverton

- **Design Review Board**
  - Janet Otten
  - City of Beaverton

- **Appraiser**
  - Bruce M. Ostly
  - Anderson, Ostly & Glanville

- **Tenant Representative**
  - Nancy MacBean, manager
  - Andover Park
Over 40 percent of the 885-acre master-planned community of Harbour Ridge was preserved in its natural state. Preservation of wetlands, sand pine scrub, and pine flatwoods upland habitats protected important environmental resources and helped attract potential buyers to this community of high-end second homes.

GENERAL DESCRIPTION

Harbour Ridge is the fourth master-planned community in southeast Florida undertaken by developer John B. Dodge and his associates. Responding to newly enacted state and federal environmental regulations and guided by a commitment to be good stewards of the land, the developer preserved over 40 percent of the 885-acre site in its natural state. Preserved areas include freshwater and saltwater wetlands, river shoreline (75 feet upland of the mean high water line), and sand pine scrub and pine flatwoods upland habitats.

Harbour Ridge's natural open space includes a 26-acre sanctuary for a nesting pair of southern bald eagles identified during site planning. In accordance with a detailed protection plan, a golf course was rerouted to buffer the sanctuary from residential areas, and earthmoving near the eagles' sanctuary was not done during the mating season. The pair of eagles continued to inhabit the site for several years, producing at least four eaglets since the project's inception. During the 1992 nesting season, the nest was taken over by a pair of great horned owls, but the likelihood remains that the eagles will eventually return to the site.

PLANNING AND APPROVALS

The property was acquired during the 1980 recession for about $8,400 per acre. From the start, the intent was to develop a private recreational community with two golf courses, tennis courts, and boat docks. Having learned from experience that the optimum number of golf members is 350 per course and expecting to have 114 social members, the development team settled on 814 units. Surplus land was sold for $2 million to provide an early infusion of start-up capital. Project approvals were subject to lengthy negotiations, because the project was considered a development of regional impact (DRIL) under Florida state law. The final approved plan reflects the cooperation of many federal, state, and local agencies, and adjacent property owners.

The development team hired Edward D. Stone, Jr., and Associates (EDSA), with which it had worked on other projects, as planner, and planning began in June 1981. The team decided early to use two different golf course architects and to supplement the team with specialized consultants and in-house designers as necessary.

The master drainage plan is designed to protect existing wetlands and to preserve their natural hydroperiods, to maintain existing groundwater tables, and to approximate seasonal fluctuations in water level. Transitional wetland/upland borders serve as natural filters for surface water runoff and provide valuable habitat for wildlife.

The water supply plan required extensive testing and investigation of the natural hydrologic system and resulted in the use of water-conserving fixtures, wastewater recycling, separate irrigation and potable water distribution systems, and the construction of a pump-
ing station and two miles of underground pipeline to draw fresh water from a canal at a point where it would otherwise be lost to the tides. This water is mixed with the effluent from the on-site sewage treatment plant to irrigate the golf courses and residential areas. Because of minimal clearing, each golf course requires only 60 acres to be irrigated, compared to the standard 80 to 100 acres for typical courses. The water and sewer plants were built and are operated by the developer and will be turned over to the property owners association debt free.

**PHASING AND FINANCING**

Construction started in January 1983. The first residential product offered was a 58-unit cluster of single-family custom sites near the project’s entrance. Next, two garden apartment complexes and a cluster of single-family villas were opened nearby. To accommodate short-term guests during the sales period, one of the apartment complexes permits short-term rentals. This rental program will end after 650 golf memberships are sold.

The range of products now includes zero-lot-line patio homes, apartment condominiums, single-family houses, and high-end custom houses with views of the river and golf courses. Demand for single-family houses is stronger than expected, and several areas originally planned for multifamily units are being developed for single-family houses. Accordingly, the number of units planned at completion has been lowered to 725.

The construction of club facilities was staged to avoid heavy initial costs. The swim and tennis center served as an interim clubhouse, and during the start-up period, special memberships offered to area residents helped establish the tennis program. The center’s location, outside the community gate, provides nonresidents with more convenient access to the facilities. Nonresident memberships in the swim and tennis center were offered at the outset, because the population of Harbour Ridge would not be large enough to support the desired facilities.

Initial project financing of $22.5 million, provided by a local S&L, was paid off in 1990. Other financing included a $6 million loan for the main clubhouse and the second golf course.

**CLUB OPERATION**

Prospective members apply to purchase one of two equity membership categories, golf or social. Golf memberships include use of all amenities; social memberships offer swim/tennis and dining privileges but are limited to six rounds of golf per season at full greens fees. The club’s cap is 700 golf memberships. Club facilities, now owned by the developer, will be transferred to the members when the last residential unit is sold. The club’s reserve fund receives the profits from resales of equity memberships and is used for necessary capital improvements.

The two-level, 40,000-square-foot main clubhouse, designed by Palm Beach architects Schwab & Twitty, overlooks the St. Lucie River. Its upper level has a formal dining room, a lounge for members, and two large banquet rooms. The lower level includes a grill for golfers, a pro shop and ship’s store, men’s and women’s locker rooms, exercise rooms, and office space. Sheltered parking encourages the use of private golf cars for transportation between houses and the clubhouse.

The swim/tennis club has ten fast-dry courts, four of them lighted at night, a pro shop, and a clubhouse with a dining facility. The tennis program, under the direction of Peter Burwash International, offers regular clinics, individual lessons, and tournaments for members.

The club’s boating facilities consist of 128 deep-water slips in three docking areas on the community’s riverfront. Prices for certificates of use currently range from $15,000 for a 20-foot slip to $45,000 for a 58-foot slip.

The swim and tennis club has ten fast-dry courts, a pro shop, and a clubhouse with dining facilities. The club, located outside the community’s main gates, was built early in the project’s phasing to provide an interim clubhouse and recreational amenities. Membership was opened to nonresidents, because Harbour Ridge’s early population was not large enough to support the range of desired activities.
MARKETING AND MANAGEMENT

Typical homebuyers are couples from the Northeast and Midwest in their early 50s to early 60s who will make the community their second home until they retire, when it will become their primary residence. Rather than buying with an intent to move to a larger unit later, today's buyers are more likely to buy what they want to keep.

A variety of media were used in early advertising to establish recognition for the community and to build a base for referrals. The Wall Street Journal generated the best leads. With approximately 80 percent of recent sales coming through referrals from owners, the marketing focus now is a "pick your neighbor" campaign targeted at the community's over 600 existing residents. It includes a new video, sent to all owners, and presentations at country clubs in key cities with several owners.

Seasonality is a major factor in marketing and management, with most activity occurring from mid-January to early May. An average of 2,000 prospects visits during the year. People in the market tend to visit every comparable project before making a decision, and competition is fierce. At Harbour Ridge, environmental sensitivity is a strong selling point. Annual surveys of property owners always elicit comments to "preserve the natural look."

Each owner belongs to a communitywide property owners association and to the appropriate separate homeowners association in the distinct housing village. On-site management staff includes the general manager, director of golf, tennis pro, groundskeeper, housekeeping department, food and beverage personnel, security staff, landscape maintenance staff, social director, dockmaster, and accounting department.
As dictated by the recreation-oriented second-home market, Harbour Ridge includes two 18-hole golf courses. Private club memberships, capped at 700, are restricted to community residents.

LANDSCAPE AND AMENITIES

The landscape theme for Harbour Ridge emphasizes the preservation of existing vegetation and environmental resources. The project’s primary market of second-home buyers and retirees dictated a wide range of active recreational amenities: the two golf courses, clubhouse (with food service and exercise facilities), swim/tennis center, and boat docks. A number of more passive amenities were included in the project as well, including a two-mile riverfront nature walk.

To help give the project a sense of containment and isolation, a buffer ranging from 25 to 150 feet consisting of natural vegetation (depending on use of the adjacent property) is preserved around the project’s entire boundary. A natural 75-foot open space buffer is provided adjacent to the St. Lucie River. Pockets of natural open space are also evident throughout the community, for example, between villages, adjacent to golf course fairways, and along some roadways.

Some of the natural flora found on site include palmetto, scrub oak, sand pine, wild malo, wild lantana, cabbage palm, slash pine, deer moss, gallberry, and pond apple. In some cases, pockets of natural vegetation have been augmented with endemic trees and shrubs, such as slash pines, oaks, and southern waxed myrtle. Some natural areas, particularly palmetto stands, are thinned occasionally to promote their value as wildlife habitats and to enhance their visual appearance.

The development team wanted Harbour Ridge to have a well-kept appearance but did not want to give the project a highly manicured look. The guiding concepts behind the landscape plan were informality and natural appearance. Landscaping in and around residential clusters builds on that theme, with informal plantings of trees, shrubs, and ground covers suited to Florida’s warm climate. Rapidly growing trees, such as eucalyptus torrelliana and rosewood, are mixed with live oaks, palms, and bottle brush trees. Near the front doors of houses, more exotic and colorful plantings are used, such as hibiscus, bird of paradise, variegated confederate jasmine, and dwarf powder puff. Most plant species do not require frequent pruning. And because it is most frequently used during the winter months, the community contains few deciduous plants to remind residents of harsh northern winters.

The pockets of natural vegetation and extensive wetlands preserved on site support a wide range of wildlife, including foxes, bobcats, and alligators, and countless species of birds, most noticeably herons, egrets, and sandhill cranes. For many residents, bird and wildlife watching has become a primary source of recreation.

The landscape budget within residential clusters averages about $15,000
Golf courses include areas of natural vegetation like thick pockets of palmetto. Most golfers favor the natural areas designed into the courses and enjoy the wildlife that often appears.

The two-level, 40,000-square-foot main clubhouse overlooks the St. Lucie River and serves as the hub for social interaction among community residents. Facilities include a dining room, a lounge, two large banquet rooms, specialty retail stores, and exercise rooms.

Per unit for single-family houses and $5,000 per multifamily apartment. Landscape maintenance constitutes a major percentage of assessments; for example, a homeowner of a typical single-family house pays $506 per month, $276 of which is allotted for landscape maintenance. That same homeowner also pays $116 per month in dues to the communitywide property owners association to cover costs for maintenance, insurance, security, and so on. Each residential village establishes its own assessments, and the communitywide owners association establishes the fee for the common areas of the community.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER

Several members of the development team suggest that Harbour Ridge is performing as well as, or better than, other second-home resort communities in south Florida. It is virtually impossible to compare Harbour Ridge to other projects, however, because each offers different types of amenities, locations, and prices. Further, the competitive market area for many purchasers includes much of the southeastern United States and, for some, Arizona.

Four projects in the local market might be considered most competitive with Harbour Ridge: Sailfish Point (eight miles east of Harbour Ridge), Jonathan's Landing (15 miles south), Willoughby (five miles south), and Cobblestone (ten miles west). All of these communities feature equity memberships, and all feature golf, tennis, and clubhouses; Sailfish Point and Jonathan's Landing are beachfront communities. It was not possible to analyze these projects thoroughly within the scope of this study, but it is clear that all have experienced slower sales in the recent few years that can be attributed primarily to the national recession. Sales of new houses at Harbour Ridge averaged about 45 or 50 in 1992; that figure was down by about 50 percent from the peak selling years of the late 1980s.

One way to track Harbour Ridge's market success is to consider sale prices over time. As of 1992, about 40 percent of all sales in the community were resales. Sale prices at Harbour Ridge have, in fact, increased steadily. Garden apartment units currently sell for 25 percent more than they did in 1986, "villa" and "golf" single-family houses sell for about 40 to 60 percent more, and custom lots sell for about 100 to 150 percent more. Golf memberships, which sold for $15,000 in 1985, currently cost $35,000. Boat slips starting at $12,500 in 1986 now sell for $15,000 to $45,000. These substantial price increases suggest strong satisfac-
tion with housing and amenities among buyers.

The developer believes that Harbour Ridge has maintained such strong price increases during a down market and a reasonable level of sales of new houses because of the project's location outside a major urban area and because of its high-quality amenities. Buyers at this type of community seek out projects with the right mix of amenities and those that appear to be well designed, managed, and maintained. Perceptions of quality design, beauty, tranquillity, and sensitivity to the natural environment have certainly been instrumental in attracting prospective buyers to Harbour Ridge.

The extensive recreational amenity package included with Harbour Ridge has been instrumental in attracting buyers, but the project's emphasis on natural landscape and environmental sensitivity has apparently helped to give it an edge over some competitive projects. These qualities of the community have been featured prominently in marketing materials. The emphasis on environmental sensitivity also helped the developer to obtain permits with minimal controversy, considering Florida's regulatory standards.

The accompanying table lists each of the project's key landscape features and ranks that amenity relative to the type of value added. As shown, the developer perceives the project's water features, plantings, sensitivity to the environment, and recreational facilities as contributing significantly to the project's appeal to consumers (as measured by sale price, absorption, and overall satisfaction).

<table>
<thead>
<tr>
<th>VALUE MATRIX</th>
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<tbody>
<tr>
<td><strong>VALUE TO RESIDENTS AND HOMEBUYERS</strong></td>
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</table>

Four residents/homeowners of Harbour Ridge were interviewed to determine the extent to which landscape and amenities influenced their decision to buy property and to assess the degree to which they value those features. Because the project is primarily a second-home resort community, purchasers had high expectations for recreational amenities. Virtually all purchasers, for example, considered the golf courses, clubhouse, and tennis club essential amenities. For this analysis, it is not so important that these recreational amenities exist in the project (the market dictates them), but that they are perceived to be of high quality.

The residents interviewed for this study agreed unanimously that the project's landscape was very important in their decision to purchase property and noted consistently that the landscape is the community's defining element. They made several points during the interviews that help to define what residents value most in the project's landscape and amenities:

- The attention paid to landscape design and maintenance enhanced buyers' perception of the developer and the developer's commitment to excellence. This perception was especially important during the early phases of the project, when all of the promised recreational features had not yet been completed. Several residents noted that they, in part, gauged the developer's commitment to the project on the high-quality landscape features they could see in the early phases.

- Residents like the "quiet" and "calming" character of the community, which they believe is created by landscaping, views of open spaces, and the many water features. Most of the homebuyers reside part of the year in large metropolitan areas and use their residence at Harbour Ridge as a retreat.

- Residents particularly value the project's "sensitivity to the environ-
Some residents initially were concerned about the close spacing of units within clusters, but those concerns have mostly disappeared as residents have come to consider the large blocks of common open space an acceptable trade-off for private yards.

ment" and place high value on the preserved areas of natural habitat for their visual quality and for the wildlife and birds they help to support. Again, they noted that the project's sensitivity to the environment helped to increase their confidence in the developer.

Residents value the "peaceful," "beautiful," and "environmentally sensitive" image that Harbour Ridge projects to their guests and family. For most residents, especially those who do not use their residence year-round, security is very important, and they value the guarded gates to the project.

The golfers interviewed responded very favorably to the natural areas designed into the courses and to the wildlife that often frequents the courses. They like the courses' not appearing artificial.

The natural vegetation preserved between clusters of houses helps to soften the appearance of the total community and lessens the perception of high density. Several residents were somewhat concerned about the close spacing of houses within the clusters, but these concerns were offset by the expanses of open space between the clusters and the views from many of the houses.

Overall, residents were not able to identify specific ingredients of the landscape program that they value most, but they highly value the natural qualities of the landscape plan.

Information obtained from residents during this study is consistent with survey results obtained by the developer. Of 284 homeowners surveyed in 1991, 87 percent indicated "natural beauty" as "very important" in their decision to purchase property at Harbour Ridge. Other "very important" items appealing to over 60 percent of the residents include the developer's reputation (79 percent), lifestyle (66 percent), landscaping (64 percent), and location (63 percent). In comparison, only 55 percent ranked the appearance and style of the house as "very important," and only 35 percent ranked the purchase price as "very important."

Residents interviewed did not clearly agree about whether they paid a pre-
mium for their housing at Harbour Ridge that could be attributed to the landscape and amenities. Relative to other projects with similar amenities, some residents believed they might have paid a premium of 10 to 15 percent; other residents interviewed believed they did not pay a premium compared to other projects they visited before purchasing a house at Harbour Ridge.

VALUE TO THE COMMUNITY

Representatives of the local government (St. Lucie County) and the state government (Treasure Coast Regional Planning Council) were interviewed to determine the effect that Harbour Ridge has had on the community. In Florida, development is strictly regulated, and Harbour Ridge was required to undergo a rigorous approvals process. The DRI permit was approved in 1982; both preliminary and final development plans had to be approved. A key issue throughout the process was environmental protection.

County officials noted that Harbour Ridge was perhaps the easiest large project ever approved, primarily because of the developer's early agreement to preserve over 60 percent of the site as open space. (The county was more concerned about preserving natural open space than about the landscaping of the areas to be developed.) Harbour Ridge helped the county to prove to other landowners and developers that it is possible to preserve such a high percentage of open space and still have a financially viable project.

Substantial evidence suggests that the preservation of open space helped the project to overcome objections from neighboring property owners. Early objections to the development of Harbour Ridge were dropped when the development plan showed that so much of the site was to be preserved.

The county representative believes that a beneficial "halo" has certainly affected surrounding properties as a result of Harbour Ridge. Property values and tax revenues from nearby properties have surely increased, although it was not possible to determine the extent of the increase during this study. This effect can be linked directly to the value of properties within Harbour Ridge and, less directly, to its landscape and amenities.

The county representative also believes that residents of the general area have benefited from Harbour Ridge's environmental sensitivity. For example, the project has helped to maintain a diverse habitat and has helped the county to meet its overall requirements for conservation set forth in regional and state plans. To some extent, Harbour Ridge has lessened the need for public acquisition of land for conservation elsewhere, although this financial benefit to taxpayers cannot easily be calculated.

Residents highly value the project's sensitivity to the environment, such as the 26-acre sanctuary for a pair of nesting southern bald eagles. In a 1991 survey of 284 homeowners, 87 percent of respondents ranked the community's "natural beauty" as "very important."
PROJECT DATA

LAND USE INFORMATION

<table>
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<th>Site Area</th>
<th>Total Dwelling Units at Completion¹</th>
<th>Average Net Density</th>
<th>Gross Density</th>
<th>Average Net Density</th>
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LAND USE PLAN INFORMATION

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<th>Acres</th>
<th>Percent of Site</th>
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<td>Future Development Areas</td>
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RESIDENTIAL PRODUCT INFORMATION

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<th>Average Net Density (square feet)</th>
<th>Number of Sold</th>
<th>Range of Current Sale Prices</th>
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<td>Single-Family Lots</td>
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<td>Custom Golf Homes</td>
<td>1.7</td>
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<tr>
<td>Garden Villas</td>
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<td>Garden Apartments</td>
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</table>

¹895 units have been sold to date.
²Includes upland preserves and buffers (not wetlands).
³Includes marsh, slough, and prairie.
⁴Cost data from inception through June 1991.
⁵Includes administration, project management, legal, accounting, insurance, taxes, club and community deficits, etc.
⁶Club members may purchase boat-use privileges for boat slips.
⁷Prices currently range from $16,900 for a 20-foot slip to $45,000 for a 38-foot slip.
⁸Includes golf homes and golf patio homes.
⁹Includes golf homes and golf patio homes.

DEVELOPMENT COST INFORMATION

| Site Acquisition Cost | $7,469,000 |
| Site Improvement Costs | $12,600,000 |
| Housing Construction Costs | $88,695,000 |
| Total | $34,624,000 |

CLUB MEMBERSHIP INFORMATION (1991)

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<tr>
<th>Golf Member</th>
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<td>1990-1991 Annual Dues</td>
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SUMMARY AND CONCLUSIONS

- Because of a lack of data, it is not possible to compare Harbour Ridge's relative performance with other projects in the market. Anecdotal evidence suggests, however, that Harbour Ridge is performing as well as or better than competitive projects as a result of the project's location, the developer's good reputation, the mix and quality of recreational amenities and their blending with the landscape, and the absence of substantial debt carried by the developer for the cost of the land.

- Data tracked by the developer over several years indicate that Harbour Ridge has achieved impressive increases in sale prices, especially in higher-end products. For example, single-family houses increased 40 to 60 percent in value between 1986 and 1992. During the same period, lots for custom houses increased in value 100 to 150 percent.

- The project's emphasis on environmental protection and preservation of open spaces clearly and positively affected the developer's ability to obtain project approvals with little controversy.

- In both interviews conducted for this study and more extensive surveys conducted annually by the developer, residents show strong satisfaction with the project. A survey of consumers in 1991, "natural beauty" and "landscaping" were among the highest-ranked reasons for buying property in Harbour Ridge.

- Strong evidence suggests that preservation of open space, attention paid to environmental protection, and emphasis on a "natural" landscape are major factors in the project's success. Homebuyers appear to strongly endorse these factors as

Information from the Treasure Coast Regional Planning Council was consistent. From the state's perspective, the project's primary benefit is the partial preservation of three key habitats on site: coastal scrub (98 percent of this habitat has been lost to urban development throughout the four-county region), pine flatwoods, and wetlands.

The state also believes that Harbour Ridge helped to set a precedent for other projects with its sensitivity to environmental resources, particularly preservation of the eagle nesting area and mitigation techniques around lakes to maintain water quality and fish life.

Harbour Ridge moved without substantial controversy through the state's DRI permitting process, largely because of the developer's willingness to cooperate with government agencies established to protect the environment and to make some compromises in the original development plan.
helping to set Harbour Ridge apart from competitive second-home communities.

- The developer's attention to environmental protection, preservation of open spaces, and landscaping helped to prove to buyers the development team's long-term commitment to quality and excellence and increased prospective buyers' trust in the developer, especially in the early phases.

- The considerable support and trust from local and state governmental agencies for Harbour Ridge and its development team can be attributed directly to the project's environmental protection and preservation of open space.

- Observers believe that Harbour Ridge has had a positive impact, related to its high property values and its overall design, on the value of surrounding properties, although the extent of it could not be documented for this study.

- Government officials believe that Harbour Ridge has benefited the larger community by preserving important natural habitats for plants and wildlife, although this effect is difficult to measure in monetary terms. At the very least, the acreage preserved within Harbour Ridge will help offset the county's need to acquire other properties in the county for conservation.

**WHERE, WHEN, AND WHO**

**CASE STUDY CONDUCTED:** June 1992

**DIRECTIONS**

*From Palm Beach International Airport:* Leave the airport's north exit and follow signs to I-95. Take I-95 north to Exit 60-A at Jupiter and proceed west to the Florida Turnpike. Follow the turnpike north to Exit 133 at Stuart. Continue straight ahead on Martin Downs Boulevard to the third stoplight; turn left onto High Meadows Avenue. Follow High Meadows Avenue for one mile to the four-way stop at Murphy Road. Turn left and follow Murphy Road for 2.5 miles; the entrance to Harbour Ridge is on the left.

*Driving time:* Between 45 minutes and one hour.

**DEVELOPMENT SCHEDULE**

*Site Purchased:* 1980
*Planning Started:* June 1981
*Construction Started:* January 1983
*Sales Started:* 1984
*Swim/Tennis Center and First Golf Course Opened:* December 1984
*Main Clubhouse and Second Golf Course Opened:* January 1989
*Anticipated Project Completion:* October 1995

**INTERVIEWEES**

*Developer*
- John B. Dodge, chair
- Jack Schulter, president
- Lester W. Boese, architect and vice president

*Harbour Ridge, Ltd.*
- P.O. Box 2451
- Stuart, Florida 34995
- (407) 336-1800

*Landscape Architect*
- Joe Glass
- Palm City, Florida 33490

*County of St. Lucie*
- Dennis Murphy, land development manager
- St. Lucie County Planning Department

*Treasure Coast Regional Planning Council*
- Don Cary, executive director

*Residents/Homeowners*
- Monty Spindler
- Dudley Taylor
- Judy Harrison
- William Mitchell

Residents frequently use a two-mile nature walk along the St. Lucie River, including sections of raised boardwalk.
Desert hillsides and natural drainage courses were preserved and combined with desert- and drought-tolerant plants to give this 2,647-acre master-planned community both beauty and practicality. A 1988 survey of residents revealed their strong satisfaction with the project's aesthetic appeal.

**GENERAL DESCRIPTION**

Mountain Park Ranch is a 2,647-acre master-planned community near the southern edge of Phoenix, Arizona. The community, which now includes approximately 3,800 houses, will eventually comprise approximately 8,200 dwelling units, commercial and office developments, day-care and other community services, and an extensive package of recreational features.

Key features of Mountain Park Ranch include the preservation of existing desert hillsides surrounding and interspersed through the site, landscaping of street edges with lush desert- and drought-tolerant plants, joint development of drainage courses and retention basins for use as greenbelt jogging/bike trails and parks, and the provision of recreation centers linked to the linear parks and trails.

**THE SITE AND THE PROJECT’S HISTORY**

Mountain Park Ranch is located at the base of South Mountain, a 15,000-acre municipal park. The site is just over one mile west of I-10, the major freeway between Phoenix and Tucson, and is approximately 15 miles south of downtown Phoenix. It is bordered to the north by South Mountain and an older retirement community, to the south and west by newer subdivisions, and to the east by a mixture of agricultural land and urban development.

The terrain ranges from flat to steeply sloped. The hills, essentially foothills of South Mountain, present a natural landscape of eroded rock and dry desert flora, punctuated by an occasional saguaro cactus, some of which are 200 to 300 years old.

