Private Wilderness Playgrounds:

Understanding the Competitive Effects of Environmentally Oriented Master-Planned Communities

by

Jeffrey William Rapson

Bachelor of Science in Landscape Architecture
Purdue University, 1995

Submitted to the Department of Urban Studies and Planning
In Partial Fulfillment of the Requirements for the Degrees of

Master of Science in Real Estate Development
&
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Abstract

The thesis of this work is to better understand the competitive effects of developing second-home master-planned communities in an environmentally oriented fashion. The competitive effects are understood by examining the "traditional" land development approach and comparing it to the approach used in two case studies in this research—Spring Island and Dewees Island. These measurements and comparisons are used to understand and inform the effectiveness of an environmentally-oriented development approach, whereby these development strategies can be put forth and adopted as an approach to create value in future residential developments. The study derives its information from personal interviews and secondary research on the two developments. The research then presents a comprehensive synopsis of the competitive strategies so that the subtle relationships between consumer preferences, development risks, and market feasibility can be better understood. This thesis is intended to better inform community developers of the benefits, financial and otherwise, that one can capture through a whole-systems approach to master-planned community development. A whole-systems approach to residential development is defined by taking the three primary drivers for decision-making, economics, community and environment, and actively considering the interconnections between the systems in a balanced orientation. This concept is often referred to as the 'solutions multiplier' effect.

This thesis finds that residential community developers in the South Carolina Low Country second-home market can generate significant premiums and differentiate their communities in a highly competitive marketplace, while making better decisions that are more responsive to a project's social, aesthetic, environmental, and economic site through a whole-systems market-based development approach. It will be shown that bringing these three primary drivers together and capitalizing on their interconnections has realized multiple benefits over their competition while creating a new community development prototype.

Thesis Supervisor: Eran Ben-Joseph, Ph.D.

Title: Assistant Professor of Landscape Architecture and Planning

Dedication

To my parents—for their unwavering support and love—across all fronts, whatever the idea.

Secondarily, to my customers who supported my childhood landscape contracting business—it planted an important entrepreneurial seed and has undoubtedly proven itself valuable. More significantly, it uncovered my talents: design and development within the built and natural environment

Biographical Note

A landscape architect by training with seven years of professional experience, Jeff's undergraduate degree is a Bachelor of Science in Landscape Architecture from Purdue University where he graduated with honors in 1995. Since that time, Jeff has worked for EDAW, a global urban design, land planning and real estate development consultancy. At EDAW Jeff managed planning and design assignments from pre-planning feasibility through design-development phases of a projects development. Jeff is conscientious and results oriented with experience in planned community and land development; land development feasibility and planning; redevelopment visioning and workout; landscape architecture; and urban design.

At MIT, Jeff has studied as a dual degree candidate in the School of Architecture and Planning while fulfilling the requirements toward a Master in City Planning and a Master in Real Estate Development. His immediate plan after MIT is to join a development company involved in resort, recreation, and residential development. He plans to pursue and help build a new body of community development product that reflects the principles and ideals expressed in this thesis. In the future, Jeff plans to operate his own development concern.

Direct Real Estate Coursework at MIT and Harvard University: The Fundamentals of Real Estate Investment and Finance (HU), Real Estate Investment and Finance (MIT) Corporate Finance I and II, Real Estate Capital Markets, Real Estate Legal Issues, Strategic Management in Real Estate and Construction, Real Estate Negotiations and Consensus Building, Real Estate Economics, Micro and Macro Economics, Quantitative Analysis and Statistics, Construction Management, Public and Private Project Delivery (Contracting) Methods, Golf Course Development, Design and Operations, Affordable Housing Development, Finance and Management.

Acknowledgements

A sincere thanks to Jim Chaffin and the folks at Chaffin/Light who gave of their time and resources so that I could gather the appropriate information while I was researching Spring Island. Specifically, I want to thank Ann Debrosse and Chris Marsh who were of unmentionable help in providing the "right" data and insights into the project! This made my work considerably easier. My deepest appreciation to John Knott and the folks at Dewees Island (the Island Preservation Partnership, LLC) for the successful examples they are building that will no doubt contribute to a better method of community building. Specifically, Shawn Baldy, who provided critical links and gave me access to the Island and connected me with the appropriate people and data. Thanks Shawn!

Special Thanks to Eran Ben-Joseph, my thesis advisor who spent the time to work with me on this endeavor. Sincere regards to Peter Roth for allowing me to work in his Boston real estate company through the summers I was at MIT and also for supporting my CRE application. Thanks to Dennis Frenchman for advising me as a reader on this thesis and for advising me while I was at MIT.

A kind thanks to Brent Ryan (PhD to be) and Kath Phelan (PhD to be) for your "advisorship" while reading and editing this document—your insights are greatly appreciated and certainly have made this writing better.

Special thanks to those who wrote letters of recommendation on my behalf and supported my application in the beginning of this journey: Greg Pierceall, Kent Schuette , Kevin Percival and Jim Heid.

Lastly, thanks to my friends and family, who endured my explanations of the thesis and its development for many months.

Table of Contents

Chapter 1

Rethinking Master-Planned Communities

Private Wilderness Playgrounds

Along the coast of South Carolina, private island communities such as Seabrook, Kiawah, Spring, Dewees, Dataw, Daufuskie, and DeBordieu are protecting their environmental resources in an effort to increase marketability and financial return[1]. Their primary motives for doing this are to differentiate their communities and maximize the economic return of their investments[2]. Extensive resort and residential communities on coastal barrier islands are a recent phenomenon. Until the 1960s, developers gave little thought to the value of open space, harmony with nature, or to the economic value that is created by stabilizing sand dunes and protecting native vegetation. Previously, they built close to the sea, used seawalls, revetments, and bulkheads and desecrated large tracts of natural undisturbed land in the pursuit of development and profits. They clear-cut tree stands and filled in marshes. In the 1960s, however, rising prosperity and growing interest in the environment led many private developers to see the Low Country islands in a new light. The notion of total community development replaced traditional lot-by-lot development. Hilton Head, for example, a large island off the coast of South Carolina, was heavily logged in 1950[3]. However, after a bridge was built from the mainland, bringing visitors and potential residents by car, owners began to realize that the island had something much more valuable than timber: the natural beauty of beaches, trees, marshes, wildlife and water.

Charles Fraser, who developed the Sea Pines resort on Hilton Head in the 70's, was a pioneer in preserving that beauty[4]. He kept trees standing along the coast. He used natural building materials that blended in with the surroundings, designed lots to maximize their views, built houses that were open to the outside, and constructed streets that wound through protected trees and natural vegetation. Fraser

also set aside some of the land as permanent natural preserves. At that time, Sea Pines became a training ground for developers, architects, landscape designers, and others who later took their lessons of environmental development to resorts and new communities across the nation[5].

Fraser was not alone. Developers on Spring Island, Kiawah Island, Dewees Island, and others took similar steps to meet the needs of Americans who appreciated environmental and cultural preservation as well as home sites. These environmental developers located housing farther away from the ocean than required by state law, protected the shoreline ecosystem by hiring geologists, biologists, and engineers as consultants or full time employees to manage the site development before, during and after the project build-out[6]. These projects have constructed walkways over dunes, limited entry-points onto the beach, protected wildlife and trees, and restricted the use of chemicals on golf courses and roadways. The last two decades have seen the emergence of an increased marketability for a new style of land development. Referred to as "green", "sustainable" or "environmentally sensitive," this development prototype shares a common objective of being designed, marketed, and sold to balance environmental protection while maintaining or increasing economic return as a result of preserving the existing natural context and ecology of the site[7].

Research Objectives

Purpose

The goal of this thesis is to explore the current competitive development practices and ideas in the evolution of environmentally focused second-home master-planned communities in the South Carolina Low Country. This inquiry initially emerged from an observation of a trend in this market—building less and making more money! Fundamentally, the primary question that began this research was "HOW"? How are community developers in this market making more money while building and doing less? Is it true that because developers are physically building less that their customers are receiving as much as they previously did? At first glance, using basic economic and finance theory, one could surmise that as more of a good is available to consume for a buyer, that the good will have a higher value and thus that buyer will be willing to pay a premium to consume more of that good. This primarily concerns the 'exclusivity' and 'quality' components of these communities and the benefits that are inherent in such an arrangement. Simply, the scenario is the inverse of the argument commonly known as the 'tragedy of the commons'[8].

The analogy can grow in complexity, but it is probably safe to say that an optimal mix exists between the good(s) net (total) value and the number of users that have access to that good, so that a developer's financial return is maximized and the good that consumers are paying a premium to consume is not destroyed—ecologically or economically. The good I am referring to is an entire environmentally-oriented residential community and all its constituent pieces. This includes the existing undisturbed natural environment and open space, the exclusivity and privacy created by the developer, the enhanced design and development standards, and the institutionally- organized environmental trust that guarantees that the environmental good existing today will be preserved. The development will therefore reflect an equivalent rate of appreciation in economic value in future periods and will presumably be greater than competing rival second-home investments in the same market.

That said, the core of this thesis is a qualitative probe that explores how developers are able to downzone a project, build one-tenth of the allowable density (by choice) and yet generate higher investment returns. This fundamental question is tested by exploring two planned resort second-home residential developments: Spring Island in Blufton, South Carolina and Dewees Island in Isle of Palms, South Carolina. Further questions which lead from this general inquiry are also explored in this paper. For example, what are the physical development standards for these communities? How are they enforced? What are the development standards effects on a project of this nature, considered to be 'atypical' or 'alternative' by 'conventional' financial underwriting standards[9]? For example, what are the effects on pricing the risk? As a result of building a community prototype that is new and hence not fully understood by the underwriting marketplace, what are the effects (penalties) on the finance, investment, or zoning norms? Moreover, what are the effects on the land acquisition and entitlements process? This thesis will address and explain the costs and benefits[10] of these key questions.

Another aim of this thesis is to explore how these communities are being marketed and sold. What are the competitive[11] marketing differences in comparison to traditional second-home master-planned community developments? If community developers and marketers are able to charge premiums as a result of this development approach, how are developers ensuring that what buyers pay a premium for today will be of equivalent ecological, economic, and visual value in the years to come, once the developer has turned the community over to the property owners association[12] (POA)? How does a developer prevent a 'tragedy of the commons' condition?

Finally, the goal of this thesis is to understand the questions just posed, while at the same time synthesizing the methods used in the two case examples so that these development strategies can be applied to other residential projects. Given that the development strategies used in these case examples are shown to be competitive, the key contribution of this inquiry will perhaps be to help popularize and change the norms of land developers in the residential development business.

The Modern History of Planned Communities

Today's development practices in the second-home residential development market segment integrate homes more carefully with site and history, accounting for primeval lands, historic architecture, and restoration or preservation of native vegetation. Sound, environmentally oriented development can be part of the solution to a number of conservation and land use issues in higher end residential communities. By promoting conservation-based residential development techniques, the developer / builder can achieve the full desired housing density, but in a way that will produce a community-wide framework of interconnected open space, recreational areas, and other elements important to a community's character and uniqueness[13]. New rules are being written about the marketing of new homes, especially homes in master-planned communities. In a memo from PBR, one of the nation's leading planning and development consultants to master-planned community developers, Michael Horst outlines current market research data that identifies (in order of importance) the most significant *mega trends* in the 1990's and beyond[14]. Seven primary trends define the landscape: Environmentalism; Voter Mobilization; Demand for Authenticity; Importance of Community; Individualism; Culture; and Economies of Targeting[15]. The past few years have seen the demise of mass marketing, more buyer sophistication, a desire for variety in lieu of uniformity, and pressing growth management concerns that buyers want to support through the type of community they buy into[16].

Starting with the new town movement of the early 1960's, America has experienced a master-planned community (MPC) boom that has been behind the development of everything from Sun-City-style retirement communities to New Urbanist towns[17]. Some MPC's have been successful while others have never achieved their intended potential. Any number of factors—economic cycles, location, product mix, even troubles at the development company itself—can limit a MPC's success. For many struggling MPC's, however, the problem is a master plan that doesn't have a long-term perspective or built in components for long-term success[18]. What are the key ingredients for a successful master plan that

grows with a community over the long-term? I propose that theses ingredients are threefold: physical structure, market adaptability and financial flexibility[19].

Master-planned communities are usually a product of long-term, multiphase development programs that combine a complementary mix of land uses. Often they are held together by a unifying character or design element. A master-planned community provides an opportunity for a large tract of land to be planned comprehensively and implemented in logical economic stages[20]. Development of master-planned communities typically occurs on 'greenfield sites[21] ', that is, on tracts of undeveloped land at or beyond urban fringes. Increasingly, the most desirable sites are no longer available, and developers must turn to infill or 'brownfield sites' [22] that require more investment in infrastructure remediation and initial up-front development costs to get the site prepared for development. Additionally, as the supply of large tracts of land with reasonable proximity to an urban area decrease, developers have started to explore the opportunities for building communities in environmentally sensitive areas—previously considered above a reasonable site development cost curve and therefore not particularly desirable parcels of land for development. Interestingly, in a 2001 survey of builders and developers, respondents noted that the single primary concern in the residential land development industry was the decrease in the supply of developable land within a reasonable proximity to an urban service area[23]. As a result, previously undesirable environmentally sensitive sites, as demonstrated in the case examples used in this research, provide new and highly profitable opportunities, and challenges, for community builders in the next century. The demonstrated conclusion of my research shows that a different development approach is necessary to make these types of projects marketable and profitable. Understanding this new approach and its competitive economic development strategies will therefore be the central focus of this thesis.

All development professionals face a major common issue in the development of large land development projects: public protest against new development. *NIMBYism*[24] has become the most pervasive obstacle of new projects—urban, suburban, or rural, no matter how well a project is conceived[25]. Developers must acknowledge and create strategies to address this issue, for it will not go away. Environmentally oriented communities increase the probability of a developer avoiding much of the controversy associated with a new development[26]. In some contexts, for example the Dewees Island community studied in this thesis, this approach created a significant competitive advantage and actually enabled the developer to get the deal completed. One can argue that this entitlement, as a result of this approach, essentially creates an arbitrage opportunity within that marketplace against the traditional development approach. As a result,

an environmentally oriented developer can bring their product to market quicker and therefore generate greater financial returns[27].

'Psychographics[28] ' is a term that has replaced 'demographics' [29] to identify and satisfy the market niches that make up today's home buying public. Markets are more than just age cohorts. They are segmented into household types, lifestyles, and backgrounds. Aging is a major demographic factor that will change the face of residential community development in the years to come[30]. Immigration patterns must also be considered and are a second exacerbated force on community design and development. In response to these and other trends, developers are looking for ways of mixing ages and incomes within a community to broaden their markets and subsequently sell more goods, i.e. housing[31].

Moving Towards a Whole-Systems Development Approach

Given the 'rethinking' that is occurring in the master-planned communities market (trends, demographics, consumer forces and supply responses), how might community developers respond to current market opportunities? Fundamentally, developers should begin with a cost-benefit analysis that takes into account the whole-systems approach to development[32]. The whole-systems development approach, or environmentally-oriented development is an integrated framework of design, construction, and operations practices that encompasses the environmental, economic, and social impacts of buildings and communities[33]. Environmentally oriented development practice recognizes the interdependence of the natural and built environments and seeks to minimize the use of energy, water, and other natural resources and provide a healthy, productive living environment[34]. This approach to development is a rapidly expanding field, offering significant opportunities to real estate developers. Environmentally oriented development can significantly improve the comfort, aesthetics, resource efficiency, and value of properties[35].

Environmentally oriented development is not just a long list of add-ons that make a project more expensive while producing only token environmental improvements. Rather, it is a philosophy based on a whole-systems approach[36] to development. Whole-systems thinking looks at a development as a whole: how decisions, systems and designs are interrelated, and how each influences the other. Through teamwork, all stakeholders and members of a development team spend time understanding how each goal and decision influences each other[37]. If a development is viewed as a whole system and all the parts of the system interconnect, then the team members responsible for those parts must also work together.

'Front-loaded' design refers to planning and designs in the early stages of project development. With end-use/least-cost thinking, one asks a simple but profound question: what are we really trying to do, and what is the best and cheapest way to do it? Building occupants do not care about lighting technologies or ductwork—they want a comfortable, well-lit space. The goal is therefore to understand end uses and then to work backwards to develop the means to deliver those ends at the least cost from an environmental, social, and financial perspective[38]. Contrary to conventional thinking, environmentally oriented buildings and communities are not inherently more expensive to build than conventional construction. There is no doubt that there are market barriers and obstacles for certain types of product where this approach is not yet financially feasible or competitive. However, as this thesis will demonstrate, the second-home market (specifically this segment) has, thus far, proven to create a more competitive community than those in the same market area that did not choose an environmentally-oriented development program and approach. This can be seen in the Spring and Dewees Island case studies used in this thesis.

Fundamental Characteristics and Benefits

Briefly, several of the fundamental characteristics necessary to achieve an environmentally-oriented community are: clustering housing units to preserve community open space; providing economic and cultural diversity, with part of the strategy purposely focused on creating a variety of high priced, mid-range, and low priced lots as building sites for both expensive and affordable houses; incorporating pollution prevention technology into the project primarily through development of community wastewater treatment facilities and solid waste recycling processes; consideration of energy efficiency technology into the architectural design of the houses to be built; and using materials in the homes would be of the highest and most durable standards and would be accepted by the U.S. Green Building Council[39] as materials which qualify for meeting their green building criteria. By considering the above recommendations in attempting to achieve 'green' residential planned communities, there are a number of significant benefits that the developer, homeowner, and local governments can experience. These include[40]:

Economic Benefits

- Reduced capital costs, or faster payback periods on higher "first costs" and higher rates of return on financial investments
- Reduced operating costs (energy, waste, water, maintenance) lead to higher net income, therefore higher project valuation.

- Lower construction costs (energy, water, waste, materials, reuse)
- Less expense over long-term to developers & residents

Environmental Benefits

- Efficiency of resource use
- Pollution prevention
- Water recycling for winter alternative heating, irrigation, and other "grey water" uses. House clustering would also afford savings from a single water service for multiple house sites.
- Increase the amount of natural land set aside for conservation
- Reduce the amount of impervious cover and use pervious areas for more effective storm water return
- Maximization of landscape attributes - enhancements

Social Benefits

- Demonstration of social awareness
- Macro-level benefits can include reduced dependence on foreign oil and associated need for utility plant expansion, reduced transportation costs and fuel consumption.

Physical Benefits

- Compatibility with regional zoning
- Buildings with longer life spans that can be adapted for other uses
- Reduced litigation risk related to indoor air quality
- Consideration of architectural designs of the houses to be built to include energy efficiency technology and means to conserve and recycle water within the homes, as well as on the home sites.
- Materials used in the homes would be of the highest and most durable standards and would be accepted by the U.S. Green Building Council (San Francisco, CA) as materials able to qualify for meeting their green building criteria (building materials made from recycled products).
- Thoughtful siting of home structures can take advantage of natural vegetation to enhance cooling in summer and increased sunlight exposure for more efficient heating in winter. Energy cost savings from these strategies can be as much as 20% with proper window placement that will take advantage of natural ventilation for added cooling benefits.
- Use of low-flow water fixtures (toilets, showers, sink faucets, etc.) can save as much as 15% of household water use. [Water usage for a traditional family of four just in flushing toilets can equal the use of 40,000 - 50,000 gallons of water per year.]
- Consideration of proper placement and protective measures for heating systems (furnaces, water heaters, etc.) can enhance in-door air quality significantly, protecting resident health. [Coupling solar-driven hot water heating with whole house heating, and incorporating hydronic floor heating with a concrete slab, can reduce winter heating costs by as much as 10%.

Geothermal air tubes within the interior of the house can significantly enhance traditional cooling and heating technologies to reduce utility costs and ultimately decrease pollution.]

- Integrated site design that will consider home clustering can take advantage of wastewater treatment and water supply technology in a much more efficient manner by, for example, eliminating duplication of multiple wells and drain fields for these homes. This strategy could translate into an additional $2,000 - $4,000 savings for each household that wants to take advantage of the benefits from a clustered housing design.

For the community developer and building owner, conservation-oriented development offers many potential benefits: reduced operating costs of buildings and landscapes; market differentiation; improved sales or leasing rates; higher property values; increased absorption or occupancy rates; reduced liability risk; better health and higher productivity of workers; avoided regulatory delays during permitting; and even reduced capital costs[41]. Jim Chaffin, (the developer of Spring Island), and others have used data from consumer interest surveys on environmental awareness and concern, for example, to extrapolate demand for environmental goods and environmentally responsible developments[42]. Thus far, this data and the accompanying consumer demand have proven to be highly reliable as sales for their environmentally oriented developments are exceeding projected market absorption and profits.

Market Segmentation and Consumer Stratification

The 'typical' homeowner is very difficult to describe and is increasingly becoming more difficult to group under a single category or classification. It is the general opinion of residential developers that a mass market no longer exists[43]. The buyer profile is now breaking apart into niche consumer segments, ranging from singles, retirees, married couples without children at home[44], aging adults, college graduates who are once again living with their parents, and immigrants with deep cultural mores, language, housing needs, and location preferences[45]. All these characteristics have spurred developers to design and market master-planned communities differently. Examples of the changing scenarios and critical factors in developing master-planned communities include[46] the following considerations.

Micro-Marketing Versus Mass Marketing

Like many of other products, master-planned communities were traditionally marketed to everyone, all at once. Today, it is important to target not just one generic buyer, but people in as many as 15 different segments such as: executive couples, move-downs, move-ups with kids, single women, single men, young couples, empty nesters, and so on[47]. The first step in planning a community is to research the population

base: who already lives nearby, who is moving into the area, what their lifestyles are, and what can they can afford. Land planners, architects and engineers must integrate this knowledge into their land plan for the appropriate placement of these features and amenities in the community design[48]. Developers need to make sure potential customers know the benefits of living in a master-planned community: value, selection, risk reduction, investment appreciation potential, and in some cases, a reduced commute. In most regions of the United States, buyers are placing a higher emphasis on environmental sensitivity. To respond to such concerns, for example, large percentages of developable land is being protected and consciously planned for as wetlands, walking trails, neighborhood parks and open space. In the 1980s, a typical home buyer would not have asked about wetlands or salmon preservation, but today a developer's thoughtfulness on these matters can both be a selling point and create enormous value at the same time[49].

Product Selection, Choice and Diversity

Developers have become much more purposeful in planning for diversity in lifestyles, income levels, home styles and residents' ages[50]. Planning for diversity takes sensitivity and consideration. Developers need to make sure the range of home choices are compatible with each other and that insensitive siting of smaller less expensive homes doesn't compromise the value of more lavish homes. A developer of a large community must carefully integrate multifamily dwellings with custom homes and address the standard allocation of amenities and resources for everything in between.

Changing Consumer Preferences and Future Trends

Are developers creating master-planned communities that will be obsolete and unmarketable before they are completed? What homebuyers want is not always what homebuyers get, usually because they cannot find the type of home they want in their market. A survey of 2,000 recent buyers of both new and resale homes sought not only to identify what homebuyers want and what kinds of communities appeal to them, but also to explore the gaps between what homebuyers want and what is available[51]. This survey, by AmericanLIVES, Inc., a California-based market research firm, compared homebuyers of master-planned communities, buyers of new construction homes, and buyers of resale homes, as well as the demographics of buyers[52]. Natural open space, walking and biking paths, and sidewalks were at the top of the amenities list generated by the homebuyers sampled from Florida, Arizona, California, Texas, and Colorado.

Figure 1.1, Summary of Features (by Percent) of Respondents Saying Feature Is Very or Extremely Important[53].

Feature	Percent
Quiet, Low-Traffic Area	93.07
Designed With Cul-De-Sac Streets, Circles, And Courts	77.72
Lots Of Natural Open Space	77.72
Walking And Biking Paths	74.73
Established Schools	69.84
Community Controls On Architectural Styles And Lot Sizes	69.02
Sidewalk Along One Side Of All Streets	66.03
A Security Patrols In The Community At Night	65.22
Easy To Meet People Within The Community	60.87
Easy Freeway Access	60.60
Gardens With Native Plants And Walking Paths	56.39
A Small Cluster Of Convenience-Oriented Retail Stores	55.30
Wilderness Areas	52.99
An Outdoor Swimming Pool	52.85
A Community / Recreation Center	52.31
Easy To Walk To Parks, Stores, Etc.	52.17
A Shopping Center Adjacent To The Community	51.49
Interesting Little Parks	50.82
An Exercise / Fitness Center	50.68
A Town Center With Shops, Coffee Bars, Meeting Places	48.10
Joining Community -Neighborhood Recreational Facilities	47.28
A Library Where to Check Out Books Or Sit And Read	47.01
Churches Or Other Places Of Worship	46.88
Preservation Of Historic Sites	46.33

Opportunities For Parents To Interact Around Child-Centered Activities	46.06
Living In Area Where I Meet Lots Of People	44.57

Source: American LIVES, Inc., San Francisco, California.

The same items topped the list in a similar 1995 survey[54]. These amenities were the ones that appealed to all survey respondents, regardless of what type of home they bought or what kind of community they currently live in. A majority of homebuyers favored gardens and parks, in particular numerous smaller parks and green spaces located throughout a community, rather than just one centralized park. Golf courses, a very expensive amenity, were down toward the bottom of the list, indicating that golf is a highly specialized niche market and desired by a smaller group of buyers. If the target buyers for a community were golfers, then it would be necessary for the project to include a golf course in its program. However, the survey indicated that 8 out of 10 homebuyers are not attracted by the prospect of a golf course, and might even be opposed to a golf course. Some of the respondents mentioned they might choose a golf community because it at least offers open space, but what buyers really want is useable green space—space that their children can play in, their dogs can run in, and their family and friends can gather in.

Preserving historic sites rated fairly high on the amenity list, both in the 1995 and 1998 surveys[55]. Other such studies have shown that buyers are surprisingly receptive to authenticity and local flavor in their communities, rather than identical communities that could be located anywhere. While all homebuyers wanted a safe community, not all felt that having security guards patrolling (often armed) was necessarily the solution. Gated entrances appealed to about every one in four buyers. Buyers in master-planned communities, as well as buyers of more expensive homes, were more likely to consider security guards important. Buyers of homes in master-planned communities were also more likely to want community controls over architectural styles and lot sizes, whereas resale buyers were less likely to want this. Master-planned community buyers were also more likely to place a higher priority on community facilities and amenities, such as a recreation center, exercise / fitness center, and a swimming pool. Other homebuyers indicated that they are willing to take these amenities or leave them.

Just as today's office building developers are accommodating new technologies and striving to meet the expectations of sophisticated new businesses, today's residential developers must both understand and respond to rapidly evolving consumer demands. Consumers of housing expect the same up-to-the-

minute lifestyle features and technological innovations that they are used to at the office[56]. The 1990s were a decade of subtle, but substantive, changes in consumer demographics and, more importantly, in psychographics. Unless consumers' attitudes are well understood and integrated into their planning and sales processes, the developers of master-planned communities are potentially at a competitive disadvantage. These developers could also end up investing in communities that will be literally obsolete or rejected by the consumer because they fail to mirror and match consumers needs[57]. Many of these changes are already being anticipated and addressed in other areas of real estate, such as office and retail. But the planning and development of residential real estate properties has lagged behind in focusing on the consumer[58]. If the rules are changing, then how might developers respond to create a premium product and create subsequent added economic value? How might the master-planned community development business be different in the future?