The site of Mountain Park Ranch, which was originally three parcels, was assembled for development by a local developer, Leroy Smith, in the late 1970s. Landscape architects A. Wayne Smith & Associates prepared a master plan at that time. The major features of that plan (preservation of the hillsides, desert landscaping, and loop roads threading around and through the natural landscape) have been retained and developed over the years as ownership of the project has changed hands. The current developer of the project, American Newland Associates (an outgrowth of a former owner), has been the primary force in implementing these principles of landscaping.

At the time the master plan was developed in the early 1980s, the "south of South Mountain" area was unincorporated, with no zoning and few land use controls of any sort. With the exception of Ahwatukee, the retirement community to the north, the area was undeveloped and the availability of utilities restricted. The process of development approval was thus mostly a matter of annexation negotiations, focusing on the provision of utilities to the project and the establishment of Planned Community District zoning.
for the site. Acquiring approvals proceeded relatively smoothly, partly because the developer and the city planner shared common objectives. Though it did not yet have a hillsides preservation ordinance on the books, the city wanted the natural landscape preserved, and though it did not then have any restrictions on landscaping and irrigation, the city was moving toward a policy of promoting drought-tolerant landscaping.

The master plan for Mountain Park Ranch was approved in 1983 and modified only slightly over the years. Today, of the plan's total of 2,647 acres, approximately 1,600 acres (60 percent) is devoted to residential development, over 900 acres (35 percent) to permanent open space and recreational uses. The remaining 5 percent is devoted to commercial development (shopping centers and offices), community facilities (churches and day-care sites), and quasi-public uses (fire station, schools, power stations).

Ground was broken in 1984 for the first of several development phases. Five parcels were sold to three builders, and the first houses were completed in 1985. By 1988, over 600 dwelling units a year were being closed, a rate that was sustained until 1992 (closings for the first seven months of 1992 totaled 304 units, or an annualized rate of 521 units). Of the 5,772 units closed by June 1, 1992, 3,548 were single-family houses, 192 were townhouses, and 32 were custom lots. None of the planned 3,000 multifamily units have been built to date. Lots for the single-family units in subdivisions range from 4,500 to 12,000 square feet.

Much of Mountain Park Ranch's community facilities and all of its recreational facilities are complete. It now includes three recreation centers, two parks, 6.8 miles of linear park/jogging/bike trails, and five small lakes. Of the community facilities, two day-care centers and one elementary school have been completed; sites remain for one additional school and two churches. Of the commercial acreage, only a bank has been built to date, though the site for a 120,000-square-foot shopping center is in escrow.

**PROJECT DEVELOPMENT TEAM**

The developer of Mountain Park Ranch, American Newland Associates, was formed in 1987 by several executives of Genstar Development Corporation (a former developer of Mountain Park Ranch) and a corporate investment partner. Ronald T. Lane, American Newland's president, headed Genstar's development efforts at Mountain Park Ranch beginning in 1982. An early proponent of natural landscaping and hillside preservation, he guided Mountain Park Ranch's master plan through approvals and implementation. American Newland's staff for this project has been kept small. At its peak, staffing for the project totaled eight people. Currently just five people manage the sale of parcels and implementation of the plan, including Lane and Rick Garner, project manager.

The original master planner for the project was A. Wayne Smith & Associates, now a division of Cornoyer Hedrick Associates of Phoenix. When Genstar became involved in the project, Terrini and Brink of Santa Ana, California, modified the plan, though retaining much of the original design. Vollmer & Associates is currently Mountain Park Ranch's landscape architect, responsible for implementing the planning and landscape program. Steven Vollmer, president of the firm, also participated in the development of Mountain Park Ranch's master plan while employed at A. Wayne Smith & Associates.

[Site plan]
Amenities include three recreation centers with pools, two parks, and 6.8 miles of linear park with jogging and bicycle trails. The homeowners association owns and maintains the recreation centers.

MARKETING

As Mountain Park Ranch became more established and word of mouth grew, the formal advertising campaign for Mountain Park Ranch was discontinued in 1990. In the early stages, however, the primary marketing vehicles used to generate interest in Mountain Park Ranch were newspapers and billboards. The annual marketing budget for Mountain Park Ranch was approximately $400,000, funded jointly by the homebuilders (60 percent) and the developer (40 percent). The ads almost always highlighted the hillside views of Mountain Park Ranch, as it is the most distinctive aspect of the community. The intent of the ad campaign was to sell the community aspects of Mountain Park Ranch rather than individual subdivisions. No on-site information center was provided. Rather, the developer printed maps of the master plan and made them available to the builders to distribute.

LANDSCAPE AND AMENITIES

HILLSIDE PRESERVATION

The project's developer considered the hills at Mountain Park Ranch the community's primary amenity, a benefit to be maximized in site planning and marketing. The primary question was not whether to preserve the hillsides, but to what extent. Through negotiation, the parties decided that the 10 percent slope line would be an appropriate limit for development.

Over 700 acres of hillside was set aside for permanent open space as a result of this decision. The preserved hillsides act as buffers at the site's perimeter; in other areas, the hills appear as knobs interwoven through the fabric of the site. Major roads follow the base of the hillsides in some instances; in others, circulation runs through valleys or cuts through passes between the hills.

To integrate the hillsides into development in the valley and to repair edges of the hillsides scarred by grading, a desert revegetation seed mix was developed. The mix, which contains desert flowers, shrubs, and trees, is seeded beyond the cut edges to avoid having discernible edges of new and old landscaping. Included in the mix are blue Palo Verde and Chilean mesquite trees, shrubs like brittlebush and creosote bush, and flowers like Mexican poppies, firewheels, purple verbena, and desert marigold. Initially, the flowers and grasses dominate, but over time the shrubs, and eventually the trees, develop.

LANDSCAPE AND HARDSCAPE

The streetscape furthers the desert landscape, providing a parkway of desert plantings inspired by the hills and the dry Arizona landscape. Typically, the planted area covers 10 to 15 feet from
the back edge of the sidewalk, culminating in a six-foot-high stucco-covered wall that undulates within a 10-foot-wide landscape easement. The parkway relies on rose-colored decomposed granite as a landscape bedding instead of turf.

The plant palette consists of a mix of desert shrubs and ground covers, cacti/succulents, and desert trees. Refined over the years, the plant palette includes a selection of desert plant materials and other drought-tolerant plantings that provide seasonal color and a variety of textures to create a natural, but very lush, appearance. Included in the palette, in addition to Palo Verde and mesquite trees, are sweet acacia, native ironwood, Texas ebony, and African sumac. Cacti/succulents include saguaro, prickly pear, desert spoon, and red yucca. Shrubs and ground covers include petite oleander, red bird of paradise, brittlebush, lantana, and cassias. Palm trees (date palms) are reserved for entries, median strips, and lake areas.

The walls are constructed of eight-inch concrete block with a textured stucco finish. The ends of walls where interrupted by streets terminate in double blocks, creating a 16-inch corner edge and a more substantial appearance. Further highlighting street corners is a change from concrete to decorative Bomanite pavers.

Periodic "oases" are provided in the desert landscape to highlight major entry points and street crossings. At major entries, stucco-covered monument signs are sited in a setting of grass and flowers. Because these areas are limited in size, they are distinctive. This idea is also used where major roads cross the drainage area/parkways, where small, concrete-bottomed lakes, each with fountains and surrounded by a small grassy area, mark the points. Lakeside benches allow more leisurely contemplation of the scene.

RECREATIONAL FACILITIES

The third feature of the landscape program, linear parks, was inspired by requirements for drainage. Among the conditions for approving the master plan, insisted on by the Gila Indians, whose reservation is just south of Mountain Park Ranch, was a requirement that there be no net increase in stormwater runoff beyond the project's borders over the amount before development. Thus, most of the site's natural drainage courses were maintained in their open state and lined with riprap, and two large areas (42 acres and 43 acres) were graded to serve as 100-year flood retention basins. The drainage courses were then developed with meandering eight-foot-wide jogging/bicycle trails and the edges of the drainage courses landscaped. Mountain Sun Roy Park, one of two public parks developed jointly by American Newland Associates and the city of Phoenix, provides two tennis courts, basketball courts, a baseball diamond, a soccer field, volleyball courts, and a tot lot. The city of Phoenix maintains the parks.
To minimize maintenance costs for landscaping in this hot desert setting, five small lakes were included in the landscape plan. They are located where major roads cross natural drainage courses and at important entryways.

Park Ranch's three recreation centers were developed adjacent to these trails, and two municipal parks were developed in the flood retention areas. The trails in the drainage courses lead to five small lakes (each approximately one-third to one-half acre) located where the drainage courses intersect the road network. Two of the lakes are part of the drainage system, and three are ornamental.

Supplementing the greenbelt trails along the drainage courses are jogging/bicycle pathways along the major loop roads. Rather than mandating separate sidewalks and bicycle lanes, however, the city required that a single eight-foot-wide concrete pathway be developed as a combined sidewalk/jogging/bicycle trail. These loop trails provide east/west connections to the primarily north/south greenbelt trails. Though most of the drainage courses have paved trails, the drainage channel leading to South Mountain is planned to remain as an undeveloped hiking trail and official trailhead entrance to South Mountain Park.

The two parks in retention basins, Sun Ray Park and Vista Canyon Park, were jointly developed by American Newland Associates and the city of Phoenix. Each park includes basketball courts, a baseball diamond, a soccer field, volleyball courts, a tot lot, and restrooms. In addition, Sun Ray Park has two tennis courts. American Newland provided the land, and designed and developed the parks. The city of Phoenix reimbursed American Newland for certain costs related to development of the parks ( principally buildings and equipment), and American Newland shouldered the costs of creating the retention basins. The city now maintains the parks within the municipal park system.

Three recreation centers supplement the city parks. The centers, owned by the Mountain Park Ranch Homeowners Association, each include a restroom/equipment building, two tennis courts, a volleyball court, a pool, a spa, and a tot lot/ playground.

CONSTRUCTION COSTS

Total costs for Mountain Park Ranch's landscape and amenities program are a projected $11.5 million. The largest expenditure ($4.5 million, or 38 percent of the total) is for the stucco walls constructed along major roads, drainage channels, and hillsides and is passed directly to homebuilders at Mountain Park Ranch. Costs for landscaping major roads and drainage channels totaled $3.6 million (31 percent), costs for parks, trails, and recreation centers $2.9 million (25 percent). The $11.4 million total for landscape and amenities
amounted to approximately $1,390 per dwelling unit (averaged over 8,200 planned units).

The developer and the city shared development costs for the two municipal parks. Of the total $1.17 million spent for the two parks, the developer paid for the cost of creating the drainage retention facilities and landscaping ($640,000), the city for the design and construction of recreational buildings, parking, and recreational fields and equipment ($530,000).

Interviewees suggested that capital costs for the desert landscaping are similar to those for more traditional plants, though maintenance costs are substantially less. Mountain Park Ranch typically plants 24-inch box trees at a cost of approximately $150 each. Though substantially more expensive than the 1-gallon specimens often used at $35 to $50 each, Mountain Park Ranch’s landscape architect believes that the 24-inch trees require less training and maintenance than smaller trees. Through experience, the developer has found that desert trees can grow quite rapidly when irrigated. Conversely, after the tree is established (about three years), irrigation can be cut back or even eliminated.

**Construction Costs for Mountain Park Ranch**

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<th>Amenity</th>
<th>Construction Cost</th>
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<td>Streetscapes (landscaping of streets and drainageways)</td>
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<td>Entryways (landscaping)</td>
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<td>Water Features (five lakes)</td>
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<td>Hardscape (stucco walls)</td>
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<td>Jogging Trails (6.8 miles)</td>
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<td>Three Recreation Centers</td>
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<td>Two Parks</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$11,482,000</strong></td>
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**Operating Expenses**

Annual operating expenses for landscape and amenities, which are funded by the Mountain Park Ranch Homeowners Association, are $726,500. Of this total, 62 percent ($450,500) is for labor to maintain the landscape, 21.5 percent ($156,000) for upkeep of the recreation center and lake (utilities and maintenance), and 16.5 percent ($120,000) for irrigation and other water requirements for the lakes and recreation centers.

The largest individual expense categories are labor to maintain the landscape ($400,000), labor for maintenance of the lakes and recreation centers ($65,000), and power ($41,000). Together, these items amount to $624,000, or 86 percent of the operating expenses for landscape and amenities. Most of the remainder is for landscape materials.

Overall, operating expenses at Mountain Park Ranch (as measured by dues

**Annual Operating Expenses for Mountain Park Ranch**

| Labor to Maintain Landscape (including entry and recreation centers) | $400,000 |
| Trimming Palm Trees                                                   | 5,000    |
| Weed Control (labor and materials)                                   | 18,000   |
| Irrigation (all areas)                                                | 6,000    |
| Fertilizer (including entry and recreation centers)                  | 7,000    |
| Replacing Plants                                                     | 6,000    |
| Decomposed Granite                                                   | 1,500    |
| Turf Seed                                                           | 7,000    |
| Water (including lakes and recreation centers)                       | 120,000  |
| Power (including lakes and recreation centers)                       | 41,000   |
| Chemicals for Lakes                                                  | 3,000    |
| Propane (recreation centers)                                         | 8,500    |
| Electrical Repairs (recreation centers and entry lights)             | 3,500    |
| Pool Repairs (recreation centers)                                    | 6,500    |
| Tennis Courts                                                       | 1,500    |
| Labor to Maintain Lakes and Recreation Centers                       | 63,000   |
| Recreation Center Staff (summer only)                                | 19,000   |
| Maintenance for Buildings and Structures (recreation centers)       | 8,000    |
| Telephone (recreation centers)                                       | 2,000    |
| **Total**                                                            | **$726,500** |
for the homeowners association) are somewhat below the average of all master-planned communities in Mountain Park Ranch's market area. In one survey of seven such communities, the average annual fee was $224, compared to $192 for Mountain Park Ranch. Four communities were higher, two lower.

Compared to most other competitive communities, water consumption at Mountain Park Ranch is lower because of the drought-tolerant landscaping used, smaller amounts of turf, and smaller lakes. Expenses are also less for mowing, fertilizer, and weed control.

On the other side of the ledger, the cost of operating three separate recreation centers has tended to drive up operating expenses, because it has been necessary to retain staff at each center to minimize vandalism and to provide services. Overall, operation expenses at Mountain Park Ranch tend to be less than for communities with large lakes or golf courses, higher than for those that provide minimal recreational facilities.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER

Mountain Park Ranch has been well received in the market, apparently largely because of its preserving the hillsides, landscaping, and amenities. The value of these factors goes back to the initial marketing, when the south of South Mountain area was primarily undeveloped and the south Phoenix area north of South Mountain was not generally considered a desirable residential location. Thus, the developer of Mountain Park Ranch had a considerable task to attract homeowners.

Preservation of the hillsides and the desert landscape provided a distinctive identity for Mountain Park Ranch. According to surveys undertaken by the developer, "scenery" was the primary factor that first attracted residents to Mountain Park Ranch. Fifty-six percent of residents cited this factor in a 1986 survey, 45 percent in 1988. In contrast, none of the other choices, such as location and price, received more than 14 percent.

In the decision to buy, however, other factors were important (sometimes more important), according to the surveys. In response to the question, "What were the most important factors in your decision to buy at Mountain Park Ranch?" in 1986 "scenery/desert-mountains" was cited most frequently (57 percent), followed by "affordable price" (26 percent) and "convenient location" (25 percent). In 1988, however, location was most frequently cited (53 percent), followed by price (52 percent) and "scenery/desert-mountains" (21 percent). Just 13 percent cited recreational facilities in 1986, 7 percent in 1988.

These findings are similar to the sentiments one homeowner expressed in an interview during this study. For this resident, the hills initially attracted him to Mountain Park Ranch. His decision to purchase a house, however,
was also strongly influenced by the location (close to work), the particular floor plan of the house purchased, and the recreation facilities available for his children.

Absorption rates at Mountain Park Ranch have been consistently much higher than elsewhere in the market area or in the Phoenix area in general. Of 32 master-planned communities in the Phoenix area, Mountain Park Ranch had the fastest absorption between 1988 and 1991, with over 600 sales each year. The second highest rate was just over one-half Mountain Park Ranch’s rate. The same relationship holds true in the southeast Phoenix market area. Of seven master-planned communities there, Mountain Park Ranch had the highest rate (602 sales) in 1991; the two communities with the next highest rates each sold 500 to 400 units.

The causes of this success have much to do with the number of product types offered, their price range, and the quality of houses. Interviewees suggest that Mountain Park Ranch has been especially effective in maintaining a range of prices. But it seems apparent that a good measure of Mountain Park Ranch’s success is the result of its combination of hillside preservation, desert landscape, and recreational facilities.

In terms of price, interviewees interviewed for this case study believe that sale prices at Mountain Park Ranch have maintained a 2.5 to 5 percent edge over competing products, amounting to premiums of $5,000 on average. In terms of location, builders at Mountain Park Ranch have achieved premiums of $2,000 to $5,000 for units adjacent to the greenbelts and lakes and up to $50,000 for units adjoining hillsides ($15,000 to $25,000 is more typical).

VALUE TO RESIDENTS AND THE COMMUNITY

Residents appear to be very satisfied with the landscape and amenities at Mountain Park Ranch. In the 1988 survey of residents, 99 percent of residents said they were “very satisfied” or “somewhat satisfied” with the “esthetic appeal of the development,” as were 98 percent with recreational areas and 97 percent with the landscape. No more than 3 percent were “not satisfied” with any of these items.

For the community, the landscape and amenities at Mountain Park Ranch have yielded several benefits. Mountain Park Ranch has provided a strong example of sound environmental planning in its preservation of hillsides, joint development of drainage courses as recreational greenbelts, and regime of drought-tolerant landscaping. The city of Phoenix has adopted much of what Mountain Park Ranch has done.

<table>
<thead>
<tr>
<th>VALUE MATRIX</th>
<th>Higher Rents/Sale Prices</th>
<th>Higher Satisfaction among Tenants and Residents</th>
<th>Higher Retention of Tenants and Residents</th>
<th>Faster Absorption or Leasing</th>
<th>Faster Approvals</th>
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<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>City Parks</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Active Recreation</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Jogging Trails</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Tennis/Volleyball</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>+ = High</td>
<td>+ = Medium</td>
<td>+ = Low</td>
<td>x = No value</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: High, medium, low, and no value represent the developer’s overall impression of the value of amenities.
in its development standards, and state regulators have adopted requirements for drought-tolerant plants in street rights-of-way.

Mountain Park Ranch has been quite influential with regard to development of the south of South Mountain area. For example, the adjacent community, which was developed before Mountain Park Ranch, is now replacing landscaping to compete better with Mountain Park Ranch and other projects in the marketplace.

To some extent, the recreation centers at Mountain Park Ranch alleviate the municipality’s burden to provide facilities. The city was able to develop the two municipal parks more efficiently and more inexpensively in concert with the developer than if it had proceeded on its own. And the final products benefit the community at large.

**SUMMARY AND CONCLUSIONS**

The successful development of Mountain Park Ranch can be attributed, to a large extent, to a master plan and landscape plan that placed great importance on maintaining the natural landscape and extending it through the use of desert- and drought-tolerant plants and to the joint use of drainage courses for a greenbelt jogging/bike path system and two municipal parks.

- The preservation of the existing desert hills that run through the site has provided a distinctive feature in the community’s design, which has been shown to have a high marketing appeal in the relatively flat area. Preservation of the hillsides has been a significant factor in attracting people to Mountain Park Ranch, spurring sales, and creating premiums for location.
- The desert- and drought-tolerant landscape has similarly helped to differentiate Mountain Park Ranch from its competition. The landscaping interspersed with oases of small lakes and grass, has proved to be popular and cost-effective.

---

**PROJECT DATA**

**LAND USE INFORMATION**

- Site Area: 2,647 acres
- Total Dwelling Units: 8,174
- Gross Density: 3.1 units per acre
- Average Net Density: 5.1 units per acre

**LAND USE PLAN INFORMATION**

<table>
<thead>
<tr>
<th>Acres</th>
<th>Percent of Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1,976</td>
</tr>
<tr>
<td>Office/Commercial</td>
<td>101</td>
</tr>
<tr>
<td>Public/Quasi-Public</td>
<td>33</td>
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<tr>
<td>Open Space (hillsides, parks, drainage, recreation centers)</td>
<td>917</td>
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<tr>
<td>Total</td>
<td>2,647</td>
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**DEVELOPMENT COST INFORMATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Site Acquisition</td>
<td>NA</td>
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<tr>
<td>Site Improvement Costs</td>
<td>$517,000</td>
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<tr>
<td>Grading</td>
<td>$117,000</td>
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<tr>
<td>Sewer/Water/Drainage</td>
<td>$2,398,000</td>
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<tr>
<td>Paving/Concrete</td>
<td>$1,245,000</td>
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<tr>
<td>Landscaping/Irrigation</td>
<td>$6,130,000</td>
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<td>Recreation Centers</td>
<td>$982,000</td>
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<td>Underground Utilities</td>
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<td>Total</td>
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<tr>
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<td>Legal/Accounting</td>
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<td>Title Fees</td>
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<td>Construction Interest and Fees</td>
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<td>Working Capital/Cash Shortfall</td>
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<td>Rezoning Fees</td>
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<td>Total</td>
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<tr>
<td>Total Development Cost to Date</td>
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**RESIDENTIAL UNIT INFORMATION**

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<thead>
<tr>
<th>Average Net Density</th>
<th>Lot Size</th>
<th>Floor Area</th>
<th>Number</th>
<th>Current Sale Prices</th>
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<tbody>
<tr>
<td>(units/acre)</td>
<td>(square feet)</td>
<td>(square feet)</td>
<td>Planned/Built</td>
<td>(Square feet)</td>
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<td>Single-Family Detached</td>
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<td>4,500–12,000</td>
<td>1,400–3,500</td>
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<tr>
<td>Single-Family Attached</td>
<td>8.3–9.1</td>
<td>2,500–4,000</td>
<td>1,200–2,000</td>
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<tr>
<td>Multifamily</td>
<td>15–29</td>
<td>NA</td>
<td>445/308</td>
<td>NA</td>
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<tr>
<td>Custom Homesites</td>
<td>0.5</td>
<td>1–7 acres</td>
<td>2,500–10,000</td>
<td>61/32</td>
</tr>
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</table>

1. Includes only development costs incurred by American Newland Associates since acquiring the project in July 1987.
2. Site acquired by American Newland Associates partially developed as part of a portfolio acquisition.
WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: August 1992

DIRECTIONS
From Phoenix International Airport and downtown:
Take I-10 east, exit at Chandler Boulevard or Ray Road, and proceed west to entrances.
Driving time: Approximately 30 minutes.

DEVELOPMENT SCHEDULE
Site Purchased: May 1981
Planning Started: June 1981
Construction Started: January 1984
Sales Started: April 1985

INTERVIEWEES
Developer
Ronald T. Lane, president
Rick Garnier, project manager
K.C. Brandon, construction manager
Newland Arizona/American Newland Associates
3101 North Central Avenue, Suite 1000
Phoenix, Arizona 85012
(602) 234-1544

Master Planner
A. Wayne Smith, president
Jackie L. Guthrie, principal
A. Wayne Smith & Associates (subsidiary of Cornoyer Hedrick)
2425 East Camelback Road, Fourth Floor
Phoenix, Arizona 85016
(602) 381-4848

Landscape Architect
Steven Vollmar, president
Vollmar & Associates
Casa Loma Building
398 South Mill Avenue, Suite 202
Tempe, Arizona 85281
(602) 921-8414

Planning Official
David E. Richert, deputy planning director and zoning administrator
Phoenix Planning Department

Broker
Michael W. Martindale
Commerce Realty Advisors, Limited

Tenant Representative
Allan Ebner, board of directors, homeowners association

° Desert landscaping is similar to more traditional landscape designs in terms of capital costs, but maintenance costs tend to be significantly lower, because less water is used and less labor required for mowing, weeding, and seasonal planting.

° The integrated system of recreational amenities at Mountain Park Ranch works well, and residents use it actively. Surveys by the developer have shown, however, that they have not been a critical factor in most decisions to purchase property.

° Absorption at Mountain Park Ranch has been very high, as much as twice that of competitive projects. The combination of landscape and amenities appears to play a significant role in these numbers, both in attracting attention to Mountain Park Ranch and in providing a desirable residential environment. But other factors play a role, particularly the price ranges available at Mountain Park Ranch and the strict compliance with the community's design guidelines.

° Premium prices have been achieved for houses adjoining the greenbelt, the lakes, and the hillsides: as high as $50,000 for views of the hillsides or a lot next to them. The developer believes that, overall, Mountain Park Ranch has been able to sustain prices 15 to 20 percent higher for lots sold to builders.

° The landscape and amenities at Mountain Park Ranch appear to have benefited the developer during the approvals process, and the environmental features of the master plan contributed to relatively smooth approval of the plan. The landscape and amenities contributed to the city's acceptance of the residential densities proposed by the developer.

° Residents of Mountain Park Ranch are generally quite satisfied with the community's landscaping and recreational features, which in turn has generated positive word-of-mouth marketing for the project.

° Much of what Mountain Park Ranch has achieved, including preservation of the hillsides, desert landscaping, and joint use of drainage facilities for recreation, has been adopted by the city of Phoenix and by other developers as standard or required practice. Thus, for the public Mountain Park Ranch has provided an example of the benefits of environmentally conscious planning, and for the development community Mountain Park Ranch has provided the additional example of the financial benefits of such planning.
THE TERRACES AT PERIMETER CENTER
ATLANTA, GEORGIA

The Terraces at Perimeter Center includes nearly 1.2 million square feet of office space in two 11-story buildings. Each building features a soaring central atrium that expands the sense of space and blends indoors and outdoors. A pond between the buildings unifies the ground-level landscape.