References

[1] Pompe, Jeffrey, and Rinehart, James. (June 1999). *Protecting Beaches: South Carolinas Islands do it Privately.* (Vol. 17, num. 3). Where Markets meet the Environment: PERC Reports.
[2] Ibid.
[3] Ibid.
[4] Ibid.
[5] Ibid.
[6] Ibid.
[7] Ibid.
[8] Capitalism's most dangerous flaw is that it has no inherent method for dealing with the tragedy of the commons. The tragedy of the commons is the doctrine which insists that we will always add one too many sheep to the village commons, destroying it. In other words, we will always opt for an immediate benefit at the expense of less tangible values such as the availability of a resource to future generations. When you look around you, it is immediately obvious, if your eyes are open, that the tragedy of the commons is an accurate description of human nature; such disparate human creations and institutions as Times Square, Usenet and Love Canal all represent tragedies of the commons.
[9] Financial underwriting if the process whereby a financial institution assumes the risk of securities' sale by purchasing the securities from the issuer for resale to the public. Investment bankers often assume this underwriting function in order to guarantee that the issuer will receive all the funds needed from the sale.
[10] Cost-benefit analysis is the process of analyzing and studying a projects costs and benefits in the context of a new information system or processes. Costs include people and machine resources for development as well as running the system. Tangible benefits are derived by estimating the cost savings of both human and machine resources to run the new system versus the old one. Intangible benefits, such as improved customer service and employee relations, may ultimately provide the largest payback, but are harder to quantify.
[11] Competition is the act of competing, as for profit or a prize typically in the context of strong rivalry. Competition tests the skill or ability of a contestant or the rivalry between two or more businesses striving for the same customer or market.
[12] A Property Owners Association, commonly referred to as a 'POA,' is a legal and operational entity that manages and enforces the codes, covenants, and restrictions of a planned community development. Its primary purpose is to execute and carry out the wishes of the residents as prescribed in legally binding documents, subject to approval of the residents.
[13] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[14] PBR, Inc. (Mike Horst). (1990). *Intra-Project Team Memorandum: Megatrends Follow Up.* (May 14). Office Memorandum to Santa Margarita Center Planning Team.
[15] Ibid.
[16] Ibid.
[17] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities.* Washington, D.C. Urban Land Institute.
[18] Cusumano, Gary M. (2001). *MPC Lessons: Creating an MPC master plan that succeeds over the long term.* (May) Washington D.C. Urban Land Institute. Urban Land Magazine. 14-16.
[19] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities.* Washington, D.C. Urban Land Institute.
[20] Cusumano, Gary M. (2001). *MPC Lessons: Creating an MPC master plan that succeeds over the long term.* (May) Washington D.C. Urban Land Institute. Urban Land Magazine. 14-16.
[21] Ibid.
[22] Ibid.
[23] NAHB Economics, Mortgage Finance and Housing Policy Division. (2000). The Next Decade for Housing. Washington, D.C. NAHB.

[24] NIMBYism is a euphamism often used in the planning and development vocabulary that means ' NOT IN MY BACK YARD." This is a commonly used word that makes reference to those who oppose a change that would impact and otherwise alter their existing state of existence.
[25] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities*. Washington, D.C. Urban Land Institute.
[26] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[27] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[28] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities*. Washington, D.C. Urban Land Institute.
[29] Ibid.
[30] Ibid.
[31] Ibid.
[32] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[33] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[34] Ibid.
[35] Ibid.
[36] Ibid.
[37] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[38] Ibid.
[39] AmericanLIVES, Inc., San Francisco, California.
[40] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[41] Ibid.
[42] Ibid.
[43] NAHB Economics, Mortgage Finance and Housing Policy Division. (2000). The Next Decade for Housing. Washington, D.C. NAHB.
[44] Currently 54 percent of the total housing market, the largest segment, is comprised of "empty nesters"—married couples without children at home.
[45] NAHB Economics, Mortgage Finance and Housing Policy Division. (2000). The Next Decade for Housing. Washington, D.C. NAHB.
[46] Rodman Smith, Mark. (1997). Integrating Sustainable Design and the Real Estate Development Process: A Survey of Real Estate Professionals: Obstacles and Solutions. (Technical Papers pgs. 353-359). Environmental and Economic Balance: The 21st Century Outlook, US Green Building Council, AIA, and DOE.
[47] Ibid.
[48] Ibid.
[49] Ibid.
[50] Ibid.
[51] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[52] Rodman Smith, Mark. (1997). Integrating Sustainable Design and the Real Estate Development Process: A Survey of Real Estate Professionals: Obstacles and Solutions. (Technical Papers pgs. 353-359). Environmental and Economic Balance: The 21st Century Outlook, US Green Building Council, AIA, and DOE.

[53] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities*. Washington, D.C. Urban Land Institute.
[54] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[55] Ibid.
[56] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities*. Washington, D.C. Urban Land Institute.
[57] Ibid.
[58] Ibid.

Chapter 2

Developing Master-Planned Communities

The Process for Building Master-Planned Communities

Introduction

The subdivision process is the principal mechanism by which cites are developed. Technically, the term "subdivision" describes the legal and physical steps that a developer must take in order to convert raw land into developed land[1]. These steps, and the associated critical factors, are examined in this chapter in the context of the development of residential master-planned communities. Subdividing land is a vital part of a regions growth, and it determines both the appearance, segregation or mixture of its land uses, and, more importantly, the layout of its urban infrastructure—namely, its roads and systems for ecology, drainage, water, sewer, electricity, telephone and gas.

Many current subdivision regulations have evolved because earlier regulations did not provide adequate streets, utilities, setbacks, and development densities to create a suitable living environment. Each decade has brought new problems and concerns that have changed the land development regulatory process. Developers today must be more mindful than ever of the impact of their projects. Even when their projects conform to existing zoning requirements, developers are finding that they must justify their projects to local communities in terms of beneficial (or at least not adverse) impacts on the environment, traffic, tax base, and schools, parks, other public facilities[2]. Thus, in the broader sphere of urban and suburban development, developers must understand the complex relationships that tie the private and the public sectors together. Figure 2.1 depicts the interrelationships and phases of the development process involved in building a residential master-planned community.

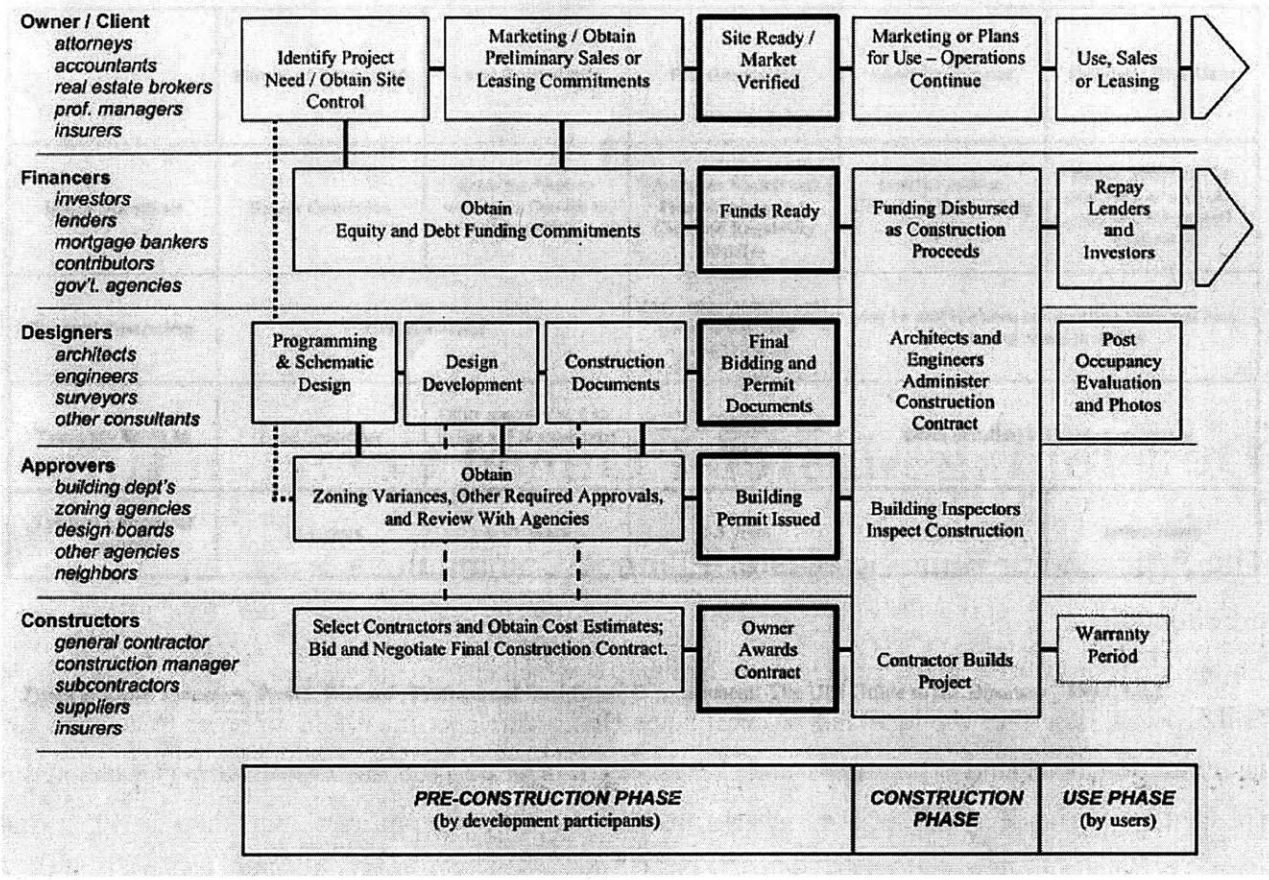

Figure 2.1, **The Development Process**, Lewis, Roger K. (1985) *Architect: A Candid guide to the Profession*, p152, Massachusetts Institute of Technology.

Subdividing Land

The subdivision process by which land is transformed from raw to a developed state has three stages: first, raw land; second, semi-developed land, usually divided into 20- to 100-acre tracts, with roads and utilities extended to the edge of the property; and third, "developed" or "subdivided" land, platted into individual home sites or five- to 10-acre commercial parcels ready for building. Figure XX shows the structure of land conversion and industry and the roles of the various players.

	Buyer of Raw Land	Land Speculator	Pre-Developer	Land Developer	Builder / End User
Major Function	Begins Conversion	Holds the Property waiting for Growth to Approach	Analyzes Market and Plans development; Clears all Regulatory Hurdles	Installs Utilities; Completes Subdividing Program.	Builds Structures for sale, rent, or own use; may employ general contractor
Typical Financing	Noninstitutional		May attract institutional investment on a selective basis	May be able to obtain construction loans and long-term real estate investors	
Typically Sells to	Land Speculator	Other speculators. Last in line sell to some type of developer	Land developer or end user	Other (smaller) builders or end users	
Typical Length of Tenure	10 + years	8-10 years	2-5 years	1 + years	Intermediate

Figure 2.2, **Types of Land Investors,** Alan, Rabinowitz, *Land Investment and the Predevelopment Process,* (New York: Quorum Books, 1998), p.26.

The Business of Building Master-Planned Communities

In the most recent publication from the Urban Land Institute regarding the future of master-planned communities, the author says, "The future of master-planned communities as a rational business investment decision is open to question[3]." As will be discussed later in this chapter, master-planned communities typically require a tremendous up-front capital commitment over an extended period of time—often a decade or more. Because these projects create large-scale change to the status quo, these immovable assets can be a large target for hostile criticism[4]. Additionally, master-planned communities are vulnerable to shifting political and legal currents of public and private interest and obligations. Ultimately, this creates more uncertainty and magnifies the associated risks involved in a project of this nature. As an investment, a mixed-use master-planned development is analogous to a zero-coupon junk bond, with little economic performance and financial return until late in the investment cycle[5]. Subsequently, the "back-ended" nature of this type of investment, should command extraordinary returns when compared to other investments, which typically offer more consistent returns over a shorter period of time. As I will discuss in the finance section of this chapter, this uncertainty creates significant barriers in the finance and development of this type of real estate product.

Creating A Plan

The process of master planning involves a multi-disciplined approach to planning and feasibility analysis that includes the integration of economics, design and community feasibility issues as shown in the diagram figure 2.3 below.

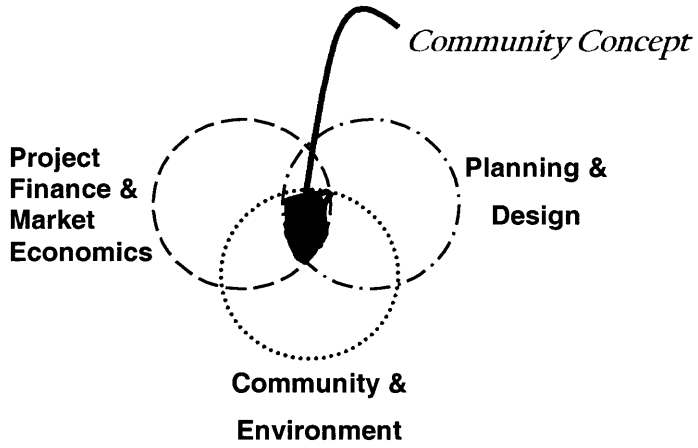

Figure 2.3, **The Multi-Disciplined Model To Planning And Feasibility for Master-Planned Residential Development**, PBR, Inc. (date unknown). Work Program. Intra-Office Notes.

A typical approach to developing a work program and understanding the scope of the community through the master planning process can be seen in figure 2.4. From the multi-disciplinary interaction of these forces, an economically viable community development concept can evolve and emerge towards construction.

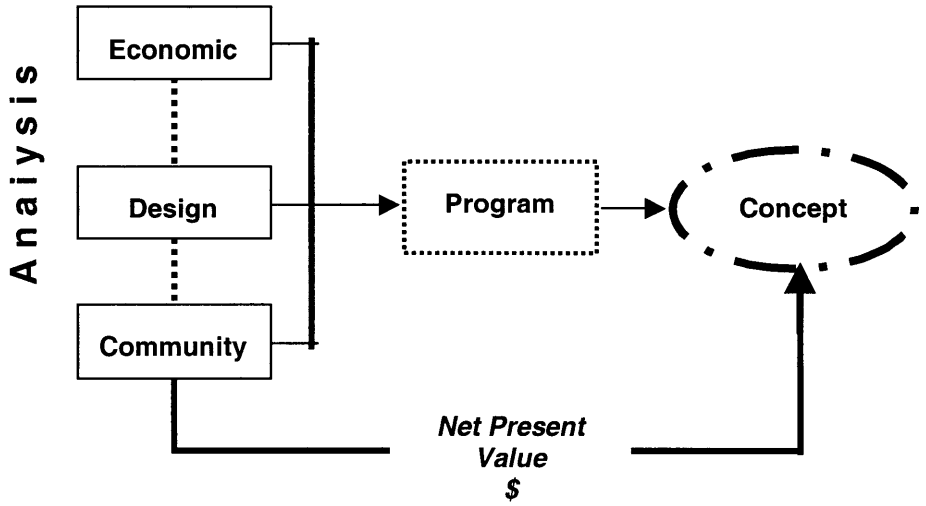

Figure 2.4, *The Traditional Model for Developing the Planning Program,* PBR, Inc. (date unknown). Work Program. (month unknown). Intra-Office Notes.

Experience in developing and planning large-scale master planned projects has demonstrated that spending the resources to create detailed master plans for very large pieces of property which are projected for development over several decades can be both costly and unwise. Programmatic and economic back-up materials projected beyond a eight- to ten-year period will almost always have to be revised, sometimes significantly, before final development plans can be implemented[6]. A master developer should prepare a conceptual plan and business strategy for the entire property and concentrate the detailed planning on areas selected as the first increment or increments, incorporating economic, political and design considerations. The idea is to not generate any greater detail than is absolutely necessary to give the development team confidence and vision about how the property will be subdivided within the appropriate development phasing and economic horizons[7]. With this in mind, the development concept has to be developed enough so that the public sector can support the proposal on behalf of the general public they represent. An overall plan should concentrate primarily on identifying development areas, a macro-scale open space network, and a basic infrastructure network. Land uses should only be shown at the most conceptual level. While adaptability operates at a macro-economic level of consideration, flexibility in the master plan supports timely, micro-level, cost effective evolution and adjustments to serve the demands of the market and the continually changing needs of the community and its developer[8].

Residential Density, Land Value, Highest Use, and *'the Optimal FAR'*

When land is developed, it is most central characteristic is the density of the development (the number of units per acre). Like any attribute that adds or detracts from the net value of a piece of land, density is determined in a manner that typically maximizes the profit of the development. A site's locational features and the structural characteristics of potential housing determine the location cost (or rent) that will accrue to any particular housing unit[9]. In this respect, density is no different than any other attribute associated with housing. Empirical research shows that greater density should tend to reduce a unit's value through the loss of open space, naturalized areas, and privacy[10]. However, density also determines the number of units to be developed per acre. In this respect, it is an important determinant of the location cost (or rent) per acre that can be obtained from the site.

A landowner-developer contemplating the development of a property wants to maximize the residual profits to be obtained from the land, after construction costs. Thus, the density of the development should be that which maximizes the potential residual value of the land. Assuming, for simplicity, that

the only type of development is for residential use, in evaluating different densities of residential development, the developer must consider how the consumers' willingness to pay for units will vary with density, as well as how density increases the number of units to be placed on the site. Since consumers in general are willing to pay less per housing unit as density increases, there exists a tradeoff. Greater density reduces the value and, hence, profit from each unit, but increases the number of units that can be placed on the land. The former reduces site profits or value, while the latter increases it. A developer must balance these two forces in seeking the profits and residual value[11].

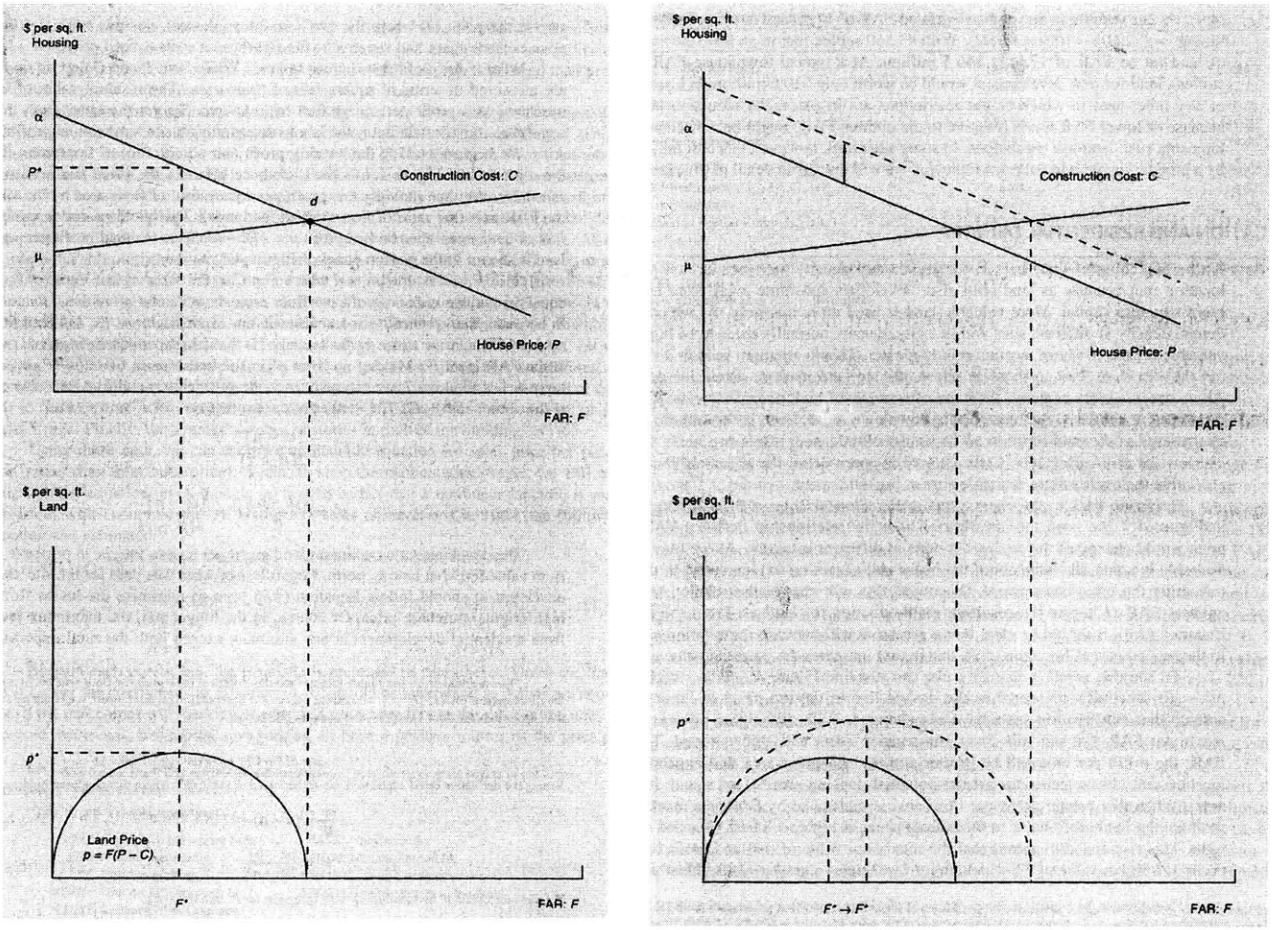

Figure 2.5, ***Housing Markets and Optimal Density (FAR)***, William Wheaton, *Urban Economics and Real Estate Markets*, (Englewood Cliffs, New Jersey): Prentice Hall Books, 1996), p.75.

Both of the developers in this research were able to downzone their projects as a result of identifying an emerging segment of consumer demand, whereby the consumer's willingness to pay (price per square foot of land), was at a level that enabled a low density development which therefore allowed a strict environmental development and conservation agenda for these case studies. In the case of Spring Island, the density of the project was 1 DU/per 7.31 acres. In the case of Dewees Island, the density was 1 DU/per 8.0 acres. It is important to keep the concept of 'cost of land p.s.f.' and 'the consumer's willingness to pay' at the center of this discussion as it is critical to both the home sales in the project as well as preserving the environment. (See Appendix 3 and 5 for actual sales data for Spring and Dewees Islands.) Since developers are profit maximizing operators and the developers in this research are working to maximize the return on their capital while conserving the environment through an optimal mix of real estate and ecology, if the investment analysis, on a present value risk adjusted basis is not positive, the developer will still not exercise their option to develop the site regardless of their intent to preserve the environment. This said, the single and only goal was not to preserve the environment, but instead it was twofold: the balance between profit and preservation and determining the *optimal FAR* for these environmentally oriented residential developments.

Influences on Master Planned Communities

Master planned communities can be influenced by a number of factors and forces. At a macro level of analysis and consideration, there are five primary drivers[12]: infrastructure; amenities; institutions and employment concentrations; recreational currents; and land uses and zoning. For example, infrastructure created as a result of major road, bridge, airport, marina or lake construction can facilitate development activity. Institutions and employment concentrations can often act as the driving force for the siting of a master-planned community. These might include a university, training center, art institute, or a military base. Major recreational uses[13] are also primary drivers for the development of MPC's, such as theme parks and resorts, conference centers or event centers; sporting event centers and complexes, and sport training facilities. The final primary driver for the creation of MPC's is the absolute designation of land uses through zoning that allows for a predictable, and therefore timely, permitting and entitlements process. The zoning designations should allow the developer to adjust lot sizes according to what marketplace does and does not demand. Design guidelines are a key means of building flexibility into a master plan and are an essential tool to maintaining visual consistency within a community across economic cycles and long development build-out horizons[14].

Due Diligence and Initial Underwriting

As with any financial investment, careful underwriting of an investment analysis in a master-planned community requires a comprehensive analysis of every major element of the proposed development[15]. This typically includes:

(1) Physical characteristics of the land (topography, natural amenities, view opportunities, drainage, easements, soils, geology, biology)

(2) Locational characteristics (neighboring land uses, convenience to freeways, access to employment centers, proximity to entertainment and shopping)

(3) Development and environmental issues and constraints (flood plains, wetlands, riparian habitats, endangered species, drainage requirements, grading requirements, availability of infrastructure)

(4) Entitlement status of the project (General Plan Amendment, Specific Plan or Area Plan, Development Agreement, Environmental Impact Report or Statement, subdivision maps including Master Tentative Tract Maps, Builder Tentative Tract Maps and Final Maps)

(5) Other entitlement features of the project (map expirations, federal and state agency approval requirements, moratoriums or limits on development due to ballot initiatives, conditions of approval)

(6) Market potential for the residential components of the project (evaluation of regional growth trends, patterns of job growth and housing growth, demand generators, consumer segments, market image, comparable communities, future competition, overall supply-demand balance, appropriate amenities, competitive position of the project, expected pricing and absorption by product type)

(7) Market potential for commercial and industrial uses (reflects degree of urbanization in the market area, timing of similar development in competitive new communities, and importance of critical mass in establishing the project as a viable location for these uses)

(8) Development costs and phasing plan for the project (reflects well-conceived land plan that is consistent with evolving product mix characteristics over time, as determined by changing consumer segments as the market and project matures; infrastructure phasing plan should minimize up-front costs without losing market penetration and economies of scale)

(9) Infrastructure financing plan for the project (should provide for effective use of tax exempt bonds according to the requirements of the city or county and the local marketplace)

(10) Cash flow projections (should accurately present the revenue and cost assumptions for the project, with supporting analysis of every aspect of master-planned community development that impacts the financial results, including such fine points as master homeowner association funding, utility reimbursements, inflation assumptions, development financing, and umbrella marketing reimbursements)

(11) Sensitivity analyses (measure the impact of variations in certain key assumptions, such as price appreciation, land absorption and future real estate cycles)

In addition to the specific items noted above, developers should provide monthly status reports, quarterly budget updates and periodic discussions on entitlement, development and marketing objectives and strategies[16]. Thorough, detailed management reports to the investor should be derived from a customized reporting system that already provides regular updates to the executives of the development company. The information can then be summarized and repackaged for use with equity partners.

Financing Master-Planned Communities

The new community literature often has negative tones when discussing project investment and finance related to master-planned communities[17]. Yet a look at the financing strategies of profitable new communities can provide some guidelines for this aspect of new community development. Project financing is the most perplexing problem that new community developers face, because of the enormous size of the investment required and the required front-end nature for large capital investment[18]. For example, the Woodlands, a 25,000-acre new community outside Houston, reports that as of 1988, 15 years into the development, $1.6 billion had been invested in the project (at cost)[19]. This amount is less daunting only if certain facts are kept in mind: The Woodlands is a highly amenitized community[20], and nearly half of the total investment has come from homebuilders. Nevertheless, the amount of capital a developer invests in land, infrastructure, amenities, and buildings in master-planned communities can be immense. Perhaps more troublesome than the amount of funding required is the fact that this capital investment must be loaded at the front end of projects, with high risk, before income can be realized from

land sales[21]. Massive initial investment is needed at start-up and at each phase of development[22]. A new community's upfront costs fall into three primary categories. These categories are discussed below.

Land Acquisition

A developer cannot afford to acquire land as it is needed, since its price begins to appreciate as soon as the new community is announced. In the book *Columbia and the New Cities*, Gurney Breckenfeld's explains how Jim Rouse assembled the land for the Columbia, Maryland new town with almost military-like secrecy to avoid price gouging. Even with this level of precision, once people realized a single person was buying the land, holdouts emerged that caused Rouse to have to pay premium prices on specific parcels to assemble the necessary contiguous tract of land for the development[23].

Major Infrastructure

Infrastructure costs tend to be high as a result of many new communities being located in outlying areas with enough reasonably priced land but without major roads and utilities. Government cost-sharing also tends to be minimal and often causes municipalities to exercise greater exactions on these communities while creating a tax fence around them so that no subsidization occurs[24]. In several instances in Southern California, this notion has advanced to the point where several new communities have been forced to pay for their own police force, fire stations and libraries[25].

Major Amenities

To gain credibility in the marketplace, new community developers must provide recreational and shopping facilities before a critical mass exists to support these facilities and financially justify them. Prospective residents are not satisfied with promises[26]. Examples abound where developers made promises and for one reason or another, fraudulent or not, were unable to complete the amenities that were promised to residents when they bought into the community.

Having considered these three fundamental factors behind the successful execution of a master-planned community, it quickly can be seen that the early development of new communities is a race between carrying costs, principally interest, and the rise in land values. Land must appreciate rapidly enough for land sales or additional borrowing to cover the carrying costs on large upfront investments[27]. Developers are essentially performing a balancing act. If they plunge ahead on a scale large enough to create enormous land values, interest costs may prove fatal. If they have an aversion to borrowing heavily,

undercapitalized projects may never develop enough momentum to succeed. The following model, figure 2.6, simplifies and organizes the constituent elements of the economics of the development process.

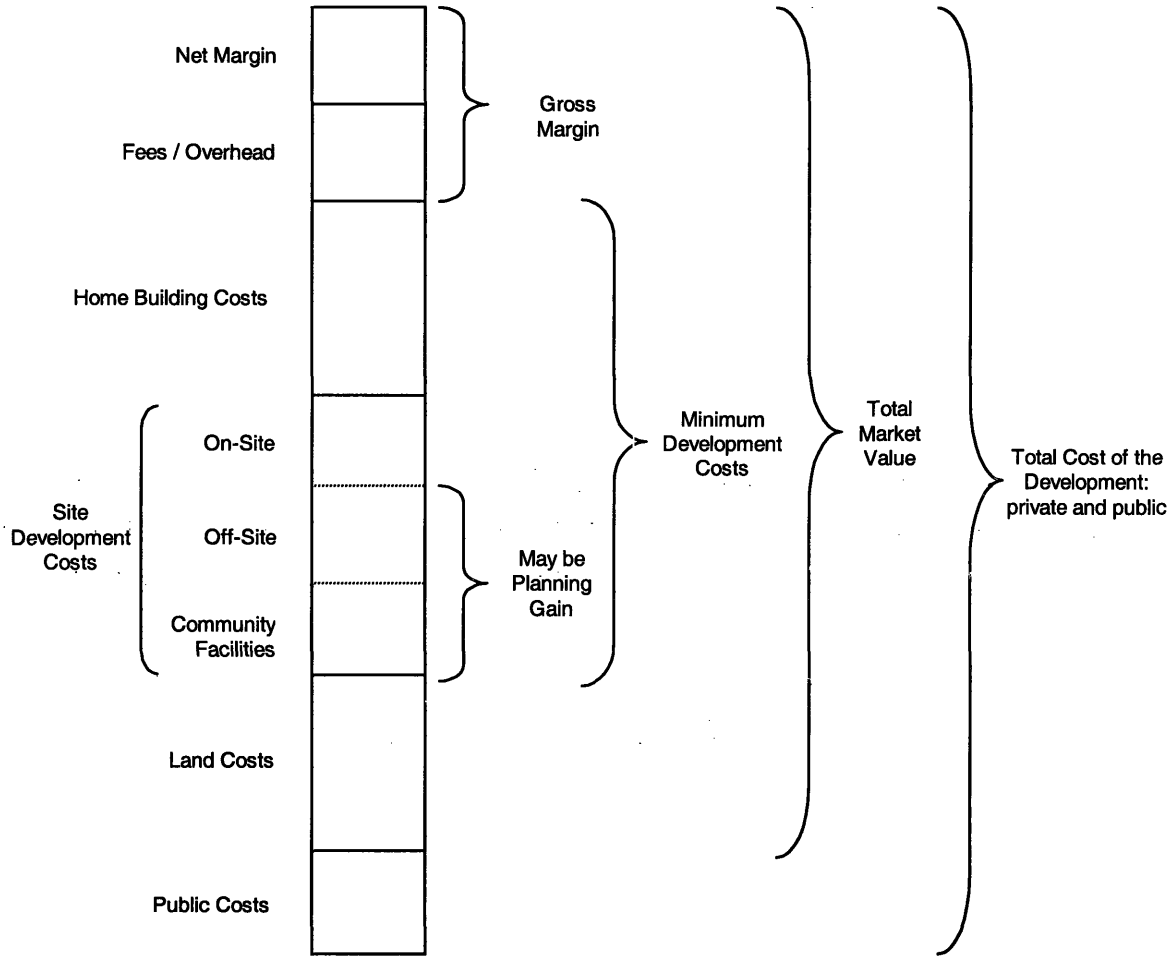

Figure 2.6, **Constituent Elements of the Economics of the Development Process**. Adapted from Alternative Development Patterns: New Settlements (1992), p.16.

Carrying Costs and Land Sales

Once survival is insured, developers face a series of decisions and bottom line choices[28]: (1) quick profits versus long-term asset appreciation; (2) stable income generators versus volatile sources of income with higher potential returns; or (3) a high degree of leverage versus heavy capitalization with equity. Developers opting for quick profits, volatile income sources and financial leverage are creating additional

risk in the event of an economic downturn. A prolonged real estate slump may not hurt them, but the need to sell off assets at inopportune times in order to service debt may cost them dearly in long-run profits. One strategy to avoid this problem is to capitalize a venture with as much equity as possible, staying away from debt if at all possible, and therefore avoiding the constant hurdle of having to have capital available and on hand for regular interest payments on the debt[29]. Figure 2.7 illustrates the race between carrying costs and land sales.

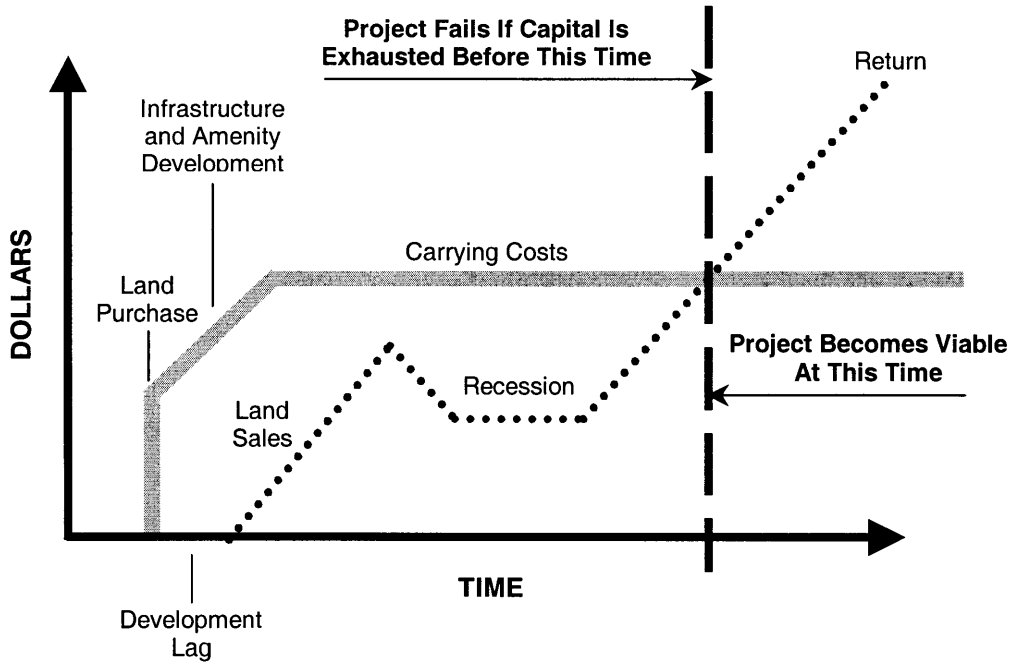

Figure 2.7, ***The Race Between Carrying Costs and Land Sales***. Adapted from Reid Ewing's Urban Land Magazine, *Financing New Communities*, August 1990.

Developers position their capital structure in a myriad of ways which is often dependent on their firm's structure or on the other partners that are co-invested in the deal[30]. For example, some developers use almost all equity financing and borrow only to the capacity that they can comfortably service the debt from existing operations and their most stable income generators---shopping centers, apartment complexes, and office buildings. If asset appreciation is fast enough, the development company will occasionally sell income-producing properties, but typically, companies develop to hold and expand their

portfolio of investment properties[31]. At the other extreme, some developers are looking for the quick return on their investment. These prefer to generate cash quickly and invest it in new properties and projects. This type of developer is more likely to see high debt to equity ratios at the onset of a project, which inherently makes the project more risky and requires a higher rate of return. In a scenario like this, a development company might sell its immediate position in half or more of the project. Additionally, a developer looking to 'flip' a development or investment quickly might also sell tracts of residential land rather than making another additional investment to sell finished lots, thereby minimizing their investment and staffing needs[32].

Competitive Financial Strategies

All built environments have four areas of cost considerations after land acquisition and zoning approvals as one is putting together a community such as Dewees or Spring Island.

(1) Infrastructure required for finished sites

(2) Infrastructure repair and replacement

(3) Construction of building and site finishing

(4) Operating and replacement costs of buildings

Developing and building in the context of natural resources, using buildings as resource providers, building with the premise that all resources are limited, and choosing materials compatible with environment will reduce most of the above costs and produce a more marketable product as well as reduce demand on municipal tax dollars. The costs that govern land development are grading, roads, storm drain, water quality, and landscaping. The driving forces that control these costs are public works regulations, storm water volume and land development regulations. If we reduce paving, we reduce all other costs. If we reduce storm water run-off, we reduce storm drain and regional pond costs. If we control siting of homes by the discipline of natural systems, we will reduce their operating costs as well as long-term maintenance and repair. If we build energy efficient and resource-providing homes built with regionally available and environmentally compatible materials, we will improve short and long term

performance and achieve higher quality. Other things being equal, there are five key strategies a community developer can use to ensure the financial success of a project[33]. These are: (1) shifting development costs, (2) deferring development costs, (3) bringing in patient capital, (4) fostering land appreciation, or (5) generating non-development income that will increase the likelihood of financial survival in the early years of a large project while protecting the high return on investment in later years[34]. The following Figure 2.8 is an organization matrix for how components of residential development costs structured and flow through the development budget, which then derives the total development cost for the individual components of the whole project.

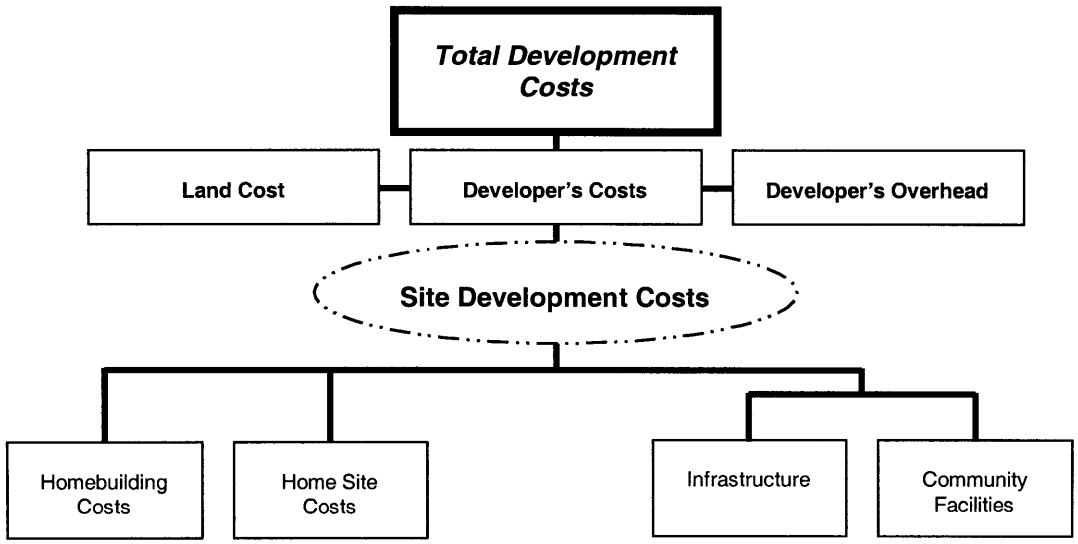

Figure 2.8, **The Components of Residential Development Costs**. Adapted from *Alternative Development Patterns: New Settlements*. (1992). p.110.

Shifting Costs

In recent times, given the often strained operating budgets of municipalities, new communities have had a difficult time shifting costs to local governments. These governments may flatly refuse to make basic infrastructure contributions, but occasionally help with amenities, principally parks[35]. For example, a

community developer can rid itself of the maintenance expenses for parks and open space by assigning or donating these amenities and improvements to the city. Other than parks and 'soft' recreational space, these improvements might include recreational facilities, rights-of-way and manmade lakes that are primary value generators and drivers for appreciation in the development's value. By donating these amenities, a developer still benefits from their creation but sheds their immediate operating expense[36]. Another approach is to use a special district. With authority under state law to issue tax-exempt bonds and collect property taxes or fees to repay the bonds, this highly accessible vehicle has emerged as the most common tool for cost shifting. The creation of a special district still remains one of the primary vehicles to finance basic infrastructure. Lastly, a third primary way for a developer to shed the immediate operating expenses of amenities and other costs is to transfer their ownership into a community or homeowners association[37]. For example, transferring the responsibility for maintaining common landscape areas or a golf course can eliminate significant expense while still acting as a catalyst for land appreciation, which ultimately benefits the developer.

Deferring Costs

Deferring, rather than shifting, development costs means developing incrementally—'building no road before its time'. This approach typically takes a large organization that is highly capitalized, with the flexibility and balance sheet to respond to market shifts and aberrations in a quick manner, for better or for worse. This approach requires careful consideration for how a project is phased, since a 'parcel by parcel' or 'village by village' approach will be taken in an incremental approach to development[38]. Often, if the wrong phasing approach is taken, it can have adverse effects on the image and marketability of the project and negatively impact revenue and returns. Deferring costs can also mean pre-servicing only when necessary[39]. Because recreational facilities are critical points for marketing and selling houses in a community, they have to be introduced as a project is begun. Facilities such as shopping centers can be built in a way to provide just enough village-based services to provide a credible sense of intent by the developer. For example, as a cost saving tactic, developers typically bring in convenience-based retail until a shopping center can be supported[40].

Patient Capital and Committed Long-Term Partners

Access to patient capital allows a developer to build and sell property when the market is ready and to pull back when it is not. By reducing fixed carrying costs, patient capital takes some of the pressure off a developer during the initial race to profitability[41]. This can result in a development company waiting to

harvest profits at the completion of a large project, or through multiple offerings where equity / convertible debentures are issued on a demand basis[42]. Other development companies simply reinvest all capital back into the project to reduce the debt-to-equity ratio, whereby a 'stacked' capital structure allows a firm more flexibility and control in how a development is executed[43]. An investor who is fully informed from the outset about every significant element of a proposed master-planned community, and is updated regularly by high quality management reports, is less likely to take a negative view of externally driven shifts in entitlement, development or marketing strategies. A sophisticated developer will strive to provide this degree of information, with the benefit of having not just a concerned long-distance investor, but also a fully committed long-term partner[44].

Fostering Land Appreciation

Creating land value is a developer's line of work and core business focus. In a new community development, this is a four-step process[45]: (1) master planning, (2) securing development approvals, (3) providing infrastructure and amenities, and (4) building improvements. How much value is added at the regulatory stage depends on the regulatory environment. Entitlements will dramatically affect land values. The value created with infrastructure development is illustrated through the following example taken from a real development[46]. In a comparative examination of land sales figures for a 40-acre community with 'move-up' homes valued between $150,000 to $180,000, the developer can sell unfinished lots and make $20,000 to $25,000 per acre profit on the land. If finished lots are sold (120 total) at $33,000 per lot, the developer makes more than twice the yield versus selling unfinished lots. This is equal to $59,000 an acre after subtracting the $1,600,000 million direct costs to develop the site[47]. This obviously requires an additional investment and exposure to market (demand) risk, but this example illustrates that this move is a critical step in the trajectory of value creation.

Provision of amenities adds value to both abutting property and to the community at large. These amenities, depending on their placement, location, and program can add significant premiums to neighborhoods in a community as well as in individual properties themselves. For example, the creation of a golf course can easily create premiums of $20,000 to $30,000 per lot for golf frontage and additional value if water and/or natural areas are included in the same golf view[48]. How far a developer goes along the value-creation continuum is a decision that should be based on a present-value analysis of the alternatives. Financial analyses usually lead new community developers to put in infrastructure and amenities themselves, and to leave homebuilding, which tends to be less profitable, to others. New

community developers can let others build and still capture value in the land appreciation through participation in builders' profits. Some developers take back mortgage notes instead of cash from their better builders as well as a share of the profits as the builders sell homes. Another approach that is often used is for the developer to sell land at a fixed price and then to split the profits realized by the builder beyond an agreed-upon rate of return[49].

Generating Non-Development Income

Finally, new community developers can look to other sources of income or to interim uses of land awaiting development to ease the financial problems associated with large up-front capital investments. When land absorption is slower than expected, one might construct a daily-fee public golf course that will pay for itself in a short period of time[50]. Other development companies have been known to harvest natural resources (timber, oil, gas, stone and gravel, farming, livestock grazing, ranching, filmmaking) while awaiting development. Master developers can also profit from operating brokerage businesses, water and sewer companies, cable TV, and gas companies[51]. Fundamentally, successful development companies have done one or all of what has been discussed here: shifting costs to special taxing districts, developing incrementally, creating high rates value with amenities, and participating in builders profits. These competitive development strategies, when used appropriately, can support a community developer to ensure the financial success of a project. Many of these techniques were used in the two case studies examined in this thesis and will be investigated in detail to understand how these developers used these strategies to their advantage.

Marketing Master-Planned Communities

Second-Home Markets

Market analysis for a residential development in a metropolitan area oriented to primary-home residences involves relatively straightforward market analysis process. Demand is driven by local employment, population, household income, and other key variables[52]. For a resort community, however, several different components of housing demand might exist, including second-home investment and second-, pre-retirement-, retirement, and primary-home use[53]. Although second homes can be found in nearly every state in the United States, the top states, in order of preference, are Florida, California, Colorado, North Carolina, Texas, and Arizona[54]. Beach property followed by lake settings and the mountains are the most common locations for second homes. Other locales—such as the tropics, golf

course areas, ski areas, and the desert—are significantly less common. Although appropriate market research is important in planning any real estate project, it is particularly important for second-home developments because of both demand-timing issues (the decision to vacation or buy a second-home is discretionary and can be postponed or accelerated) and location issues (vacationers and second-home buyers can choose any area they desire, either across the country or around the world)[55]. Given that second homes are not necessities, estimating demand does not rely solely on population or household growth, but requires a closer estimation of the quality of potential demand[56]. One must try and figure out where the demand is likely to emanate: from the immediate state, a multi-state area, completely different sections of the country, or international locations. The task can be very difficult, requiring interviews with realtors and others who have experience in the subject area and who know where buyers have traditionally come from. The following diagram, figure 2.9, illustrates a typical approach to thinking about and formulating a marketing strategy for a residential master-planned community project.

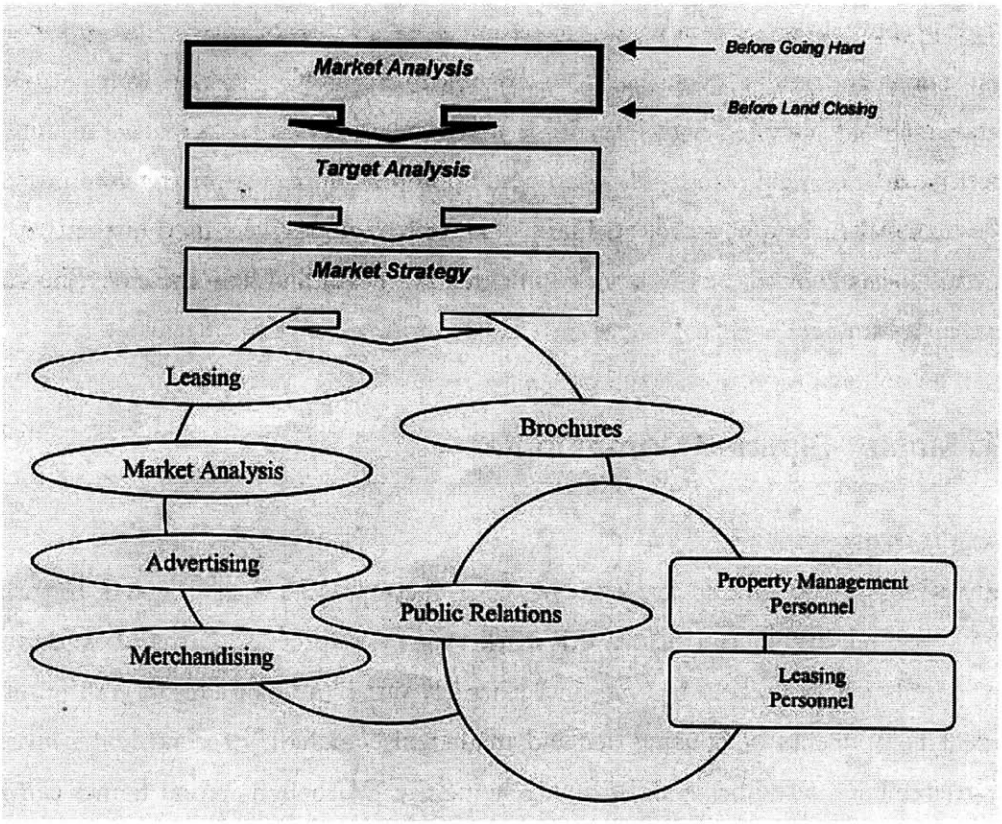

Figure 2.9, **Developing a Marketing Strategy** , Pieser, Richard. (1992). *Professional Real Estate Development: The ULI Guide to the Business.* Washington D.C., Urban Land Institute.

Most resort communities compete over a much wider geographic area than traditional primary-home residential communities[57]. For example, resorts in Hawaii draw from the entire U.S. as well as from Japan, Europe, and South America. The second-home market is typically made up of households whose heads are in their 40s and 50s with incomes in the top 10 percent of all households[58]. Typically, they are drawn from large metropolitan areas where the stress of everyday life is an additional motivation to own property in a completely different environment. Of those people who do meet this criteria, only a small portion actually do buy second homes. Jim Chaffin, the Spring Island developer, notes that in general, current demographics and psychographic trends suggest that the market should favor resort and recreational development in the later part of the 1990's and into the next century[59]. The baby boomers began turning 50 in 1996, and 78 million of them thus began to enter the period of highest earnings and greatest discretionary wealth. Chaffin reiterates, "Remember, ours is not a need business, ours is a want business. Our markets do have increasingly discretionary time and money, but they are increasingly sophisticated consumers demanding higher quality in real value, more services, and more conveniences. We must first find out what people want, and then find out if we can figure out a way to give it to them[60]."

Conclusion

As one can begin to surmise after reading a brief overview of the land development business, it is easy to begin to question the rationale for undertaking such an investment decision given the complex and unpredictable nature of the practice. As will be discussed in detail in chapter 3 when the cases studies are examined, master-planned community developers are still undertaking these types of investments, typically requiring a tremendous up-front capital commitment over an extended period of time, but are now utilizing very creative methods to defer and shift the risk inherent in these types of commitments. Because these projects create large-scale change to the status quo, these immovable assets will continue to be a large target for hostile criticism. Going forward, developers are going to be required to partner with environmental agencies and political institutions to decrease uncertainty in their projects. I believe developers are, over time, going to have to remake themselves into *community builders* and not simply *builders* or *developers* separate from the larger regional context, which they find their project positioned in. Additionally, master-planned communities are going to have to position themselves so that shifting political and legal currents of public and private interest and obligations do not create additional uncertainty while magnifying the associated risks involved in a project of this nature.

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Chapter 3

Conservation and Value Creation: Spring and Dewees Islands

Introduction and Background

Much of the credit for the Lowcountry real estate development boom goes to Charles Fraser[1], a visionary land planner who came to Hilton Head in the mid-1950s and shaped Sea Pines into a model community that was tastefully developed--scenic and planned to be environmentally oriented. Other developers, many of them former Fraser employees, have followed suit with a parade of communities that extends from Hilton Head into mainland Bluffton and beyond. The first project after Sea Pines was Long Cove, an exclusive development on Hilton Head's south end with a Pete Dye golf course--regarded among the renowned golf course architect's finest. As more upscale island neighborhoods followed, one of those Fraser pupils, John Reed, saw that available property running low and headed just off-island to a prime tract nestled between the Colleton River and the marshes of Port Royal Sound. This was the beginning of the Colleton River Plantation, where Reed and his partners hired Jack Nicklaus to design a premier golf course that opened in 1993 to immediate acclaim. Reed then moved five miles further west and helped develop Belfair, home to two Tom Fazio-designed courses and a first-rate golf learning center. Like many of their Lowcountry neighbors, both properties emphasize the beauty of the outdoors, offering miles of nature trails for residents to enjoy with their families, and activity centers to keep them fit while doing so. Additionally, these communities are highly amenitized[2] and built within strict architectural covenants and design guidelines.

Second-home communities have such a wide range of property types, recreational amenities, and natural settings that it makes a general overview necessarily broad. Additionally, second-home communities have three fundamental demand factors in the markets they serve that are fundamentally created from human desires. These are: (1) the desire for a change of pace--to get away from a familiar environment; (2) the desire to pursue recreational interests and to be stimulated and entertained in the process; and (3) the desire to travel to interesting or attractive places and unusual settings. "People want to simplify their lives," says Reed[3], who is now a partner and the developer-in-charge at the new Berkeley Hall project adjacent to Colleton River. "Charles Fraser started Sea Pines as a family place, not a glitzy place. Now more people are going back to family and nature, and that's what this area is all about." In other words, Lowcountry boils and oyster roasts reign over black-tie dinners and nights on the town[4]." The less-is-more approach appears to be increasingly in vogue as one community after another springs up among the region's marshlands and maritime forests. More restrictions are placed on home sizes, enabling a better blend with in surroundings. At Colleton River and Belfair, fewer home sites were offered along the golf courses. At Berkeley Hall, the golf courses are not encroached upon by housing at all.

The above picture illustrates the broad and diverse beauty of the Lowcountry landscape. It is this diversity that attracts both residents and developers to the area to settle.