GENERAL DESCRIPTION
The Terraces at Perimeter Center is a prototypical suburban office project that illustrates the achievement of a pleasant and inspiring work environment. The architecture is designed to blend quietly with the natural setting, while a dramatic sequence of indoor and outdoor spaces enlivens the site and enhances its sense of place.

Two 11-story office buildings, mirrored by a small pond at the center of the site, are coupled with separate, free-standing, six-level parking garages that are largely hidden from view. Indoor and outdoor terraces provide a variety of vantage points for viewing wildflowers, swans in the pond, and the skyline of downtown Atlanta above the forest canopy. Inside, soaring 11-story atria with sweeping panoramas of glass create a spacious environment. Red oak interiors and balconies are accented with bamboo and palm trees, water features, and polished bronze.

The project features a wide range of on-site services and social opportunities for business professionals, including a fully equipped health club offering three daily aerobics classes and exercise equipment, a private executive dining club (The Ashford Club) on the top floor of the North Terraces building serving three meals per day to its members, and a conference center featuring a 155-seat auditorium with complete audiovisual and projection capabilities and boardroom. The ground level of each building's atrium provides restaurants, banks, and dry cleaning, shoe shine, and travel services.

THE SITE
The site of The Terraces is located within Perimeter Center, a 550-acre office park developed by Taylor & Mathis in association with the Metropolitan Life Insurance Company. Perimeter Center is located 20 miles north of downtown Atlanta near the intersection of Ashford-Dunwoody Road and I-285, within a short drive of many of the city's most prestigious residential areas.

Much of the land for Perimeter Center was assembled in the late 1960s at $15,000 per acre. To lure businesspeople away from downtown Atlanta, Taylor & Mathis knew that it would need to offer essential services, such as hotels, banks, service stations, travel agencies, restaurants, and even nightclubs. Having reached an agreement with Rich's, a local department store, Taylor & Mathis leased land to the Rouse Company for the construction of Perimeter Center Mall, which opened in 1971. Today, Perimeter Center contains over 5 million square feet of office space and serves as a business address for more than 350 national corporations, over half of them Fortune 500 companies.

The Terraces is located on an irregularly shaped 25-acre property that is generally bounded by Ashford-Dunwoody Road on the east, Perime-
ter Center West on the south, Perimeter Center Place on the west, and Meadow Lane on the north. A 200-room hotel and a branch bank office building are located adjacent to the site on the southeast, and Perimeter Center Mall is located immediately to the south. Before development, the site contained heavily wooded areas and an abandoned excavation borrow pit.

DEVELOPMENT PROCESS AND FINANCING
Taylor & Mathis has been a joint venture partner with Metropolitan Life for four major projects, including Perimeter Center. In its role as developer,
A koi and lily pond encircles a gazebo at the rear entrance to the south tower. Feeding the fish and relaxing by the pond is a favorite pastime for tenants.

The development program was determined by the projected leasing rate and by considerations of operating efficiency and the site. A zoning variance was required to exceed a building height of more than five stories. To maintain flexibility throughout development, participants decided to develop the southern portion of the site last as its greater visibility and fewer development constraints made it a potential retail site.

Construction of the first phase, the North Terraces office building and north parking structure, started in May 1983 and was completed 18 months later. Construction of the second phase, the South Terraces office building and south parking structure, was started in November 1984 when the first phase was completed and was completed 21 months later.

The Terraces was an all-cash project, so no third-party financing was involved.

MARKETING AND MANAGEMENT

The Terraces at Perimeter Center is highly successful in terms of economic viability. The North Terraces was fully leased within 20 months after construction was completed, and the project now averages 90 percent occupancy, despite a soft market.

The dining club and retail establishments are leased by private operators, and Taylor & Mathis operates the health club and conference center. Each office building has its own building manager; the maintenance staff is headquartered in the South Terraces. Taylor & Mathis employs five full-time groundsmen to care for the exterior landscape, including mowing grass weekly, watering and feeding flowers and replanting beds twice per year, monitoring the central pond, caring for the swans, maintaining the koi/lily pond, cleaning the fountain pools at the entrance to each building, and monitoring, watering, and thinning plants in the planters along the terraces of parking structures. A separate staff maintains the atria. As testimony to the energy-efficient design of the project, The Terraces has the lowest power bills of any project managed by Taylor & Mathis.

LANDSCAPE AND AMENITIES

The landscape and amenity program at The Terraces is tied closely to the overall architecture of the buildings. The buildings and parking structures were designed to blend the grounds into the site, and the landscape plan evolved to blend the grounds with the buildings. The design maximizes views of trees, landscape, and water features, and minimizes views of loading areas, parking garages, and other structures.

The project's landscape includes several notable elements:
- A large central pond between the two buildings created from a creek that flows southerly through the site.
- Two pedestrian footbridges, one over the pond between the two buildings and the other over the pond between the North Terraces building and its parking structure.
- Large trees, many of which were preserved and others that were planted during construction.
- Extensive planter boxes along the terraces of the parking structures intended to minimize the promi-

A covered outdoor walkway connects each building to an adjacent parking structure. Tenants appreciate the protection from the elements, given Atlanta's often unpredictable and rainy climate.
The parking garages incorporate planters and trellises, enabling the garages to blend into the landscape as the foliage matures.

- A formal gazebo surrounded by a circular koi and lily pond between the South Terraces building and its parking structure.
- Large beds of flowers throughout the project, but particularly along the roadway frontages and at entrances.
- Deep pools with fountains at the drop-off entrance of each building.

Planning and design were part of a collaborative effort between the architect (Skidmore, Owings & Merrill of Chicago), the landscape architect (Reece Hoopes & Fincher of Atlanta), and the developer. From its inception, The Terraces was intended to be the premier office address at Perimeter Center and the developer's showcase project. Pursued through the architecture and the interaction between the buildings/parking structures and the landscape, Taylor & Mathis early rejected the notion of a single high-rise structure, opting instead for a design that would be more suburban in scale.

The first phase (the North Terraces building) was situated in a sloping, wooded area with many large trees, and the decision was made early to preserve as many of the trees as possible, especially along the creek. The area for the second phase (the South Terraces building) had previously been excavated and was largely denuded of trees. During construction of the first building, large berm was constructed around the periphery of the site for the second phase and trees planted; some trees that had to be removed from the site for phase one were transplanted and other large trees trucked in. As a result, when the second phase opened later, the landscaping appeared more mature.

The development team decided to challenge the common perception of architecture the market wanted. As a result, the project differs from other office projects in suburban Atlanta in its use of natural, non-high-tech materials. The tactile quality of the project's painted concrete superstructure, quarry tile floors, brightly painted ceramic tiles, brass accents, and wooden window walls and railings has a soft appearance that is intended to make tenants and visitors feel more comfortable than in projects where high-tech, machine-made materials are used.

The buildings incorporate a strong element of elegant simplicity. Materials were selected to complement the natural surroundings, and the clean architectural lines flow smoothly with the natural grade of the land. The concrete office buildings use overhangs and columns to provide shade, which, in combination with the aluminum solar fins, provide excellent energy efficiency despite the use of clear glass windows. The structure also recalls the sculpture of Sol Lewitt, with its connotation of infinite space defined by a three-dimensional grid. This spatial ambiguity enhances The Terraces's interaction with its wooded site.

Surface parking was minimized to protect the existing landscape and the site's natural characteristics. The two parking garages are recessed into the ground to minimize their visual impact. Above ground, the garages are
open-air, terraced, precast concrete structures with trellised rooftops and cantilevered planter edges. As they become overgrown with vines, the terraced profiles set into the hillside are intended to disappear into the landscape. The terraced arrangement also provides for entrances at various levels and from various directions, reducing vehicular circulation between levels.

Each building has two main entrances for visitors and tenants, one serving primarily a drop-off area and one serving primarily a parking garage. The drop-off areas are square terraces paved with geometric patterns of red clay brick and gray granite, while the building entrances on the drop-off side are accented by porte-cochere with copper-roofed wooden canopies and large fountain pools.

From each garage, landscaped walkways pass through pondside garden pavilions, reminiscent of traditional gazebos, that mark a ceremonial point of arrival for each building. Covered passageways provide a convenient connection between the garages and the office buildings.

A meandering creek, which bisects the site, has been expanded to provide for a series of deep ponds that serve to retain stormwater and fluctuate several feet to accommodate peak storm flows. A cable-supported footbridge, built with imported hardwood from African okki trees, spans the creek between the two drop-off areas. Pond edges are mostly "soft," except near the footbridge and drop-off terraces, where the edge is lined with a rock wall.

Each building features two office wings connected by a glass-enclosed atrium; each atrium surrounds a cluster of six high-speed glass elevators. Office suites in two wings of each building are connected to the elevator cluster at each level by bridges that span the atrium. Each building wing is, in effect, an individual building with its own central utility core and service elevator.

Exterior water features are carried inside, where, in each atrium, they are transformed into shallow pools whose walls are paved with special handmade and glazed ceramic tiles by Spanish artist Joan Gardy Artigas. The same colorful tiles are combined with clay tiles in the atrium at the garden level, first floor, and elevator lobbies of each office floor.

In addition to the mature trees on the site, the area was densely planted with a wide array of trees native to the Atlanta area: red birch, willow oaks, red maples, Bradford pears, sawtooth oaks, tulip trees, pines, and magnolias. The intent was to establish a natural feel to the landscape except in the motor court areas, which are treated more formally and feature a preponderance of hardscape. The landscape plan provides for many small landscape "zones," which function as small, independent gardens.

To minimize the visual prominence of the parking structures, planter boxes were built into the terraces of the structures and planted with a variety of...
hanging species, such as blue rug juniper, ivy, honeysuckle, and other evergreens. As a result of problems with irrigation systems and drainage, some of the boxes have had to be replanted, and they must be frequently monitored to ensure the plants are healthy.

The budget for landscaping was set at approximately $1.2 million for each building. Annual operating expenses total approximately $200,000, split about equally between the north and south towers.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER/OWNER

Interviews with members of the development team indicate that the project's landscape and amenities had no effect on the ability to gain or expedite approvals. The primary benefit that the developer stands to gain from the landscape and amenities is therefore related to the financial return (rental rates and occupancy levels) that can be attributed to the amenities.

Members of the development team noted that several Class A office projects opened in the immediate area of Perimeter Center since the first phase of The Terraces opened. Three of these projects are primary competitors, and three are secondary competitors. Asking rental rates, as published in Doby's Office Guide, were used to compare these office projects, located in the north central submarket of Atlanta.

Asking rental rates for office space are fairly consistent between The Terraces and its primary competitors. The top end of the asking rates is higher for Concourse and Northpark (and probably Ravinia), because they are newer and more expensive office complexes. All of the primary competitors feature amenities similar to The Terraces, including covered parking, health clubs, on-site food service, an adjacent hotel, common conference facilities, and prominent landscape elements.

Despite the asking rents for these projects, it is likely that The Terraces and its primary competitors receive roughly comparable rents, about $17.00 per square foot. In comparison, the pro forma rental rate for North Terraces was $18.50 per square foot and for South Terraces was $20.50 per square foot. The pro forma rates for competitive projects are unknown but are probably below the rates currently received because of the strong competition in the market.

Comparative vacancy levels for the projects could not be ascertained within the scope of this analysis. North Terraces, however, is currently 92 percent leased, South Terraces 86 percent leased. These occupancy levels are above the local average of 84 percent for office space priced from $25.75 to $52.00 per square foot, according to Doby's Office Guide.

The developer of The Terraces believes that the project will continue to outperform the market in its ability to retain office tenants because of the high level of management and maintenance services offered and the "comfortable" and "livable" work environment. The developer believes that The Terraces will age more gracefully than glitzier competitive projects, contending that the scale of the buildings and

OFFICE RENTAL RATES FOR THE TERRACES AND COMPETITORS
(as of the first quarter 1992)

<table>
<thead>
<tr>
<th>Project</th>
<th>Asking Rents per Square Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Terraces</td>
<td>$24.00-24.50</td>
</tr>
<tr>
<td>Primary Competitors</td>
<td></td>
</tr>
<tr>
<td>Ravinia</td>
<td>$22.00-22.25</td>
</tr>
<tr>
<td>Concourse</td>
<td>$23.50-27.50</td>
</tr>
<tr>
<td>Northpark</td>
<td>$23.50-27.50</td>
</tr>
<tr>
<td>Secondary Competitors</td>
<td></td>
</tr>
<tr>
<td>Ashford Center-North</td>
<td>$22.50-23.50</td>
</tr>
<tr>
<td>Crown Pointe</td>
<td>$21.00-24.00</td>
</tr>
<tr>
<td>Central Park</td>
<td>$24.00-26.00</td>
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* Asking rates not published.

CONSTRUCTION COSTS BY TYPE OF AMENITY

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<thead>
<tr>
<th></th>
<th>North Tower</th>
<th>South Tower</th>
<th>Total</th>
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<tbody>
<tr>
<td>Streetscape</td>
<td>$70,464</td>
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<td>Exterior Signage</td>
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<td>Water Features (lake)</td>
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<td>Entryways (cypress deck)</td>
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<tr>
<td>Entryways (tunnel)</td>
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<td>Plazas</td>
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<td>78,750</td>
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<td>Underground Sprinkler System</td>
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<td>Connector Bridge</td>
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OPERATING COSTS BY TYPE OF AMENITY

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<th></th>
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<th>South Tower</th>
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<td>Exterior Signage</td>
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<tr>
<td>Landscaping (atrium)</td>
<td>19,056</td>
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<tr>
<td>Landscape Design</td>
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<td>Fountains (exterior pools)</td>
<td>5,408</td>
<td>2,627</td>
<td>8,035</td>
</tr>
<tr>
<td>Underground Sprinkler System</td>
<td>5,528</td>
<td>5,381</td>
<td>10,909</td>
</tr>
<tr>
<td>Total</td>
<td>$106,455</td>
<td>$100,493</td>
<td>$206,948</td>
</tr>
</tbody>
</table>
The lobby of the south building is landscaped with towering bamboo trees that thrive in the glass-enclosed space. A cafeteria and convenience services are also located in the lobby.

VALUE TO TENANTS

The primary users of the project are the office tenants and their clients or visitors. Representatives of several office tenants were interviewed to gauge their perceived value of the project's design and landscape.

Tenants indicated that their decision to locate in The Terraces was driven first by location, access, and rental rates. Only when those requirements were satisfied did they consider aesthetics and amenities. Virtually all of the tenants at The Terraces entered the local market seeking Class A office space, so they came with certain expectations about rental rates.

Tenants appreciate most the following features of their work environment:
- Essential services, particularly banking and food services, on site;
- The health club in North Terraces;
- The ability to walk to the Perimeter Center Mall during lunch;
- The private dining club on the top floor of the North Terraces building where executives can meet for meals and to entertain clients;
- The conference facilities in the South Terraces building;
- The openness of the office suites created by windows into the building atria and the use of clear glass windows that allow in more light;
- The "warm," "comfortable," and "restful" atmosphere both inside and outside the buildings (although tenants had difficulty distinguishing the components of the landscape responsible for this positive atmosphere).

Tenants also value highly the "good image" The Terraces presents to their clients. While the buildings and grounds are attractive and comfortable, they are not "lavish" or "decadent," and The Terraces "strikes a good balance between quality and practicality" and presents "a professional environment."

Tenant representatives who are directly involved in finances for their organizations commented on the high efficiency ratios of the buildings (that is, the net rentable area compared to net usable area), which was an important factor in their decision to locate in The Terraces. The design of the atria and the location of the elevators within them minimize nonusable space. Offices on the top floors with outdoor balconies are in strong demand. Although none of the interviewees indicated that the balconies caused them to select The Terraces over competitive projects, it is clear that office workers compete for these prized spaces.

Tenants also value the quality of Taylor & Mathis's management and commitment to maintenance. The de-
veloper/owner's reputation in the Atlanta market for quality management and maintenance seems to have had a substantial positive effect on tenants' perception of the project and its perceived value.

Few tenants placed much emphasis on landscaping or the project's exterior features, taking them largely for granted, with the possible exception of the pair of swans. Tenants believe more spaces should be available to sit outside and eat lunch. The existing outdoor sitting areas are frequented primarily by smokers, and many nonsmokers avoid them (smoking is not permitted in the buildings). Most office workers consider outdoor areas to be primarily passive and visual amenities. They like the large beds of flowers planted around the project, but they are most visible from cars. While the landscape and grounds are considered a piece of the total project, they do not constitute a singularly valuable amenity from the perspective of office workers.

Most of the tenants interviewed believe they do not pay a rental premium that can be attributed to the project's landscape and amenities. Strong competition within the market has kept rental rates reasonable and fairly consistent among the competing Class A projects. Some tenants noted that they would not have paid a premium (if they felt that one was being asked) because the market contains too many other high-quality projects nearby with excellent amenities. If a small premium can be attributed to the project, tenants believe it is the result of management and maintenance services, not to landscaping or any other amenities.

On the whole, tenants believe that office workers appreciate their good work environments and that the project contributes, at least to some extent, to increased morale and productivity among workers. The high quality of management and maintenance minimizes building problems and the time spent by workers trying to fix those problems, also enhancing productivity. Tenants are not convinced that the pleasant work environment contributes significantly to retaining employees.

When asked why they selected The Terraces over competing projects, tenants responded uniformly that it was a function of location, price, the buildings' efficiency, and the reputation of the developer/manager. Tenants believe that the project's aesthetics and amenities are good but not substantially greater than those of competitors. Some prefer The Terraces's natural feeling over other Class A projects nearby (which tend to be high-rise structures with marble lobbies and more formal landscaping), but that preference alone would not be enough to sway their choice of location.

Railings and interior window frames are made of hand-rubbed red oak. Other materials, such as the quarry tile floors, brightly painted ceramic tiles, and brass accents, complement the naturally wooded surroundings.

A conference center—including a 135-seat auditorium with complete audiovisual and projection capabilities—is available to tenants.
A cable-supported footbridge, built with hardwood from African ekki trees, spans the central pond and connects the two buildings.

**VALUE TO THE COMMUNITY**

The landscape architect and members of the development team indicated that the design, amenities, and landscape of the Terraces had virtually no influence over the development review and approvals process or the time required to secure approvals. DeKalb County, where the project is located, had no substantial landscaping standards at the time plans were submitted, and the county did not (and typically does not) take an aggressive role in issues affecting architecture and landscape design. No opposition from the community arose to the proposed project, in part because it is located in a primarily commercial area. Thus, the public sector’s role in designing and developing The Terraces was minimal.

No evidence exists that the project’s landscape and amenities created fiscal value for the local community beyond the normal value for Class A office projects. Real estate tax revenues are believed to be comparable to competitive local projects. To the extent that The Terraces was among the first Class A projects to be built within Perimeter Center, however, it might be argued that it helped to set a high standard for design and landscaping.
SUMMARY AND CONCLUSIONS

- No conclusive empirical evidence suggests that the developer/owner of the project has achieved higher office rental rates, higher occupancy levels, or other direct financial return that can be attributed specifically to the project's landscape and amenities.

- Anecdotal evidence suggests that The Terraces could be returning a higher rent per square foot than competitive projects when construction costs are taken into consideration. The belief (not quantified in this case study) is that The Terraces was less costly to build than competitive Class A projects, because construction costs were minimized by building an 11-story building and by avoiding expensive exterior building materials.

- Despite a construction cost that is believed to be lower than typical Class A buildings in the submarket, The Terraces retains a strong, positive image as a result of its distinctive architecture, the atria, and the strong visual relationship between indoors and outdoors that has benefited the owner's ability to compete for tenants at the top end of the market.

- Tenants value more highly matters like location, property management, price, and building efficiency than they do aesthetics and landscape, especially during a recession.

- Office tenants in this market expect that Class A projects will incorporate a high level of landscape and amenities in their design and take such amenities largely for granted.

- When asked to list the amenities they value most, office tenants tend to place greater value on services (food service, banking and travel services, health clubs, conference facilities, management services, and so on) than they do on landscape and other design amenities.

- Tenants' feelings about the aesthetic quality of their work environment were very positive, but they could not easily isolate specific elements of the project that contribute to those feelings, although they mentioned the atria most often as a specific amenity they valued. They most valued the overall "feel" of the project.

- Tenants are very concerned about the image their office space pre-

### PROJECT DATA

#### LAND USE INFORMATION

<table>
<thead>
<tr>
<th>Site Area</th>
<th>25.08 acres (1,092,363 square feet)</th>
</tr>
</thead>
</table>

#### Gross Building Area (GSF)

| North Terraces | 580,760 square feet |
| South Terraces | 605,786 square feet |
| Total          | 1,186,546 square feet |

#### Gross Leasable Area (RSA)

<table>
<thead>
<tr>
<th>Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>974,436 square feet</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>8,251 square feet</td>
</tr>
</tbody>
</table>

| Health Club/Conference Center |
| 10,528 square feet |
| Total |
| 993,215 square feet |

#### Net Square Foot (NSF)

| 852,586 square feet |

| Floor/Area Ratio (FAR) |
| 1.09 |

<table>
<thead>
<tr>
<th>Total Parking Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Structure</td>
</tr>
<tr>
<td>South Structure</td>
</tr>
<tr>
<td>Surface Parking</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>1,408 square feet</td>
</tr>
<tr>
<td>1,500 square feet</td>
</tr>
<tr>
<td>80 square feet</td>
</tr>
<tr>
<td>2,980 square feet</td>
</tr>
</tbody>
</table>

| Applicable Parking Ratio |
| 3 spaces per 1,000 NSF |

| Maximum Number of Stories |
| 11 |

| Site Coverage |
| 25 percent |

<table>
<thead>
<tr>
<th>ANNUAL OPERATING EXPENSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per NSF</td>
</tr>
<tr>
<td>Taxes</td>
</tr>
<tr>
<td>Insurance</td>
</tr>
<tr>
<td>Services</td>
</tr>
<tr>
<td>Maintenance</td>
</tr>
<tr>
<td>Janitorial</td>
</tr>
<tr>
<td>Utilities</td>
</tr>
<tr>
<td>Legal</td>
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<tr>
<td>Management</td>
</tr>
<tr>
<td>Miscellaneous</td>
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<tr>
<td>Total</td>
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#### OFFICE TENANT INFORMATION

<table>
<thead>
<tr>
<th>Size (square feet)</th>
<th>Number of Tenants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000-1,999</td>
<td>17</td>
</tr>
<tr>
<td>2,000-4,999</td>
<td>30</td>
</tr>
<tr>
<td>5,000-9,999</td>
<td>13</td>
</tr>
<tr>
<td>10,000+</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>82</td>
</tr>
</tbody>
</table>

| Average Office Tenant (RSF) |
| 9,656 square feet |

| NSF (typical floor) |
| 33,200-46,000 square feet |

| Gross Annual Rents per NSF |
| $19.14 |

| Length of Leases |
| 3.5-10 years |

### DEVELOPMENT COST INFORMATION

<table>
<thead>
<tr>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Acquisition Cost</td>
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<tr>
<td>Site Improvement Costs</td>
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<tr>
<td>Excavation</td>
</tr>
<tr>
<td>Grading</td>
</tr>
<tr>
<td>Sewer/Water/Drainage</td>
</tr>
<tr>
<td>Paving</td>
</tr>
<tr>
<td>Curbs/Sidewalks</td>
</tr>
<tr>
<td>Landscaping/Irrigation</td>
</tr>
<tr>
<td>Fences/General Conditions</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Construction Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Superstructure</td>
</tr>
<tr>
<td>HVAC</td>
</tr>
<tr>
<td>Electrical</td>
</tr>
<tr>
<td>Plumbing/Sprinklers</td>
</tr>
<tr>
<td>Elevators</td>
</tr>
<tr>
<td>Fences/General Conditions</td>
</tr>
<tr>
<td>Finishes</td>
</tr>
<tr>
<td>Graphics/Specialties</td>
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<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
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</table>

<table>
<thead>
<tr>
<th>Soft Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture/Engineering</td>
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<tr>
<td>Project Management</td>
</tr>
<tr>
<td>Leasing/Marketing</td>
</tr>
<tr>
<td>Legal/Accounting</td>
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<tr>
<td>Taxes/Insurance</td>
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<tr>
<td>Title Fees</td>
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<tr>
<td>Construction Interest and Fees</td>
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<tr>
<td>Working Capital/Cash Shortfall</td>
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<tr>
<td>Other</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

| Total Development Cost | $136,104,283 |
| Development Cost per Gross Square Foot | $114.71 |
| Development Cost per Net Square Foot | $159.64 |

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1. NSF is the whole floor area, measured from interior wall to interior wall, minus areas of vertical penetration (such as mechanical space and service elevators).
2. Approximately 15,500 square feet of office space is currently leased to retail tenants.
3. NSF is RSF minus common corridors and other shared space.
4. Based on 1990 budget.
5. Most floors are divided into two separate tenant areas, one on each side of the atrium.
6. Does not include site acquisition cost.
WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: September 1992

DIRECTIONS
From Hartsfield International Airport: Follow I-85 north through downtown Atlanta to I-285. Follow I-285 west five miles to Ashford-Dunwoody Road. Exit I-285 and proceed north for 0.6 mile on Ashford-Dunwoody Road to Perimeter Center West. Turn left. The driveway for the south building is located 800 feet on the right immediately past the hotel.
Driving time: Approximately 45 minutes.

DEVELOPMENT SCHEDULE
Phase I Planning Started: September 1982
Site Purchased: May 1983
Phase 1 Construction Started: May 1983
Phase 1 Leasing Started: May 1984
Phase 1 Completed: November 1984
Phase 2 Construction Started: November 1984
Phase 2 Leasing Started: January 1986
Project Completed: July 1986

DEVELOPER/MANAGER
Taylor & Mathis
115 Perimeter Center Place, Suite 200
Atlanta, Georgia 30346
(404) 394-0222

LANDSCAPE ARCHITECT
Reece Hoopes & Fincher
400 Perimeter Center Terrace, Suite 85
Atlanta, Georgia 30346
(404) 394-8313

INTERVIEWEES
Developer/Owner
Harvey M. Cheatham, executive vice president—development
D. Kerry O'Brien, vice president—marketing
Kit Baker, general manager (property management)
Eric Pence, grounds manager
Taylor & Mathis

Landscape Architect
Reece Hoopes & Fincher

Tenants
Lawrence M. Gold, attorney
Frederick W. Owens, treasurer
Hazlehurst & Associates, Inc.
Gail W. Staub, human resources administrator
Summit Communications Group, Inc.

sents and what it might convey to clients. They generally believe that The Terraces strikes a good balance between quality and practicality, and does not convey a message of exorbitant expense.

• Tenants believe they do not, and state that they would not pay a premium for landscape and amenities.

• Most tenants believe that the good work environment of The Terraces contributes subtly to enhanced productivity and morale, although those perceptions could not be quantified. Most do not believe that the project's amenities significantly help to retain employees.

• Despite the visual emphasis that was placed on the project's outdoor landscape, the developer has not endeavored to increase its use for the active enjoyment of workers. Only two small areas are provided with outdoor seating, and only recently were walking paths constructed around portions of the property and only then to comply with requirements of the Americans with Disabilities Act. Few workers routinely use outdoor spaces, but it is not clear whether it is because of a lack of facilities or because of individual choice.
Surveys indicate that most tenants of Carnegie Center place greater value on passive amenities like outdoor eating areas and water features than they do on active recreational features.

GENERAL DESCRIPTION

Carnegie Center, a project of The Landis Group, is a large-scale, planned suburban office park on the Route 1 corridor near Princeton, New Jersey. The project has experienced a high degree of market acceptance and is attracting a wide range of corporate tenants. The developer has been able to position Carnegie Center at the top of the competition by staying one step ahead of the area's phenomenal growth during the early and mid-1980s and by offering a premium product that integrates land planning, landscape, and amenities.

A 54-acre parcel of land on the southeast corner of the intersection of Route 1 and Alexander Road was acquired for the first phase of the project in April 1980. While planning for Phase 1 was under way, the developer took options on several adjacent parcels. Carnegie Center I, completed in 1983 on the original 54-acre parcel, consists of four office buildings and a 360-room hotel totaling 670,000 square feet.

Carnegie Center II, on 247 acres immediately adjacent to Carnegie Center I, will at completion consist of 24 million square feet distributed among 21 buildings. Sixteen building sites lie inside an internal loop road, and buildings are clustered around a 22-acre central open space. This landscaped open space, referred to as "the greenway," links the five main building clusters and serves as the project's featured amenity. The development of each building site is regulated by a set of design guidelines and maintenance standards.

Related projects on the opposite side of Route 1 include Carnegie Center West, a build-to-suit office project, and Princeton MarketFair, a 370,000-square-foot specialty shopping center.

THE SITE AND THE PROJECT'S HISTORY

A prime location midway between New York and Philadelphia, name recognition associated with Princeton University, and a skilled workforce combined to make Princeton a desirable corporate address in the early 1970s. A steadily growing market was created by the university's development of Princeton Forrestal Center, a suburban office park on Route 1 about three miles north of Carnegie Center.

In the early 1970s, most of the local labor force lived in the northern part of the Princeton corridor. In the process of searching for a site for a large Canadian insurance company interested in establishing a U.S. headquarters in the Princeton market, The Landis Group determined that the labor pool was shifting south toward more affordable housing in the vicinities of Trenton, New Jersey, and Bucks County, Pennsylvania. The company zeroed in on a Route 1 location in West Windsor Township, midway be-
between the Princeton Junction train station and the heart of Princeton. The company purchased the 54-acre parcel, part of an unzoned sod farm, in April 1980 for $25,000 per acre.

In the ensuing months, Landis analyzed space absorption in the Princeton market and saw the potential to build a park much larger than the initial 54 acres could accommodate. It began taking options on neighboring parcels. Four options taken in early 1980 covering 465 acres were exercised between September 1982 and January 1985 for a cost of $12.9 million. With an additional purchase of 34 acres in December 1985, a total of 560 acres has been acquired for $18.5 million, or approximately $33,000 per acre. Within the five-year takedown period on the land, its value had increased ninefold; in December 1988, the land was valued at $168 million, or $300,000 per acre. This large increase in land value between 1980 and 1988 was fueled by the region’s rapid growth and absorption of office space, general speculation in land and real estate, approval of Carnegie Center’s overall master plan, which promised a campus-style environment, and the development of office space during the early phases that provided the project with name recognition throughout the region.

PHASING AND FINANCING
Carnegie Center II is being developed in five phases, arranged so that each phase will include the construction of all on-site and off-site facilities and infrastructure necessary to make that phase self-sufficient at the time of its completion. As of May 1992, ten buildings totaling approximately 1.2 million square feet (Buildings 202, 210, 211, 212, 213, 214, 501, 504, 506, and 508) were complete. Because Carnegie Center’s base land costs were only $3.31 per square foot of office space, the developer has been able to spend $12.00 per square foot in infrastructure, landscaping, and amenities (including the greenway).

Financial backing for the project was provided by a variety of institutions, including Aetna, Cigna, Travelers, Chemical Bank, Chase Manhattan Bank, Manufacturers Hanover Bank, and United Jersey Bank.

MARKETING AND MANAGEMENT
As of year-end 1991, the project was 95 percent occupied in a market with an average vacancy rate of about 13 percent. The marketing strategy is to sell the total environment, not just space in a building, with the message “There’s a new town in town.” The greenway, considered integral to Carnegie Center’s theme, identity, and market success, is featured prominently in all advertising materials.

Current tenants include Bell Atlantic, Prudential-Bache, IBM, General Mills, PSE&G (the local utility), E.R. Squibb, Kodak, Arthur Andersen, Johnson & Johnson, Wall Street Digest, United Jersey Bank, Price Waterhouse, Wang, Ernst & Whinney, Prime Computer, and Educational Testing Service. An effort is made to provide tenants with...
the flexibility to expand, relocate, or contract. To enable tenants to be juggled to provide expansion space, a standard relocation clause in every lease states that a company can be moved to another building within the complex if necessary.

The Landis Group maintains an on-site staff of 50 employees skilled in finance and law, marketing and leasing, design, planning and construction, administration, and management to cater to tenants. The on-site location gives tenants quick access to management staff and allows management to watch over day-to-day maintenance functions, such as care of the greenway landscaping.

**LANDSCAPE AND AMENITIES**

**PLANNING AND DESIGN**

Soon after acquiring the initial 54-acre parcel, Landis selected The Stubbins Associates as the master planner and architect. Carnegie Center I provided for four freestanding buildings, each with frontage on Route 1; approvals were obtained in 1979. About that time, three loss leaders were enticed to the project to heighten interest: The first was a Hyatt Regency hotel owned and operated by the chain's founders, the Pritzker family; 16.5 acres were released at $92,000 per acre to the Pritzkers in 1981. Two other parcels on what is now Carnegie Center II were sold: 20 acres at $68,000 per acre to the United Jersey Bank as a site for its corporate headquarters (Building 301) and seven acres at $60,000 per acre for the main Princeton branch of the U.S. Postal Service (Building 213).

Between 1979 and 1981, Landis and Stubbins reevaluated the master plan for Carnegie Center I and decided to pursue a different design approach that would create a project with greater identity and focus by clustering buildings with parking around the periphery. A traffic circle was built in the space between the buildings and a landscaped park area with benches located in the traffic circle. This concept of clustering provided the framework for the design of Carnegie Center II.

Hanna/Olin, Ltd., joined the master planning team as landscape architects when planning began for Carnegie Center II. The team decided as far as possible to stay within the site's original zoning, which permitted research, office, and limited manufacturing uses. The team analyzed the site's features, alternatives to the concept plan, development phasing, the impacts of development on land use, traffic, and stormwater, and benefits to the community. The result was a set of reports that came to be known as "the red books," which the developer used to demonstrate to the community the professional quality of the plan and Landis's commitment to delivering the highest-quality product possible.
The gazebo provides a quiet spot for tenants to enjoy the outdoors. It is also a popular setting for wedding photographs. The greenway itself provides the setting for several weddings each year.

The master plan, including the greenway, that emerged resulted from a combination of factors: market studies, human behavior studies, experience gained from Carnegie Center I, and West Windsor Township’s objectives for planning and protection of resources. The planning team studied three primary alternatives for design.

The first scheme provided for a traditional subdivision of the land for the development of freestanding office buildings. Three such parcels had already been created for United Jersey Bank (Building 501), the post office (Building 213), and a freestanding R&D building (Building 211). The second scheme provided for a continuation of Carnegie Center I’s design with a series of clustered buildings connected by a roadway and series of traffic circles. The third scheme retained the cluster but omitted the roadway and traffic circles, dedicating the space instead to landscaping and pedestrians.

Studies prepared for Landis by William H. White, sociologist and urban planner, and Setha M. Low, professor of environmental psychology and anthropology at City University of New York, supported this greenway design.

Low prepared a study of three office projects in the Princeton area (including Forrestal Center and Carnegie Center I) to better understand how office workers use their work environment and what features of the landscape would ultimately prove most valuable to workers. The academics concluded that workers most enjoy quiet outdoor spaces and passive recreational pursuits and provided input to the design team about specific features that could be incorporated into the landscape plan. Their conclusions were consistent with Landis’s own observations of office workers at Carnegie Center I, which showed that workers liked the central open space but were reluctant to cross the traffic circle and use the landscaped space in its center.

The greenway supported several planning objectives on the township’s agenda, particularly preservation of a greenbelt and wetlands along one side of the property. The township had a zoning category for planned development, which allowed for approval of general development plans (GDPs) to be followed by more specific site plans. The category GDP was unique to New Jersey at the time and allowed for density transfers if public benefits could be demonstrated and if usable open space were provided next to where the density was being transferred. This flexible zoning and permitting process provided Landis with further incentives to choose the greenway scheme.

**The Master Plan**

The master plan for Carnegie Center II creates 21 separate development parcels, all of which front on Carnegie Drive. Carnegie Drive is a private, four-lane internal loop road with three major connections to the surrounding public road system: a boulevard providing a link to Route I to the west, an extension to Roszel Road facilitating access to Alexander Road to the north, and a future connection to Meadow Road to the south. Carnegie Center I is linked directly to Carnegie Center II by an extension of Carnegie Way and by the greenway, which serves pedestrians only. Two two-lane traverse roads complete the project’s road system.

Five development parcels are located on the outside of Carnegie Drive. United Jersey Bank’s four-story headquarters building (#501) occupies one of three parcels bordering Route I. The Princeton regional post office (#215) and a one-story research building (#211) flank the Roszel Road extension. Two additional buildings (#500 and #502) will be built with frontage on Route I. The remaining 16 parcels are located inside Carnegie Drive. Building sites on these parcels are grouped in four clusters that enclose the 22-acre greenway.

**The Greenway**

The greenway forms the visual, pedestrian, and recreational spine of the project. This common open space is comprised of four major parklike areas, quads, located in the center of building clusters. Each quad has its own distinct character and landscape (for example, pastoral and romantic, formal and geometric, or informal town green). Common elements, including a 12-foot-wide brick primary path, custom-designed light standards and benches, and alleys of trees, provide continuity and unity between the quads. Building terraces, many with dining tables and chairs, overlook the greenway.

The first quad was built amid buildings 202, 210, 212, and 214. The area is landscaped in the fashion of an informal English garden and contains a lake.
with an island and two stone bridges, a wooded picnic grove, an amphitheater, a gazebo, two stone overlooks, and an active-use recreation area. Because the site had only a slight slope, special attention was paid to how the area was graded. The landscape architects wanted to avoid the appearance of an open field between the buildings and used the grading to create topography where none existed and the impression of greater space. Grading was also used to create a series of public and private spaces. Trees planted in the quad include tulip trees, sycamores, cypress, weeping willows, black gums, and sweet gums. Paths are lined with honey locust trees. Dogwoods and a wide variety of flowering shrubs provide spring and summer color in the landscape. Beds of annuals are located throughout the area.

The second quad developed is located amid the 500 series of buildings at the westernmost portion of the project. Three of the four buildings surrounding this park were completed in 1992 and are occupied by Educational Testing Service. The area features a large open lawn reminiscent of a town green that will contain a large bandstand. Massed plantings of trees around the quad provide shaded spaces among an intricate system of small paths, sitting areas, and reading gardens. The intent was to use spaces intensely immediately adjacent to the buildings. A plaza with a fountain marks the entrance to the quad from the east. Active-use recreation facilities (such as volleyball and squash courts) are located nearby.

The third quad, to be located amid future buildings 204, 206, and 208, will be built when the market dictates. The area will have an octagonal courtyard with a central fountain and an arbor with dining pavilions and a food vending kiosk. A terraced rock garden with borders of perennial plants will provide a link to the original Carnegie Center I cluster to the east, and a terraced parterre terminating in a rose garden and pergola will provide a transition to the completed area to the south.

The fourth and final quad to be completed will be located amid the future 400 series of buildings, the final development phase of Carnegie Center II. The park is planned along the lines of a French garden with a 450-foot-long terraced water feature, an amphitheater with a large fountain, and alleys of trees.

Improvements at Carnegie Center II total about $5.7 million, annual operating and maintenance costs $344,000.

Of particular note is the capital cost of building the greenway. Improvements to the first quad in 1985 cost about $1.9 million in 1985 dollars, or $9.70 per square foot. A less intensive landscaping treatment, such as asphalt walkways, grass turf, trees, and stock benches and light standards, would have cost an estimated $5.00 to $4.00 per square foot in 1985 dollars. Thus, the improvements selected cost about twice as much as basic landscaping, or about $1.2 million more. The costs for improving the second quad in 1992 were estimated at $1 million, or $12.00 per square foot. In comparison, installing standard turf and trees would cost roughly $5.00 to $7.00 per square foot.

Although the gymnasium is the active recreational feature office tenants use most often, only 18 percent of the tenants surveyed said they use the facility. An additional 20.7 percent said they will use it in the future.

### CONSTRUCTION AND OPERATING COSTS BY TYPE OF AMENITY

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Construction Cost</th>
<th>Annual Operating Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streetscapes</td>
<td>$30,000</td>
<td>$150,000</td>
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<td>Parking Lot</td>
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<tr>
<td>Landscape</td>
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<tr>
<td>Plantings (foundation)</td>
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<tr>
<td>Water Features</td>
<td>420,000</td>
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<td>Entryways</td>
<td>50,000</td>
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<tr>
<td>Land Engineering/Contouring</td>
<td>75,000</td>
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<td>Street Furniture</td>
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<tr>
<td>Greenway/Plazas</td>
<td>3,000,000</td>
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<td>Hardscape</td>
<td>450,000</td>
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<td>Extra Street Improvements</td>
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<tr>
<td>Environmental Features</td>
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<tr>
<td>(detention basins)</td>
<td>400,000</td>
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<td>Street Lighting</td>
<td>700,000</td>
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<td>Interior Atria</td>
<td>75,000</td>
<td>16,260</td>
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<tr>
<td>Flower Beds</td>
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<td>54,587</td>
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<td>Active Recreation</td>
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<tr>
<td>Golf Cage</td>
<td>5,000</td>
<td>250</td>
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<tr>
<td>Softball Fields</td>
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<td>10,000</td>
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<tr>
<td>Par Course</td>
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<td>NA</td>
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<tr>
<td>Sport Court</td>
<td>25,000</td>
<td>1,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$5,665,000</strong></td>
<td><strong>$343,897</strong></td>
</tr>
</tbody>
</table>

*Included in another budget item.
NA = Not applicable.
Although fishing was not one of the recreational activities originally planned for Carnegie Center, tenants and community residents have discovered this unexpected benefit of the greenway's lakes.

**OTHER LANDSCAPE AND AMENITIES**

In addition to the greenway, Carnegie Center II offers a variety of other passive landscape amenities as well as activities designed for the active enjoyment of office tenants. The more passive elements of the landscape capitalize on the requirements to preserve wetlands and detain stormwater runoff on site.

The site slopes gently away from Route 1 on the northwest to Little Bear Brook on the southeast. The stormwater management system uses multiple detention basins and swales to divert runoff into Little Bear Brook. The areas surrounding the ponds are landscaped with natural plantings, and the ponds are stocked with plants like water lilies to increase their visual appeal and to help filter out pollutants in the stormwater. Walking paths lead to some of the ponds, but their primary benefit is visual. Views to this open space are available from several buildings at the southeastern edge of the site and from a segment of Carnegie Center Drive.

The detention ponds abut wooded areas on both sides of Little Bear Creek, part of a township-designated greenbelt and wetland conservation area. Approximately 60 acres of this area is located in the site of Carnegie Center II and is being preserved in its present condition as a wildlife sanctuary. When the project is complete, ownership of this acreage will be conveyed to the township. In the meantime, it offers tenants a visual amenity and reinforces the natural, wooded edge that runs along the entire southeastern length of the site.

The perimeter of the project (generally following Carnegie Center Drive) is landscaped with turf, trees, and shrubs. Belgian granite blocks were used for curbs throughout the project and to frame brick pedestrian crossings of Carnegie Center Drive. Besides their visual appeal, the blocks work to slow traffic on this internal loop road.

Recreational amenities at Carnegie Center include two softball fields on the site of the final development phase, a health club in each cluster of buildings featuring a variety of aerobic and weight-lifting equipment, a basketball court and par course exercise area near Building 202, and an extensive system of walking paths throughout the project. Sports and health club facilities and locker and shower facilities in most buildings are free to tenants. Softball leagues encourage socializing among tenants and have proven very popular; Landis provides league managers and staff to oversee the league's activities.

**NON-LANDSCAPE AMENITIES AND SPECIAL FEATURES**

Carnegie Center features a host of services for tenants, many of which can be found in other office developments of this size:

- "Carnegie Haul" is a privately operated jitney service that carries workers between Carnegie Center and the Princeton Junction train station during the morning and evening rush hours. At lunchtime, jitneys transport office workers to and from the MarketFair retail center nearby.
- Landis built and leases to an independent operator a child-care center accommodating up to 100 children in Carnegie Center II. Workers in Carnegie Center have first priority for enrolling their children; excess capacity is opened first come, first served to the larger community.
- Security services provided on site include guards patrolling the grounds and parking lots around the clock and electronic monitoring services overseeing life safety systems and building security systems. Common areas can be entered only with security cards.
- Conference rooms are provided in most buildings to accommodate groups ranging from 10 to 200. All office tenants share the costs.
- Landis publishes a newsletter, "Newsline," to inform tenants of special activities and events.
- Three cafeterias with indoor and outdoor seating and open to the public are located on the ground floors of office buildings adjacent to the greenway.

**DEVELOPMENT CRITERIA**

To further distinguish Carnegie Center II from standard office parks, the approved master plan is supplemented by a set of development criteria that establish design review procedures and maintenance guidelines. The principal objective of the development criteria is to ensure a harmonious and aesthetically pleasing environment and a sense of continuity for Carnegie Center II during its phased development. The criteria consist of a set of design and construction guidelines, a design review procedure, and maintenance guidelines. The design and construction guidelines encourage excellence in architecture and landscape design. The location, numbers of floors, and areas of all buildings are established in the master plan. The master plan also sets forth alignment coordinates that govern the exterior walls of the buildings enclosing the greenway. The guidelines require the use of compatible building materials and colors to maintain architectural consistency within each building cluster.
All plans for buildings and site designs are subject to review and approval: each project is evaluated against the development criteria, its conformance with the master plan, and its architectural merit. Before a design is started, a meeting is held between the applicant's architect, Carnegie Center's master plan architects, and Carnegie Center's landscape architects to clarify mutual design objectives and the specific characteristics of the particular parcel.

The maintenance guidelines are intended to preserve the high quality of the overall development. They are described as "performance standards" and lay down procedures to achieve and maintain an attractive setting. The Carnegie Center II Owners Association is responsible for maintenance of most common areas and facilities, including the greenway; individual building owners are responsible for maintaining building-related lawn areas and plantings.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER/OWNER

The success of Carnegie Center is demonstrated by its ability to position itself at the top of Princeton's competitive office rental market and remain there. Competitive office, retail, and R&D projects line a seven-mile stretch of the Route 1 corridor from I-95/295 to about five miles north of Princeton, ranging from single buildings to planned developments of over 1,000 acres. Development of the Route 1 corridor began generally at the north and was spurred by Princeton Forrestal Center, the region's largest corporate office park and the one with the greatest national name recognition. During the 1980s, development moved south in the direction of available land and more affordable housing.

The accompanying table, "Vacancy Rates for Speculative Office Space," lists six other of the largest planned office developments along the Route 1 corridor and information on existing square footage of development (as of year-end 1991) and vacancies. Carnegie Center maintains the highest occupancy levels among this group of projects.

Two of these projects are compared in greater detail: Princeton Forrestal Center and Princeton Pike Corporate Center. Forrestal Center is located approximately three miles north of Carnegie Center and has long been considered the premier office address in the Princeton area. Princeton Pike Corporate Center is approximately three miles south of Carnegie Center and, like Carnegie Center, features clusters of buildings with central landscaping.

The Landis Group believes that the landscape design and amenities incorporated into Carnegie Center have had a significant effect on the company's ability to attract and retain tenants and to maintain the highest rental rates in the market. Overall, the developer estimates that Carnegie Center is able to obtain about a 5 percent premium on rents, partly because of the landscape and amenities. Other factors that might contribute to that premium include the various nonlandscape services offered and the proximity of the project to downtown Princeton and the Princeton Junction train station.

The developer believes the landscape and amenities were key in establishing an identity for the project. Unlike Forrestal Center and other projects in the market, the Carnegie Center site had no noteworthy features to build upon (such as natural woods). Thus, the site's image had to be created through design and landscaping. Carnegie Center's image and level of recognition within the Princeton market are predicated largely on the greenway.

Of the landscape features, the developer ranks the greenway as the most important contributor to the project's success. It is impossible, however, to

<table>
<thead>
<tr>
<th>Vacancy Rates for Speculative Office Space in Six Comparable Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project</strong></td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Route 1 Central</td>
</tr>
<tr>
<td>Carnegie Center (12 buildings)</td>
</tr>
<tr>
<td>Alexander Park (5 buildings)</td>
</tr>
<tr>
<td>Route 1 North</td>
</tr>
<tr>
<td>Forrestal Center (23 buildings)</td>
</tr>
<tr>
<td>College Park at Forrestal Center (11 buildings)</td>
</tr>
<tr>
<td>Forrestal Village</td>
</tr>
<tr>
<td>Princeton Corporate Center (5 buildings)</td>
</tr>
<tr>
<td>Route 1 South</td>
</tr>
<tr>
<td>Princeton Pike Corporate Center (4 buildings)</td>
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</table>

*Speculative office space.*
### VALUE MATRIX

<table>
<thead>
<tr>
<th>Streetscapes</th>
<th>Higher Rents/Sale Prices</th>
<th>Higher Satisfaction among Tenants and Residents</th>
<th>Higher Retention of Tenants and Residents</th>
<th>Higher Occupancy Levels</th>
<th>Lower Turnover</th>
<th>Long-Term Equity</th>
<th>Faster Absorption or Leasing</th>
<th>Higher Sales per Square Foot</th>
<th>Higher Retail Traffic</th>
<th>Price Increases</th>
<th>Faster Approvals</th>
<th>Premiums</th>
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<tbody>
<tr>
<td>Parking Lot Landscaping</td>
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<tr>
<td>Extra Parking</td>
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<td>+</td>
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<tr>
<td>Plantings (foundation, specimen, gardens)</td>
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<tr>
<td>Water Features</td>
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<tr>
<td>Entryways</td>
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<td>Plazas</td>
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<td>Street Patterns (e.g., extra improvements)</td>
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<td>Environmental Features</td>
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<td>Lighting (decorative/safety)</td>
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<tr>
<td>Interior Atria</td>
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<td>Special Plantings (flowers)</td>
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<tr>
<td>Jogging Trails/Walking Paths</td>
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</tr>
</tbody>
</table>

+= High  ♣= Medium  + = Low

Note: High, medium, and low represent the developer's overall impression of the value of amenities.

separate it from the concept of the overall master plan, because one is predicated on the other.

**PRINCETON FORRESTAL CENTER**

Any comparison of Forrestal Center and Carnegie Center must first acknowledge the disparity in scale. In terms of acreage, Forrestal Center is more than three times the size of Carnegie Center, 1,711 and 560 acres, respectively. With 60 percent of its 4 million square feet of existing office/research space owner occupied, Forrestal Center's reputation is based largely on build-to-suit corporate headquarters. In terms of multitenant speculative space, Carnegie Center is similar to Forrestal Center but has achieved consistently higher occupancy levels and has commanded somewhat higher rents, even though Forrestal...
Center has benefited from Princeton University's promotion of the development. (The university was the original owner of the Forrestal site and is a partner in its development.)