Source: South Carolina Coastal Conservation League

Jim Chaffin, another Sea Pines alumnus with years of experience in the Lowcountry sees environmentally oriented residential development as "good news." His firm, Chaffin/Light Associates, is responsible for communities on Callawassie Island and neighboring Spring Island, which emphasize not only golf, but also outdoor pursuits such as hunting, fishing and horseback riding. Chaffin explains, "I hope that raising the bar means doing things more understated, more unpretentious, more environmentally

sensitive and more attuned to what people want. Recreational communities have to realize that people don't want just golf, they also want amenities like open space, walking trails and community programs. That is what we have strived to accomplish at Spring Island[5]." It appears the Low Country's premier community developers have indeed recognized these shifts in consumer preferences and are responding in profound ways while creating exceptional real estate investments[6]. For a detailed description of the developments in the Hilton Head market, specifically those developments surrounding the Spring Island case study see Appendix 6.

Hilton Head's Influence on Planned Residential Communities

The concept of private communities as environmentally sensitive developments has branched out, in evolutionary fashion, from the pioneering efforts at Hilton Head Island, with different permutations thriving along the barrier islands of North Carolina, down the Atlantic Coast, and up the Gulf Coast. Two of the purest examples, and the case studies used in my research, are Spring Island, southwest toward Beaufort, South Carolina, and halfway to Hilton Head and Dewees Island, north of Charleston. Hilton Head Island takes its name from William Hilton, a sea captain who, in 1663, claimed the island for England. There is evidence that humans have inhabited this Atlantic barrier island since 10,000 BC[7].

In the late 17th century, threats from Spaniards and Indians began to recede and colonization began. During the colonial period, hunting and farming were the main pastimes on Hilton Head Island, with the main crops being indigo and rice. Planters discovered that cotton grew well here and after the Revolution local cotton crops were a big part of the economic boom years in the Lowcountry, which lasted until the Civil War[8]. When Union troops took over the island following the Battle of Port Royal Sound in November 1861, the local farmers retreated to the mainland, leaving their homes and crops. The only people remaining were the slaves who had labored cultivating crops on the plantations. At the end of the war and after the Emancipation Proclamation, these slaves and their families inherited large portions of the land and began a life of diligent farming and fishing, marking the start of the historic Gullah culture. Only about 500 people lived on Hilton Head until the about 1948 when a Georgia timber man named Fred Hack first saw its fine stands of pine and oak trees. Henceforth, Hilton Head Island's "modern" history began[9].

Entrepreneur Charles Fraser, son of one of Hack's original partners, is responsible for the gated style of community development that has become synonymous with Hilton Head Island. It was during the early 1950s that Fraser built Sea Pines Plantation[10], the culmination of his vision for a resort community that would both preserve the island's natural beauty and create a financial opportunity by putting the land to work with a higher and better use other than timber. The Sea Pines development became the model for the communities that now dominate the island's residential areas. The first bridge was built in 1956, marking the end of Hilton Head's solitude. Fraser's vision to create a world-class resort and residential community had become a reality, but over time, the pressures of development, growth, and greed would ultimately transform the once legendary environment of Hilton Head into a homogenized built environment that resembles many other areas of the nation. It was Jim Chaffin's experience at Sea Pines, were he saw an environmental preserve at that project eaten by development pressure, that gave him and his wife the inspiration to take an alternative approach to the Spring Island development. To prevent a similar tragedy at Spring Island, should they become separated from the project (through default) during its construction, they immediately created a non-profit land trust to manage that Island's most sensitive areas in a preserve, as well as the responsibility to manage the greater ecological integrity of the Island. Legally, this trust was a separate business entity carved out of the initial 3000-acre island. This mechanism set forth an innovative strategy, in perpetuity, to manage and protect the special ecological and cultural resources that Spring Island had to offer their buyers.

Similarly, at Dewees Island north of Charleston, South Carolina, the Island Preservation Partnership took a similar course when they developed that barrier sea island. While Dewees buyers are from an even smaller niche of nontraditional buyers, referred to in the literature as "environmental preservationists," this Island development has the more demanding and restricted development standards of the two cases examined in this research. Both projects will be explored in depth in the remainder of this chapter and will use the concepts and models developed in chapter 3 as the underlying framework to explain their community concepts. Specifically, I will look at the competitive effects of these two developments and the resulting opportunities and constraints that were created. Briefly, to revisit the model set forth in Chapter 3, the three primary forces and drivers influencing a community concept consist of: (1) economics and finance, (2) community and environment, and (3) design and planning. In the Lowcountry, Spring Island and Dewees Island are the two most prominent and successful environmentally oriented residential communities that exhibit a successful fusion of these core development drivers and qualities.

Spring Island: Beaufort County, South Carolina

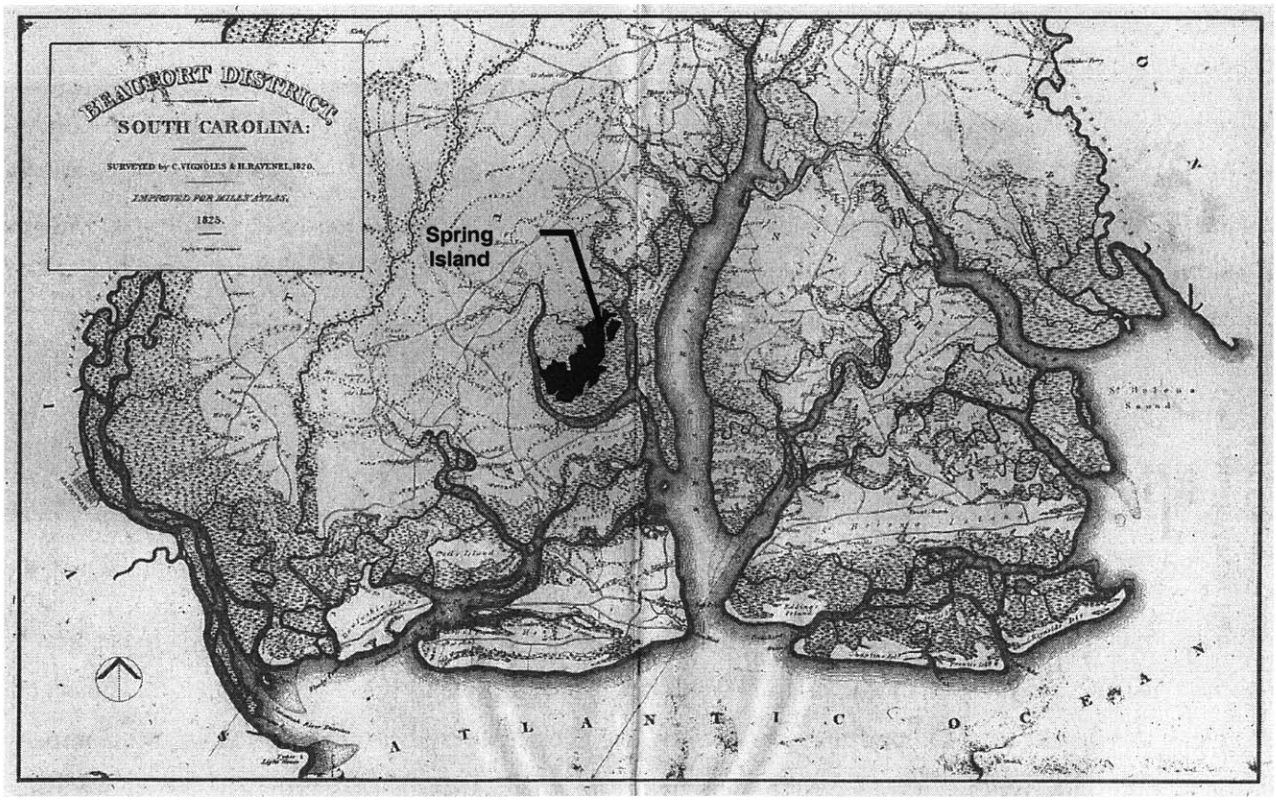
Source: Betsy Chaffin / Spring Island Company

"When I visited Spring Island for the first time Thanksgiving weekend in 1988, I was awed by its beauty and so frustrated to know that the original developer had approvals to build 5,500 homes on the island, so when the developer couldn't fulfill his options, we decided to grab it" The Spring Island Company plans to build 500 units, 5, 000 fewer than originally approved, thereby preserving the most important amenity of the project—nature."[11] ***Jim Chaffin[12], Spring Island Developer***

Introduction

The habitation of Spring Island predates recorded history. Remains from the camps of early American aboriginal "gatherers" who harvested shellfish circa 2000 B.C. are still found about the Island. Two thousand years later, a large permanent Indian village was established[13]. In 1706, John Cochran, a

Scotsman, received an English grant to Spring Island and established an Indian trading post. Before the Revolutionary War, a vital plantation community was flourishing and after the war, Sea Island cotton brought plantation opulence to the island landscape with formal gardens, majestic oak avenues and the grand Edwards plantation house[14]. At the turn of the century, Northern hunt club enthusiasts sparked a new era of vitality on the Island, hunting on it often, which would preserve it in its natural state for almost a century. Today, Spring Island combines the attributes of a national nature preserve with a private residential country club on a pristine coastal sea island.



Nestled between the Chechessee and Colleton rivers and surrounded by more than 4,000 acres of marshes, Spring Island is home to abundant wildlife, including bald eagles, alligators, deer, river otters, and southern fox squirrels. It also boasts the largest live oak forest on the Eastern seaboard, with a total of 600 acres. Spring Island (the dark mass in the middle of the map) is located approximately 5 miles south of historic Beaufort, South Carolina, 18 miles from Hilton Head Island, South Carolina, 30 miles from Savannah, Georgia, and 15 miles east of Interstate 95. Source: Spring Island Company

The Island's Mission and Philosophy

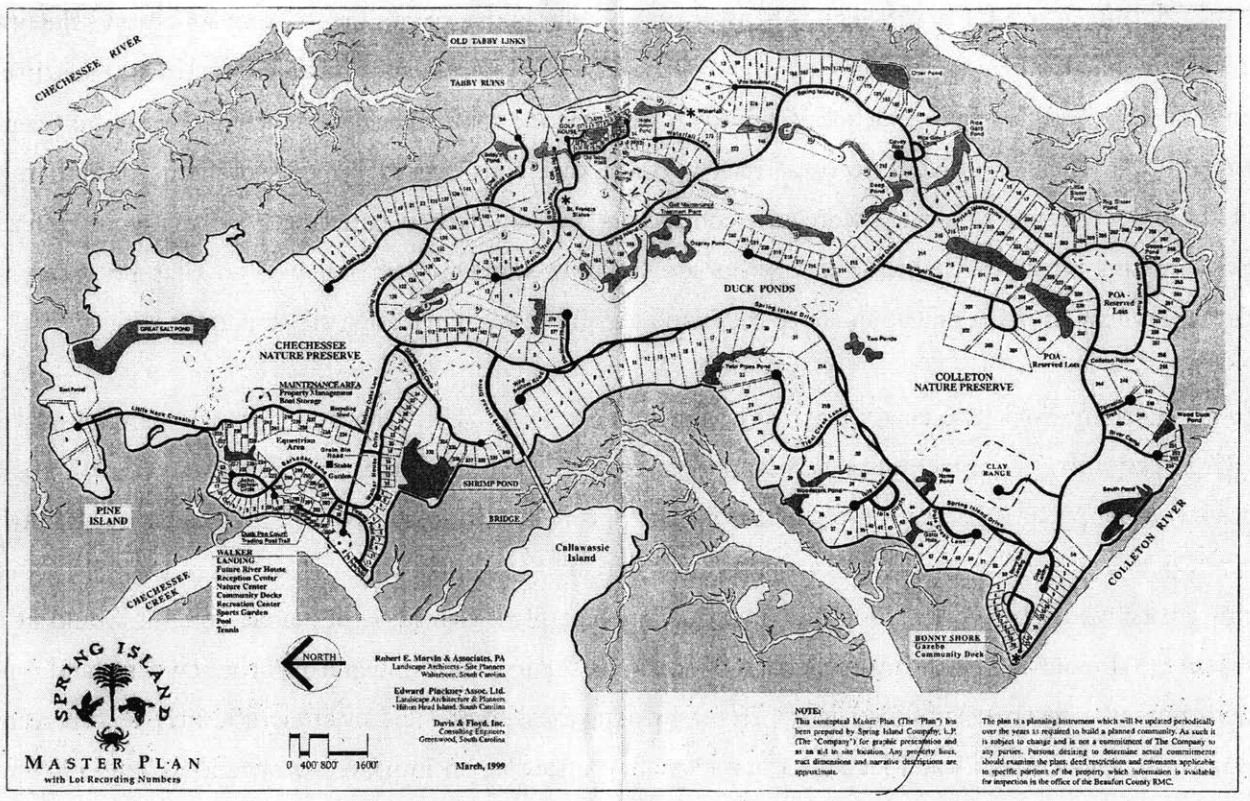
In 1990, the Spring Island Company purchased the 3,000-acre sea island[15] on the coast of South Carolina, five miles northwest of Hilton Head and 13 miles southwest of Beaufort. In contrast to the previous owner who planned to develop 5,500 homes on the island, the Spring Island Company chose an innovative plan that preserved one-third of the island and allow for as many as 500 homes to be built on the remaining two-thirds of the land. By preserving the integrity and beauty of the island, the company has attracted homeowners in the expanding market segment for second-home communities that are developed in an environmentally sensitive way. The Spring Island development philosophy[16] is as follows:

Spring Island is among the most picturesque and historic Sea Islands on the Atlantic Coast. Its habitation predates recorded history, and its stunning, natural beauty has remained largely unchanged to this day. Like a land frozen in time, its effect on all who see it is immediate and profound. It is, without exaggeration, one of the most rare and beautiful places left in America today. Twelve generations of owners spanning more than three centuries, have helped to preserve, mold and enhance the land with a gentle passion which is everywhere evident today: along the winding sandy roads, in the dense, primordial Live Oak Forest, in the freshwater ponds which dot the island's rim, and in the historic tabby ruins of the magnificent Edwards Mansion, which have become symbolic of the island itself.

Now the torch is being passed to a new generation of owners, but the tradition of land stewardship on the island will continue, so that future generations can take pleasure in the peaceful enjoyment of its marshes, forests and fields. The restorative sense of solitude will not vanish, but instead will be protected by the studied decision to permit only 400 families to share the experience of Spring Island. The rookeries will still teem with bird life, the ponds and creeks abound with fish. Everything that is natural and beautiful about the island will be maintained, and man's presence will be subtle and unassuming here. Spring Island will appeal most to those who come not to be seen, but to behold; not to be heard by others, but to listen – to that special wisdom which only nature and history can impart. And yet, the Spring Island experience is more than just a passive one. Golf, tennis and equestrian facilities, second to none, are folded carefully into the island's lush tapestry of woods and fields. Fishermen and boaters find at their doorsteps two of America's cleanest and most beautiful rivers. The island's legendary quail hunting will go on. And everywhere, the emphasis is on quiet enjoyment and casual, understated charm: and escape from the pretension and formality which have come to characterize too much of our daily lives.

On Spring Island, the spirit of past generations will live on. It will continue to guide the island's destiny, not only in the commitment to preservation and appreciation of God's natural gifts to this special place, but in the tradition of land stewardship which others have fostered here. It will endure through the indelible stamp of quiet good taste which they left behind. The future of Spring Island must be approached not only as an opportunity, but also as an obligation. The cherished sense of special place with a dozen generations have looked upon this land, must never be allowed to die.

Among the lowest density communities on the Eastern seaboard (7.31 DU/AC-gross), Spring Island will have 410 homes on 3000 acres at completion. The shift in the development program is a result of the existing property owners buying back 90 of the remaining lots, transferring them into a conservation easement, and then gifting them to the Spring Island Trust. The Spring Island Trust is the island entity that is responsible for managing the conservation of the Island. Nature preserves, club amenities, recreational facilities, and home sites have been thoughtfully woven into the ecological fabric of the island with unprecedented consideration for the existing land and natural resources. Habitat Review Guidelines encourage individually designed environments that gently blend into the overall context of Spring Island--referred to by the developer as a "community within a park." The traditional Lowcountry style of architecture found in nearby historic Beaufort and nearby rural plantations serve as references for traditional and contemporary interpretations for homes at Spring Island. Home sites are priced from $400,000 to over $1,000,000 and are two to ten acres (.8 to 4 hectares) in size. All have superb and diverse views ranging from golf courses, to dense forest, to marsh, river and fresh water lakes. Cottage neighborhoods are found adjacent to the three community gathering areas - Walker Landing, Bonny Shore and Old Tabby Links. Cottage home sites, approximately one-quarter to three-quarters of an acre (.1 to 3 hectares) are priced from $350,000.



Nestled between the Chechessee and Colleton rivers and surrounded by more than 4,000 acres of marshes, Spring Island is home to abundant wildlife, including bald eagles, alligators, deer, river otters, and southern fox squirrels. It also boasts the largest live oak forest on the Eastern seaboard, with a total of 600 acres. Prior to the development of the island, the company hired a team of professionals to conduct a natural resource inventory of the island's wildlife, geology, vegetation, soils, and hydrology. From this analysis, the company devised a comprehensive list of wildlife and incorporated their habitat needs in the overall land management plan for the island development.

In order to make the project economically viable, the company determined how much development the island could incorporate without detracting from its aesthetic and ecological values. Weighing these considerations, the plan allowed for 500 homes and an 18-hole golf course carefully sited through old bean and cotton fields, areas that had already been disturbed. One-hundred-and-twenty-five cottage homes are grouped into three clusters. Three hundred estate homes are located around the perimeter of the island and have water views, with the remaining 75 homes facing the golf course. Lots vary in size from one to ten acres. Spring Island includes ecologically designed features, such as narrow unpaved

roads, deep setbacks for homes along the water, and use of native plants for landscaping around the new development. Cottage homes have a 50-foot setback, while estate homes must be located 100 feet from any marsh or pond. These guidelines serve to create what the company calls a "Nature-Curtain" concept. In addition, there is an architectural review board that considers all aspects of home design from landscape alteration to siting. Moreover, contractors are required to participate in training seminars, held by the Trust, to ensure that appropriate building standards are followed so that no excessive damage is created either on the site or to the island's fragile ecosystem during construction.

In an effort to avoid repeating what had occurred at Sea Pines, where inevitable development pressures encroached into environmental preserve lands set aside at the inception of the project, the company also created a nonprofit conservation organization--the Spring Island Trust—to own and manage the 1,000-acre Colleton River Nature Preserve as part of the development's plan approval. Different than Sea Pines, this entity would be more than a line on a development plan with no legal delineation—it would be a separate, standalone organization charged with preserving and integrating the owners and the environment. The trust is funded and operated by donations, grants, and most significantly, a 1.5 percent fee on the initial sale of each lot and a one percent transfer fee on improved properties. These different subsidies support and fund the Trust's conservation and educational activities.

Among the many amenities at Spring Island are a championship 18-hole golf course (par 72) that was designed by Arnold Palmer and Ed Seay, two preeminent golf course designers in the industry. Additionally, the island boasts a strong tennis program that is lead by a noted tennis pro. For members of the equestrian club, the island provides club horses that are available to members and guests or boarding facilities for club members who own their own horses. Spring Island currently maintains forty miles of marked trails that allow members to explore some of the most sensitive parts of the island on foot or horseback. The Spring Island Hunt Club is in the process of moving off Island to a nearby plantation, but occasional quail, dove, turkey and deer hunting is available on foot and by mule wagon. Fishermen and boaters find at their doorsteps two of America's cleanest and most beautiful rivers--the Colleton (call-a-ton) and Chechessee (cha'-chess-ee). The mild climate invites users to enjoy the outdoors with a cast net, a kayak and or by crabbing. These are all favorite pastimes of visitors to and owners of Spring Island.

In addition to the many traditional recreational activities found on the island, as well as other similar developments in the region, Spring Island has successfully differentiated itself from other developments

in that it also offers swimming, fitness programs, naturalist and environmental programs, organic gardening, a children's tree house and farm, a visiting artists program, croquet, badminton, softball, sports fields as well as several clubhouses including The River House[17], The Golf House[18], and the Walker Landing Recreation Area[19].

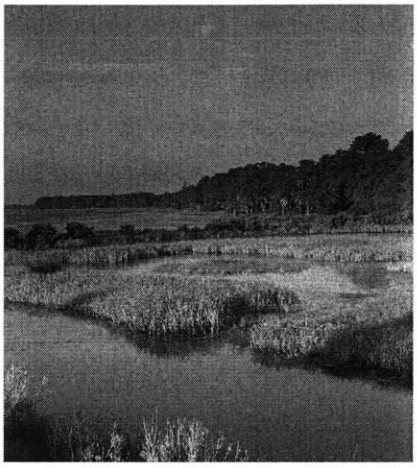
Community and Environment

Creating a "Community in a Park"

Spring Island was conceived as a "community in a park" where conservation and the natural environment would be the two primary drivers behind the community development concept[20]. Spring Island is a development organized around the conservation, preservation and creation of place—natural and manmade. When the developer bought Spring Island in 1990, they planned to put into practice their own unique form of land development –underdevelopment[21].

"Spring Island is a vision of a park with a community in it as opposed to a community with a park in it [22]," Jim Chaffin told me as we talked in his Spring Island office. He gives his wife Betsy the credit for conceiving the idea of the environmentally oriented community. When Betsy conceived the idea for Spring Island she had been working for a nonprofit agency and began wondering how one could incorporate a nonprofit approach to development. "I just started scribbling ideas onto a notepad," she said. "I didn't really know what I was doing ... I was just putting my ideas on paper[23]." Betsy later showed the ideas to Jim and the two eventually founded Spring Island as a place in which they would attempt this community-building concept. Interestingly, after the Chaffin' bought Spring Island and realized its place in the larger regional context and history of South Carolina, they immediately tried to sell the property to the State for the cost they had paid for it. At that time he was hoping the island could be turned in to a state park. Strapped for funds, the State of South Carolina was unable to purchase the island as a nature preserve, so the Chaffin' proceeded with developing the property. The Chaffin' downsized the development to 500 high-end home sites and created an environmental land management trust whereby more than a third of the island was rolled into the trust. The previous owner had the island entitled for 5,500 home sites (.54 DU/AC-gross). From the outset, the developer created The Spring Island Trust as a primary driver of the development program to ensure the ecological integrity of the island[24]. This additionally created financial and psychological value for the development by guaranteeing that the premium prices owners were paying would maintain their values over time. By

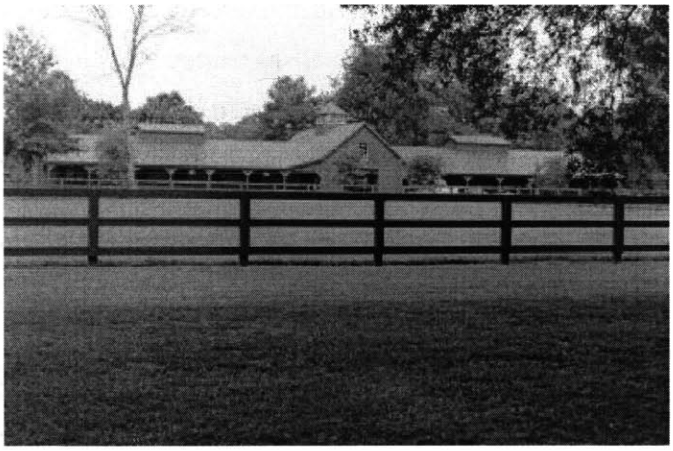
putting this land into a trust, it essentially created a firewall against future encroachment by other development—wisdom gained through unfortunate lesson the Chaffin's learned at Sea Pines.[25]

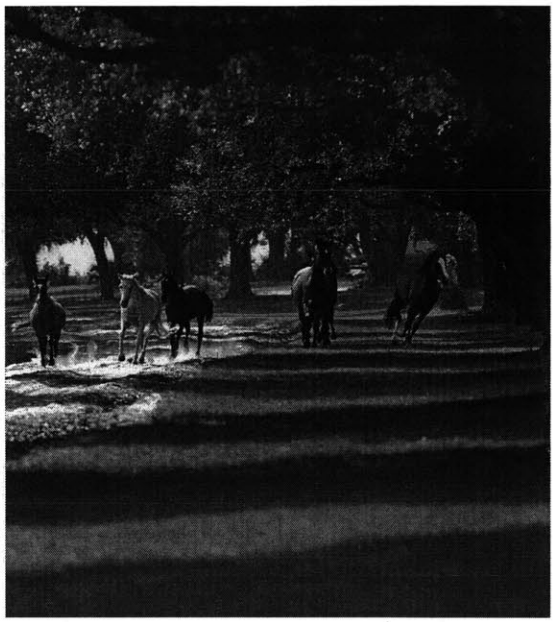


"Sometimes it's the place that first inspires the vision. After thirty years as a recreational community developer, I came across the Spring Island site. From the first day myself and my wife, Betsy, set foot on the property, I knew this was a special piece of property and that any development had to respect its natural beauty[26]." Photo: Betsy Chaffin and the Spring Island Company

Failing to sell Spring Island to the state of South Carolina, Chaffin and the development team set out to try and create a successful development that would minimize the impact on the island's ecosystem while providing residents and visitors with an opportunity to experience nature's gifts. Chaffin notes, "that is and was the vision for the community[27]." Chaffin believes that the vision for a community will influence who will go there, and that is critical to plan and design it in such a manner that represents these values in order to attract people who have the same values and desires to protect the land[28]. Unlike most developments, Spring Island was never advertised; rather "word of mouth" advertising brought the project, its owners, and the club together.

Together with Betsy and his partners in the Spring Island Company, Chaffin collectively addressed three key issues that would help ensure their vision[29]. Their community-building concept was this. First, they downsized the project while at the same time defining an acceptable economic threshold for the project. Second, they established a trust to create the nature preserve to ensure, in perpetuity, the integrity of the natural and built environments. Third, they set about planning the development so that it would foster a healthy interaction between people and the island's natural heritage. Chaffin credits his wife as the major driving force behind the environmental agenda[30].





Spring Island offers its members and guests a broad range of recreational activities. One of the extraordinary experiences one can have on the Island is to horseback ride among 200-year-old live oak trees and the old tabby ruins of the Edward's Plantation House. Photo: Betsy Chaffin and the Spring Island Company / JW Rapson.

Chaffin believes that the process for generating new ideas for communities should be both systematic and creative. "To have one without the other is a big mistake. Developers should know the fundamentals of market analysis and be able to dream[31]." Even though some poor ideas are successful because of circumstance or market aberrations, Chaffin believes that developers who are aware of the economic, social, and environmental conditions of the global community will come up with the best product ideas or "create the most stimulating places for people to live and work."[32] Chaffin's starting point in the idea generation process is to think about his previous experience. "Who have my customers been in the past? What did they expect? Was I able to deliver? What have I learned from those experiences?[33] The next step in the development process is to examine the economic, sociographic, and demographic trends and to perform a demand analysis. "Start with the fundamental questions. Who are my potential customers? How many? How fast will they respond? Who else is competing for the same customers and how are they doing? And so on..." [34]

Chaffin's associates thought he was a little idealistic to undertake Spring Island and cautioned him to wait until he was approaching retirement before indulging himself in such a project. Despite these conclusions, he went ahead based on his knowledge of the market and his gut feeling[35]. "I really had a feeling that people were moving back to basic values. Families wanted to be outdoors in a real place, sharing real experiences and safe adventures[36]." His initial goal was to complete a high-quality project that was sustainable and ecologically sound while setting an example for other developers. Since the development of Spring Island, several developers have replicated it in other locations. Specifically, a similar project under development (Palmetto Bluff, Bluffton S.C., 26,000-acres) in the same market area is competing to be the "Spring Island on Steroids" as described to me by the Vice President for Crescent-Resources, the developer of that site[37]. Interestingly, Mr. Baysden, the developer from Crescent-Resources, was previously the Senior Vice President at Spring Island. Rather than one might expect in the secrecy of a business as competitive as development, Chaffin is happy to share his experiences and ideas with his competitors rather than seeing poor-quality developments spoiling the environment.[38]

Community in a Club

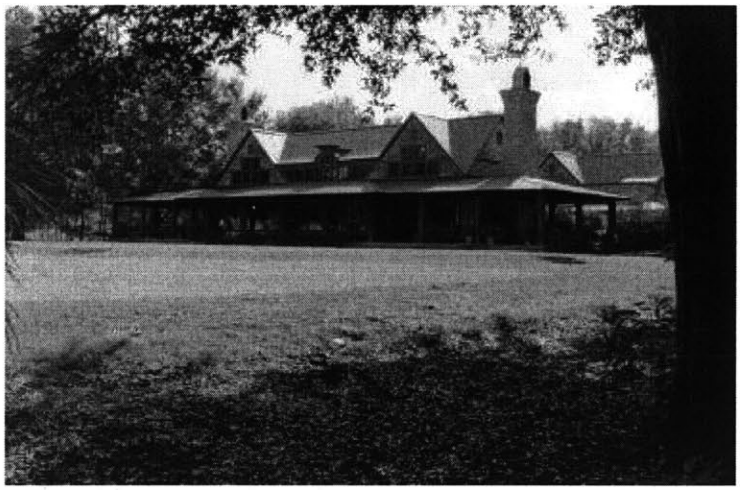
Beyond the private residential enclaves on the Island, the Spring Island community is brought together by a Club, the Spring Island Club. The purpose of the Spring Island Club is to offer its members a private equity club which offers its membership access to golf, tennis, swimming, equestrian, boating, social, fitness and other recreational facilities located in the Spring Island residential community,[39] (thus, the title of this thesis—*Private Wilderness Playgrounds*). Each "equity member" has an ownership interest in the Club and is entitled to vote on matters that affect the Club in accordance with the membership plan[40]. The Club facilities consist of an 18-hole golf course; a driving range and practice facilities; 2 tennis courts; the Golf House, which includes a pro shop, dining facilities and lounge, men's and women's locker rooms, and a golf cart storage facility; a River House complex which will include dining rooms, a gathering room, club offices and a post office; the Walker Landing Sports Garden, which includes a swimming pool, recreational center, Summer House pavilion and related family sports facilities; a sporting clays course; the Bonny Shore Gazebo; equestrian facilities including a 24 stall barn and related paddocks; and community dock facility and a boat ramp[41].

The Old Tabby Ruins of the Grand Edward's Plantation House, built circa 1790, are a reminder of the days of opulence when sea island cotton was grown at Spring Island. Photo: JW Rapson

The Spring Island Club has two categories of equity memberships that are available in the Club: Golf and Social. The number of memberships permitted in each category is 350 for the Golf Membership and 60 for the Social Membership. Eligibility for membership in the Club requires a member to have purchased land or a home in the Community[42]. Once all of the property on the Island has been sold, if memberships remain unsold, they me be offered to potential members who live off Island and do not own property. All potential members have to be approved by the Board of the Spring Island Club, so memberships are certainly not a public commodity for trading[43].

As a premier equity ownership-sporting club that offers members countless activities, The Spring Island Club is restricted to individuals who own property at Spring Island and extend to their family. The members of the Spring Island community, as mentioned earlier, are self-selecting in that no significant marketing was done to sell real estate. Rather, friends brought like-minded friends and this sold the property on the island[44]. As I will discuss in the finance section of this case, a rather innovative approach was undertaken to raise capital and establish the community initially, whereby "founding member buyers" became limited equity owners / investors in the project (with preferred land trading options to larger lots with better views) and were given the responsibility to promote and sell the project to their friends and professional colleagues[45]. A large number of Spring Island owners are Fortune 500

executives[46] and/or multi-millionaires, so the decision to locate to Spring Island was less of a financial one than one primarily centered on the quality of the natural environment, the lifestyle, recreational amenities, golf, and the notion that the island would remain under strict environmental management in perpetuity. The price to become a founding member and buy a small lot in one of the three neighborhoods was $300,000[47].



The "Golf Club", at The Spring Island Club offers its members formal dining facilities where the equity members can dine while over looking the finishing hole on the golf course and the some of the best views of the marsh and river landscape that surround Spring Island. Membership is restricted to individuals who own property at Spring Island and extends to a Members famlies. Photo: JW Rapson

The Golf Membership

A golf membership entitles a member to the use of all the golf, tennis, swimming, fitness, shooting, equestrian, boating and social facilities of the Club. Golf members are not charged greens fees or court fees for use of the golf or tennis facilities, but are required to pay annual fees for golf carts and trails. Golf members are entitled to the highest level of priority to reserve tee times or tennis court times. Golf members are charged fees for the use of the dock and equestrian facilities, sporting clays, and certain other facilities as determined by the Club. Of the 40 best golf clubs and courses in the US, ten of which are in South Carolina around the Hilton Head area, Old Tabby Links at Spring Island, was voted 12th in the country.[48] Named for the ruins of the Edwards Plantation, which it surrounds, the course is an extraordinary setting for golf. From the Golf House, the front nine weaves through old-growth forests, while the back nine opens to expansive views of marshes and rivers. As was mentioned previously, the golf membership is limited to 350 equity members with an initial joining fee and equity contribution of $125,000 and the annual golf dues are currently $6,500 ($2,275,000 gross revenues for operations at a

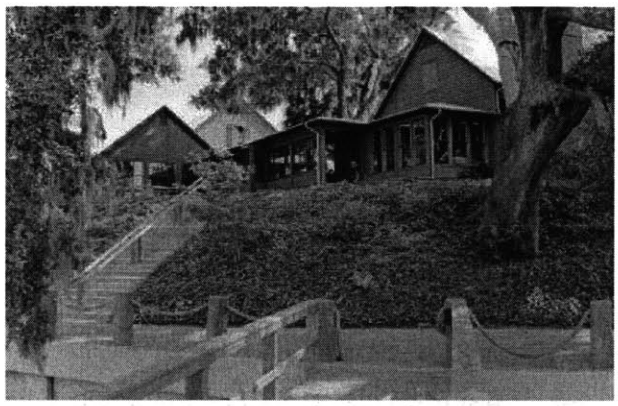
cost to each member of $541 per month)[49]. Undisputedly, the Spring Island golfing experience is a major attraction for buyers looking to locate to this market area in a golf course community.

The signature hole of the course, the 17th Fairway & Green: Par 3, 205 yards from the Palmer tees. Total yardages for the course are: 7004 from Palmer tees, 6581 from Back tees, 5942 from Member tees, 5022 from the Forward tees. Dunes, marshes, and grass buffer zones provide wildlife habitat and collect water, while filtering runoff from the Spring Island golf course. Source: Betsy Chaffin / The Spring Island Company

The Social Membership

The Social Membership at the Spring Island Club is limited to 60 equity members with an initial joining fee and equity contribution of $25,000. Annual social dues are $3,250 annually or $270 per month[50]. A Social Membership entitles the member to use all of the tennis, swimming, fitness, shooting, equestrian, boating, and social facilities of the Club. In addition to the rights notes above, Social Memberships are entitled to play one round of golf each month during the season and four rounds of golf each month in the

off-season[51]. Different than the Golf Membership, social members are not entitled to a same day tee time, but rather to a two-day sign-up tee time privilege. Social members are also required to pay greens fees and cart fees. Similar restrictions apply to the use of the tennis facilities, where social members are entitled to a time within seven days of a request to reserve a court. Like the Golf Membership, social members are charged fees for the use of the dock and equestrian facilities, sporting clays, and certain other facilities as determined by the Club[52].

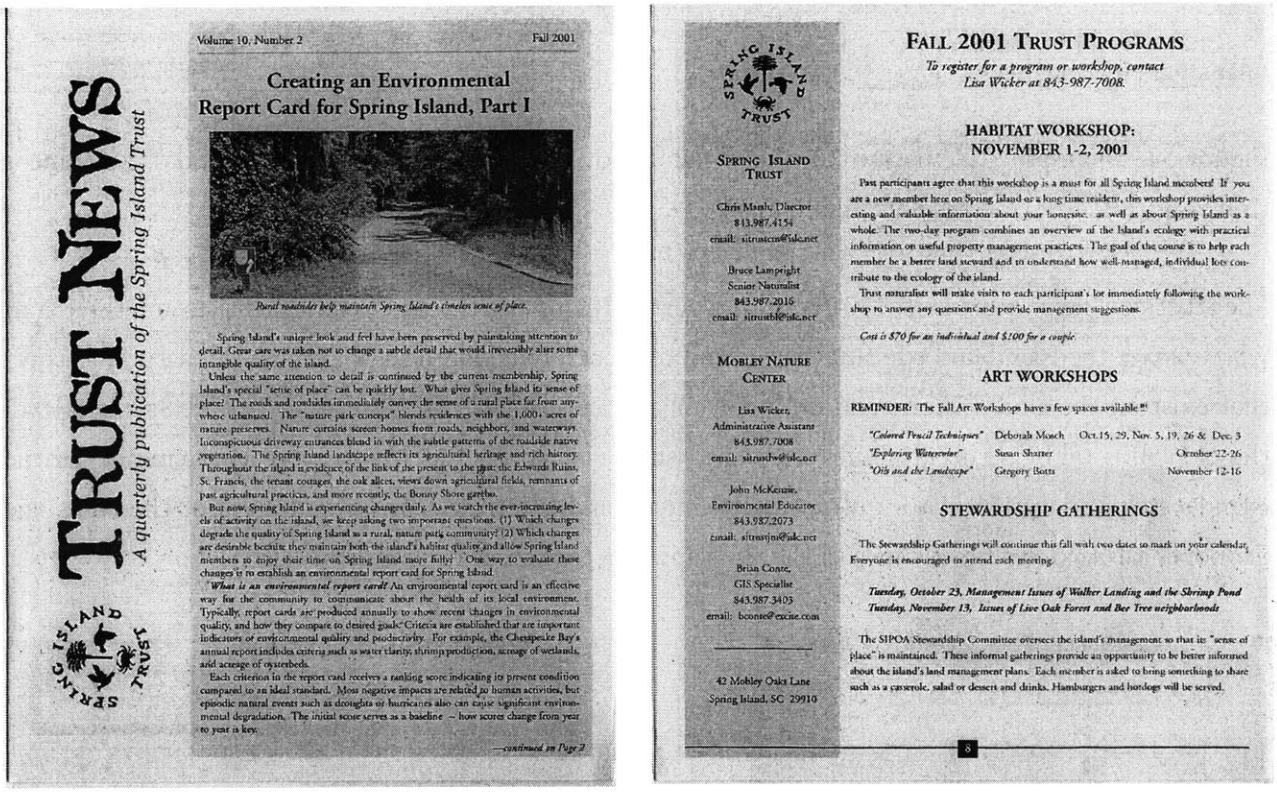


A view of the surrounding marsh and river landscape from the upper deck of the social club-- The River House. This facility serves as the project's social and formal gathering location and is a common area to all residents. It is at this location where residents use a central walk-in postal facility to pick up mail and receive other communications from the Spring Island Company. The mail pick-up area has turned into a favorite meeting area for residents—a place common to all. [53] Photo: JW Rapson

Environmental Stewardship and Operations

The Spring Island Trust (SIT), The Lowcountry Institute (LCI) and the Spring Island Property Owners Association (SIPOA) are the three primary entities on the Island that are responsible for managing the natural resources and the ways in which the landowners use the islands resources[54]. Central to the mission of these three organizations is maintaining the culture of the Island by helping members understand and support the vision for the Island where the original sense of place is maintained[55]. The entity that has the primary role to insure the preservation and protection of the island's environment and cultural history is the Spring Island Trust, a non-profit organization. Fundamental to the success of any environmentally oriented development are the operations both during construction and more critically, after the developer has left and the community has been turned over to the property owner's association for its future management[56]. The Spring Island Trust in association with the Low Country Institute

provides this responsible leadership and ensures that the resources on Spring Island are protected through conservation and education. This is accomplished through educating youth and adults, advising local governments and agencies, and partnering with other environmental non-profit organizations[57].



TRUST NEWS

A quarterly publication of the Spring Island Trust

Volume 10, Number 2 — Fall 2001

Creating an Environmental Report Card for Spring Island, Part I

Paved roadsides help maintain Spring Island's timeless sense of place.

Spring Island's unique look and feel have been preserved by painstaking attention to detail. Great care was taken not to change a subtle detail that would irreversibly alter some intangible quality of the island.

Unless the same attention to detail is continued by the current membership, Spring Island's special "sense of place" can be quickly lost. What gives Spring Island its sense of place? The roads and roadsides immediately convey the sense of a rural place far from anywhere urbanized. The "nature park concept" blends residences with the 1,000+ acres of nature preserves. Nature curtains screen homes from roads, neighbors, and waterways. Inconspicuous driveway entrances blend in with the subtle patterns of the roadside native vegetation. The Spring Island landscape reflects its agricultural heritage and rich history. Throughout the island is evidence of the link of the present to the past: the Edwards Ruins, St. Francis, the tenant cottages, the oak allees, views down agricultural fields, remnants of past agricultural practices, and more recently, the Bonny Shore gazebo.

But now, Spring Island is experiencing changes daily. As we watch the ever-increasing levels of activity on the island, we keep asking two important questions. (1) Which changes degrade the quality of Spring Island as a rural, nature park community? (2) Which changes are desirable because they maintain both the island's habitat quality and allow Spring Island members to enjoy their time on Spring Island more fully? One way to evaluate these changes is to establish an environmental report card for Spring Island.

What is an environmental report card? An environmental report card is an effective way for the community to communicate about the health of its local environment. Typically, report cards are produced annually to show recent changes in environmental quality, and how they compare to desired goals. Criteria are established that are important indicators of environmental quality and productivity. For example, the Chesapeake Bay's annual report includes criteria such as water clarity, shrimp production, acreage of wetlands, and acreage of oysterbeds.

Each criterion in the report card receives a ranking score indicating its present condition compared to an ideal standard. Most negative impacts are related to human activities, but episodic natural events such as droughts or hurricanes also can cause significant environmental degradation. The initial score serves as a baseline – how scores change from year to year is key.

—continued on Page 2

FALL 2001 TRUST PROGRAMS

To register for a program or workshop, contact Lisa Wicker at 843-987-7008.

HABITAT WORKSHOP: NOVEMBER 1-2, 2001

Past participants agree that this workshop is a must for all Spring Island members! If you are a new member here on Spring Island or a long time resident, this workshop provides interesting and valuable information about your homesite, as well as about Spring Island as a whole. The two-day program combines an overview of the Island's ecology with practical information on useful property management practices. The goal of the course is to help each member be a better land steward and to understand how well-managed, individual lots contribute to the ecology of the island.

Trust naturalists will make visits to each participant's lot immediately following the workshop to answer any questions and provide management suggestions.

Cost is $70 for an individual and $100 for a couple

ART WORKSHOPS

REMINDER: The Fall Art Workshops have a few spaces available!!

"Colored Pencil Techniques"	Deborah Mosch	Oct.15, 29, Nov. 5, 19, 26 & Dec. 3
"Exploring Watercolor"	Susan Shatter	October 22-26
"Oils and the Landscape"	Gregory Botts	November 12-16

STEWARDSHIP GATHERINGS

The Stewardship Gatherings will continue this fall with two dates to mark on your calendar. Everyone is encouraged to attend each meeting.

Tuesday, October 23, Management Issues of Walker Landing and the Shrimp Pond
Tuesday, November 13, Issues of Live Oak Forest and Bee Tree neighborhoods

The SIPOA Stewardship Committee oversees the island's management so that its "sense of place" is maintained. These informal gatherings provide an opportunity to be better informed about the island's land management plans. Each member is asked to bring something to share such as a casserole, salad or dessert and drinks. Hamburgers and hotdogs will be served.

SPRING ISLAND TRUST

SPRING ISLAND TRUST

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42 Mobley Oaks Lane
Spring Island, SC 29910

One of the many benefits to members of Spring Island are the activities that are organized by the Trust. Frequent publications outlining and describing the activities taking place on the Island help to build a community focused around conservation and the environment of Spring Island. Source: The Spring Island Trust / The Spring Island Company

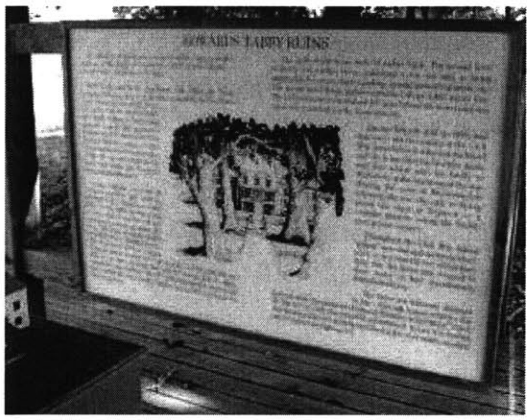
The development company set-up the Spring Island Trust to preserve 1,000 acres of land on the island, called the Chechessee Nature Preserve. As the island's major landholder, the trust is perpetually funded through the 1.5 percent tax on property sales and a 1 percent tax on housing resales. Unfortunately, in the developer's haste to create the trust as a non-profit organization, the trust was incorporated with a 501(C)(4) rather than a 501(C)(3) structure. This means that the Trust itself can get tax breaks, but not those that donate to it. The following table illustrates how a transfer fee is calculated and accessed on an

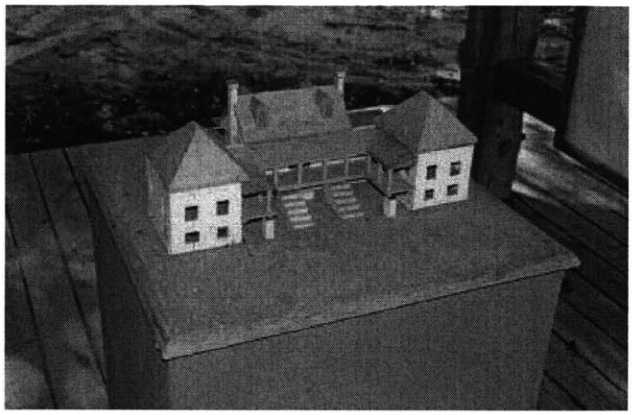
owner, buyer or seller. Thus far, the revenue generated from purchase and sale transactions on the island have fiscally supported the trust while more than tripling its budget since the project began.

	New Sale	**Resale**
Land and House Cost	$ 2,000,000.00	$ 2,000,000.00
% Charged (per transaction)	1.5%	1.0%
Fees Paid (to land trust)	$ 30,000.00	$20,000.00

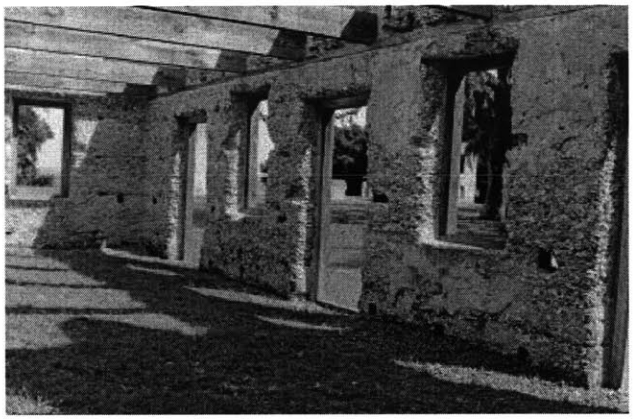
Figure 3.1, **Example Calculation for how the Land Trust is Funded**. Spring Island Development Company, Beaufort County, South Carolina.

The trust now owns more than 1,300 acres and currently employs three full-time scientists and three staff who manage the island and educate visitors and residents. In addition to preserving the natural features that exist on the land, historic and culturally significant elements are also protected. At Spring Island, the old 1800s tabby structure built of crushed shell and mortar was left to serve as a reminder of the island's rich and varied history of past settlements and enterprises. In several areas of the ruins the developer salvaged and braced areas of the old plantation to prevent further degradation.





The old tabby ruins of the grand Edward's Plantation House have been stabilized and are one of many wonderful cultural legacies that exist on the island. Interpretive panels explain the story of the ruins and a model of the house shows its context on the Island. Centered on axis with the ruins is an existing double row of 200-year-old live oak trees that used to line the drive to the old Edward's mansion. Photo: JW Rapson



The Spring Island Trust has three major programs that include (1) land management, (2) environmental education, and (3) guiding the development on the island in an environmentally sensitive way as the island moves towards full build-out[58]. The first component of the trust, land management, consists of a land management team of scientists and land-use professionals that guide the nature preserve's management plan. The primary objective is to provide for a maximum diversity of plants and animals while balancing the needs of the residential community with the needs of wildlife species[59]. Thus far, the Trust's naturalists have developed baseline data on the island's natural resources, carried out several prescribed burns, improved wildlife habitat, monitored keystone species, and produced species maps for bald eagles, southern fox squirrels, and migratory neotropical songbirds. The nature preserve includes a network of trails that allows for low-impact recreation, such as walking, bird watching, fishing, biking and horseback riding. Eventually, this trail system will connect to each lot[60].

During my visit to the Island, the Trust and Lowcountry Institute were hosting a land acquisitions meeting with the Beaufort County Open Lands Trust and the Beaufort County Planning and Zoning Board. Beaufort County recently passed a $60 million bond referendum that will enable the county to acquire land and protect high ecological value properties throughout the county. This effort is a prime example of the "spin-off" benefits of the Spring Island development and its associated conservation organizations--a joint initiative with the Lowcountry Institute, the Spring Island Trust, The Nature Conservancy, Beaufort County, and the Beaufort County Open Lands Trust. Photo: JW Rapson

The second component of the Trust is environmental education and member outreach. The Trust's educational programs target property owners, its members, guests, visiting students, and civic groups. The objective of the educational program is to develop good land stewardship among the Members through an understanding and appreciation of the natural environment at Spring Island[61]. Specific components of the educational program at the Trust include:[62]

(1) Site visits by the naturalists to Members' properties to access the natural features of the lot and to educate the homeowner on how to integrate the landscape of the residence with the existing natural landscape.

(2) "The Habitat Workshop" a two-day workshop that gives members an opportunity to learn more about the Island's ecology and ways that the residents can be better stewards of the Island. Birding, botanical walks, and other workshops are held throughout the year.

(3) Publications include the Spring Island Trust member's handbook that has been written to help the owners understand the comprehensive approach to managing the islands' ecosystem. The handbook also includes a history of the island, a comprehensive list of the butterflies and birds on the island, a map of all the trails on Spring Island. Additionally, significant ecological events are noted so that a member out at a certain time of year can be aware of particular natural events that are occurring.

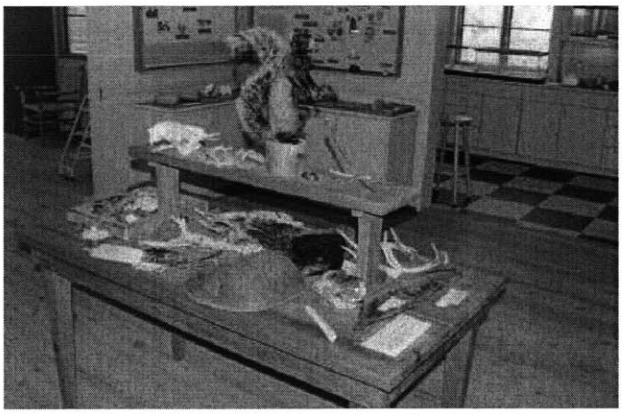
(4) Monthly Topics is a program that chooses a monthly topic, such as summer ecology, wetlands, golf course ecology, or marine biology, and teaches the topic through a series of different events including "Wednesday Walks," exhibits, fireside chats, and handouts.

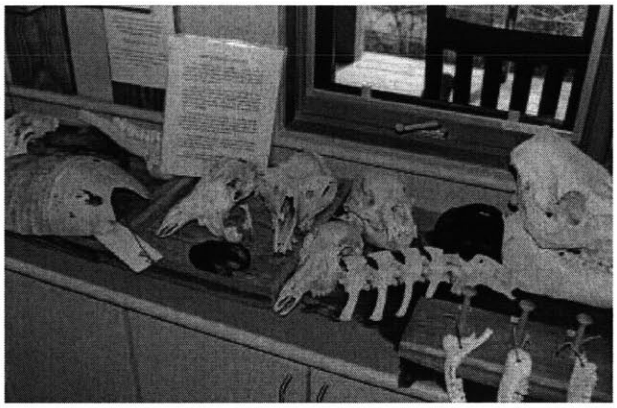
(5) Nature Tours on both a programmed and unprogrammed basis for Members are offered on foot, horseback, kayak, and boat or by car, and have proven to be a favorite "small group" activity for residents and their guests.

(6) Fireside Chats by visiting artists[63] and/or visiting naturalists give the Members a yet another opportunity to interact with another "storyteller" of the island's good fortune and beauty.

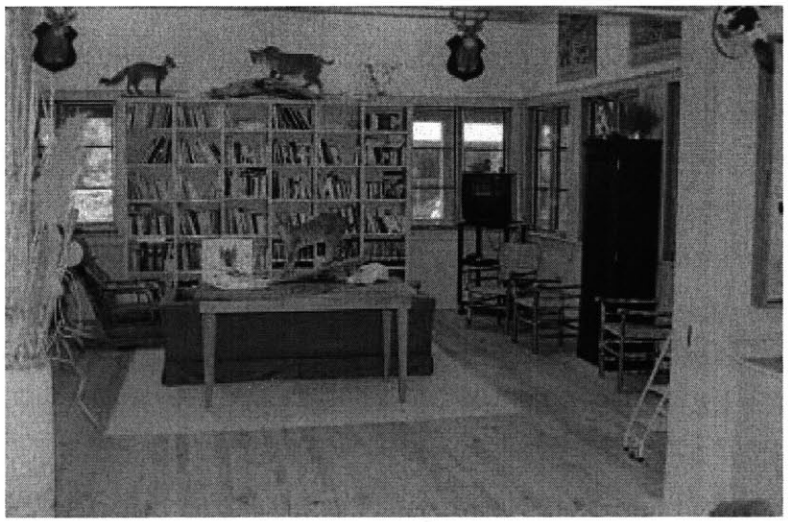
As is apparent from the educational programming at Spring Island, the Trust views its primary role as a catalyst to keep Members engaged around the ecological integrity of the island. This helps create and foster an important sense of environmental community among the growing number of Island residents. The Trust has a permanent environmental education center to help convey and teach its mission of conservation and environmental education. The Mobley Center, better known as the 'Nature Lab', provides a number of hands-on displays, including aquariums and terrariums that describe the island's wildlife habitats. To educate residents about living lightly on the land, the Trust produced a handbook on protecting wildlife to landscaping with native plants. The Trust's naturalists also spend time onsite to help owners sensitively design and manage their lots. They also publish a quarterly newsletter to keep residents and members informed of activities and field trips on the preserve and special birding and

botanical programs. The Trust has made a concerted effort to actively involve members[64]. For example, volunteers provide weekly reports on wading bird populations around island ponds.