In general, Forrestal Center has been more successful at attracting large corporations, while Carnegie Center has been more successful in attracting smaller office users to speculative buildings. The reasons are mirrored in the land plan for each project. Forrestal Center is located in a heavily wooded area, with building sites set back from the roads and nestled into the woods. A range of parcel sizes is available. The plan's intent is to capitalize on the naturally wooded site; thus, the project consists of a number of freestanding buildings with little relationship to one another. This scheme has worked well for headquarters offices of independent corporations, but Forrestal Center's shortfall in speculative development could be the result of numerous speculative developers' trying to capitalize on the success of the park but lacking the character and unifying quality of a multitenant community. Speculative buildings are interspersed among the build-to-suit units.

Conversely, Carnegie Center has been less successful at attracting large corporate users, which might be prejudiced by a master-planned complex of clustered structures that leaves less room for independent corporate identity. Currently, Carnegie Center has only two large users of space: United Jersey Bank Financial, with a freestanding building of 135,000 square feet, and Educational Testing Service, with three freestanding buildings containing about 400,000 square feet. From its inception, however, Carnegie Center's marketing plan was designed to target smaller tenants seeking speculative office space.

To attract the best employees, especially in corporate moves to suburban Princeton from New York, both Forrestal Center and Carnegie Center have excelled in terms of services and amenities, among them shuttle bus service to the Princeton Junction train station and on-site child-care facilities.

Both projects offer a wide range of amenities, but amenities at Carnegie Center are generally closer to the office buildings and more easily reached. The notable difference between amenities at the two projects is that Carnegie Center features the greenway, with all of the amenities located along it. Tenants at Carnegie Center can walk to all of the amenities and activities, while tenants at Princeton Forrestal are more likely to need to drive to them.

With regard to the five-year track record of rents for speculative office space for Carnegie Center and Forrestal Center, Carnegie Center has generally led Forrestal Center in rental rates by about $1.00 per square foot, or 5 percent higher. This difference can be attributed primarily to Carnegie Center's master plan, amenities, and services, which are targeted to tenants interested in speculative office space. In other respects, the projects are about equal:

<table>
<thead>
<tr>
<th>Service</th>
<th>Forrestal Center</th>
<th>Carnegie Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus Service</td>
<td>Public</td>
<td>Public and Private</td>
</tr>
<tr>
<td>Train Service</td>
<td>Shuttle Service</td>
<td>Shuttle Service</td>
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<tr>
<td>Heliport</td>
<td>On Site</td>
<td>On Site</td>
</tr>
<tr>
<td>Child Care</td>
<td>On Site</td>
<td>On Site</td>
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<tr>
<td>Valet Cleaning</td>
<td>None</td>
<td>On Site</td>
</tr>
<tr>
<td>Travel Agency</td>
<td>On Site</td>
<td>On Site</td>
</tr>
<tr>
<td>Shared Eating Facilities</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Concert Series/Art Shows</td>
<td>None</td>
<td>Yes</td>
</tr>
<tr>
<td>Shared Office Suites</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Shared Conference Rooms</td>
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<td>None</td>
</tr>
<tr>
<td>(other than hotels)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Post Office</td>
<td>None</td>
<td>On Site</td>
</tr>
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</table>

**COMPARISON OF SERVICES AT FORRESTAL CENTER AND CARNEGIE CENTER**

<table>
<thead>
<tr>
<th>Service</th>
<th>Forrestal Center</th>
<th>Carnegie Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>None</td>
<td>The Greenway</td>
</tr>
<tr>
<td>Open Space</td>
<td>None</td>
<td>Throughout</td>
</tr>
<tr>
<td>Outdoor Eating/Picnic Areas</td>
<td>Throughout</td>
<td>At 202 Carnegie</td>
</tr>
<tr>
<td>Concerts</td>
<td>At 101</td>
<td>Carnegie Center</td>
</tr>
<tr>
<td>Softball Field</td>
<td>Three</td>
<td>Two</td>
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<tr>
<td>Jogging Trails</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Bike Paths</td>
<td>Yes</td>
<td>None</td>
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<tr>
<td>Indoor Gym</td>
<td>Two Private</td>
<td>Two Private/One Public</td>
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<tr>
<td>Volleyball Court</td>
<td>One Private</td>
<td>One Public</td>
</tr>
<tr>
<td>Basketball Court</td>
<td>One Private</td>
<td>One Public</td>
</tr>
<tr>
<td>Tennis/Pool</td>
<td>Private (at hotel)</td>
<td>Private (at hotel)</td>
</tr>
</tbody>
</table>

**A COMPARISON OF AMENITIES AT FORRESTAL CENTER AND CARNEGIE CENTER**

<table>
<thead>
<tr>
<th>Service</th>
<th>Forrestal Center</th>
<th>Carnegie Center</th>
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</thead>
<tbody>
<tr>
<td>Tennis/Pool</td>
<td>Private (at hotel)</td>
<td>Private (at hotel)</td>
</tr>
<tr>
<td>Volleyball Court</td>
<td>One Private</td>
<td>One Public</td>
</tr>
<tr>
<td>Basketball Court</td>
<td>One Private</td>
<td>One Public</td>
</tr>
<tr>
<td>Tennis/Pool</td>
<td>Private (at hotel)</td>
<td>Private (at hotel)</td>
</tr>
<tr>
<td>Concerts</td>
<td>At 101</td>
<td>Carnegie Center</td>
</tr>
<tr>
<td>Outdoor Eating/Picnic Areas</td>
<td>Throughout</td>
<td>At 202 Carnegie</td>
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<tr>
<td>Concerts</td>
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<td>Softball Field</td>
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<td>Jogging Trails</td>
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<tr>
<td>Bike Paths</td>
<td>Yes</td>
<td>None</td>
</tr>
<tr>
<td>Indoor Gym</td>
<td>Two Private</td>
<td>Two Private/One Public</td>
</tr>
<tr>
<td>Shared Conference Rooms</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>(other than hotels)</td>
<td>None</td>
<td>None</td>
</tr>
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</table>

### Comparative Office Rents at Forrestal Center and Carnegie Center

<table>
<thead>
<tr>
<th>Year</th>
<th>Forrestal Center</th>
<th>Carnegie Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>$17.00–18.50</td>
<td>$17.50–19.50</td>
</tr>
<tr>
<td>1988</td>
<td>$17.50–19.50</td>
<td>$18.50–22.00</td>
</tr>
<tr>
<td>1989</td>
<td>$19.00–22.00</td>
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</tr>
<tr>
<td>1990</td>
<td>$19.00–22.00</td>
<td>$19.50–22.00</td>
</tr>
<tr>
<td>1991</td>
<td>$20.50–23.50</td>
<td>$20.00–23.50</td>
</tr>
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</table>

**Note:** Rents are gross plus electricity for speculative office space only. Data provided by The Victor Company of Princeton, Inc.
Another project believed to be directly competitive with Carnegie Center is Princeton Pike Corporate Center. This project is located three miles south of Carnegie Center at the Princeton Pike/1-295 interchange. For tenants seeking a more southerly location near the region's largest stock of affordable housing, Princeton Pike is considered the superior location. Also, the location benefits from more freely moving traffic, as congestion on Route 1 increases as one moves toward the north. A disadvantage for the location is that it does not have the desired Princeton address. Currently, Princeton Pike contains four office buildings with 499,967 square feet and has the potential for three more buildings.

Princeton Pike features a design plan similar to Carnegie Center. Buildings are clustered to form common open spaces, which are landscaped with grass and trees. Benches and informal outdoor eating areas are provided. Overall, however, landscaping at Princeton Pike is less extensive than at Carnegie Center; for example, Princeton Pike has no water features or major recreational amenities.

Building largely on its more southerly location, Princeton Pike has performed well in the market. Vacancy levels at year-end 1991 were 8 percent (compared with 5 percent at Carnegie Center), and rental rates were about $1.00 per square foot below Carnegie Center, or about 5 percent less.

**VALUE TO THE COMMUNITY**

To estimate Carnegie Center's value to the larger community, a representative of the West Windsor Township planning department was interviewed. Generally, the township believes it benefits from the project in the following ways:

- Clustering buildings and transferring density in the site allowed a large segment of greenbelt to be preserved, which the township would like eventually to see encircle the town.
- The master plan provides for concentrated and highly usable open space, thereby minimizing the demand for parks and recreation facilities built and maintained by the public sector.
- The master plan successfully protects sensitive environmental resources, wetlands in particular. The plan also provides for on-site detention of stormwater, thus saving taxpayers from having to build and maintain downstream stormwater control facilities. The detention ponds, further, catch and help settle out stormwater pollutants, thus minimizing concerns about water quality downstream.
- By providing lunchtime activities, on-site eating facilities, and shuttle services to the train station and the nearby retail center, the project minimizes the need for employees to make midday automobile trips. The public benefits from slightly less midday traffic, less air pollution (and other auto-related secondary impacts), and less need to undertake costly improvements to the transportation system.

Because of the environmental protection, landscaping, and open space incorporated into the master plan, the township supported the proposed development of Carnegie Center from its inception. Plans were reviewed and approvals granted within approximately one year. Township representatives interviewed could not estimate the length of time that would have been required for a different, less environmentally sensitive development scheme.

The public also benefits from its access to, and frequent use of Carnegie Center's greenway. Noontime activities, including concerts and art shows, are open to the public, although no account exists of how many employees from outside the project actually attend these events. The greenway is frequently used as a park would be during weekends, particularly for jogging and walking and as a backdrop for photographs. The gazebo in the central park of the first phase has become a popular location for wedding photos, and the greenway hosts several weddings each year. High school students periodically use the greenway and restaurants frontal it for all-night events like postprom and postgraduation parties. The greenway has also served as the site for local 10-kilometer runs. Landis makes the greenway available for such public activities at no cost to the users.

Over the longer term, township representatives believe the public will...
benefit from the design and landscape precedent set by Carnegie Center. The township has already successfully encouraged other projects in the area to use a design scheme similar to Carnegie Center, with clustered buildings and centralized open spaces. The township has also been gathering a series of pedestrian easements that would connect Carnegie Center to the Princeton Junction train station (about two miles).

Based on the perceived success of the greenway, the town would eventually like to see an interconnecting system of private and public greenways throughout its jurisdiction for recreation and to promote forms of travel other than the automobile. The township also hopes that this unified open space system will help to create an identity and image for West Windsor that is different from, but equal in quality to, adjacent Princeton Township.

Where the public is concerned, perhaps the greatest value to the developer is the cooperative spirit that has emerged between the public and private sectors through the development of Carnegie Center. The township highly values the greenway and other landscape features that are at the core of the master plan, and it has been instrumental in forging a positive relationship between the parties. This positive relationship with the township has numerous direct and indirect benefits to The Landis Group, which will be developing the project over ten to twenty years. This positive relationship can be expected to spill over to future development ventures undertaken by Landis in the market.

VALUE TO USERS
To help determine how, and to what extent, tenants of Carnegie Center value the project's landscape and amenities, representatives of five tenants were interviewed. All five representatives believe that the amenity program was a major factor in their company's decision to locate and stay in Carnegie Center. The interviews point to the following general conclusions:

- All five representatives believe strongly that the amenity program has a positive effect on staff morale.
- Most believe that the amenities help their companies retain employees; two interviewees noted that retaining employees is perhaps less of an issue now than it was a few years ago, given the poor national economy and workers' concerns about unemployment.

The interviews point to the following general conclusions:

- All five tenant representatives believe the project's landscape and design contribute to higher productivity among workers by offering a professional work setting and a "relaxed" atmosphere. They noted frequently that workers tend to go for walks on the greenway to relieve job-related stress. Most interviewees also noted that the quality of the work environment and the access to food services and eating areas tend to keep personnel on site dur-
ing lunch, thus helping to minimize time spent out of the office.

- Most tenants believe that the amenities most benefit nonprofessional and nonmanagement staff, who have more time to use outdoor areas during breaks and lunchtime, while high-level staff are more likely to spend lunch at their desks or in meetings. Top staff are given offices with windows overlooking the greenway, however, and receive a greater indirect benefit.

- Professional and management staff tend to use the indoor amenities like the gym more than nonprofessional staff.

- All of the interviewees concurred that the passive amenities were the most valued: views of landscaped open space, outdoor eating areas, walking paths, flower beds, and so on. The most appreciated active amenities were the on-site cafeterias, softball fields, noontime concerts and special events on the greenway, indoor gyms, and jitney services to the nearby shopping center during lunch.

- None of the interviewees believe the day-care center contributes a significant value because of its cost to users and because of the distance between Carnegie Center and most workers' homes.

- All of the respondents indicated that their company sponsors events from time to time on the greenway: informal staff meetings, brown-bag lunches, and companywide family picnics on weekends.

The information gleaned from these interviews is highly consistent with a separate study commissioned by Landis to determine tenants' preferences about the amenities and services offered at Carnegie Center. That study was based on a questionnaire sent to 1,815 employees at Carnegie Center, of which 411 (23 percent) were completed and returned. The most popular activities are the more passive ones, such as sitting and people watching. Other popular activities that involve the greenway include attending art shows, sunning,
reading, and contemplating nature. The most popular active-use recreational features include using the gym and shopping during lunchtime at the nearby retail center.

The three activities cited most often that respondents would like to see added to Carnegie Center include a flea market, antique shows, and a putting green, all of which would further use the greenway. In terms of new facilities, respondents would most like to see a convenience store, a swimming pool, and a tennis court added within the project. When asked what they liked most about working at Carnegie Center, 57 percent of the respondents to CUNY's study cited "landscape and grooming of the surroundings" as their top choice.

During ULI's interviews, the five company representatives were asked whether they believe the company is paying a premium for the landscape and amenities. Three believe that they are, compared to similar buildings in the area without such landscape features. One representative believes they probably are not because of the soft market and because the company is a large user of office space and thus able to negotiate rental rates more effectively than smaller tenants. Another representative also believes the company is not paying a premium because of the soft market and certain provisions in its lease but indicated that Carnegie Center is the only suburban office project in the area that offers the company the upscale image it requires. The representatives that believe they are paying a premium estimated it to be between 5 and 10 percent, and they believe that premium is reasonable, given the amenities and services available to employees that their company would not otherwise be able to afford.

POSITIVE ASPECTS OF WORKING AT CARNEGIE CENTER

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Number of Responses</th>
<th>Percent of Total</th>
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</thead>
<tbody>
<tr>
<td>Landscape, Maintenance</td>
<td>234</td>
<td>56.9</td>
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<tr>
<td>Convenience to Shopping</td>
<td>131</td>
<td>31.9</td>
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<tr>
<td>Atmosphere, People</td>
<td>104</td>
<td>25.3</td>
</tr>
<tr>
<td>Facilities, Buildings</td>
<td>91</td>
<td>22.1</td>
</tr>
<tr>
<td>Services (cafeterias)</td>
<td>66</td>
<td>16.1</td>
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<tr>
<td>Close to Home</td>
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<td>15.3</td>
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<tr>
<td>Adequate Parking</td>
<td>60</td>
<td>14.6</td>
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<tr>
<td>Other</td>
<td>36</td>
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RECREATIONAL ACTIVITIES OF SURVEY RESPONDENTS

<table>
<thead>
<tr>
<th>Activity or Facility</th>
<th>Number Using Now (n=411)</th>
<th>Percent of Total Now</th>
<th>Number Males Using Now</th>
<th>Percent of Total Males</th>
<th>Number Females Using Now</th>
<th>Percent of Total Females</th>
<th>Number Will Use (n=411)</th>
<th>Percent of Total ( ^* )</th>
<th>Number Total Use (n=411)</th>
<th>Percent of Total Use</th>
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<td>Walk</td>
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<td>52.3</td>
<td>46</td>
<td>151</td>
<td>29</td>
<td>7.1</td>
<td>244</td>
<td>59.4</td>
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<td>Concerts</td>
<td>161</td>
<td>39.2</td>
<td>41</td>
<td>112</td>
<td>58</td>
<td>14.1</td>
<td>219</td>
<td>53.3</td>
<td>152</td>
<td>37.0</td>
</tr>
<tr>
<td>Sit</td>
<td>177</td>
<td>43.1</td>
<td>31</td>
<td>140</td>
<td>14</td>
<td>3.4</td>
<td>191</td>
<td>46.5</td>
<td>146</td>
<td>35.5</td>
</tr>
<tr>
<td>Watch People</td>
<td>155</td>
<td>37.7</td>
<td>36</td>
<td>114</td>
<td>7</td>
<td>1.7</td>
<td>162</td>
<td>39.4</td>
<td>112</td>
<td>26.8</td>
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<tr>
<td>Use Gym</td>
<td>74</td>
<td>18.0</td>
<td>27</td>
<td>45</td>
<td>85</td>
<td>20.7</td>
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<td>38.7</td>
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<td>Shop</td>
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<td>105</td>
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<td>Showers</td>
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<td>62</td>
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<td>Art Shows</td>
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<td>14.1</td>
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<td>Sunbathes</td>
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<td>83</td>
<td>19</td>
<td>4.6</td>
<td>125</td>
<td>30.4</td>
<td>151</td>
<td>37.0</td>
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<tr>
<td>Read</td>
<td>98</td>
<td>23.8</td>
<td>15</td>
<td>80</td>
<td>12</td>
<td>2.9</td>
<td>110</td>
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<td>Contemplate Nature</td>
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<td>20.0</td>
<td>16</td>
<td>64</td>
<td>7</td>
<td>1.7</td>
<td>89</td>
<td>21.7</td>
<td>151</td>
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<td>Softball</td>
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<td>27</td>
<td>21</td>
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<td>6.3</td>
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<td>Jog</td>
<td>38</td>
<td>9.2</td>
<td>19</td>
<td>16</td>
<td>25</td>
<td>6.1</td>
<td>63</td>
<td>15.3</td>
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<tr>
<td>Volleyball</td>
<td>9</td>
<td>2.2</td>
<td>8</td>
<td>1</td>
<td>48</td>
<td>11.7</td>
<td>57</td>
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<td>Par Course</td>
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<td>4</td>
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<td>Courts</td>
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<tr>
<td>Frisbee</td>
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<td>Fish</td>
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<tr>
<td>Fly a Kite</td>
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<td>3</td>
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<td>3.2</td>
<td>19</td>
<td>4.6</td>
<td>112</td>
<td>27.2</td>
</tr>
</tbody>
</table>

*Respondents could select as many as they desired.

SUMMARY AND CONCLUSIONS

- Landscaping the greenway is costing $10.00 to $15.00 per square foot (1992 dollars), or roughly twice the cost of more typical landscapes. In 1992 dollars, the total cost for landscaping the greenway was an estimated $9.6 million. The developer believes the added capital cost is justified in light of the higher office rents achieved and the project's low vacancy levels.

- The developer estimates that Carnegie Center receives a rent premium of approximately 5 percent (about $1.00 per square foot in 1992) over freestanding independent office buildings in the vicinity of
WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: May 1992

DIRECTIONS
From Princeton Junction Train Station: Take Alexander Road north toward Princeton. Turn left onto Rossel Road after crossing Little Bear Brook.

Driving time: Approximately three minutes.
From Newark International Airport: Follow New Jersey Turnpike south to Exit 9. At Exit 9, follow Route 18 north to U.S. Route 1. Follow Route 1 south approximately 15 miles to Carnegie Center Boulevard East.

Driving time: Approximately one hour.

DEVELOPMENT SCHEDULE
Carnegie Center I
Site Purchase: September 1978
Planning Started: December 1978
Master Plan Approved: 1979
Construction Started: May 1980
Master Plan Revised: 1981
Sales-Leasing Started: September 1981
Completion: 1983

Carnegie Center II
Site Purchase: September 1982—March 1984
Planning Started: 1983
Master Plan Approved: July 1983
Construction Started: 1983
Sales-Leasing Started: 1983

DEVELOPER
The Landis Group/Carnegie Center Associates
210 Carnegie Center
Princeton, New Jersey 08540
(609) 452-1444

LANDSCAPE ARCHITECTS AND PLANNERS
Hanna/Olin, Ltd.
421 Chestnut Street
Philadelphia, Pennsylvania 19106
(215) 440-0030

• A comparison of six planned office projects along the Route 1 corridor indicates a wide range in vacancy levels (5 to 42 percent). Overall, Carnegie Center has maintained the lowest vacancy levels in the market, about 5 to 6 percent, compared with a regional average of about 15 percent.

• The developer believes that the initial expenditure for master planning and landscaping has been key to the company's ability to achieve higher rents, lower vacancy levels, and low turnover among tenants.

• The community has benefited from Carnegie Center's landscape and amenity program: 1) the master plan and landscaping have protected wetlands and open space important to the community; 2) the project has reduced the demand on the township to build and maintain public parks; 3) the landscaping has minimized off-site environmental impacts and has worked to reduce traffic during midday.

• Tenants at Carnegie Center believe the landscape and amenities have contributed to employees' improved morale, retention, and productivity; however, these benefits cannot be quantified in dollars.

• Generally, tenants value the passive features of the landscape (quiet outdoor areas) more than active recreation features.

• The landscape and amenities at Carnegie Center were especially important because the site had no natural amenities, such as woodlands, to draw on. The created landscape was able to overcome the lack of natural site features and provide the project with its own identity.

ARCHITECTS AND PLANNERS
The Stubbins Associates
1033 Massachusetts Avenue
Cambridge, Massachusetts 02138
(617) 491-6450

INTERVIEWEES
Developer
William F. King, partner
Roger M. Steinhardt, director of marketing
The Landis Group/Carnegie Center Associates

Landscape Architect
Maren King, senior associate
Hanna/Olin, Ltd.

Township of West Windsor
Gerald C. Lanaz, senior partner and contract planner
Lanaz, Mueller & Associates

Commercial Broker
Victor B. Murray
The Victor Company

Tenants
E. Richard Meade, district manager—customer services
Public Service Electric & Gas
Norma Needelman, director of human resources
ENVIRON
Burt A. Baron, director of property management
Educational Testing Service
Greg Babavage, purchasing manager
Foster Higgins
Alan Wallack, senior partner
Hill Wallack

A comparison of Carnegie Center with other large planned office developments in the Princeton market (for example, Forrestal Center and Princeton Pike Corporate Center) indicates that the Carnegie Center is achieving approximately 5 percent higher rents for speculative office space. This added rental income can be attributed largely to features of Carnegie Center's master plan and landscape program.
RESTON TOWN CENTER
RESTON, VIRGINIA

Stately facades, domed towers, and a fountain plaza give the first phase of Reston Town Center a sense of civic scale and importance. The 85-acre mixed-use development includes two office towers, a 514-room hotel, a traditional main street lined with retail shops and entertainment, and a wide array of public spaces and amenities.

GENERAL DESCRIPTION
Reston was the dream of Robert E. Simon, Jr., a developer who, in the early 1960s, conceived of a planned community that would serve as a model alternative to suburbia. The master plan for the 7,400-acre site included five residential villages, each with its own village center, a 1,000-acre business corridor flanking the principal highway between Washington Dulles International Airport (five miles west) and downtown Washington (18 miles east), and a 460-acre Town Center District containing an urban core with the density, vitality, and symbolic character of a city.

The community was started in 1963; today, it has over 55,000 residents and is home to over 2,100 companies with 33,000 employees. Recognizing that the community would soon have the mass required to support its own downtown, Reston Land Corporation (RLC), a subsidiary of Mobil Land Development Corporation and Reston’s master developer since 1978, initiated detailed planning for the Town Center urban core in 1982.

The first phase of Reston Town Center opened in 1990, occupying 20 acres on the eastern end of the 85-acre urban core. It is bordered on the east by Reston Parkway, Reston’s major north/south artery, and on the south by the Dulles Airport Toll Road. The mixed-use project includes twin 11-story office buildings, a 514-room Hyatt Regency Hotel with extensive conference facilities and an executive fitness center, street-level retail, restaurant, and entertainment space with professional offices above, and surface and structured parking for over 3,000 cars. Its centerpiece is Fountain Square, an open-air civic plaza that contains a major fountain, outdoor seating, artwork, and, in winter, an ice-skating rink.

Much of the retail space in Phase 1 is located along Market Street, which extends east/west through Fountain Square. Market Street is the urban core’s pedestrian spine; a private street, it is usually open to one lane of traffic in each direction but can be closed for community events and concerts. At completion, the urban core is planned to contain a total of 2.15 million square feet of office space, 315,000 square feet of retail area, 1,200 hotel rooms, and at least 600 units of housing.

Other completed development in the 460-acre Town Center District (but outside the urban core) currently includes a library, a child-care facility, a government center, office buildings, an elder-care facility, and a hospital. To form a transition between the urban core and other parts of Reston, future development within the district’s grid-ded street network will be campus-like in character and density.

DEVELOPMENT STRATEGY
In 1981, as the northern Virginia market was maturing, RLC established an in-house task force to refine the concept for the Town Center District and to consider alternatives for develop-
The task force considered three options for developing the urban core: development by the company, piecemeal land sales to other developers, or coventures. After approving an initial planning concept for the 460-acre district, the decision was to seek a co-developer to undertake the first phase. The task force recognized that, while RLC was well qualified to ensure that the Town Center would respond to the community and the marketplace, it lacked the specialized experience necessary to develop a sophisticated mixed-use project.

After interviewing dozens of developers, RLC chose Himmel/MKDG (Himmel) in 1984 as codeveloper. The company’s principals had experience creating such dynamic mixed-use projects as Copley Place in Boston and Water Tower Place in Chicago. Forming a general partnership known as Reston Town Center Associates (RTCA), Himmel and RLC joined staffs and undertook the development. Himmel’s interest in the partnership was purchased by a Mobil subsidiary once the project was completed, and Himmel was retained as development and property manager during leasing.