The Trust's educational programs target property owners, its members, guests, visiting students, and civic groups. The Nature Lab provides a number of hands-on displays, including aquariums and terrariums that describe the island's wildlife habitats. Additionally, the Spring Island Trust has an extensive literary and resource center available for its members in the Mobley Center (pictured above). Last year the Trust had every 5th grader in the county out to the nature center for educational programs in wetland and the Lowcountry environment in which they live. Photo: JW Rapson



THE LowCountry INSTITUTE Update

FALL 2001

Visited the Mobley Nature Center Recently?

John McKenzie has been rotating animal displays regularly so that few animals have to stay for extended periods of time. Right now an Atlantic spadefish is on exhibit, new largemouth bass and bluegill are in the big freshwater tank (thanks to member Art Hendrick and Trust naturalist Bruce Lampright), and an American eel prowls the large saltwater tank. Our Eastern kingsnake, corn snakes, and rat snakes have been joined by two Eastern hognose snakes. The small young hognose resembles a rattlesnake, whereas the mature one is unusual because it is solid black. Hognose snakes feed exclusively on toads and frogs, and have special teeth to puncture an inflated toad (toads inflate as a defensive mechanism). The hognose is non-venomous, but it has many interesting defensive adaptations. If cornered, they hiss and flare their head to resemble a venomous snake (or even a cobra!). If this doesn't work they roll over and play dead, often releasing an unappetizing musk odor.

Attention All Volunteers!

The Low Country Institute begins its fall school programs on September 18, and anticipates taking its biodiversity outreach program to all schools in Beaufort, Jasper, and Hampton counties during the 2001-2002 school year. During the 2000-2001 school year over 2,000 4th and 5th graders participated in this program. This year John McKenzie, the Institute's environmental educator, has developed a program for kindergarteners at the Mobley Nature Center. All kindergarten classes from Jasper County and Bluffton have already confirmed their visitation dates at the Nature Center! John is conducting volunteer workshops throughout the fall. To learn more about the Institute's volunteer program or to obtain a copy of the scheduled school visits, contact Lisa Wicker at 843-987-7008 or visit the Institute's website.

Institute environmental educator, John McKenzie, teaches fifth graders about local mammals.

Institute Co-Produces Local Guide For Educators

The Institute co-sponsored the third meeting of the Environmental Educators of the Lowcountry (EEL) which was hosted by Palm Key on August 22nd. The Institute worked closely with Lynn Catlin of USCB's Center for Coastal Ecology to form this alliance. The purpose of these biannual meetings is to generate productive partnerships among the alliance partners, including producing a pamphlet for local teachers. "A Guide to Environmental Education Programs of the LowCountry" is now available to local educators on the Institute's website.

Update

FALL 2001

Institute Initiates Land Use Education Program

The Institute has a new full-time employee thanks to a grant from the Banbury Fund and Spring Island members Walter and Anne Meier! Immediately after completing his Master's degree at the University of South Carolina, Brian Conte began working as the Institute's GIS specialist. Brian will be using GIS (geographic information systems) software to involve local teachers and students in community land use issues, especially those relating to water quality. For example, with Brian's guidance students will create a database for the Beaufort County Open Land Trust, map stormwater drains and ditches in rural communities using GPS units, and create maps to show local municipalities possible alternative stormwater drainage designs.

The Institute partners in this project include the University of South Carolina's Baruch Institute, the Lowcountry Council of Governments, Beaufort County Planning Department, and the Beaufort County Open Land Trust.

Thanks to a grant from the Banbury Fund, Brian Conte, GIS Specialist, will be working with the Institute this year.

Working with Local Municipalities

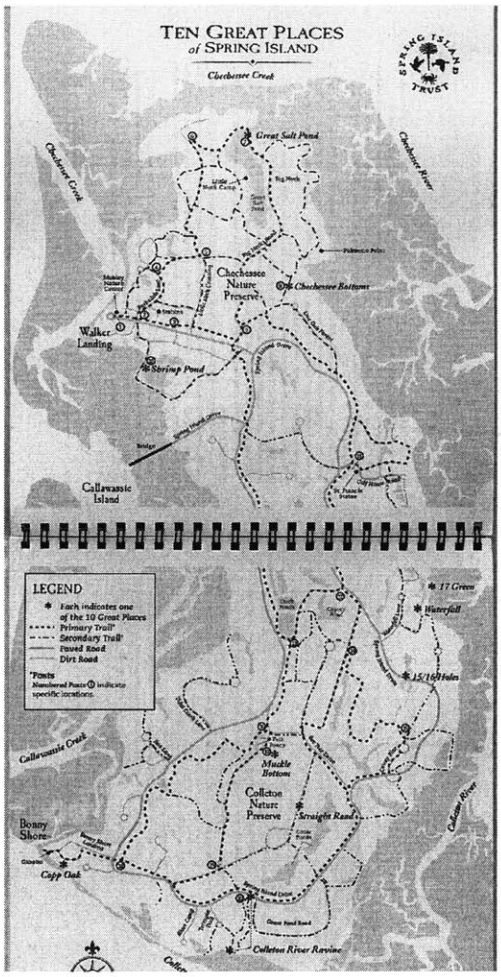
Institute Director Chris Marsh continues to provide environmental expertise to local governments. During the Summer the Institute helped the Town of Port Royal develop plans to restore the Town's large wetland as a visible egret rookery and roost. Thanks to the efforts of Robert Folk, Folkland Management, this restoration has been completed, and water levels are slowly rising as late summer thunderstorms return.

This summer the Institute responded to requests from the towns of Beaufort and Port Royal regarding their tree care and land management practices. In June, Beaufort's Landscaping and Tree Advisory Commission sought input about how to manage the bluff along Bay Street. As described in the enclosed newspaper article Chris helped them understand several alternative options to their current landscaping regime. An interesting follow-up to this article is that Beaufort's mayor supports changes suggested by the Institute. In August the Institute also cosponsored a Tree Care Workshop for the Town Of Port Royal. Chris taught tree identification to the group, and developed a self-guided tree identification exercise for the Town's nature trail.

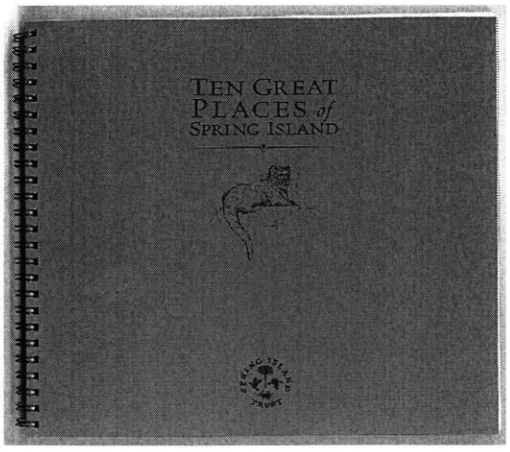
Wetlands restoration work at Port Royal, SC. Photos by Marti Catlin

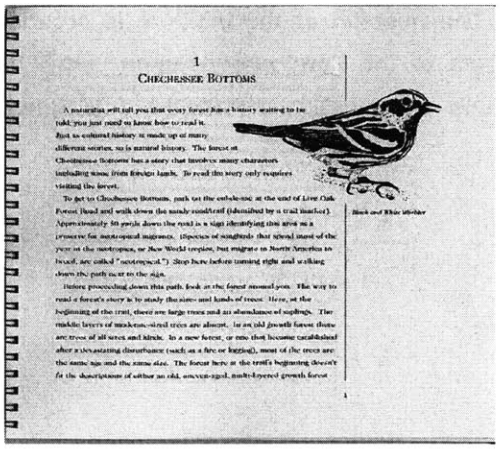
The LowCountry Institute • Chris Marsh, Executive Director • Phone 843-987-7008
Fax 843-987-4120 • E-mail info@lowcountryinstitute.org • Website www.lowcountryinstitute.org

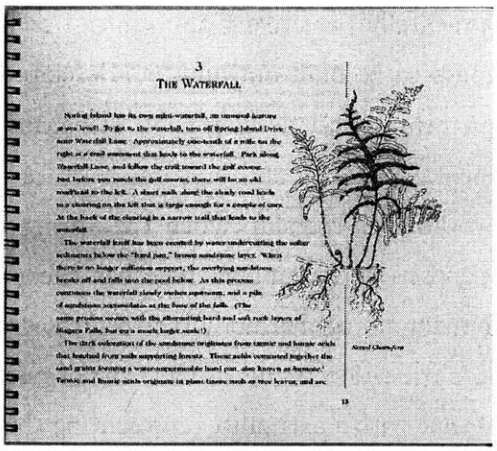
The Lowcountry Institute was created after the Trust and set up as a 501(c3) instead of a 501(c4) like the Trust. The mission of the Institute is broader in scope, extending off the island to provide technical resources to the Lowcountry region. 100% of the funding for the Lowcountry Institute is from either donations and/or grants that the Institute pursues[65]. Source: The Spring Island Trust / The Spring Island Company



A property owner's education begins at the time of purchase. To educate residents about living lightly on the land as well as the significance of the Spring Island environment, the Trust produced a handbook on protecting wildlife to landscaping with native plants. The document on the left is a publication recently put out by the SIT called *Ten Great Places of Spring Island.* **This first book details 10 significant natural areas on Spring Island and is brilliantly written both for members (less environmentally educated) and/or for a more technically inclined reader of environmental materials. They also publish a quarterly newsletter to keep residents and members informed of activities and field trips on the preserve and special birding and botanical programs. The Trust has made a concerted effort to actively involve members.** Source: Spring Island Trust



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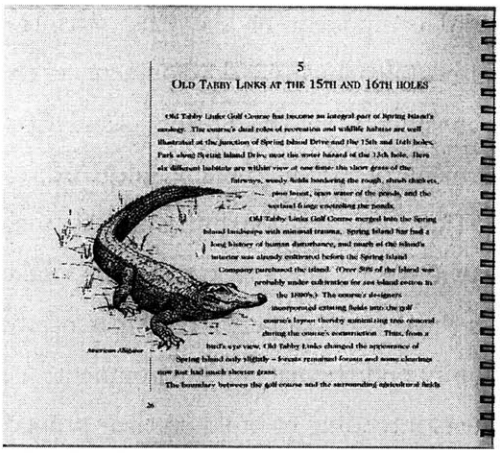
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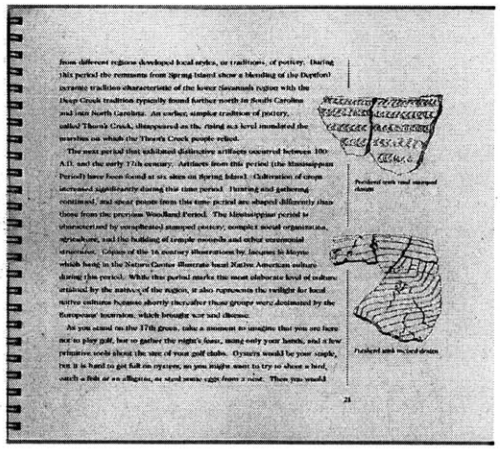
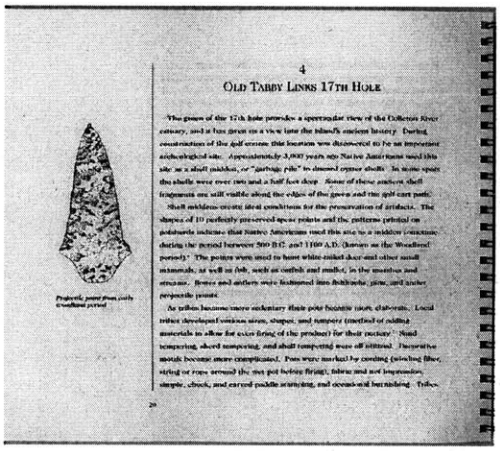
OLD TABBY LINKS AT THE 15TH AND 16TH HOLES

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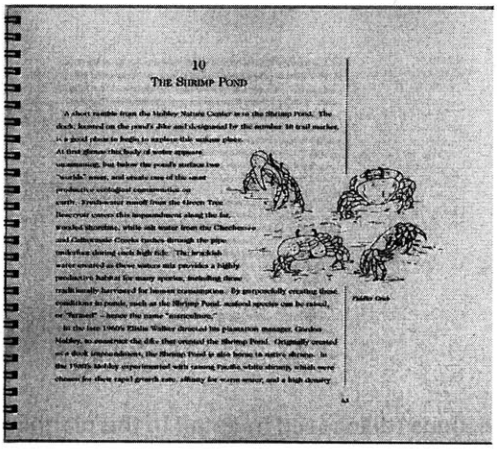
OLD TABBY LINKS 17TH HOLE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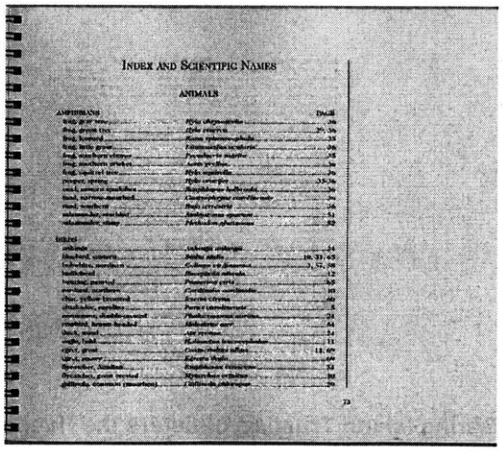
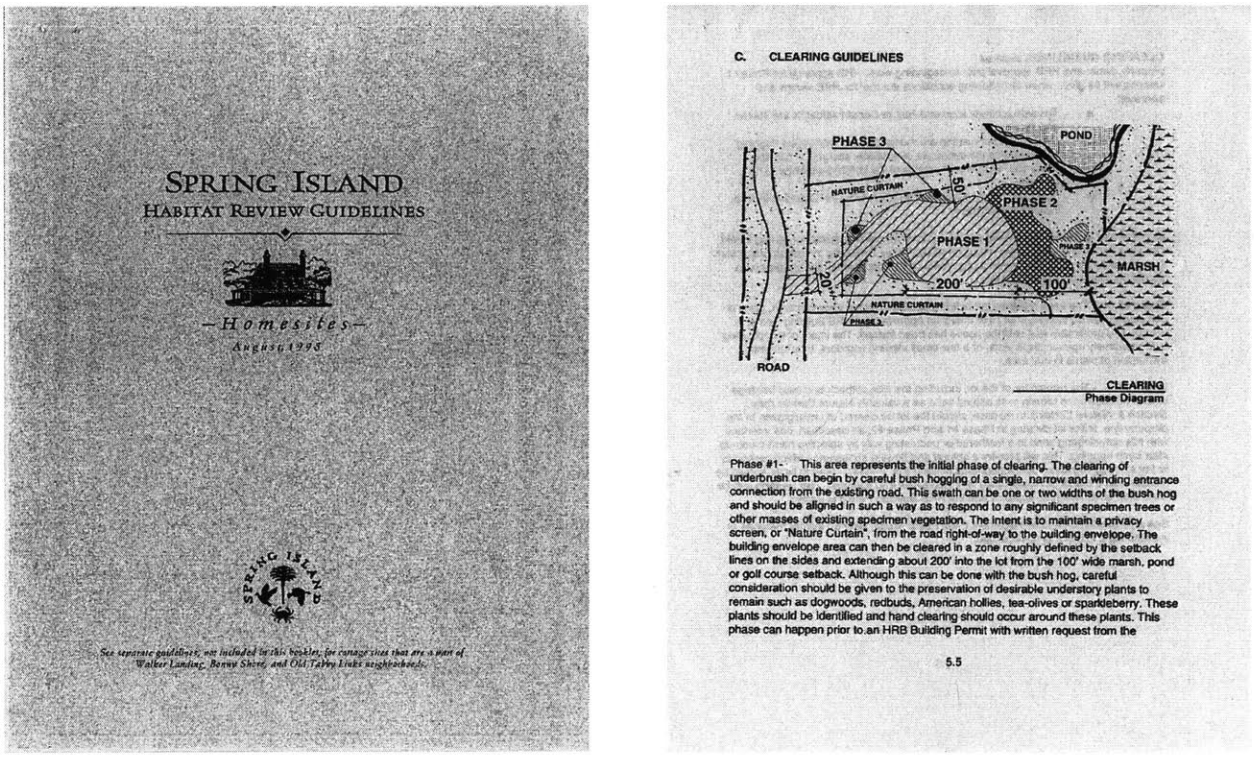

INDEX AND SCIENTIFIC NAMES

ANIMALS

Ten Great Places of Spring Island **is an example of a Trust publication, written for members to assist in their knowledge of Spring Island.** Source: Spring Island Trust

The third component of the trust, ensuring an "Environmentally Sensitive Community," facilitates environmentally sensitive development as the island continues to be built-out and lots developed. The Trust consults with the Spring Island Company to implement sound development plans and land management practices, thereby safeguarding the environmental integrity and cultural heritage of the island. This same relationship is slated to continue as a working partnership when the Spring Island Property Owner's Association (SIPOA) takes over the Island as the Members together become the Island's "biggest developer[66]." This partnership is critical to maintaining harmony between the growing community and the natural environment. A property owner's education begins at the time of purchase. All owners intending to build on their property must spend time with a naturalist representing the trust to go over the unique ecology of their lot and the island.



The Spring Island Trust administers the Habitat Review Guidelines (discussed in detail in the planning and design section) that ensure appropriate development and operations practices on the Island. Source: Spring Island Trust / The Spring Island Company

As a result of the direction and vision provided through the design guidelines, the company designed the golf course, Old Tabby Links, with measures to protect the island's diverse views, habitat of giant live

oaks, waterfowl ponds, and salt marshes. In an effort to preserve the cultural history of the island, the Trust commissioned an architectural historian to provide drawings of the Edwards Tabby Ruins as they would have appeared in the 1800's.

Finance and Investment

Capital Structure Considerations: Financing Spring Island

Partners James Chaffin, Jim Light and Dr. Peter LaMotte bought Spring Island in 1990 for $17.5 million[67]. The Spring Island developers faced somewhat different obstacles when they sought financing for Spring Island. The development team had years of experience and a strong track record on prior deals, but lenders questioned why they would want to take a risk by reducing the allowable number of homes on the island to a tenth the permitted number while significantly changing the cost of the lots accordingly[68]. They were therefore unable to get conventional financing for Spring Island. Their inability to sell the financial community on their environmentally inspired concepts, coupled with their belief that an overall cultural and psychological shift was occurring in which people wanted to be associated with environmental values, forced the developers to take a alternative approach to financing Spring Island.

As a result of the reluctance in the financial community to fund Spring Island, Chaffin was able to secure a one-year option on the island. He then moved to the area and spent that year figuring out how to make the concept work. During this time he got approvals for the master plan and for the bridge connecting the island to the mainland (via Callawahassie Island)[69]. In the interim, the development company set-up the Spring Island Trust to preserve the conservation land on the island. Once the master plan was approved, Chaffin brought small boatloads of people to the island to experience its beauty while trying to presell lots. Over lobster bakes, he shared his dream, attracting 36 buyers at $300,000 per lot as 'founding members', raising $10.8 million in equity before actually closing on the land deal. This was known as the "Founder's Program[70]. "

The Founder's program not only generated the necessary equity capital to get the project off the drawing board, but created "sale ambassadors" to give the project early momentum to the referred sales process[71]. For their contribution, founding members received at closing a five-acre home site, a golf membership, and other financial consideration in the project. In addition to the capital raised through the founders program the general partners also contributed $1.0 million in equity capital. Part of the initial $10.8

million funded construction of the bridge and other necessary infrastructure. The success of the presales convinced NationsBank to lend another $17 million to the project. This adequately capitalized the deal to finish the remainder of the project[72]. About six months later, a Japanese firm, Nippon Landic, provided another $20 million in venture capital as an equity partner. By late 1996, 90 percent of the debt had been retired[73]. It was at this time that Chaffin reported a "very strong absorption rate and at a high price[74]." With the financial performance of the project exceeding projections, this put the development company in a position to fund the remaining infrastructure requirements ($13 million) with cash flow from the project. This eliminated the need for the firm to borrow more capital. The current ROI is approximately 23 percent annually after debt service, projected over a 10-year holding period.[75] Mont Blaisdell, the CFO of Spring Island and the parent company Chaffin/Light, noted that revenues have far exceeded pro-forma expectations, with the remaining sell out of the project creating 'significant' positive accretion to this deal[76].

Interestingly, the bank was at first uneasy about the idea of removing the Spring Island Trust acreage from the development should the bank need to foreclose on the property. It therefore kept a mortgage on the Trust's acreage until a specified amount of the debt had been repaid[77]. This was to ensure that if the bank did have to foreclose on the property that there would only be a single owner on Spring Island. The developers did not like this provision because it ultimately reduced the level of protection they had for the Island, however, they had little choice but to go along with it. After the debt level was reduced, meeting the repayment hurdle, the feasibility of the Trust became more certain.

A second condition lenders were concerned about were the unusually strong covenants on site protection, including an undisturbed 'nature curtain' where only the driveway could be seen from the road. This downplays the physical presence of residences. The dilemma for the lenders was whether or not prospective purchasers would spend a substantial amount of money for a lot where the house could not be seen[78]. The developer's view was that these restrictive CC&R's would actually entice people to buy. Chaffin's intuition proved to be correct. Interesting, the 'nature curtain' concept which differentiates Spring Island from almost all other communities in its market area and the United States[79]. At the time, the bank thought the developer was foolish to ask $300,000 for a two-acre lot that did not have beach frontage. Yet it was these very restrictions ultimately created the lot's high value[80]. "Establishing covenants and ensuring land preservation are among the cheapest ways to create value for a development. These integral parts of the development have no heavy front-end costs like infrastructure

investments or ongoing operating expenses," Chaffin explains[81]. After a year of looking at how lots had been sold as well as who was buying—which included prominent members of both the business and environmental communities—the lender was finally convinced that there was a market for this kind of development[82].

Although Chaffin and Light had worked with NationsBank for many years prior to the Spring Island deal, it took the bank several years to trust the developers' market assumptions. Chaffin believes that in the end, their track record in always paying the bank back, as well as their past banking relationships, is probably what got them the financing[83].

Financial Statistics:

Total Development Cost Expected at Build-out: $90 Million
Hard Costs
- Site Acquisition Costs: $17 Million
- Site Development Costs: $18 Million
- Building Construction Costs: $12 Million

Soft Costs
- Financing: $6.3 Million
- Marketing / Leasing: $10 Million
- Architectural and Other: $2 Million

Note: $10 Million in presales convinced NationsBank to lend $17 Million in debt. $20 million in initial equity from joint venture Japanese investors, Nippon Landic. $13 million in infrastructure remained as of August 1996. Total Return on Investment: $40 million (10 years); approximately 23 percent after debt service.

From his experience at Spring Island, Chaffin recommends that one of a 'green' developer's best financing alternatives is to buy an option on the land and presell as many lots as possible to show lenders and other potential investors that in fact there is a demand for the proposed project[84]. A second alternative is to locate a substantial equity investment in which the investors own a percentage of the project above what is financed with debt. As is the case with most projects, banks never lend on the entire value of the projects total development costs, and as such, releases[85] can be very steep. A release is the amount (percentage) a bank or lending institution requires a developer to be put toward repayment of the loan; the larger the release percentage, the more difficult it will be for the developer to generate cash flow from the sales to apply towards debt service payments while also paying up-front costs of marketing, sales,

capital improvements, and other required and immediate development expenses. Chaffin cautions that environmentally oriented development still has a way to go in the finance community before banks or equity partners will be fully comfortable with many of the new development issues and undefined target markets[86]. Chaffin explains, "If you're going to do green development, it is important that you have enough equity to carry your project during an unpredictable absorption period, because you will have to educate your market[87]." He cautions that green developers need to be even more cautious than traditional developers in their pro forma estimates for the first couple of years. He notes, that "It will take time for the market to catch on to the benefits of such projects[88]."

Although it may be easier in the capital markets to take out loans than to raise money, equity financing buys more time to work out a plan that maximizes investors' value as well as satisfying the different constituents in the development process[89]. In general, using equity over debt generally allows for greater control on behalf of the developer. There is usually uncertainty about how long any new or unusual type of project will take to get approvals, and the compounding interest as well as constant monthly or quarterly payments on the debt service can potentially limit future options on how the project is managed, operated, and developed.

Marketing and Sales

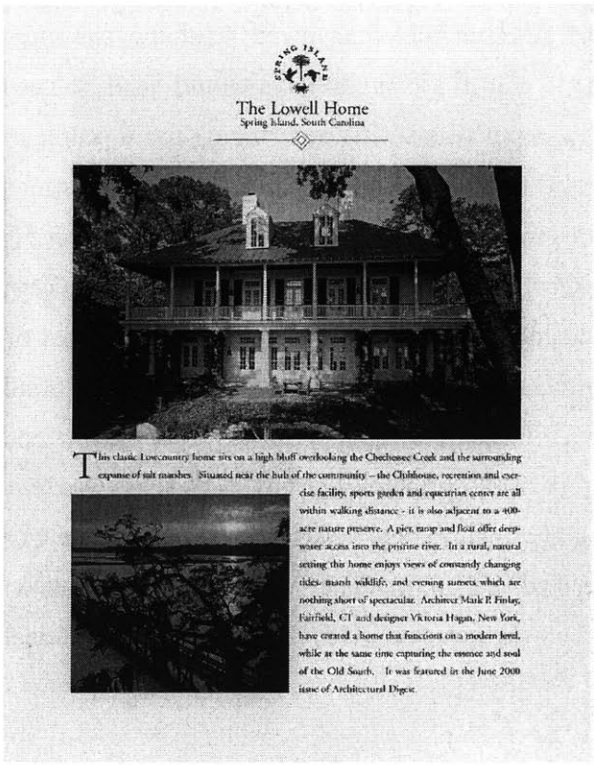
Market research for green development entails careful analysis of who the customers are and what products they want. The target market for green development may be very different than the target market for conventional development. It might also be a smaller subgroup of a recognized existing larger market in a similar product type[90]. Even though Chaffin is a strong advocate for the environment, when it comes to business he is just as concerned about risk as any other developer. When he began exploring the opportunities for a greatly downsized, environmentally oriented development on Spring Island, he had no idea whether there would be a market for it[91]. The idea of a private recreational community emphasizing environmental preservation had not been done before. Golf resorts were the development of choice for South Carolina's Low Country islands, and so Chaffin had to prove to himself and to his partners that there was a market for the product he envisioned. As he began planning the basic elements of this new project, Chaffin conducted extensive market analysis[92]. "Real estate development is market identification and product development," says Chaffin. So why he wondered, were there no products of this specific type in the marketplace? Was there no market? Or did the previous absence of a similar product keep people from realizing that there really was a market niche to be filled[93]? Chaffin used

market research consultants and his own staff to identifying and quantifying potential submarkets that he could target for his initial vision for Spring Island.[94]

Chaffin started with conventional market analysis and research which involved studying the areas demographics[95]. He learned that the 78 million baby boomers in the United States would begin to turn 50 in 1996—one every six seconds. He also learned that a population shift was bringing more people to the southeast to retire. Further research by Chaffin revealed that people over 50 take the most vacations and begin searching for a place to retire.[96] Additionally, earning power peaks more or less at the age of 50. After he understood the broader market in the Lowcountry, he then researched opinion polls to learn more about this population's market needs, interests, and mindsets. A 1989 Roper poll indicated that 67 percent of Americans thought of themselves as environmentalists.[97] In 1991, another Roper poll found that for the first time, people were more concerned with leisure and quality of life than with work. Chaffin explains this as a shift from being "status driven" to being "principle driven[98]." His sense was that people were caring for themselves, their community, and the environment, instead of simply striving to make more money[99]. Other studies Chaffin examined verified that more money was now being spent on cultural activities than sporting activities, and that people were expressing a greater feeling of individual responsibility and concern for the environment[100].