Throughout the process, RLC remained adamant about committing only to the first phase so future phases could reflect evolutions in the marketplace. The development horizon for the 85-acre urban core is approximately ten years, and RLC will consider allowing others to develop future portions of the project.

**PLANNING HISTORY**

Master planning for the Town Center District started in February 1982. RTKL Associates, Inc., a national architectural firm that had provided planning assistance for Reston’s neighborhoods and villages during the 1970s and early 1980s, devised a master plan and development concept.

The plan intentionally incorporated positive characteristics of both urban and suburban development: pedestrian-scale streets, a variety of uses and services, green open spaces, easy vehicular...
The Town Center has become a popular recreation and entertainment destination for Reston-area residents. Ice-skating, a Christmas parade and tree lighting, an Easter egg contest, on Octoberfest, and summer concerts draw visitors to the Town Center.

access, and ample parking. Before deciding on a traditional street grid, RTKL evaluated the evolution of town centers in search of organizational schemes to make the core distinct from the remainder of Reston. RTKL also looked at ways other communities created public spaces and integrated automobiles.

The plan was presented to a panel of ULI members in 1983. The panel challenged RLC to decide whether the project should be urban or suburban, and then to stretch the boundaries of the chosen direction. To create an urban center, the panel recommended higher densities, the addition of a hotel to the downtown mix, and the inclusion of a cultural and civic component. During 1984 and 1985, working with the new RTCA development partnership, RTKL refined the core area plan and responded to the increased development program and density. In 1986, in an invited national competition, RTKL produced the winning design for the first phase and became the architect for the project.

GOVERNMENT APPROVALS

The project required rezoning from Fairfax County. The process began in 1985, took approximately two years, and involved several revised submissions. RLC's initial request for rezoning for the 460-acre Town Center District was for rights to develop 8.4 million square feet of commercial space and 1,400 to 2,000 residential units.

The predominant issue was traffic. Negotiations led to the creation of a performance rezoning for a minimum of 6.8 million square feet of commercial space, including 5.5 million square feet of office space, and 1,400 residential units. Up to 1.6 million square feet of additional office space will be permitted if RLC's traffic forecasts prove to be accurate and if the project meets RLC's objectives for number of trips generated. Transportation "proffers" (developer-funded and -implemented improvements), including pavement and right-of-way, are valued at approximately $50 million for the minimum program and $40 million for the maximum program.

As part of the approval, a shared parking agreement was negotiated to recognize the efficiencies of the mixed-use project, thereby reducing the parking requirement for Phase 1 from 4,100 to 3,100 spaces. RLC also agreed to establish a transportation management association to educate the public on transportation alternatives, refine regional transit routing to the development and advocate various strategies to reduce demand.

The county was concerned that the retail and residential components were too small and that the residential component was not sufficiently integrated with the commercial development. RLC agreed to expand the retail component.
(thereby reducing office and/or hotel components) if demand proved sufficient. RLC also argued that because Reston already provided a strong and diverse residential base, it was not necessary for the Town Center to be self-sufficient; the parties also agreed to defer residential building in the urban core until after the amenities necessary to support an urban lifestyle were in place.

A maximum of 3,465,000 square feet of development is permitted in the urban core, including 2,15 million square feet of office space, 315,000 square feet of retail space, and 1 million square feet of hotel space. The maximum floor/area ratio for the urban core is therefore 0.94; no limit has been placed on the density of specific parcels.

LEASING

Phase 1 of the Town Center's urban core was brought to market at the onset of one of the region's most severe economic downturns, and office leasing has been significantly below projections. Although the project commands a premium estimated by the developer of $2.00 to $4.00 per square foot, gross effective rents average about $17.00 per square foot (after deductions for standard improvements and rent abatements), well below original pro formas, which were in the high $20s.

Retail space was 70 percent leased when the project opened. For purposes of preparing a leasing plan, the project's retail space was considered to be a separate component that would compete directly with shopping centers in the area. It was determined that at least 110,000 square feet of fashion merchants and shoppers goods would be required to draw from the primary trade area, which extends five to ten miles in all directions. It was also determined that the project could initially support at least six restaurants, a multiscreen cinema, and service retailers, including banks and an office supply store.

Once the best locations for each category of tenants were identified, a two-tiered approach was used to attract merchants. Starting three years before completion, the developer's own leasing director and an exclusive agent approached national tenants. At first national tenants needed to be convinced of the project's merits, because it was classified as an "anchorless mall," and several leases with national tenants were signed with tenancy clauses. Second, the leasing team targeted distinctive local and regional tenants who could add variety and local entrepreneurship to the center.

Restaurants were somewhat easier to attract, and RTCA was able to be selective in bringing together a variety of themes, price ranges, and cuisines. Res-
Restaurants were expected to average over $500 per square foot by the second year.

The cinema complex was designed to contemporary standards, with four movie theaters on the ground floor and seven above. National Amusements, Inc., operates and manages the 11-plex cinema under a lease with RTCA. In its first year of operation, the multiplex theater became one of the highest-grossing theaters in the northern Virginia metropolitan area, and receipts during the first half of the second year increased by 35 percent.

The hotel is owned by RTCA, which has a management agreement with Hyatt Hotels for the hotel and two restaurants in the hotel. RTCA receives profits from hotel operations minus Hyatt’s management fee. Although off to a slow start, the hotel reached monthly occupancy levels approaching 80 percent by the summer of 1992, well above the average for the area.

Marketing and Management

Early marketing focused on creating awareness of the project in potential users and brokers through media advertising, direct mail, and outreach programs for brokers and the community. As the project approached completion, target audiences were blitzed with extensive media advertising to heighten awareness. At the project’s opening, marketing shifted toward generating retail consumer traffic. Marketers undertook high-profile and extensive promotions of events, starting with a major holiday promotion that included an outdoor skating rink, extensive holiday decorations, and six weeks of holiday entertainment beginning with a parade featuring the arrival of Santa Claus and lighting of a 50-foot Christmas tree on Thanksgiving. Continuing events like Easter egg contests, Oktoberfest, and a free summer concert series have focused on seasonal events to generate retail traffic and sustain marketwide awareness of the project.

RLC considers the project a long-term investment and the culmination of Reston’s development. All aspects of asset management, including building design, maintenance, purchases of equipment, tenant relations, and community outreach, are based on a commitment to create maximum long-term value.

Landowners in Reston Town Center automatically become members of one of several owners associations, based on either the location or the use of the property. Property owners in the urban core are members of Reston Urban Core Association, Inc., owners of commercial properties outside the urban core are members of Reston Town Center Industrial Association, Inc., and residential owners will belong to their respective cluster associations. The individual associations administer activities that relate solely to their individual projects, buildings, or areas.

All associations are represented on the board of directors of Reston Town Center Joint Committee, a tax-exempt corporation that functions as the umbrella organization to coordinate all common programs and maintenance within the Town Center. The RTCJC

Fountain Square lies at the heart of Market Street, the Town Center’s main street spine. The square provides an open-air plaza, a large fountain, outdoor seating, artwork, and ice-skating in winter.
levies assessments to defray its expenses, exercises architectural control, and enforces covenants through its Town Center Design Review Board.

LANDSCAPE AND AMENITIES
At Reston Town Center, it is impossible to separate the project's landscape and amenities from its overall design. Key elements of which include stately facades, domed towers, and a fountain plaza that give the project a sense of civic scale and importance. RTKL designed five structures simultaneously: the hotel, two office buildings, a retail building, and a retail/office building. They establish a strong visual and stylistic identity for the Town Center.

RTKL's architectural themes work hand-in-hand with the landscape plan developed by Sasaki Associates. Sasaki's plan for the streetscape recalls great shopping streets and public squares of Europe as well as such U.S. prototypes as Country Club Plaza in Kansas City and Rockefeller Center in New York.

The predominant unifying element of the Town Center is Market Street, the main spine that runs through the center of the project. The scale of the buildings lining Market Street was established for the comfort of pedestrians. The street's width (82 feet from building face to building face) accommodates two lanes of traffic, parking, street landscaping, and sidewalks. RLC and the project designers decided early to keep Market Street open to cars, believing that cars are an important part of urbanism in this country and are necessary to promote the street's vitality. Sidewalks are wider on the sunny side of the street, and the lanes for cars are narrow so that pedestrians are encouraged to cross from one side of the street to the other. Brick pavers and granite benches are custom-designed to complement the architecture and to reinforce human-scale comfort and accessibility. Small bubbling fountains provide low-key elements of surprise along the Market Street promenade.

Large-caliper trees (4.5 to 5.5 inches in diameter) and beds of seasonal plants give the streets and plazas a sense of liveliness and maturity. Market Street and Fountain Square are planted with linden trees because they provide a thick canopy of shade and do well in urban settings. To ensure that the trees present a consistent appearance, they were purchased two years before final planting and pruned to consistent shapes. Purchasing the trees ahead of time also avoided "growth shock," which can occur when trees are removed from the nursery.

The development team realized that a variety of retail storefronts would help to create a vibrant experience for pedestrians. They engaged Philip George, a New York-based retail designer, to plan the layout of food, entertainment, and specialty retail uses and to identify the visual characteristics critical to its success. The buildings then were designed to accommodate a continuum of storefronts at the ground level of every building, with variations in setbacks, entrances, awnings, bay windows, and signage to produce a recurring sense of surprise and the impression that the town has evolved over time. Tenants and their designers are encouraged to approach the design of their storefronts as they would any active small urban commercial street. Landscaping along Market Street is simple and repetitive; while the landscape provides a unifying theme, it does not detract attention from the storefronts.

Fountain Square is the project's primary gathering place. The square, framed by the architecture of the two largest office buildings, contains a large fountain and a tree-shaded area for sitting and outdoor dining. The square extends across Market Street and provides a place for summer concerts and winter ice-skating. RTCA plans to build a covered, open-air pavilion over a portion of the area to help frame that end of Fountain Square. The pavilion will house the ice-skating rink, provide a place for summertime concerts on rainy days, and be used by the hotel for outdoor receptions.

The hotel also was intended to contribute to the street-level vitality of the town center. RTKL and the developer edged the hotel's streetfronts with restaurants and shops, providing numerous entrances inviting the public in and making the hotel's public areas as much a natural gathering place as those in an elegant downtown hotel. The developers wanted the hotel's interiors to convey a residential intimacy, and they achieved it through the use of richly textured fabrics and rugs, carefully placed antiques, and accent lighting.
The developers also recognized that cities that grow and prosper over time achieve a richness of detail rarely found in new projects. RTKL was therefore charged not only with designing the directional and informational signage for the Town Center, but also with developing ornamentation that would add evocative visual texture to the Town Center. At the entrance to Market Street from Reston Parkway, for example, RTKL placed a row of wind sculptures that attract the eye with their movement and evoke traditional weather vanes. For each side of the entrance, RTKL designed gold-colored orbs reminiscent of medieval astro-labes. These pieces, each more than seven feet in diameter, serve as gate-posts at the entrance to Town Center, recall important themes in the history of urban culture, and have become favorite backdrops for family photos.

To respond to the community’s cultural needs, the developers included museum-quality art as an integral part of the project. For example, the sculpture of Mercury that graces the central fountain was commissioned following an invited competition. The hotel’s public spaces are filled with contemporary art from around the country, and additional art is planned.

At the entrance to the project lies an informal park where large oak trees were preserved. The park’s landscape is comprised simply of the mature trees, shrubbery, grass turf, walking paths, and benches. The area is intended to provide a green edge to the very urban Town Center, and it provides an informal, quiet area for relaxation.

Total development costs for the Reston Town Center are an estimated $185 million. RTKL estimates that about 3 to 5 percent of this total cost was spent on “extra” landscape and design features, such as special paving materials, architectural embellishments, fountains, sculpture, and larger landscape materials. To help contain costs without compromising the landscape, some features of the original plan were removed from the development program, including irrigation systems over portions of the project and special lighting for street trees.

VALUE OF LANDSCAPE AND AMENITIES

VALUE TO THE DEVELOPER/OWNER

The developer’s decision to include a high level of design and landscaping was driven by two key objectives: 1) to maximize long-term return on the financial investment in the project; and 2) to provide the larger community of Reston with a notable town center that would serve commercial, civic cultural, and social needs.

OFFICE COMPONENT

As noted, Reston Town Center opened at the onset of a major downturn in absorption of office space that affected the entire Washington metropolitan area. Accordingly, rental rates have been significantly below pro forma projections, and absorption has been much slower than anticipated.

Project pro formas projected office rental rates to be in the middle to high $20s per square foot. During the first 12 to 18 months the project was on the market RTKL held out for close to those rents, while other properties in the market were more willing to make

<table>
<thead>
<tr>
<th>Amenity</th>
<th>Annual Operating Cost</th>
<th>Amenity</th>
<th>Annual Operating Cost</th>
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<td>Streetscapes</td>
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<td>(Foundation, specimen, gardens) and Irrigation</td>
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<td>Water Features</td>
<td>$19,000</td>
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<td>Entranceways</td>
<td>$9,500</td>
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<td>Street Furniture</td>
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<td>Total</td>
<td>$453,000</td>
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—Not available or not applicable.

PERFORMANCE OF OFFICE SPACE IN PREMIER PROJECTS IN NORTHERN VIRGINIA

<table>
<thead>
<tr>
<th>Project</th>
<th>Building Size (square feet)</th>
<th>Asking Rents (new space)</th>
<th>Space Available (square feet)</th>
<th>Space Absorbed (square feet)</th>
<th>Percent of Building Absorbed</th>
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<tbody>
<tr>
<td>Reston Town Center</td>
<td>246,271</td>
<td>$26.00 - $28.00</td>
<td>13,464</td>
<td>232,907/94%</td>
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<tr>
<td>One Fountain Square</td>
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<td>Tower One: 8065 Leesburg Pike (1990)*</td>
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<td>Dulles Corner Park South</td>
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<td>$23.50</td>
<td>39,557</td>
<td>136,965/77%</td>
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*Building being offered for sale.

aggressive deals. During this early period, RTCA lost several office users to other projects, and absorption was very slow. Eventually, RTCA revised its pricing strategy to be more competitive and dropped rental rates to 35 to 40 percent below the original pro forma. Absorption improved immediately, and during the project's third year, office space was about 80 to 85 percent leased.

Outdoor seating is provided in public spaces for the enjoyment of office tenants, shoppers, and visitors.

Reston Town Center benefited substantially when RTCA's parent company, Mobil, signed a lease for about 140,000 square feet (six floors of the Two Fountain Square Building). Execution of this lease permitted RTCA to market the remaining office space at favorable rates in line with the pro forma.

Relative to other office projects in the market, Reston Town Center's performance has been about average.

Of several premier office buildings in northern Virginia that opened about the same time as the Town Center, all are considered top of the line and competitive with the Town Center, although none of them feature the tight mixture of uses or the neotraditional themes of the Reston Town Center. Asking rents at the Town Center are above most of the other properties, while absorption has been on a par with the competitors. Two factors, however, muddy this comparison: 1) for all of the properties, asking rents have little to do with actual rents received (although actual rents are not available in any published form), and 2) RTCA's deal with its parent company for 140,000 square feet improves substantially the Town Center's absorption.

Despite office rental rates and absorption substantially below original pro formas, RTCA estimates that the project is, in fact, receiving rental rates $1.00 to $2.00 per square foot more than other premier office buildings in the market. RTCA attributes this premium to the project's distinctive design and its architecture, landscape, and amenities but also notes that, for some tenants, the project's design and amenities have worked against its ability to make deals ("reverse image"). Some potential tenants have opted for lower-quality space, regardless of price, to give their clients and home offices a more conservative impression of their operation. Some deals were lost because potential users did not want their offices to appear of higher quality than the headquarters office.

RETAIL COMPONENT

Original leases for retail space were close to pro forma projections of about $30.00 per square foot. Since that time, however, lease rates have dropped by about one-third because of the oversupply of retail space in the market, the generally poor national economy and nationally dropping retail sales, and the slow start for retailers at Reston Town Center.

Clearly, the retail component of Reston Town Center has posed the greatest
challenge for RTCA. Initially, retailers had difficulty understanding the project's design, even though it was based on this country's classic main street. The lack of a typical anchor was a problem for some retailers, who had to be convinced that the entertainment anchor (the cinema and restaurants) would work.

Although RTCA was able to sign leases with stores before opening, sales have remained below pro forma projections of about $350 per square foot per year. (Northern Virginia's most successful regional mall, Tysons Corner, averages sales of $400 to $450 per square foot.) Sales during the second year of operation were around $250 per square foot (but were up about 20 percent over the previous year). RTCA projects retail sales will continue to improve.

In the northern Virginia market, no other project compares fairly with Reston Town Center because of the project's distinctive main street. Most of the stores in the Town Center would be found in a regional mall, and the project has demonstrated that such "national credit retailers" can survive in a project like the Town Center. Local retailers have had a more difficult time, and five such stores have left the Town Center since the project opened in 1990. New local and national retailers replaced these failed businesses, however, suggesting confidence in the project's future performance.

Clearly, the most successful component of the overall project has been the restaurants and the cinema. Restaurants have continued to perform over pro forma projections, and the cinema is very close to that objective.

To improve overall retail sales, RTCA is continuing to refine the tenant mix and is considering adding a business like a specialty grocery store or a farmers' market to act as another anchor. RTCA also believes that the retail component of the project will continue to improve as the market's perception of Reston Town Center as a "shopping center" strengthens.

<table>
<thead>
<tr>
<th>VALUE MATRIX</th>
<th>Higher Rents/ Sale Prices</th>
<th>Higher Satisfaction among Tenants and Residents</th>
<th>Higher Retention of Tenants and Residents</th>
<th>Higher Occupancy Levels</th>
<th>Lower Turnover</th>
<th>Long-Term Equity</th>
<th>Faster Absorption or Leasing</th>
<th>Higher Sales per Square Foot</th>
<th>Higher Retail Traffic</th>
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</tbody>
</table>

+ = High  × = Medium  + = Low  🍁 = No value

Note: High, medium, low, and no value represent the general manager's overall impression of the value of amenities.
Compared to other new hotels in the market, the Hyatt Regency at Reston Town Center has performed very well financially. During summer 1992 (its second year of operation), the hotel achieved its pro forma occupancy levels, although it is still lagging behind its pro forma room rates.

The apparent success of the hotel is attributed to its extensive conference facilities and to its location within the Town Center. The synergy between the hotel and other uses has been very positive, and it appears that the hotel has been able to draw increased business-related and weekend trade because of its close relationship with the retail stores, restaurants, and cinema. The Town Center's design and landscape features have thus contributed to the relative success of the hotel.

An informal park with mature oak trees located between the Town Center and the main arterial roadway and with access to the project provides tenants and visitors with a shady, tranquil alternative to the urban orientation of the Town Center.

It is virtually impossible to establish a link between the design, landscape, and amenities of the Reston Town Center and increased financial return to the developer. Although the project has not yet met its pro forma objectives, this failure is more likely a function of the national economy and the recession in real estate than of the project's design. In general, the restaurants and cinema have performed well above the market, offices and the hotel have performed as well as or better than the local market, and retail uses have performed generally below the market.

It appears that the project's distinctive design has worked both for and against the project's financial success. The design and amenities have worked well for restaurants, the hotel, and, to a lesser extent, the office component. The design, however, is contrary to many established rules of retailing and has perhaps worked against that component of the project. RTCA believes that in time the retail component will become increasingly viable.

Further, the design helped RLC to carve out a niche in the market. By the middle to late 1980s, the market had been saturated with regional malls, strip commercial centers, hotels, and high-quality office parks. RLC believed that any viable development program of the scope envisioned for the Town Center's urban core would need to be noticeably different from anything else in the market, and it used the concept of a main street and extensive landscaping and amenities to establish a niche in the market.

RTCA's objectives for the Reston Town Center extend beyond the financial performance of the project's first phase. Phase 1 is only 20 acres out of an eventual 85 acres to be included in the Town Center's urban core and 460 acres to be included in the total Town Center District. The Town Center is a small part of the acreage and long-term investment that the developer has
made in the 7,400-acre master-planned community.

One of the developer's objectives for Phase 1 was to create value in its larger land holdings by establishing a "heart" for the community of Reston. The developer believed that a town center was necessary to provide a place where civic, cultural, and social needs could be met. Although it is all but impossible to quantify this contribution, the developer believes the financial investment in the urban core to date has paid off.

VALUE TO THE COMMUNITY

Fairfax County generally took a hands-off role in the design of the Town Center, although it required extensive road and other improvements by the developer. The county's involvement focused primarily on establishment of the land use, specifically, the ratio between commercial and residential uses, and issues of traffic and parking. The negotiations between the county and RLC ended with a minimum number of residential units (600 units in the urban core and 800 outside the core) and a maximum amount of commercial square footage.

Although the county did not force any particular design or landscape and amenities, it did require that a minimum of 15 percent of the project be provided as open space, to include walkways, pedestrian plazas, parks, and water features. Additionally, the county required the project to conform with its zoning standards for a minimum of 10 percent tree cover and landscaping for parking lots. The landscape plan prepared for the Reston Town Center's urban core exceeded the county's minimum landscape standards.

A significant contribution of the project to the county was RLC's agreement to provide a cultural center in the project. The center was agreed to during rezoning and was intended for the benefit of all Reston residents. For RLC, the center was also a way to bring a civic, noncommercial dimension to the downtown. The nature of the center was not specified during negotiations. RLC originally planned to construct the center during the first phase of development on the plaza between Market Street and Discovery Street. That plan was dropped when further studies revealed that the building would need to be larger than the site would permit, and RLC has decided to incorporate the cultural center into a later phase of the project.

In addition to Fairfax County, the Virginia Department of Transportation (VDOT), which is responsible for approving and maintaining all public streets in the state, reviewed the project's design. The design for Market Street, most notably its width and brick paving, did not meet the state's strict design standards. To avoid having to comply with VDOT's standards, which would have seriously compromised the intent of the main street, Market Street was designed with a width and brick paving that met the state's requirements. The resulting design created a comfortable pedestrian atmosphere and allowed for the development of a unique identity for the downtown area.

Restaurant and entertainment tenants, such as the multiplex cinema, have proven particularly successful, largely because of the synergy that has evolved between these uses and the comfortable pedestrian atmosphere. After a slow start, the hotel has grown steadily, apparently because it is close to a variety of supporting uses.
Outdoor concerts and special events at the Town Center can draw up to 5,000 attendees. The Town Center functions in many ways like the downtown for Reston.

Street and other small streets in the project’s core were made private.

Overall, the approvals process for Reston Town Center was completed without major controversy, but nothing indicates that the design and features included in the project helped to quicken the process. It is more likely that the project’s unusual features lengthened the process slightly because of additional reviews and negotiations required.

In terms of its fiscal benefits to the county, the project certainly has generated more revenue for the county than when it was raw land. Nothing suggests, however, that the project’s design has increased revenue any more than a typical suburban design involving the same amount and type of land uses would have. But as the project matures and expands, it seems likely that the design and amenities will increasingly benefit the county’s tax base.

Already, Reston Town Center has demonstrated its value to residents of Reston and neighboring communities by serving as a gathering place that previously was absent in the area.

- Outdoor summer concerts at Fountain Square draw up to 5,000 attendees.
- The center has become a popular location for large fundraising events; between June 1991 and June 1992, events held at the Town Center raised about $150,000 for community charities.
- The project has become a popular destination for small children on Halloween; the theater charges $1.00 for movies, many stores give out candy, and the developer sponsors games and events.
- The Town Center has become the site of several seasonal events.
- The ice-skating rink attracts over 1,000 people each week during the winter.
- The Town Center is now home to a major art festival sponsored each year by the Greater Reston Arts Center, which has its offices on the site.

In addition to these structured events, the Town Center draws many Reston area residents who come just to enjoy the project’s urban flavor, not available elsewhere in Fairfax County. Thus, the primary value of the project to the larger community is its function as a destination.

VALUE TO USERS

The primary users of the project are retail tenants, shoppers, office tenants, and hotel guests.

RETAIL TENANTS AND SHOPPERS

For the most part, the national chain stores typically found in a regional shopping mall or major downtown area have been successful at Reston Town Center, although sales volumes at this point are generally below those of their counterparts in strong regional malls. Locally based retailers in the Town Center, however, have generally had the most difficulty attracting customers. The relatively low volume of weekday retail traffic at Reston Town
Center has clearly been a problem for some small retailers.

The project’s design, landscape, and amenities have worked both for and against retailers. On the positive side, the concept of a main street provides an alternative to shoppers who want to avoid the hassles of a regional mall. Shoppers who want to go to a particular store might be attracted to Reston Town Center, but those who are interested in more variety are likely to go elsewhere. One locally based retailer selling handmade arts and crafts indicated that the store owners selected Reston Town Center for its first Fairfax County location specifically because of the project’s design. The owners

**PROJECT DATA**

**LAND USE INFORMATION**

<table>
<thead>
<tr>
<th>Site Area</th>
<th>20.6 acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Building Area (GBA)</td>
<td>1,200,725 square feet</td>
</tr>
<tr>
<td>Retail</td>
<td>240,000 square feet</td>
</tr>
<tr>
<td>Office</td>
<td>530,000 square feet</td>
</tr>
<tr>
<td>Hotel</td>
<td>430,725 square feet</td>
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**LAND USE PLAN INFORMATION**

<table>
<thead>
<tr>
<th>Acres</th>
<th>Percent of Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>5.7</td>
</tr>
<tr>
<td>Parking Structures</td>
<td>2.5</td>
</tr>
<tr>
<td>Paved Areas</td>
<td>6.5</td>
</tr>
<tr>
<td>Landscaped Areas</td>
<td>5.9</td>
</tr>
<tr>
<td>Total</td>
<td>20.6</td>
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</tbody>
</table>

**DEVELOPMENT COST**

<table>
<thead>
<tr>
<th>Cost in Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
</tr>
<tr>
<td>On-Site Improvement Costs</td>
</tr>
</tbody>
</table>

**Construction Costs**

- One Fountain Square | $19
- Two Fountain Square | 21
- Southwest Building | 10
- Hotel | 41
- Freedom Drive Parking Structure | 7
- Total | $98

**Hotel Furniture, Fixtures, and Equipment**

- $7

**Taxes**

- $1,140,770

**Insurance**

- $192,250

**Maintenance**

- $997,040

**Utilities**

- $652,150

**Jr. Department/Office**

- $879,400

**Management/Legal**

- $527,470

**Security**

- $465,170

**Landscaping**

- $291,000

**Miscellaneous**

- $28,750

**Total**

- $5,374,000

**RETAIL TENANT INFORMATION**

<table>
<thead>
<tr>
<th>Number</th>
<th>Percent</th>
<th>Total GLA</th>
</tr>
</thead>
<tbody>
<tr>
<td>of Tenants</td>
<td>of Total</td>
<td>(square feet)</td>
</tr>
</tbody>
</table>

**Food**

- 7 | 13.2 | 45,260 | 21.9

**Food Service**

- 4 | 7.5 | 4,054 | 2.0

**Clothing and Accessories**

- 9 | 17.0 | 34,003 | 16.4

**Shoes**

- 1 | 1.9 | 1,144 | 0.6

**Home Furnishings**

- 6 | 11.3 | 14,070 | 6.8

**Home Appliances/Music**

- 2 | 3.8 | 6,517 | 3.2

**Hobby/Special Interest**

- 5 | 9.4 | 12,499 | 6.0

**Gifts/Specialty**

- 5 | 9.4 | 4,225 | 2.1

**Jewelry**

- 2 | 3.8 | 1,910 | 0.9

**Other Retail**

- 3 | 5.7 | 6,077 | 2.9

**Personal Services**

- 6 | 11.3 | 6,664 | 3.2

**Recreation (cinema)**

- 1 | 1.9 | 65,597 | 31.7

**Financial**

- 2 | 3.8 | 4,780 | 2.3

**Total**

- 53 | 100.0 | 206,800 | 100.0

**Average Annual Rents**

- Approximately $30.00–33.00 per square foot

**Average Length of Lease**

- 10 years

**Typical Terms of Lease**

- Base rent plus percent of gross sales

**OFFICE TENANT INFORMATION**

<table>
<thead>
<tr>
<th>Typicial Rentable Area per Floor</th>
<th>21,000–23,000 square feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Office Tenant Size (50 tenants)</td>
<td>9,397 square feet</td>
</tr>
<tr>
<td>Average Annual Rents</td>
<td>Approximately $23.00–27.00 per square foot (less concessions); effective rent average approximately $17.00 per square foot.</td>
</tr>
<tr>
<td>Average Length of Lease</td>
<td>3–10 years</td>
</tr>
</tbody>
</table>

*Phase 1 only.

*Does not include 15 acres leased to RTCA from RLC for 1,404 temporary surface parking spaces. Surface parking will eventually be replaced with structured parking.

*Currently, 3,356 spaces are in parking structures, and 1,749 spaces are in surface lots. Approximately 900 additional spaces have been added in parking structures since this case study was completed.

*Includes structured parking for 500 cars.
wanted a nontraditional retail setting that reflected their store's personality.

On the negative side, the design of the project is contrary to conventional suburban retailing: it is an open-air mall without a conventional retail anchor. Most customers come to the project for some other reason than to shop (to see a movie, eat at a restaurant, attend an event). One retailer notes that business on cold or rainy days drops considerably.

Clearly, the retail businesses that have proven most successful at the Town Center are the restaurants and the cinema. All of the project's restaurants are operating above their expectations, drawing especially large crowds during lunch, after work hours, and on weekends. The synergy between the restaurants and the cinema has proven highly valuable to both.

Overall, the evidence is inconclusive as to whether retail tenants have benefited in sales generated from the design of the project. The landscape and amenities and design detail of the project have attracted people, but Reston Town Center has still not established itself as a shopping destination. Retailers believe, however, that it will change as the tenant mix is refined, the project's identity becomes more established, and the retail base expands.

OFFICE TENANTS

In the highly competitive and overbuilt northern Virginia office market, Reston Town Center has competed well with other more conventional high-quality office projects. It has been especially successful in attracting corporate headquarters for companies located outside the Washington area and outside the United States. Rolls Royce and Molson Breweries, for example, selected the project for their U.S. headquarters. The location of the project has been both an advantage and a disadvantage. The site is more distant from Washington than Tysons Corner (the region's largest concentration of office space outside downtown Washington) but is closer to Dulles International Airport. Some tenants have been lost to projects closer to Washington, but the project has competed very well with tenants who prefer proximity to the airport.

Office tenants interviewed indicated that the design of the project, the landscape and amenities, the attention to detail, and the mix of uses were all very important factors in their decision to locate in the Town Center instead of elsewhere; the ability to negotiate a good deal, the quality of the buildings, and the location of the project were also important. Office tenants like being located in the highly integrated mixed-use setting and appreciate the proximity to retail services, although in general most retailers are too upscale for typical office workers. Many would like to see more stores catering to workers' daily needs and stores offering lower-priced goods. Office tenants also value the convenience of a wide variety of restaurants and the fact that workers do not have to leave the project by car during lunch, but they would like more inexpensive restaurants.

Most office tenants believe that employees' morale and retention rates are somewhat higher because of the setting and the project's landscape and amenities. Employees like "the pleasant atmosphere," the outdoor sitting areas, and the environment conducive to walking. Employees also like the project's suburban conveniences, such as automobile access and parking, and the fact that they do not have to commute into Washington, D.C.

HOTEL AND GUESTS

Based on on-site interviews, the hotel tenant has done particularly well financially. Like the office market, the hotel market in northern Virginia was saturated during the 1980s, and two other Hyatt-operated hotels in the market failed. Reston Town Center's Hyatt Regency Hotel operated below pro forma levels for the first two years but has shown steady growth since then.

A large factor in the hotel's success is the synergy between the various uses in the project, particularly between the hotel and the offices, which generate overnight stays and the need to use meeting rooms. One large office tenant, Learning Group, conducts national computer training programs at its Town Center location and generates considerable room trade for the hotel. Learning Group also contracts with the hotel for meeting room space when its in-house meeting and conference rooms are overbooked. Likewise, the hotel sometimes uses Learning Group's meeting rooms when its own facilities are at capacity.

Other factors in the hotel's success can also be tied to the mixed-use design of the Town Center and its small-town amenities. Compared to other hotels in the market, the Hyatt Regency has been successful in attracting weekend trade, mostly nonbusiness visitors to northern Virginia who are enticed by the hotel's proximity to shopping and restaurants. The hotel markets minivacation weekend packages to area residents and a special weekend promotion during the Christmas shopping season. The hotel also has had above-average success with weekday business travelers who like the proximity to restaurants and the cinema.

SUMMARY AND CONCLUSIONS

- The design, landscape, and amenities included in the first phase of the Town Center have clearly benefited some of the project's uses, most notably the restaurants and cinema.
- HTCA estimates that it receives rental rates $2.00 to $4.00 per square foot (about 10 percent) higher for office space as a direct result of the project's design and landscaping. (This estimate is difficult to confirm with independent data, partly because of the very poor office market in northern Virginia.)
- Although operating below expectations during its first two years, the Hyatt Regency Hotel has shown steady growth in room occupancy levels and was expected to reach pro forma occupancy levels during its third year. The hotel has performed better than most other new hotels.
in the market; in fact, two other nearby Hyatt hotels that opened about the same time have achieved occupancy levels of only about 40 percent. The hotel’s relative success is the result of its more extensive conference facilities and its location in Reston and the mixed-use Town Center. The hotel benefits from the synergy resulting from the tight mixture of uses, which helps both business and nonbusiness trade.

- The project’s design, landscape, and amenities have helped some retailers to overcome the lack of a conventional anchor and the open-air design. Overall, however, the retail component of the project has performed below expectations.
- The developer believes that design, landscape, and amenities were instrumental in creating a market niche for the intensive development program long envisioned for the site. The developer believes that the market would not have supported a more typical suburban design, because office, retail, and hotel space was oversupplied in the region. Thus, the design, landscape, and amenities helped the Town Center to capture a larger share of the market than it otherwise could have.
- Perhaps the greatest value created by the landscape and amenities is the project’s success as a gathering place for leisure, civic, social, and cultural activities. Large crowds are drawn to the project for special events, and local residents use the public spaces frequently for just strolling or sitting. The restaurants and the cinema work with the design to promote informal gatherings of people.
- The project’s clear success as a social, civic, and cultural gathering place has spin-off value to the developer in other phases of the Town Center. The developer believes the existence of the Town Center also creates value in the entire community of Reston by providing a heart and urban activity hub for the still-growing town.
- Although the project’s success cannot yet be demonstrated in strictly financial terms, the developer believes that the additional design and landscaping were well worth the additional expense (estimated at $5 million to $10 million). The second phase of the urban core will include a comparable level of design and landscaping. The developer believes the additional cost will generate added income from the project over the long term; thus, the amenities are seen as an investment in the future.
Del Mar Plaza's meticulous design, high-quality materials, and open-air public spaces have helped to make it a local landmark and financial success. The 75,000-square-foot specialty retail center demonstrates the rewards that can be attained from long-term amortization of improvements in design.

GENERAL DESCRIPTION

Del Mar Plaza's developers saw untapped potential in a hillside commercial property overlooking the Pacific Ocean. The corner site, located on the Pacific Coast Highway in the heart of Del Mar's village core, was occupied by a nondescript, physically and economically obsolete, one-story, 25,000-square-foot strip shopping center. Sited on a graded plateau 20 feet above the roadway and fronted by a large parking lot, the shopping center made its tenants invisible to the more than 35,000 cars that passed by each day.

Sophisticated aerial topographic analysis provided data necessary to design a four-level replacement structure, built into the hillside, that combined enclosed parking, 75,000 square feet of prime specialty retail and restaurant space, and 35,000 square feet of elevated public terraces boasting ocean views. Through careful design, the developers were able to improve views from adjacent properties while substantially increasing the density of development on the site.

With its central location, mix of goods and services, public spaces, and beauty, Del Mar Plaza has become an important part of the community. A market, dry cleaner, hair salon, and some other merchants are subsidized to ensure residents' patronage. Del Mar Plaza's public space is not only an informal gathering place in the ancient tradition of the marketplace as the center of social interchange, but also the setting for graduations, weddings, fund-raising concerts, and children's events.

Del Mar Plaza's design responds to the site, as well as to the local architectural vernacular. Detailing reflects that vernacular at an extraordinary level of craftsmanship. Design criteria developed for Del Mar Plaza have won such favor in the community that they have been adapted for use in other parts of the village.

Local developers Ivan C. Gayler and David J. Winkler acquired the site for $2.2 million in October 1983. Their goal is to develop and operate environmentally and socially responsive projects with strong economic viability that need not rely on income tax subsidies or other politically vulnerable financial support. Before Del Mar Plaza, their company, Del Mar Partnership, undertook a number of small renovation projects in Del Mar and other coastal communities in northern San Diego County.

The site is within a two-minute drive of three exits off I-5. The merchants benefit from a remarkable sphere of buying influence. Residents from Del Mar and the surrounding communities of La Jolla, Rancho Santa Fe, Fairbanks Ranch, and Solana Beach are among the most affluent individuals in the United States. In 1990, the immediate trade area boasted 300,000 potential shoppers with median family incomes over $74,000 and over 2,000 hotel rooms. Demand for retail space within the immediate area continues to grow, in part because of the proximity of large, growing residential communities and...
expanding visitor attractions like the Del Mar Race Track and Fairgrounds.

Del Mar's General Plan called for intensified use at the Plaza site. Early demographic analyses reflected demand for a center with a gross leasable area over 250,000 square feet. The developers recognized that an expanded and improved center required a retail presence on the street and began to investigate a range of site alternatives to achieve this objective as well as accommodate additional retail space and parking for 90 percent of peak demand.

The solution was to excavate the hillside and parallel the contour of the visible portions of the building with the 40-foot differential in grade across the site. Three levels of open-air retail space cascade down the hillside, covering a three-level parking garage and hiding it from view. At-grade pedestrian access is provided to each level of retail space from the two adjacent streets; stairs, ramps, and elevators provide easy connections between levels. A vehicular entrance on Pacific Coast Highway provides access to the parking garage as well as to a central service and delivery area; a vehicular entrance on 15th Street provides access to the parking garage only. Service areas are hidden from view.

Once the basic concept was articulated, the developers interviewed approximately 15 architectural firms before selecting the Jerde Partnership, which had prepared Del Mar's General Plan and designed Horton Plaza, the open-air regional shopping center in downtown San Diego. Landscape architects Emmet L. Wemple & Associates, whose work includes the Getty Museum in Malibu, were recruited to coordinate with Jerde. One of Jerde's most significant design contributions to the project is the curved pedestrian street on the top (plaza) retail level, which intentionally creates a sense of discovery and is part of a major circulation loop. Lower portions of the structure are type-3 metal construction, upper portions wood frame. Following demolition of the old strip center in February 1987 and excavation of the site, construction was completed in approximately 18 months.

The $2.2 million initial purchase price was based on the then-current center's income. The project was appraised in escrow for $3.5 million, based on its potential for redevelopment. Initial predevelopment costs were financed by loans secured against the resulting equity. In August 1986, the developers formed a limited partnership, Del Mar Partnership, Ltd., to raise additional capital from investors; as general partners, they retained 72 percent ownership. Citicorp Real Estate, Inc., a division of Citibank, provided the original $18 million construction loan in 1987. As the construction budget grew, the loan amount was increased to $21 million in 1988 and $26 million in 1989, when the construction loan converted to a five-year, interest only, minipermanent loan. The interest rate was set to float.

The center provides 35,000 square feet of elevated public terraces, including this rooftop terrace with views of the Pacific Ocean. Local residents, as well as tourists, frequently gather in these spaces for morning coffee, afternoon sun, and evening strolls, helping to keep the project active throughout most of the day.
at 150 basis points over the London Interbank Offered Rate (LIBOR). At the time of the conversion, Citicorp required a LIBOR cap or swap, to limit its exposure and selected a swap at 10.14 percent per year for three years. With LIBOR as low as 4.1 percent per year (translating to a pay rate of 5.6 percent), $1.3 million in annualized cash flow is attributable to the interest rate differential, which accrued to the owners when the swap expired in October 1992.

**LANDSCAPE AND AMENITIES**

The developers of Del Mar Plaza played an active role in designing the project and in selecting its landscape and amenity features. Both Winkler and Gayler had grown up in the small coastal town and felt committed to building a project on the site that would enhance the community's identity over the long term. The project would have to be economically viable, but the developers also believed an opportunity existed with this site to restructure the commercial and social function of the village core.

Winkler's and Gayler's hands-on effort began with exploration of commercial centers throughout California and Europe. To communicate their vision of the project to the designers, the developers prepared a slide show of both successful and unsuccessful marketplaces, architectural styles, landscaping, and materials. The design team used the photographs to re-create the functional and aesthetic essence of these places in Del Mar Plaza. Once the slides were sorted, cataloged, and
analyzed, common design theme elements began to emerge and with them several important design objectives for Del Mar Plaza:

- Make the public spaces the most important part of the project. (More than 50 percent of the land area is covered with public spaces and landscaping, despite the fact that the site contains 234,600 square feet of improvements.)
- Create a sense of marketplace that enriches the community’s social and physical fabric.
- Build a structure that will improve over time and thus serve several generations.
- Use a variety of materials common to the region that will enhance the project’s timeless image, but select only materials that will have a nominal life of 100 years.
- Capitalize on views wherever possible.
- Let the buildings and the architecture serve as a backdrop to the landscape.

The developers believed that money spent initially on design was more important than money spent on materials that would be used on the buildings. In fact, the project features a mixture of both expensive and inexpensive materials; in several instances, costly materials like Malibu-style tiles are set sparingly in concrete aggregate paving to heighten their effect and sense of importance. The plaza’s design became a collaborative effort, evolving during construction with over 400 change orders, most of them discretionary and aesthetic modifications.

The design and construction budget was a function of the size of the proposed center and the rents it could be expected to achieve. Although early market studies supported a project of up to 250,000 square feet, Winkler and Gayler targeted the project for 100,000 square feet of leasable space, based on the site’s limited size, their unwillingness to build a structure that would be out of scale with the village core, and their knowledge of the tough local political climate. A center of this size would approximately double the existing retail space in Del Mar’s village core and create adequate retail space to make the core a viable retail destination. A study of festival marketplaces around the United States supported the developers’ belief that the center could capture a premium of 20 to 25 percent over existing rents in the area.

Specialized studies were not commissioned to determine specific amenities, as the developers had already determined that the key amenities would be the public gathering places, the ocean views, and the landscaping. The most significant single amenity included in the project is the plaza on the top level, which affords a range of views to the Pacific Ocean, one block to the west. The project’s developers worked closely with the developer of a hotel across the street to ensure that view corridors were preserved and pleasantly framed by rooftops and landscaping. In one instance, the Del Mar Plaza’s developers were able to have a proposed tennis court across Camino Del Mar lowered in elevation so that views of water from the plaza could be improved.

The plaza is located on the roof of the second level, above a grocery market. It is furnished with Adirondack chairs painted in a variety of bright colors and occasional freestanding umbrellas for visitors who prefer the shade. Landscaping includes a formal arrangement of large concrete planters filled with orange trees and rose bushes. Dozens of smaller terra cotta pots feature a mixture of annual and perennial flowers and other herb-like plants.

The development and design team wanted to create the illusion that each level of the project exists on terra firma. That effect is achieved, in part, with concrete tree wells recessed below pavement level, which hang into the top level of the parking structure below. Special attention was required during design and construction to ensure that each well is adequately drained and supplied with irrigation and power. The illusion of terra firma is furthered by vines growing over a redwood trellis that extends from the edge of the public plaza to the 15th Street entrance to the project. Other hanging vines, including bougainvillea, are placed on the roof over storefronts; climbing roses and flowering vines like trumpet vines grow from large terra cotta pots on trellises adjacent to building walls.

According to the landscape contractor, approximately 200 terra cotta pots of various sizes are scattered throughout Del Mar Plaza, roughly double the number originally contemplated. And more pots continue to be added to achieve the lush and colorful impact the developers want to achieve. Each pot is equipped with a sensing device that monitors soil moisture to regulate watering and ensure that water does not collect in the trays under the pots. The contractor has intentionally planted the pots with a range of shrubs and flowers to achieve a personal, noncommercial effect and continually tries and tests new species.

The emphasis on landscape continues to the street level. Mature Torrey pines were preserved along 15th Street to give that side of the project a mature look with abundant shade. The
To add movement and sound to the environment, several fountains are located on upper-level terraces. The project's developers carefully scrutinized each design detail.

Camino Del Mar frontage was planted with pine and holly trees; vines climb up the storefronts, and extensive plantings hang from the stepped-back rooftops. Landscaping along Camino Del Mar has successfully been used to reduce the scale of the building, convey a sense of age and maturity, and articulate the building's intent to flow gently up the hillside.

Within Del Mar Plaza, the landscape architect has used plants and hardscapes to create a series of small gardens that complement nearby retail tenants. For example, an herb garden is located next to the grocery, a Zen-style garden near a sushi restaurant, and an eastward-facing morning garden at the rear of the project next to a bookstore and coffee bar.

Installation of landscaping required almost two years because of theordinate level of detail needed to support so much landscaping on what is mostly rooftops. Achieving adequate drainage and irrigation required close cooperation among the landscape architect and the landscape and building contractors. Fiberglass containers to line tree wells and planters were custom manufactured in Los Angeles. A number of problems and complexities arose during construction, and some drainage problems persisted until about one year after the project opened. The end effect, however, is the project's most striking feature.

Other amenities include sculpture that is available for sale displayed by one of the art gallery tenants. The sculpture changes as pieces are bought and sold. Several fountains are located on the second and third levels to provide movement and sound. Hardscapes consist of a wide range of materials, including flagstone, precast Mexican shellstone, marble, stone, brick, and ceramic tiles selected for their durability, quality, and character.

The landscaping at Del Mar Plaza requires an inordinate amount of maintenance. Annual maintenance for 1992 was about $90,000, or about 10 percent of the total operating budget. The landscape contractor staffs the project with one full-time person responsible only for maintaining the plants and supporting equipment. The contractor estimates that at least one other half-time person is needed during the year to help with special projects, such as pruning trees and replanting large containers. The developers intentionally selected a small landscape contractor who would commit his personal attention to the project and watch each detail closely.

The basic management philosophy at the Plaza is to treat the facility, management personnel, customers, and tenants with the utmost respect and care. Management is instructed to operate the Plaza "like Disneyland," with no litter allowed to lie on the ground and no deferred maintenance whatsoever, and to respond directly and immediately to any complaints from customers, employees, or tenants. Periodic surveys

### ANNUAL OPERATING EXPENSES (1992)

<table>
<thead>
<tr>
<th>Expense</th>
<th>Annual Budget</th>
<th>Percent of Budget</th>
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<tbody>
<tr>
<td>Taxes</td>
<td>$223,151</td>
<td>23.3</td>
</tr>
<tr>
<td>Insurance</td>
<td>$56,949</td>
<td>6.2</td>
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<td>$114,760</td>
<td>12.0</td>
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<td>Maintenance</td>
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<td>Janitorial</td>
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<td>Utilities</td>
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<td>Management</td>
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<td>Miscellaneous</td>
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<td>$957,363</td>
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</table>
VALUE OF LANDSCAPE AND AMENITIES

Representatives of the developer/owner, the city of Del Mar and its residents, and tenants of the center and their customers believe that the project’s landscape and amenities add value to the financial bottom line and to their perceived quality of life.

VALUE TO THE DEVELOPER/OWNER

The developers’ decision to include extraordinary landscaping and amenities at Del Mar Plaza was driven by three primary factors: 1) to achieve the highest possible long-term return on their time and financial investment; 2) to make the proposal for the project so attractive to the community that it would overcome expected no-growth, no-change opposition; and 3) to create a valuable and long-lasting contribution to the community’s physical and social fabric.

FINANCIAL RETURN

Del Mar Plaza’s financial return to the developers can be partly measured by its success in attracting and retaining tenants. Del Mar Partnership, Inc., handles the leasing, marketing, management, and oversight of all tenant and capital improvements associated with Del Mar Plaza. The Plaza’s position in the marketplace has been established by emphasizing its architectural qualities and landscape, location, and quality and mix of its tenants; a position that helped the center to be 75 percent preleased at opening and 93 percent leased during the first year of operation.

Typically, the tenant improvement allowance was about $20.00 per square foot, but exceptions were made up to $200 per square foot. And in constructing their improvements, some tenants spent up to $500 per square foot. Most tenants are local or regional merchants who understand quality, value, and
Vine-covered trellises on the rooftop terrace add shade and architectural interest to storefronts.

product mix, and how to merchandise and market those special items to affluent customers. Interiors of individual retail shops are designed for the maximum ratio of store frontage to interior square footage: typical shops are 15 to 18 feet wide and 50 to 60 feet deep.

Del Mar Plaza’s early success is further exemplified by its sales per occupied square foot, which grew an average of 22 percent from 1989 to 1990, notwithstanding the slowdown in the economy during the second half of 1990. The average annual sales volume for 1990 was $385 per square foot, considerably above national averages, and sales volumes for 1991 were estimated to be even higher. The three major restaurants, located on the top level behind the retail shops, have large outdoor decks oriented for maximum views of the ocean and are among the top performers in the San Diego market. Furthermore, these successes have continued to trend upward since the project’s opening. By the end of the second year of operation (1991), rents averaged 50 percent above initial estimates. And during 1990, a sale of a 32 percent interest in the center returned three times the owners’ original investment. Gayler and Winkler believe firmly that the center’s financial success (measured in occupancy levels, sales per square foot, and rents) is a direct function of the attention paid to design, the initial commitment to landscape and amenities, and the ongoing commitment to maintenance and landscaping.

According to information provided by the developers and an independent commercial broker familiar with the local market, Del Mar Plaza generates rents substantially higher than nearby retail space. Rents for the Plaza, which range from $3.50 to $4.75 per square foot per month (the base rental rate, excluding developer-subsidized tenants), are approximately double the rental rates for retail space in strip stores along Camino Del Mar. The difference is attributed to easy parking, the concentration of pedestrian traffic, and the perception of Del Mar Plaza as a retail destination. According to one commercial broker, all of these factors are important, but the landscape and amenities and the center’s overall appearance are essential in drawing people to Del Mar Plaza.