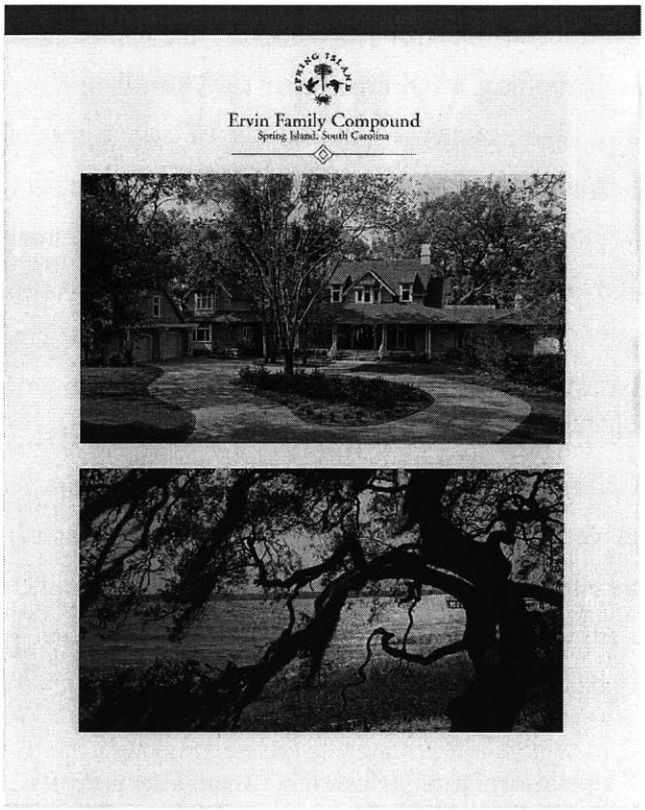
All this information helped Chaffin and his partners assure themselves of a market for their Spring Island development. Having paid 17 million ($6,000 acre) for the property, he and his partners were still concerned about the risk and therefore decided to include a golf course in the development plans[101]. Nearby Hilton Head and other successful island golf resorts provided ample evidence of the demand for golf club recreational properties. They felt that the risk was too great to rely on nature trails and environmental education programs alone as the primary recreational amenities. Rather, the golf course was a "safety valve," says Chaffin[102]. The golf course assured the developers and their financial backers that there was a market demand for this product should their intuition be off or their assumptions about their market research for environmentally oriented residential communities wrong. While such zeal for environmental stewardship may have initially dissuaded property buyers, it is now the main reason many have chosen to make Spring Island the site for their second home. A current resident of Spring Island, a Mr. Williams, notes, "I was attracted to the extraordinary natural beauty of this place along with the Chaffins' commitment to ensure that the island's natural resources were preserved," said Williams.[103] In a conversation I had with another resident of the island, the resident noted " ...they [her family] wouldn't

have moved anywhere else ... we love it here ...and the best part is that it is going to be like this forever ..." [104]



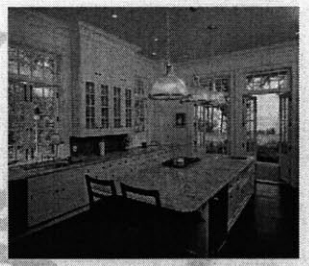
The Lowell Home
Spring Island, South Carolina

This classic Lowcountry home sits on a high bluff overlooking the Chechessee Creek and the surrounding expanse of salt marshes. Situated near the hub of the community – the Clubhouse, recreation and exercise facility, sports garden and equestrian center are all within walking distance - it is also adjacent to a 400-acre nature preserve. A pier, ramp and float offer deep-water access into the pristine river. In a rural, natural setting this home enjoys views of constantly changing tides, marsh wildlife, and evening sunsets which are nothing short of spectacular. Architect Mark P. Finlay, Fairfield, CT and designer Victoria Hagan, New York, have created a home that functions on a modern level, while at the same time capturing the essence and soul of the Old South. It was featured in the June 2000 issue of Architectural Digest.



Ervin Family Compound
Spring Island, South Carolina

The following documents are typical examples of the 'cut-sheets' used to resell and market existing homes at Spring Island. These contain the name of the property, size and special features and views. A sales person at Spring Island can assemble a package of the different homes for sale and send them to prospective buyers upon their request, making for an efficient system of conveying information. The brokerage company itself does not maintain something similar to the paper version on the web. Most sales happen when prospective buyers visit the Island directly, not thorough second source brokers or information service systems[105]**.** Source: The Spring Island Company

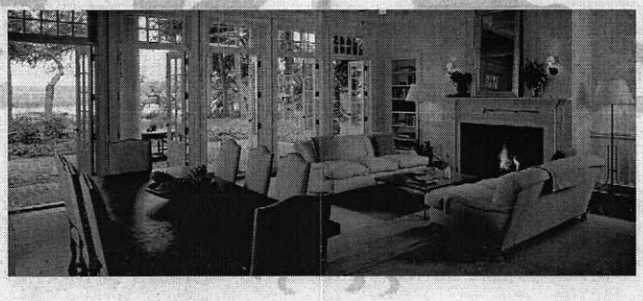


A French colonial style plantation house prevalent in the Southeast, it has sweeping verandahs and porches around the whole house and a steep hand made metal hip roof. The extensive landscaping featuring native species around the home provides sanctuary for a wide variety of songbirds and butterflies. Woodstork, ibis and egrets fish on the banks of Chechessee Creek pausing occasionally to acknowledge passing schools of dolphin.

Inside, the home has a clean, crisp look. The fine craftsmanship and use of elegant materials is evident throughout. Twelve-foot ceilings, coffered on the first floor, add warmth and intimacy and keep the house airy and light. The floors are of 7/8" antique heart pine and antique English limestone found in a French chateau. The French doors and windows are solid mahogany and the hardware bronze and polished nickel. Built by a local artisan, this refined and stately home was inspired by the style found in many of the original homes in nearby Beaufort and Charleston.

Square footage

Main home	Heated	4,671
	Unheated	1,631
Garage/office	Heated	285
	Unheated	576



Special Features

- 3 Bedrooms
- 3½ Bathrooms
- Large screening room with 10'x6' rolled down screen
- Multi-functional sound system in and out
- Miele, Bosch, Thermadore, Sub-Zero appliances
- 3 Wine coolers, 2 wet bars
- Polished granite and limestone countertops
- Security system
- Irrigation system
- 2 car garage with office above
- Metal roof
- Second floor washer/dryer
- Large guest room walk-in closet
- Hand-troweled plaster walls

Room Sizes

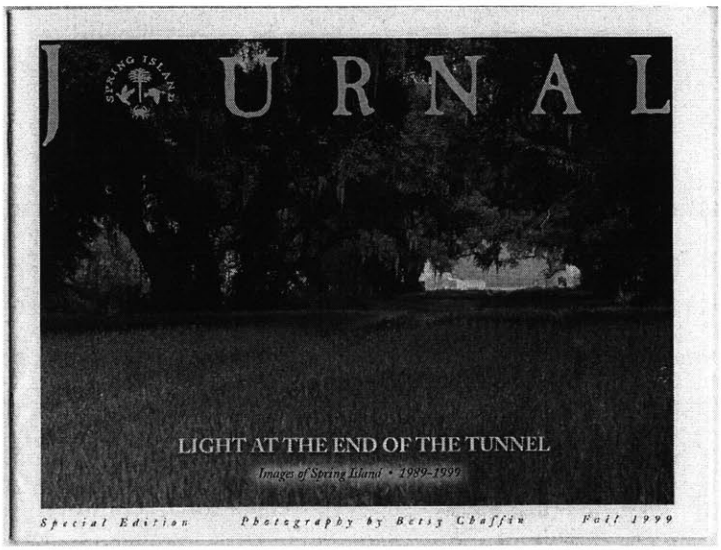
Kitchen	16' x 19'
Family room	16' x 17'
Laundry room	10' x 8'
Living/Dining room	25' x 26'
Foyer	9' x 24'
Master Bedroom	19' x 16'
1st Guest Bedroom	19' x 16'
2nd Guest Bedroom	14' x 18'

If the project were to be developed today, Chaffin believes it would be a success without the golf course, because the 'nature of the Island' has proven to be the number one amenity for the homeowners[106]. Fewer than half the occupants play golf, and the average age of homeowners is 54—Chaffin's numbers were right[107]. While the majority of the residents come from the Northeast, some have moved from as far away as San Francisco and even other countries. Interestingly, one of the islands residents is Joe Williams, former chairman of the Nature Conservancy's board of governors[108]. By identifying new customers and niche markets, Chaffin was able to succeed with his innovative style of recreational community development. Similarly, other developers in the region are now replicating this model and also attempting to apply this development approach to other projects around the United States[109]. Chaffin/Light Associates, the parent company of the Spring Island Company, currently has four similar projects in various stages of development around the United States. All of these projects are modeled after the successful prototype developed at Spring Island[110].

Spring Island Project Logo

Lowcountry Institute Logo

'Branding' a project in its entirety as well as the different value added components of the project are critical factors of a second home community that create recognition, market differentiation, and psychological value. All of these logos help to communicate a specific market appeal related to the sense of place and uniqueness of Spring Island. Source: The Spring Island Company



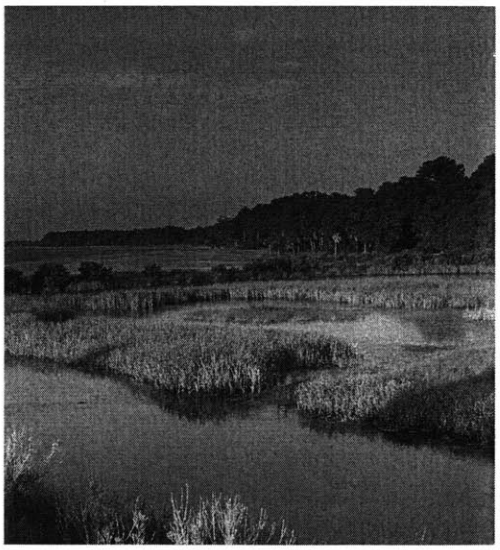
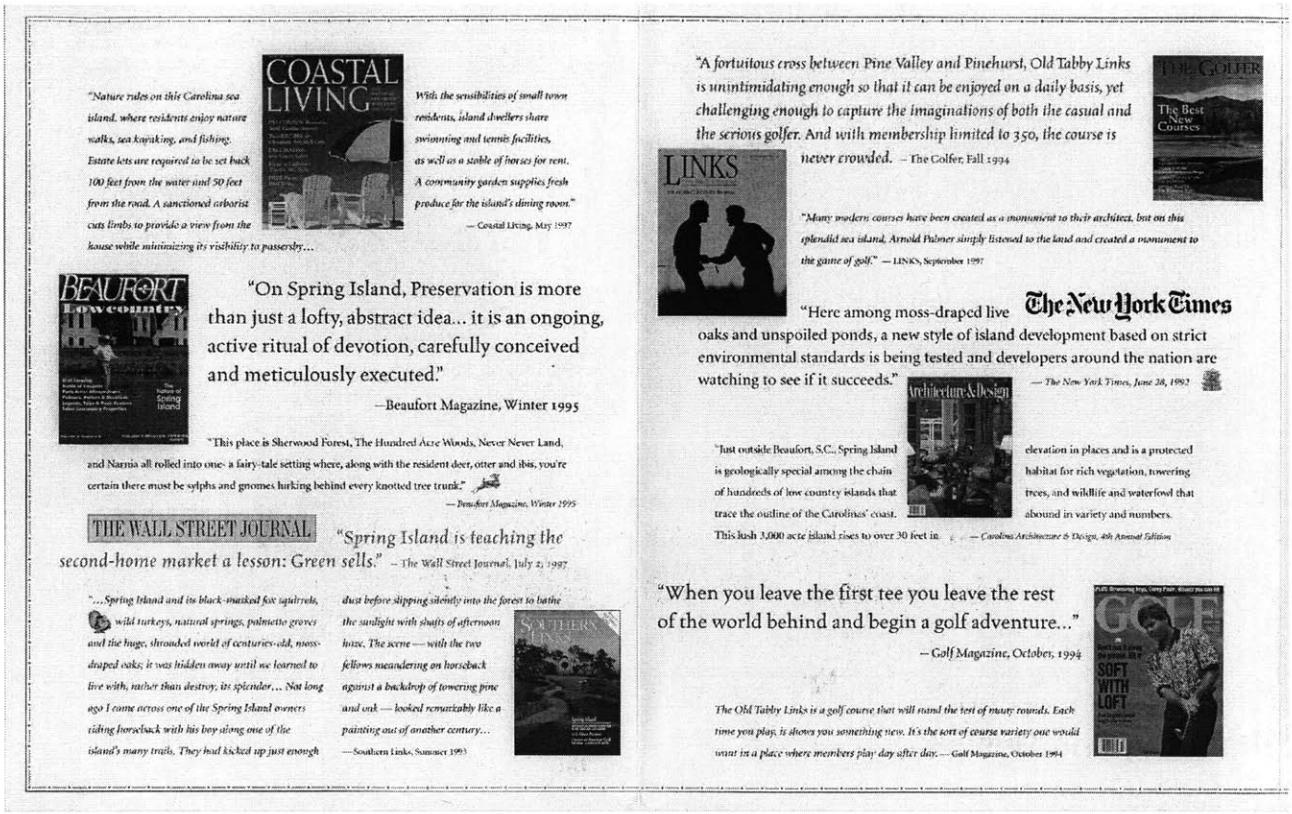


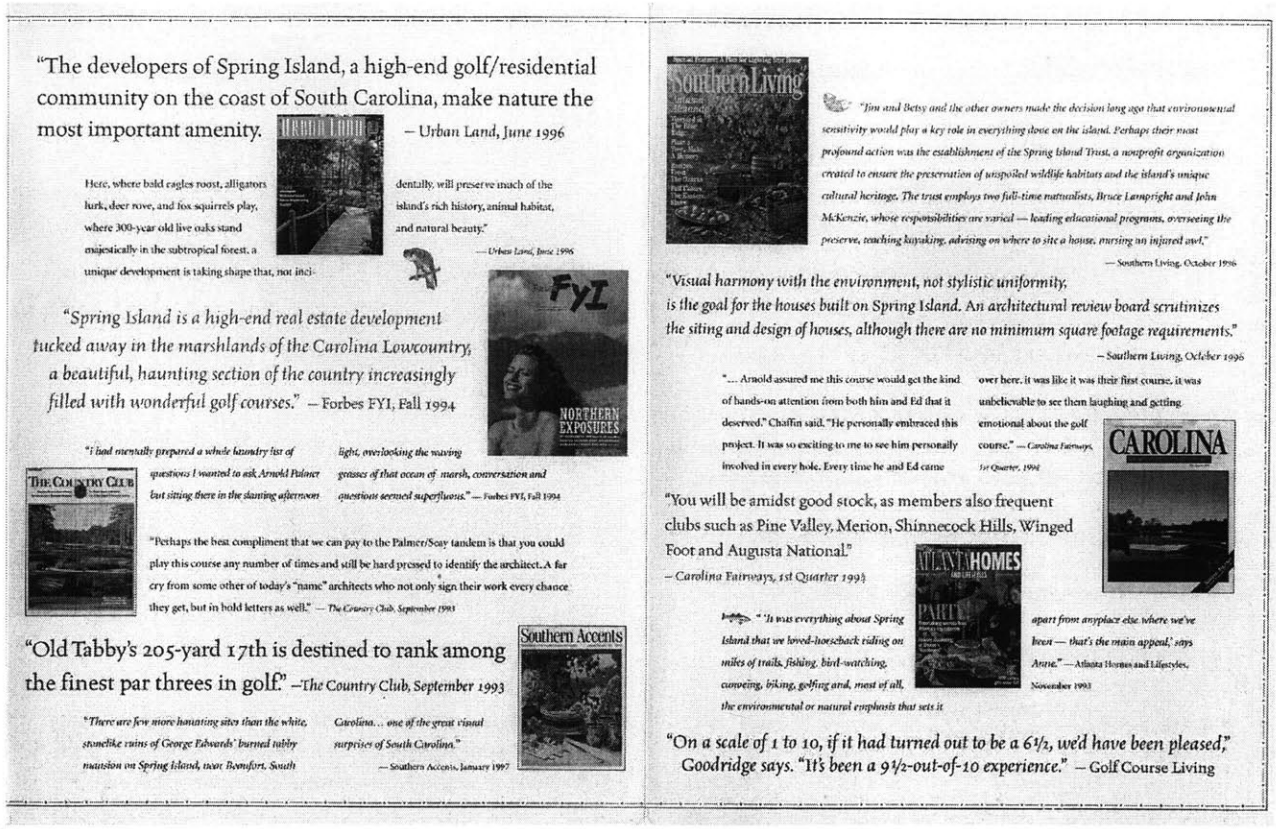
Photo Credit: Betsy Chaffin / The Spring Island Company

A second critical marketing tool used to convey the beauty and uniqueness of the Island are a series of publications that tell the 'story' of Spring Island's natural beauty and cultural legacy. Betsy Chaffin, the developer's wife, used her interest and talent in photography to document the different seasons, faces, colors, and textures of Spring Island. The 'Journal' is one example of a publication that conveys 'value' in

buying into the community. This publication proved to be a critical tool to sell land and attract prospective residents to Spring Island.



Spring Island was never publicly advertised in a situation where the developer initiated and paid to have it listed in a magazine or newspaper. Rather, the beauty and promotionally innovative approach being untaken at Spring Island generated a great deal of free media attention that resulted in many articles being written about the Island. This attention saved the developer money. The following images depict the diversity of the free advertising Spring Island experienced. Source: The Spring Island Company



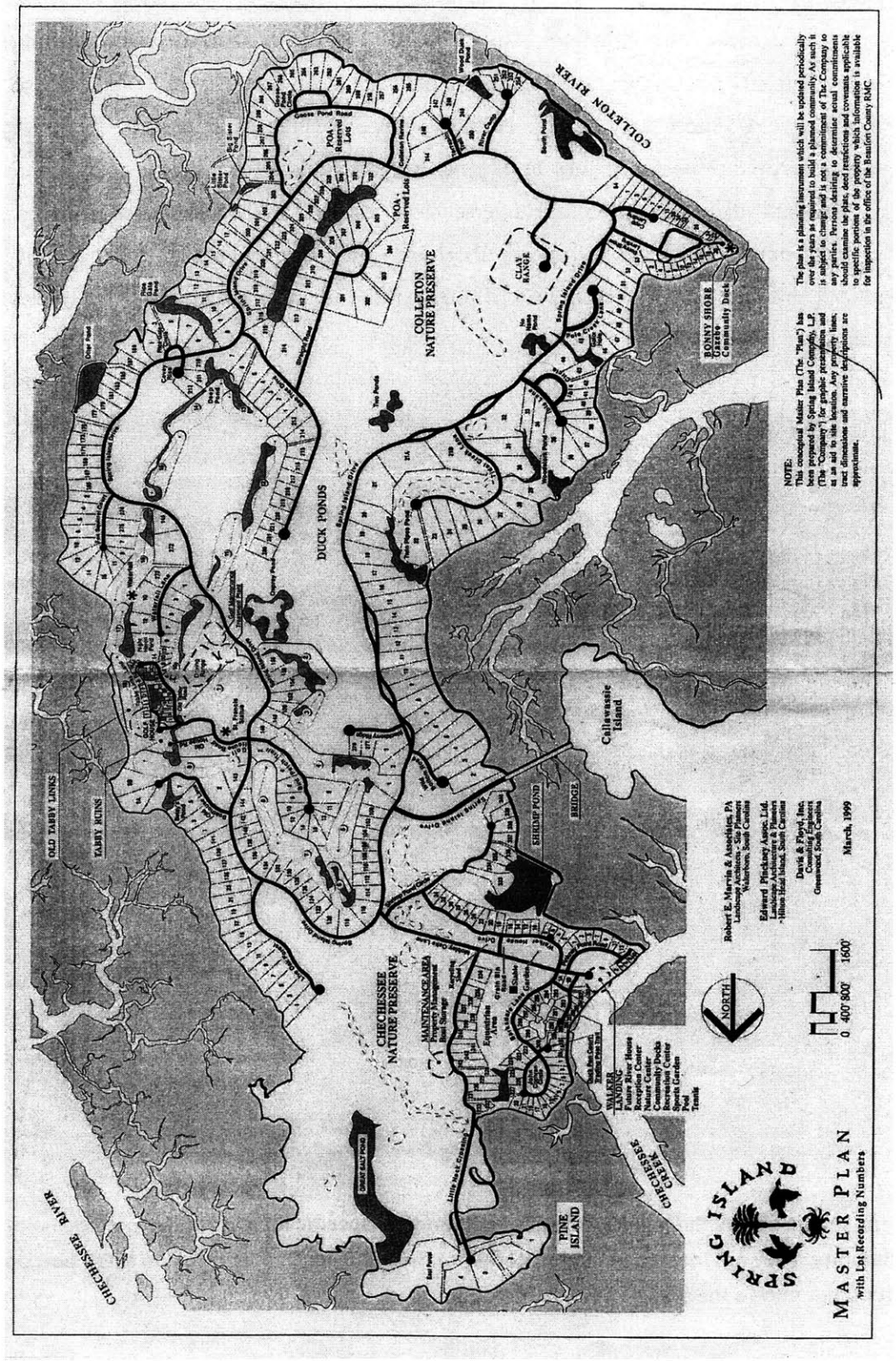
Planning and Design

When Jim Chaffin began developing Spring Island, his first conclusion was that in order to protect the Island he had to understand it. From the outset of the project he brought together a team of consultants that included a biologist, a naturalist, a forester, a landscape designer, and an environmental scientist to conduct and extensive inventory and assessment. This included baseline data on all natural resources, soils and topographic features[111]. The information was then entered in to a GIS database where further study and analysis could be performed. The team even created individual species maps to better understand animal habitats. The team of scientists delineated critical wildlife habitat, wetland, and other important vegetative areas[112]. The developer then used this data to decide what land to set aside as a nature preserve. The GIS assessment guided site planning and design decisions to minimize the impact of trails, dirt roads, buildings and a golf course and to allow maximum diversity of plants and animals. While the island already had approvals to build 5,500 units, Chaffin felt that this many homes would ruin the island and reduced the number to 500 for the initial economic feasibility planning[113]. The results of these decisions are a successful development where people and the environment thrive on the Island.

Housing Concept

Among the lowest density communities on the Eastern seaboard (.17 DU/AC-gross), Spring Island will have 410 homes on 3000 acres at completion. The traditional Lowcountry style of architecture found close by in historic Beaufort and nearby rural plantations serve as references for traditional and contemporary interpretations for homes at Spring Island. Home sites are two to ten acres (.8 to 4 hectares) in size and all have superb and diverse views ranging from golf course, to dense forest, to marsh, river and fresh water lakes. Cottage neighborhoods are adjacent to the three community gathering areas – Walker Landing, Bonny Shore and Old Tabby Links and are approximately one-quarter to three-quarters of an acre (.1 to 3 hectares).