The development team determined early that no other projects in the San Diego market are comparable to Del Mar Plaza. Two high-quality specialty centers in downtown San Diego, Bazaar del Mundo and Seaport Village, are geared largely to the tourist trade, and residents indicated at the outset they did not want a tourist-oriented center built in Del Mar. One retail center in downtown San Diego might be considered comparable to Del Mar Plaza. Palladium, a high-end center, is similar to Del Mar Plaza in terms of development costs and rents, but Palladium is located in a downtown setting and its design is geared primarily toward expensive interior finishes. Its enclosed structure is not conducive to landscaping and its overall theme not consistent with Del Mar Plaza. Several tenants of specialty stores at Del Mar Plaza indicated they would consider a location at Horton Plaza, a large open-air regional mall in downtown San Diego, as an alternative to Del Mar Plaza. While they believe Horton Plaza offers the number of shoppers necessary to support their businesses, Horton Plaza is a major regional center catering to national chains and thus does not represent the tenant mix that Del Mar Plaza hoped to attract.

Perhaps the project most comparable to Del Mar Plaza is Beachwalk, a 54,500-square-foot specialty center just two miles up the coast in Solana Beach that was scheduled to open in summer 1992. To some extent, Beachwalk was built on Del Mar Plaza’s success and features some striking similarities: a location on the primary coastal highway just one block from the beach, a multi-level design, reliance on restaurant tenants for traffic, and public gathering.
spaces (although less extensive than at Del Mar Plaza). A key difference, however, is that Beachwalk features a design blending elements of a traditional strip center with the multilevel marketplace of Del Mar Plaza. Beachwalk placed less emphasis on landscape, and development costs are an estimated 75 percent lower than at Del Mar Plaza. After Beachwalk has established some operational experience, it might prove instructive to undertake a comparative analysis of the two projects.

As noted, the developers and independent commercial brokers consider each of these projects substantially different from Del Mar Plaza. Because each is so different, little can be learned by comparing one to another. Thus, apparently no way exists to measure the value of Del Mar Plaza's landscape and amenities relative to other projects in the market area.

From the developers' perspective, however, the landscape and amenities proved essential to the project's financial success. They believe that:

- The public plaza is the most important contribution to the project's success and that the payback on it could be as much as six times its construction cost.
- The investment made in design studies to improve views has been recovered many times over and that the ocean views from the main plaza and the restaurants on the top level are essential elements of the project.
- Although the landscape buffers installed at the north and east property boundaries and the trellis cover over the service area provide little direct economic return to the project, they were important factors in obtaining approvals and winning the community's support.
- The streetscape design and the architecture return three times the amount of their investment, and placing utility lines underground returns two times.
- Overall, the features that have had the highest return on the developers' investment are, in order, contouring the land to maximize views, the public plazas, landscaping on the public plazas, the use of landscaping to soften building forms and edges, and the quality of the materials used.
- Building 30 additional public parking spaces has probably paid for itself twice over.

**VALUE MATRIX**

<table>
<thead>
<tr>
<th></th>
<th>Higher Rents/Sale Prices</th>
<th>Higher Satisfaction among Tenants and Residents</th>
<th>Higher Retention of Tenants</th>
<th>Higher Occupancy Levels</th>
<th>Lower Turnover</th>
<th>Long-Term Equity</th>
<th>Faster Absorption or Leasing</th>
<th>Higher Sales per Square Foot</th>
<th>Higher Retail Traffic</th>
<th>Price Increases</th>
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<td>+</td>
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</tbody>
</table>

+= High  = Medium  += Low

Note: High, medium, and low represent the developers' overall impression of the value of amenities.
In Del Mar, the measurement of how favorably the community perceives a proposed development is not in how quickly the project is approved, but whether it is approved. The permitting process for Del Mar Plaza spanned nearly five contentious years, and its existence today can be attributed to its design, landscape, and commitment to quality.

The approval process involved preparation of a Specific Plan to replace the existing zoning, which permitted a maximum floor/area ratio (FAR) of 45 percent. After months of soliciting public comments, the developers submitted a plan proposing an FAR of 95 percent. As part of an extensive public relations campaign, the developers prepared an eight-page brochure to explain the development philosophy and concepts of the proposed project to Del Mar residents.

Soon after the original Specific Plan was unanimously approved by the village committee, planning commission, and city council, an out-of-office power base launched a petition drive to require a public vote on all development with building areas over 12,500 square feet. The perception was that a number of projects proposed to be developed simultaneously with the Plaza (including a luxury hotel across the street) would have a significant cumulative effect on the small village. Sufficient signatures were collected to place the initiative on the ballot, and, as the Plaza's approvals had not yet been vested, it became subject to the voter-approved initiative. By that point, February 1986, virtually all tenants had been vacated from the old center, and negative cash flow was significant.

After lengthy discussions with all factions of the community, the developers assembled a new coalition of leaders in the community to support a revised Del Mar Plaza Specific Plan. The downsized proposal, with an FAR of 77 percent, was similar in most respects to the original plan; once again, it received approvals from all of the city's discretionary boards. The revised plan was then placed on the ballot, with a development agreement to vest the developers' rights if voters approved the plan.

A sample ballot, prepared jointly by the developers and the city, further explained the project to Del Mar residents. A model of the proposed project was set up on the street corner, and the developers stood by to answer questions and garner support. The principal issues raised during the public hearings and the election focused on traffic generation, uses to serve residents, and impacts of construction. In February 1987, after an arduous political campaign and considerable expense, the Plaza won voters' approval by a 2 percent margin. Subsequent approvals from the California Coastal Commission and the Del Mar Design Review Board were easily obtained.

The city granted density bonuses to the allowable gross leasable area in return for the many public benefits and other amenities that the developers offered to include: owner-subsidized retail uses that would serve residents; Rental rates at Del Mar Plaza are approximately double those in stores along Camino Del Mar, the traditional retail district and main arterial highway through Del Mar. Rents are about 20 percent higher than in other high-quality retail destinations in the San Diego area.
outdoor public spaces; retail space (as opposed to office space) to increase the city's revenues; the replacement of water, sewer, and drain lines serving the Plaza and several hundred nearby residences and of nearby streets, intersections, and median strips; and the installation of traffic signals at an intersection at the north end of the Plaza to slow vehicles entering the center of town. In concert with the city, the developers paid for placing major electrical transmission lines underground, installing enhanced pavers in the community's principal intersection, and creating a new oceanfront park with excavated soil. In total, the developers spent about $3 million on public improvements.

Gayler and Winkler believe that a project with less commitment to design and quality would not have achieved the necessary approval from voters. The city manager agrees that the Plaza's design, landscape, and amenities shown in scale models and renderings were instrumental in gaining approvals.

VALUE TO THE COMMUNITY

FINANCIAL RETURN TO THE COMMUNITY

City officials are unable to quantify increased sales tax revenues resulting from increased retail sales at neighboring properties, but the city manager believes the contribution to the local tax base is positive. Measuring increases in sales tax revenues is difficult because of the city's current computer accounting technology and is further complicated by the development of the hotel across the street from Del Mar Plaza, for at least some of the increased sales in the village core can be attributed to the development of the hotel.

According to the developers, the community has further benefited from spin-off effects on surrounding properties. Because of the concentrated retail activity at Del Mar Plaza, rental rates have increased for other nearby retail space along Camino Del Mar, indicating higher retail sales since the Plaza opened. Rents for storefronts within three blocks of Del Mar Plaza have increased an estimated 15 to 50 percent since the project opened. In isolated instances, rental rates have increased by as much as 50 percent, according to one independent commercial broker.

NONFINANCIAL BENEFITS TO THE COMMUNITY

The qualitative benefits accruing to the community as a result of the project's landscape and amenities can best be measured by watching the way people move through and use the space. It is typical to see people stopping to admire an unusual flower. Cameras are commonplace, and visitors are often seen lined up along the plaza fountain for photographs. But the most appreciated amenity for locals is the public plaza on the top level. Throughout the day, people who did not come to shop but to enjoy the ocean views, breezes, and sun visit the plaza. College students can be seen studying near senior citizens who have come to talk. The recent addition of a wine and coffee bar adjacent to the plaza has increased the use of the space for informal business meetings.

Although some individuals from the community refuse to shop or visit Del Mar Plaza because they so strongly opposed redevelopment of the site, the city manager confirms that a sizable segment of the community seems to appreciate and use the project's amenities.

VALUE TO USERS

Tenants of Del Mar Plaza believe that the center's aesthetics are a factor in the success of their businesses. While tenants noted that location, demographics, and parking must not be ignored, tenants interviewed believe that the project offers an edge over other retail centers in the area, which can generally be attributed to appearance. One tenant says the Plaza is "one of the most beautiful places you could have a business. I love coming to work here." Another notes, "People want to come here and shop because it's beautiful."

Of the amenities, ocean views are most important to restaurant tenants. Each of the major restaurants features indoor and outdoor seating oriented toward the view. Other tenants are less specific about which amenities they value most and believe it is the overall execution of the landscape and architectural theme that makes the project an attractive place to visit, work, and shop. Other comments were frequently made about the landscape and amenities:

- People spend money when they feel good, and the Plaza's combination of smells, music, breezes, and views makes customers feel good.
- The plaza makes people feel relaxed, which is conducive to strolling and shopping.
- The restaurants are very important to generating traffic for other retailers throughout day and evening.
Tenants believe that the attention paid to design, landscape, and maintenance is a primary factor in the project's ability to generate retail traffic and sales.

**COMPARISONS OF RENTAL RATES AND SALES VOLUME FOR ONE TENANT AT DEL MAR PLAZA**

<table>
<thead>
<tr>
<th>Location</th>
<th>Estimated Rent per Month</th>
<th>Estimated Sales per Square Foot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Del Mar Plaza</td>
<td>$4.00-4.50</td>
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</tr>
<tr>
<td>La Jolla</td>
<td>$3.30-4.00</td>
<td>$500</td>
</tr>
<tr>
<td>Los Angeles, Palm Springs</td>
<td>$3.50-4.00</td>
<td>$300</td>
</tr>
</tbody>
</table>

1 Base rent, including percentage sales.
2 First year.

The design of the center, the ocean views, and easy parking are important factors that draw customers into the restaurants and thereby generate retail traffic for other tenants.

Several store proprietors indicated that their employees enjoy taking breaks and eating lunch in the public spaces and that employees' morale benefits from the work environment. The proprietors could not quantify the amount that the project's amenities reduced turnover and benefited morale but generally indicated that the beneficial effect was substantial.

Most tenants are not national chains, and Del Mar Plaza is their only location. The remaining tenants are comprised primarily of stores with two to four locations in the regional market. Comparable sales figures with other stores are thus difficult to measure. Information from one specialty shoe store, however, allows some measure of the contribution that the amenities could have on increased sales. That store specializes in high-quality, high-priced casual shoes and sandals made in Europe, and the European manufacturer strictly regulates the number of U.S. retail outlets. In 1990, Del Mar Plaza became the fourth outlet in southern California, with other locations in Palm Springs, Melrose Avenue in Los Angeles, and nearby La Jolla. The proprietor of the Del Mar store considered purchasing the La Jolla location but, after visiting Del Mar Plaza and being impressed with its appearance and amenities, decided to pursue opening a new store at the Plaza instead.

Initially, the manufacturer rejected the location in Del Mar, primarily because of the base rental rate of $4.00 to $4.50 per square foot per month (although other demographic factors supported a second store in the San Diego market). Following the rejection, the store's proprietor traveled to Europe to persuade the manufacturer to reconsider the decision and successfully convinced the manufacturer to come to Del Mar and visit the proposed location. After touring the project, the manufacturer was sufficiently impressed with the project's appearance and its amenities to reverse his decision, despite the rental rates. The manufacturer wanted to upgrade and update the product's image and was persuaded that a location in Del Mar Plaza would help to further that objective.

The proprietor's persistence and the manufacturer's decision have paid off economically: the store generates sales per square foot about double those of the downtown La Jolla store (also considered a desirable location with demographics similar to Del Mar Plaza) and has become the fourth-highest-grossing location in the United States.

In an interview, the store's proprietor indicated a firm belief that Del Mar Plaza's design and amenities are major factors in the store's success. The manufacturer was sufficiently impressed by the center's design to approve the store's opening despite base rents approxi-
mately 20 percent higher than at the La Jolla store.

Other tenants initially were not interested in locating a store in Del Mar until they visited the Plaza. For example, the developers wanted a specific type of restaurant for a location in a prime space on the third level to serve as an anchor, generate traffic, and set a fashionable theme that would influence other high-quality tenants to locate in Del Mar Plaza. Almost by accident, Gayler found the perfect restaurant tenant during a visit to San Francisco. Although the restaurant’s owner had no intention of opening another restaurant, he was enticed to visit Del Mar Plaza and was so impressed with the ocean views, third-level public plaza, and overall attention to design and landscape details that he, too, reversed his decision. Since its opening in 1989, the upscale Italian restaurant has proven a financial success; in 1991, the same owner opened a wine and coffee bar adjacent to the third-level public plaza. Both establishments do brisk business during both day and evening hours and, other retailers note, make important contributions to general retail sales at Del Mar Plaza.

**SUMMARY AND CONCLUSIONS**

- Sensitive, contextual design is cost-effective. The Plaza’s meticulous detail, high-quality materials, and tenant mix help make the project an economic success. It demonstrates the benefits of long-term amortization of costly improvements and the public’s appreciation of superior design and construction. The basic rules of retailing cannot be ignored, however, and location, demographics, and convenient parking must also be in place for any retail project to succeed.

- While views and beautiful public spaces help to generate traffic for retailers, other important criteria should be recognized: strong demographics, high existing traffic counts and visibility, and the proximity of other destinations to increase secondary traffic.

**PROJECT DATA**

**RETAIL INFORMATION**

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Tenants</th>
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<th>Total GLA (square feet)</th>
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**ANNUAL OPERATING EXPENSES**

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**DEVELOPMENT COST INFORMATION**

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<td>Fees/General Conditions</td>
<td>78,825</td>
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<td>156,795</td>
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<tr>
<td><strong>Total</strong></td>
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**DEVELOPMENT COST INFORMATION**

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**SALE COSTS**

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<td><strong>Total Cost per Gross Square Foot</strong></td>
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1Leases range in length from one to 20 years.
2Includes approximately 1,500 square feet of common interior service areas, which are prorated in the GLA.
The project's design was the result of collaboration among the developers, the architect, the landscape architect, and the community.

The project's successful design can in large part be attributed to the developers' hands-on approach throughout design, approvals, and construction. Careful attention to even the smallest details proved important to the community's, tenants', and customers' overall perception of the project.

The developers believe that the investment made to maximize views through detailed design studies and land sculpting yielded the highest return on the investment. Other amenities and features that generate high returns on the investment include the public plazas, the enhanced landscaping, and the quality of materials used on building facades and hardscapes.

The commitment to landscape and amenities proved essential to obtaining development permits and overcoming residents' opposition to Del Mar Plaza. In no-growth communities like Del Mar, the right to develop a property hinges on the community's perception of whether the project will benefit the larger community; the developer must be able to sell the project to the community by pointing to features like landscape, amenities, and excellent design.

Rental rates at Del Mar Plaza are approximately double those in retail stores along Camino Del Mar. Overall, the project receives rents about 20 percent higher than for other quality retail destinations in the San Diego area. The project has also fueled increased rent on the order of 15 to 30 percent for retail space within a few blocks of the center (although some portion of these increases can be attributed to the hotel across Camino Del Mar).

The community of Del Mar has benefited from the public areas built into the project, which, for some residents, serve a function similar to a public park but without costs to the public. The community has also benefited from a substantial increase in sales tax revenues.

All of the tenants interviewed for this study believe that the landscape and amenities contribute substantially to employees' morale and retention and to their financial bottom line. Retailers believe that the attention paid to design, landscaping, and maintenance is a primary factor in the Plaza's ability to generate retail traffic and sales.

WHERE, WHEN, AND WHO

CASE STUDY CONDUCTED: March 1992

DIRECTIONS
From San Diego Airport and downtown San Diego: Follow I-5 north approximately 15 miles and exit at Del Mar Heights Road. Proceed west on Del Mar Heights Road to its junction with Camino Del Mar (Pacific Coast Highway). Turn right and proceed north into the Del Mar Village center. Del Mar Plaza is located on the right at 1555 Camino Del Mar, on the northeast corner of the intersection of Camino Del Mar and 15th Street.

Driving time: Approximately 20 minutes.

DEVELOPMENT SCHEDULE
Land Purchased/Planning Started: October 1983
Leasing Started: February 1987
Final Approvals Obtained/Construction Started: November 1987
Grand Opening: May 1989

DEVELOPER
Del Mar Partnership, Inc.
221 15th Street
Del Mar, California 92014
(619) 259-0903

ARCHITECT
The Jerde Partnership
913 Ocean Front Walk
Venice, California 90291
(310) 399-1987

LANDSCAPE ARCHITECT
Emmet L. Wemple & Associates
2503 West Seventh Street
Los Angeles, California 90057
(213) 386-6623

INTERVIEWEES
Developer
Ivan C. Gayler, partner
David J. Winkler, partner
John Nash, project manager
Maggie Brown, director of marketing
Del Mar Partnership, Inc.
Landscape Architect
Emmet L. Wemple, president
Emmet L. Wemple & Associates
Landscape Contractor
Mark J. Sterk, owner
Columbine Landscape Company
Vista, California 92083
Commercial Broker
Edward J. Himmelberg
Rancon Real Estate
Public Official
Gloria Curry, city manager
City of Del Mar
Tenants
Angelika B. Sotnick, proprietor
Seaview Birkenstock
Carolyn Larkin, proprietor
Leura Larkin Gallery
APPENDIX A

INTERVIEW QUESTIONNAIRE

[DEVELOPER/LANDSCAPE ARCHITECT]

[Interviewer: Questions have been organized into three groups: process/planning, cost, and value. Not all questions may apply, depending on the type of project.]

PROCESS—PLANNING—DESIGN

List and describe the amenities found in the project (specific amenities and overall theme of the landscape program). Describe the overall concept and what you hoped to achieve. Did you achieve it?

Describe the planning process that led to the selection of the landscape and amenities. For example, were independent marketing studies influential in the selection of the landscape and amenities?

Who were the key players in recommending/selecting the landscape and amenities (planners, landscape architects, local government agencies, etc.)?

What cost/benefit studies were conducted relative to the landscape and amenities?

Relative to other similar projects in the local market, how do the landscape and amenities compare? Identify the similarities and differences. To what extent did competitive projects influence the planning decisions that led to the landscape and amenities in this project?

To what extent did natural site features (terrain, views, drainage, vegetation, etc.) contribute to the selection of the landscape and amenities? Was preservation or enhancement of natural site features an objective, and, if so, how was that objective furthered by the landscape and amenities?

Do water features serve multiple purposes (e.g., recreation, drainage, cooling of buildings, wildlife habitat, etc.)? Do other features serve multiple purposes (how or for whom)?

COST

For each specific amenity provided in the project, list the approximate development cost. [See attached form and ask developer to provide data.] To the extent possible, compare this cost with that of providing a more basic (plain vanilla) version of the same type of amenity (for example, the cost of providing a special paving material versus concrete, or the cost of providing a water feature versus a landscaped open area).

(Note: The intent here is to quantify the incremental cost difference between the project as built and what would have been considered a typical or adequate landscape/amenity package.)

What are the operating costs for amenities that require upkeep regularly or periodically (general maintenance, energy, replanting, repairing, refining, replacement, staffing, etc.)? Which amenities require extra provisions for liability and security, and what are the operating costs associated with them?

To what degree is the landscape and amenities program influential in the marketing of the overall project? Are the programs emphasized in merchandizing and promotional materials?

How are added construction and operating costs attributed to the landscape and amenities being recouped?

Are any savings or cost benefits in construction and/or operation the result of the way the project was designed or landscaped? Were these benefits intentional? Describe how the savings occur.

What was the experience with financing the landscape and amenities? Were lenders concerned about costs for financing the program? Were changes to the original plan required for financing?

Overall, which amenities proved to be most and which the least worth the expense? Which were most cost-effective?

PERCEIVED VALUE

What features and amenities have proved to be most successful, popular, or cost-effective, in your opinion:

• to management
• to users (residents, tenants, shoppers)
• to lenders
• to the general public
• to the public approvals process?

From the perspective of developer/builder, which amenities appear to have contributed most to the project's financial success? Which amenities are perceived as having the lowest payback? Describe how and why for each.
In your opinion, which features add the most measurable value to the project? Why?

What kinds of value do they add (individually or collectively)? Attempt to quantify the added value for each of the following:

- higher rents or sale prices
- higher retention of tenants/residents
- higher satisfaction among tenants/residents
- higher occupancy rates
- lower turnover
- long-term equity
- faster absorption/leasing
- higher retail sales per square foot/higher shopper traffic
- ability to increase prices for subsequent phases
- duration/ease of approvals process
- increased premiums

[Interviewer: Ask developer to complete the attached matrix to help quantify this question.]

Can the value added to this project be compared to other similar projects you have developed that did not have this level of landscape and amenities?

In hindsight, what would you do differently? What features would you change, add, or drop, and why?

[LOCAL PUBLIC AGENCY]

What was the agency's role, if any, in establishing the project's landscape and amenities?

Were other public agencies at any level of government influential in the selection of the landscape and amenities? If so, which agencies and what were their roles?

To what extent does the project exceed local requirements related to landscape and amenities (for example, percent of open space, landscaping requirements, and other applicable regulatory requirements)?

What are/were the spinoff effects from this project to the local community? Have the project's amenities enhanced the community and, if so, how? Summarize the positive or negative effects on the community.

Have the project's amenities had an effect on surrounding properties (e.g., changed land values)? What kinds of effects?

To what extent did landscape and amenities influence the time required for entitlements processing? If possible, estimate the time savings or increase attributable to the landscape and amenities program by comparing it to other similar projects. [Note: Obtain a list of amenities included in these other projects for comparison.]

Did the program being offered make the project more salable to local decision makers or public interest groups? Did the amenities help quiet opposition to the project?

Have property or other taxes increased because of the landscape and amenities? If so, estimate how much compared to other projects.

Have property or other taxes increased on other properties in the community as a result of the landscape and amenities?

What is the perceived "value" of the landscape and amenities to the local agency? How might that value be measured: increased tax base, decreased demand on related public services, such as parks, others factors? [Note: To the extent possible, interviewers should obtain quantitative data and information regarding this question.]

[USER GROUPS]

[Note: The user groups will vary with the type of project and include homeowners, renters, office tenants, and retail tenants. The questions listed below should be tailored to the specific type of user group.]

What factors were most important in your decision to purchase, rent, or lease the property (for example, cost, location, investment, etc.)? Rank factors from most important to least important. Among these factors, to what extent did the project's landscape and amenities influence your decision? [Note: List the various features of the landscape and amenities and ask the user to rank each feature as high, medium, low, or no value.]

Would you have moved here or located here without these amenities and features? What were your options?

Which specific features of the landscape and amenities do you consider most valuable? Which do you use most often? Which do you consider least valuable?

How frequently do you use the amenities? Include information for both passive and active amenities.

Do you wish any other specific amenities had been included in the program?

Did you pay a premium to rent or buy space here? Or do you believe prices were comparable?

Would you have paid a premium? For what types of features or amenities?

[OFFICE USERS ONLY]

To what extent do employees perceive the project's landscape and amenities a benefit? Which features and why?

Which amenities do employees not perceive as important?

Is the total amenity package perceived as more important than any individual amenity?

Do any of the amenities have an effect on employees' morale or mental and physical health? If so, which features and how so? Is retention of employees affected by the landscape and amenities? Can you quantify this retention rate by comparing it to other projects?

Can increased productivity as a result of the project's landscape and amenities be substantiated in any way?

[RETAIL USERS ONLY]

Do landscape and amenities support increased sales? If so, how? Have you ex-
experienced higher sales or better business than projects without these amenities?

Are comparable sales figures available from other stores in retail centers with fewer amenities that could help to measure the effect?

[COMMERCIAL BROKERS/RESIDENTIAL REAL ESTATE AGENTS]

What are the comparable projects in the local market area? If possible, determine at least three projects in the local market considered to be most competitive with the project under study.

Try to obtain a competitive analysis of these projects compared with the project under study, including:

- sales/lease rates
- year sales/leasing began
- square feet (office or retail space) or number and size of units (residential)
- amenities and landscaping included in each plan
- leasing/sales history and experience based on the broker's or agent's knowledge or opinion of the projects.

How do landscape and amenities for the project different from others of its type in the local market? Do landscape and amenities influence you (the broker or agent) to steer potential clients toward the project before other projects?

Comment on the contribution of the project's landscape and amenities in terms of your ability to sell, lease, or rent property in it. How does this ability compare with competitive projects? Does the project under study hold any advantage or disadvantage as a result of its landscape and amenities?

What impacts have the landscape and amenities had on the value of the project (for example, rents/sale prices or leasing period)?

What impacts have the project's amenities had on the value of surrounding properties? Has it had a spin-off effect on other developments? Has the project had any effect on the community's image or on property values?

What has been the market response to the project relative to the competition?

[Note: If possible, develop a matrix or comparable graphic technique to compare the project with competitive projects, including a list of amenities and sales/lease data.]
## APPENDIX B

### SAMPLE CONSTRUCTION/OPERATING COST DATA FORM

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<td>Extra Parking</td>
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<td>Signage</td>
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<tr>
<td>Plantings (foundation, specimen, gardens)</td>
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<td>Entryways</td>
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<td>Street Furniture</td>
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<td>Plazas</td>
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<td>Hardscape Features</td>
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<td>Special Plantings (flowers)</td>
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### APPENDIX C

**VALUE MATRIX**

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<th>Higher Satisfaction among Tenants and Residents</th>
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<th>Higher Occupancy Levels</th>
<th>Lower Turnover</th>
<th>Long-Term Equity</th>
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Rank each for High (H), Medium (M), Low (L), or No (N) Value.