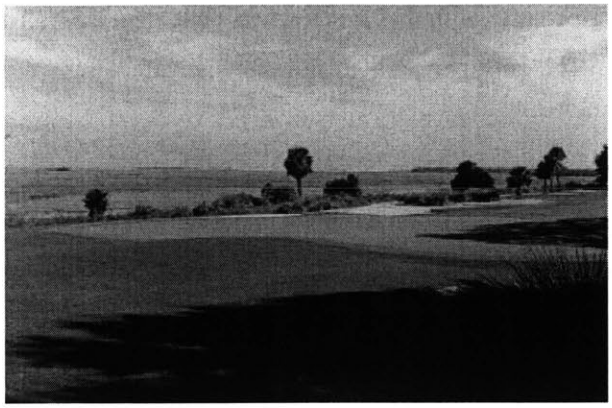
The following image shows the general layout of golf and the specific location of two cottage neighborhoods in the community. They are located in the top-center of the map, the Old Tabby Links Neighborhood, and the bottom left corner shows the Walker Landing neighborhood. Source: The Spring Island Company


COLLETON RIVER
COLLETON NATURE PRESERVE
DUCK PONDS
CHECHESSEE NATURE PRESERVE
CHECHESSEE RIVER
CHECHESSEE CREEK
Callawassie Island
PINE ISLAND
BRIDGE
SHRIMP POND
CLAY RANGE
BONNY SHORE
OLD TABBY LINKS
TABBY RUINS
NOTE:
This conceptual Master Plan (The "Plan") has been prepared by Spring Island Company, LP. (The "Company") for graphic presentation and as an aid to site location. Any property lines, tract dimensions and narrative descriptions are approximate.
The plan is a planning instrument which will be updated periodically over the years as required to build a planned community. As such it is subject to change and is not a commitment of The Company to any parties. Persons desiring to determine actual commitments should examine the plats, deed restrictions and covenants applicable to specific portions of the property which information is available for inspection in the office of the Beaufort County RMC.
Robert E. Marvin & Associates, PA
Landscape Architects - Site Planners
Walterboro, South Carolina
Edward Pinckney Assoc. Ltd.
Landscape Architecture & Planning
Hilton Head Island, South Carolina
Davis & Floyd, Inc.
Consulting Engineers
Greenwood, South Carolina
March, 1999
NORTH
0 400' 800' 1600'
SPRING ISLAND
MASTER PLAN
with Lot Recording Numbers

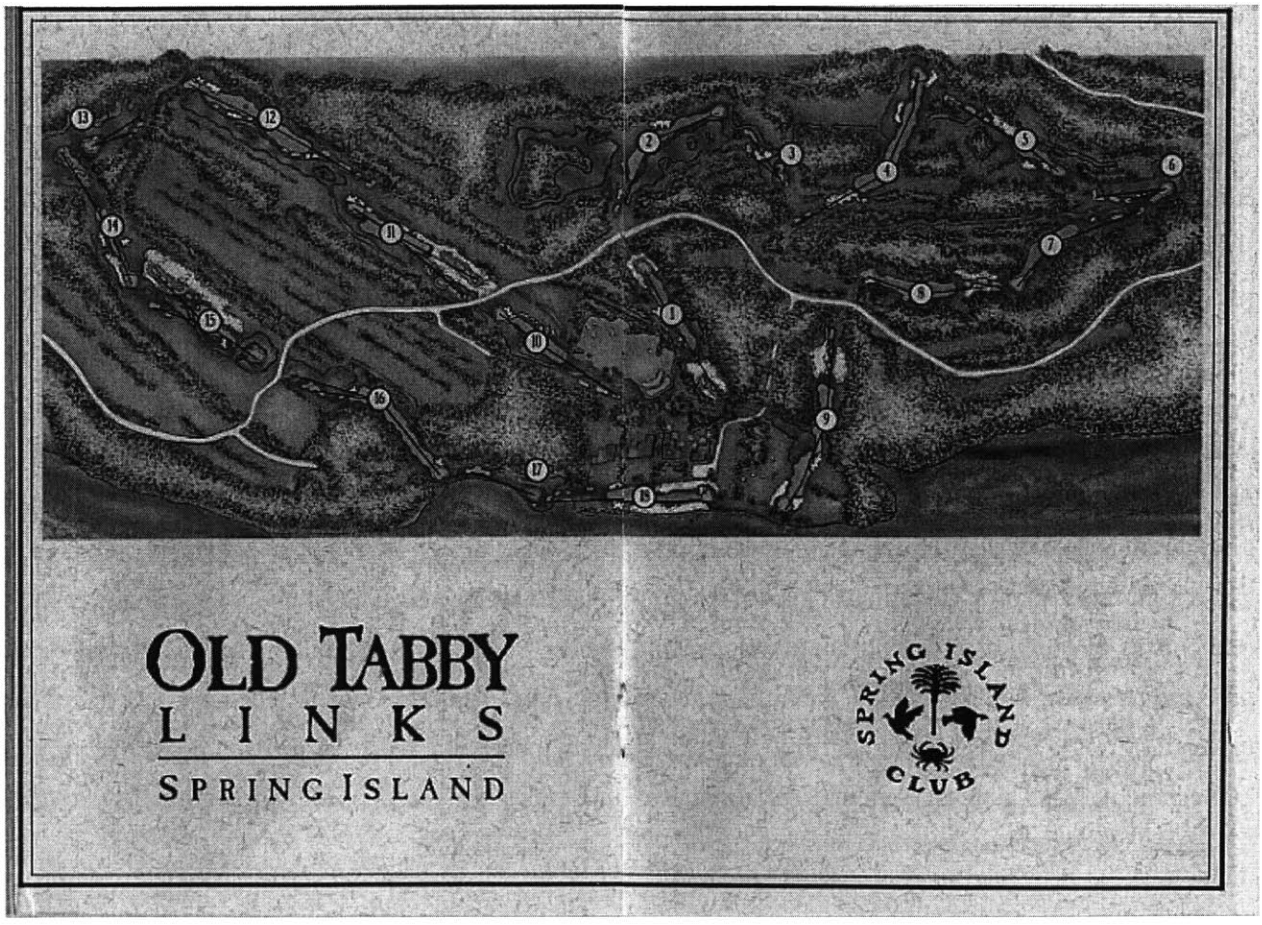
With more than 30 years of experience in real estate projects, Chaffin has learned that developers can realize the greatest outcome from their investment in the land through comprehensive site assessment and design integrated with the natural environment[114]. "As developers, we need to have humility regarding the importance of a property's natural amenities. We often believe that we can improve the value of a property, or enhance the customer experience through man-made facilities. I believe that the first goal should be the thorough assessment of, and the protection and enhancement of, a property's natural features[115]." For Chaffin, the highest and best use of the land extends far beyond greatest net financial return. "Providing the opportunity for personal connection with the land and surrounding natural environment offers more personal nourishment and spiritual fulfillment than any of our "developer's amenities[116]," he says. "What greater product can we offer our customers?[117]" The Spring Island Trust has received awards from such organizations as the South Carolina Wildlife Federation, the South Carolina Department of Natural Resources, and Renew America. One might conclude that all of the environmental success has been at the compromise of financial performance. "Not so," says Chaffin, who notes the project has been highly successful financially and exceeded initial financial expectations[118].

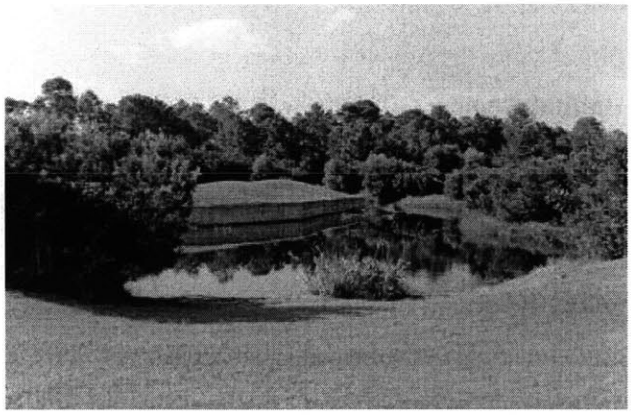
Old Tabby Links

Spring Island's golf course earned certification by Audubon International[119], which administers the Audubon Cooperative Sanctuary Program for Golf Courses. Spring Island has enjoyed much positive press for its 'ecologically planned' golf course. In planning the course, the team paid careful attention to preserving archeological and historic sites and protecting coastal areas and wildlife habitats. The facility incorporates lagoon systems that collect and filter runoff from the course and filter it before it is reused on the course. Dunes, marshes, and grass buffer zones provide wildlife habitat and collect, while filtering runoff from the Spring Island golf course. Many of these features act as hazards and are seamlessly integrated to the design and play of the course. The course design and layout accommodated native grasses, aquatic plants, and many trees. Trees removed to create the golf course were transplanted to other areas of the island during the development. Through this multidisciplinary planning and design process, the team made specific recommendations for prescribed burning, bush hogging (to manage understory), tree management, natural succession areas, pond and fisheries management, and wildlife management. This process remains collaborative, and the team meets four times annually to assess progress.

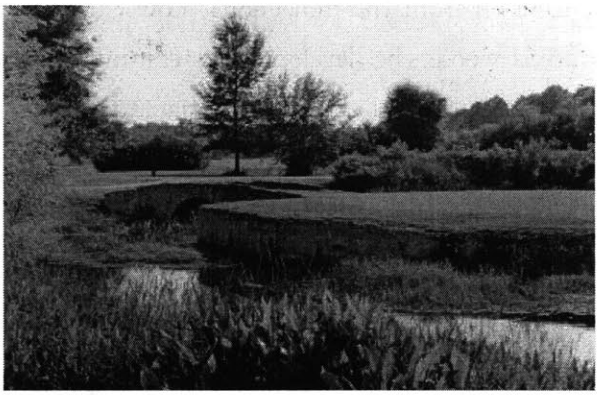


In planning the course, the team paid careful attention to preserving archeological and historic sites and protecting coastal areas and wildlife habitats. Dunes, marshes, and grass buffer zones provide wildlife habitat and collect, while filtering, runoff on the Spring Island golf course. Photo: JW Rapson



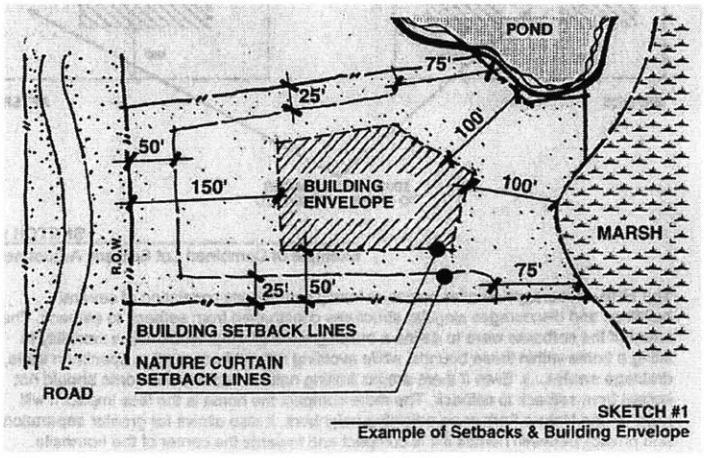


Old Tabby at Spring Island, designed by Arnold Palmer and Ed Seay was named for the ruins of the Edward's Plantation, which it surrounds, the course is an extraordinary setting for golf. From the Golf House, the front nine weaves through old-growth forests, while the back nine opens to expansive views of marshes and rivers. Both the 9th and 18th holes return to the Golf House and offer magnificent views of Port Royal Sound. Photo: JW Rapson



Habitat Review Guidelines

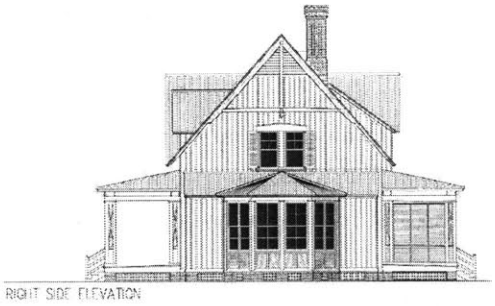
At Spring Island, an architectural and habitat review board also scrutinizes all home plans, including siting, landscaping, and alteration of natural vegetation. This ensures to that each proposed residence meets the strict environmental control standards established for the development[120]. The intent is to guide the design of the houses so that a house is created that is rooted in local building traditions. The guidelines also ensure that the houses will have a low impact on the island from both a visual and an environmental standpoint. "When the houses are hidden, people feel less of a need to show off," explained Jim Chaffin.[121] This philosophy and approach wasn't an easy sell at first, and the early years of the Spring Island development were financially uncertain[122]. Paying more than $250,000 for two-acre lots, buyers believed they should have their own say about their property[123]. But the Chaffins refused to compromise, citing the needs of the island over the desires of residents. Time has now begun to show the immense visual as well as financial returns this philosophy and concept have returned. Additionally, the habitat review guidelines call for efficient appliances, high-performance windows, and passive ventilation from the indigenous "Low Country"—style architecture, recycling centers, and sustainably sourced wood. The development's community office keeps and updated database of sources for various other products considered appropriate to use.[124]

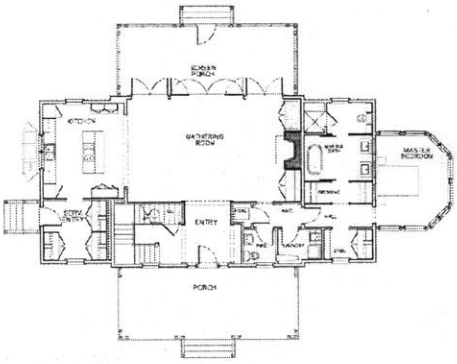


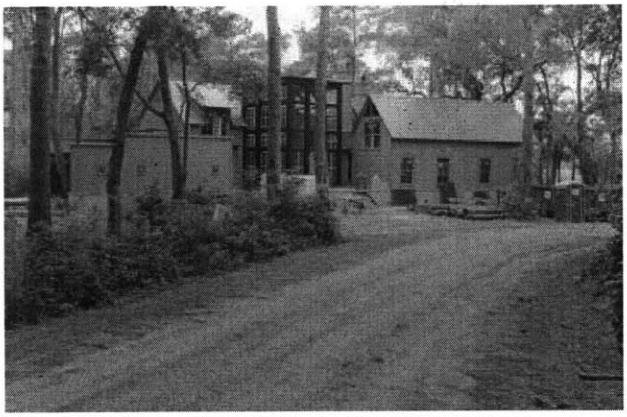
One of several signature environmental features in the development strategy and community program was the idea of a "Nature Curtain." The intent, successfully executed, was to mandate that each of the houses must maintain a 50-foot "curtain" of natural vegetation. The nature curtain provides vital habitat for animals while maintaining the visual illusion of a wilderness. Source: The Spring Island Trust / The Spring Island Company

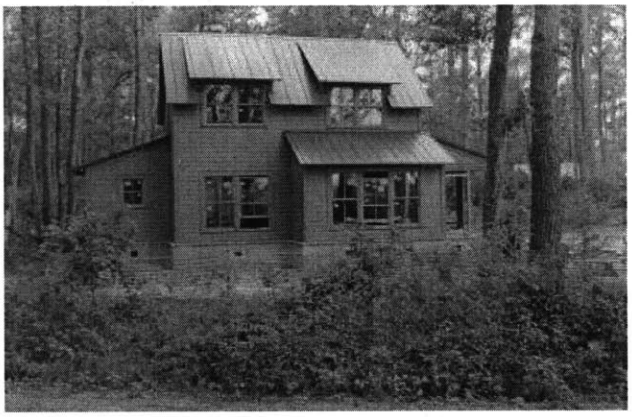
The following images illustrate the effects of the architectural design guidelines used across the Spring Island development that are designed and written to create a varied, but consistent, regional vernacular of Lowcountry architectural traits such as the pronounced porches that line the house while providing shade.

Source: The Spring Island Trust / The Spring Island Company



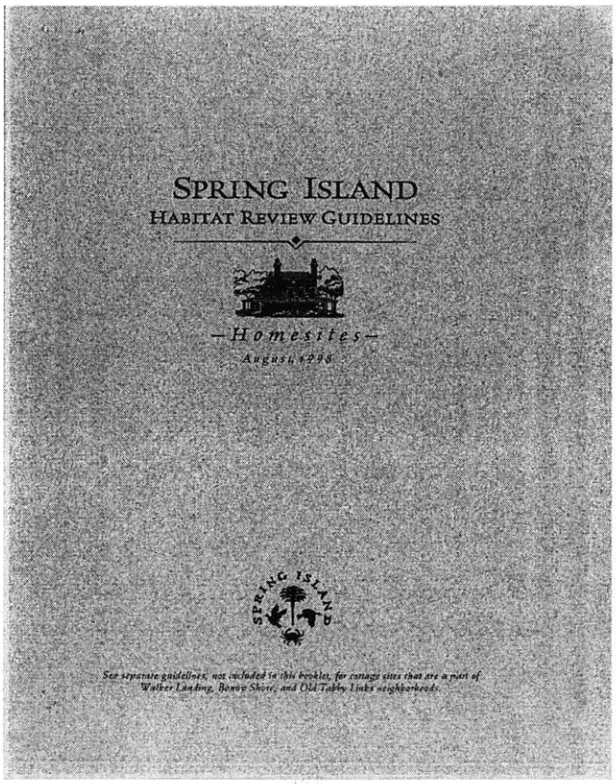


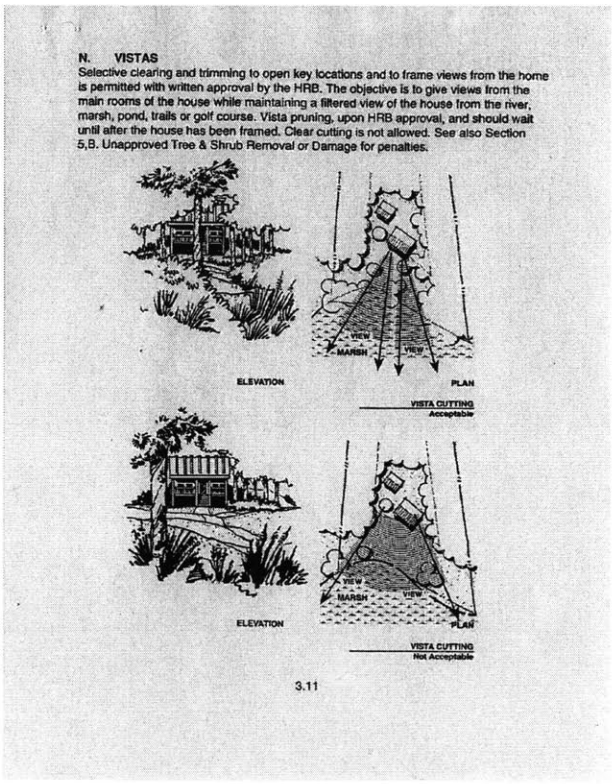




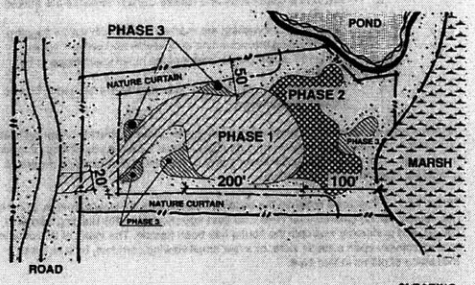
The Following images show a brief sampling of the architecture and site development standards prescribed by the development company and required by owners. These documents are appropriately known as the "Habitat Review Guidelines."

The Habitat Review Guidelines (on the following pages), administered by the architectural and habitat review board scrutinizes all home plans, including siting, landscape, and any alteration of natural vegetation. The guidelines ensure each proposed residence conforms to strict environmental standards. Buyers are required to spend a day with a local naturalist and attend a two-day seminar on designing with nature before they plan their new home. Construction must start at least 150 feet from the road to discourage "competitive and pretentious" homes while securing habitat for migratory songbirds. Source: The Spring Island Trust / The Spring Island Company





C. CLEARING GUIDELINES



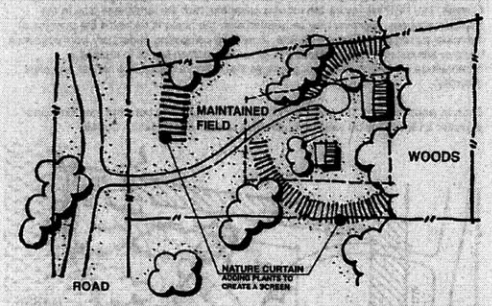
CLEARING
Phase Diagram

Phase #1- This area represents the initial phase of clearing. The clearing of underbrush can begin by careful bush hogging of a single, narrow and winding entrance connection from the existing road. This swath can be one or two widths of the bush hog and should be aligned in such a way as to respond to any significant specimen trees or other masses of existing specimen vegetation. The intent is to maintain a privacy screen, or "Nature Curtain", from the road right-of-way to the building envelope. The building envelope area can then be cleared in a zone roughly defined by the setback lines on the sides and extending about 200' into the lot from the 100' wide marsh, pond or golf course setback. Although this can be done with the bush hog, careful consideration should be given to the preservation of desirable understory plants to remain such as dogwoods, redbuds, American hollies, tea-olives or sparkleberry. These plants should be identified and hand clearing should occur around these plants. This phase can happen prior to an HRB Building Permit with written request from the

5.5

NATURE CURTAIN, continued

On homesites with an existing open field or where there is a meeting of woods and fields- the Nature Curtain becomes a planting strategy that is not controlled by offsets from property lines, but rather a planting plan tied to the siting of the house and the addition of vegetation to create an effective screen for the home. This may mean siting the home discreetly behind an existing hedgerow or near a stand of existing trees for scale, then adding trees and shrubs to create a filtered view of the home from neighboring lots and thoroughfares. These screen trees, when placed properly, could also have the additional function of shading the house or the site.



NATURE CURTAIN
Open Field Homesties

Please Note: There is no Nature Curtain setback between the home and vistas to the river, marsh, pond or golf course. The area between the home and these site amenities may be only selectively cleared. See guidelines on *'Vistas'* within this section.

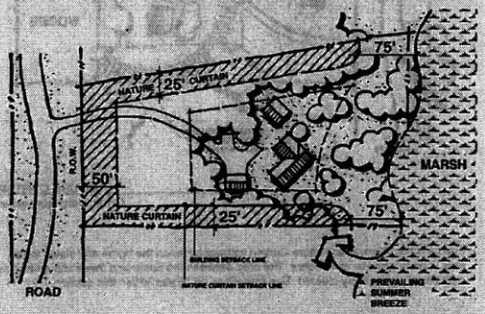
3.8

NATURE CURTAIN; continued

On predominantly wooded lots- the Nature Curtain Setback corridor is 50' from the property line at the road and 25' from each side property line. Only selective cutting may take place within this setback and underbrushing or clear cutting is not permitted. The Nature Curtain Setbacks along the side property lines end 75' from the edge of the river, marsh, pond or golf course (the amenity side). This area can be part of the "Vistas" (see guidelines on "Vistas" within this section). This offset from the edge of a site amenity allows flexibility in locating the selective framed views.

An owner may request approval for selective cutting of small openings in the Nature Curtain. The HRB will review the request submitted with the landscape plan in the approval process. Approval may be granted after the home is framed if the purpose of selective cutting is: to increase air flow; to remove competing understory from specimen trees or shrubs; to remove noxious plants such as poison ivy; or to replace a monoculture of plant species with plantings that improve the wildlife habitat and plant diversity.

Even in wooded areas, the addition of native screen planting between the home and adjacent lot lines may be needed to enhance or establish a Nature Curtain.



NATURE CURTAIN
Wooded Homesties

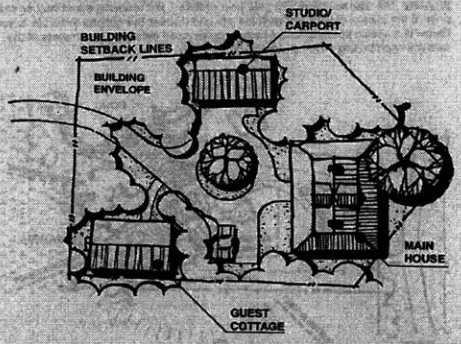
3.7

SETBACKS, SITING & MASSING, continued

Massing - Since Spring Island estate homesites are generally 2+ acres, owners are encouraged to design small homes or family compounds utilizing separate buildings rather than designing a singular, large massed structure under one roof.

Porches, verandahs, balconies and trellises can help reduce the visual mass of the house in addition to providing needed shading. Typical of the Lowcountry house, these elements reduce penetration of direct summer sun into the living space.

If the main house is 2 stories, it is suggested that this structure be placed in the center of the lot to minimize intrusion of privacy to the adjoining property. Below is the massing configuration of a Spring Island residence which would fit discreetly into the landscape while providing the owners with a family compound.



SKETCH #4
Massing of the Residence

R. SKYLIGHTS

If skylights are proposed, the HRB requires the submission of manufacturers literature and specifications to evaluate the quality and suitability of the proposed skylights (visibility from off-site and consistency with architectural style).

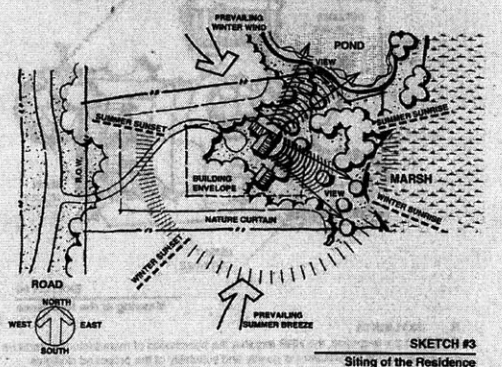
2.14

SETBACKS, SITING & MASSING, continued

Siting - In a climate like that of Spring Island's, the integration of strategies aimed at shading the house and cooling it through natural ventilation will be important to the comfort the house affords. Passive solar heating can easily be accomplished by south facing glass during winter months but shading should be carefully considered to avoid overheating in the summer months.

When designing the house note the direction of the prevailing winds and place windows to facilitate potential cross-ventilation.

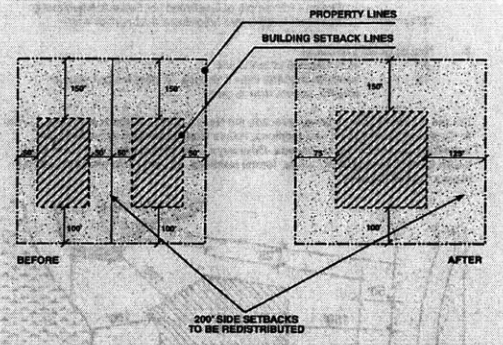
One of the services offered by the HRB is the availability of a representative versed in site planning and a naturalist who are familiar with the Island and can lend invaluable insight regarding the options available for the optimum placement of the home on the property. The staff will meet with you, your architect and landscape architect or designer prior to the start of design, will walk the site and discuss the options available to you. Below is a sketch showing how a home may be sited within the parameters of the setback and building envelope shown in Sketch 1.



SKETCH #3
Siting of the Residence

SETBACKS, SITING & MASSING, continued

If multiple adjoining lots are owned and combined for one homesite, the building setback line from an adjoining property line should exceed the minimum 50' setback. The cumulative side setbacks should at least equal the side setbacks of the former lots.



SKETCH #2
Example of Combined Lot Setback Adjustment

The HRB encourages smaller homes or family compounds consisting of several buildings and discourages singular structures constructed from setback to setback. The intent of the setbacks were to define a building envelope that would allow flexibility in siting a home within these bounds, while avoiding natural features (i.e. specimen trees, drainage swales...). Even if there are no limiting natural features the home should not sprawl from setback to setback. The more compact the home is the less impact it will have on the Nature Park or on adjoining neighbors. It also allows for greater separation and privacy between homes if it is compact and towards the center of the homesite.

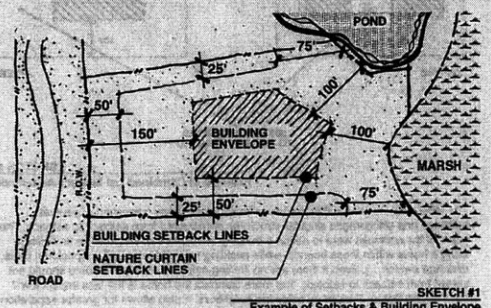
SETBACKS, SITING & MASSING, continued

Building Setbacks- Applies to all vertical construction greater than 18" from natural grade

- 50' to 100' - from edge of pond, marsh and other waterfront site as determined by the mean high water line and/ or change in vegetation to upland plant species
- 50' to 100' - from golf course corridor boundary line, whether it be the side or rear yard adjoining the course
- 50' - from an adjoining property line (greater for combined lots; see Sketch #2 Example of Combined Lot Setback Adjustment)
- 75' to 150' - from front or side yard adjoining a road right-of-way

2. Nature Curtain Setbacks
   - 50' - from roadside property line
   - 25' - from side property lines and ends 75' from the golf course corridor, marsh, river or pond

For the definition and guidelines effecting the Nature Curtain Setback area, please refer to Section 3, Landscape Considerations, Nature Curtain. Minimal disturbance of vegetation can occur within this area. Driveways (with the exception of the entrance), septic fields, decks, grading, lawns, formal plantings, etc. are not to encroach into the Nature Curtain Setback.



SKETCH #1
Example of Setbacks & Building Envelope

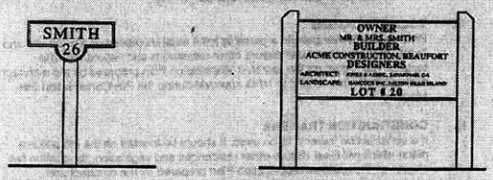
D. SIGNAGE

No temporary contractor signs are permitted along Spring Island roads. Prior to issuing the Spring Island building permit, the contractor or owner (at their expense) is to post the permanent address sign at the road to facilitate personnel and material deliveries and for site identification in case of emergency.

The contractor or owner may elect to post the standard contractor/designers sign on the site a maximum of 25' from the building.

Information about the sign supplier, and approved address number, may be obtained by contacting Spring Island HRB office at (843) 987-2000.

The address number assigned by the local "911" emergency system can be different than your lot recording number. The HRB office has a record of the assigned "911" address numbers that need to be used on your sign.



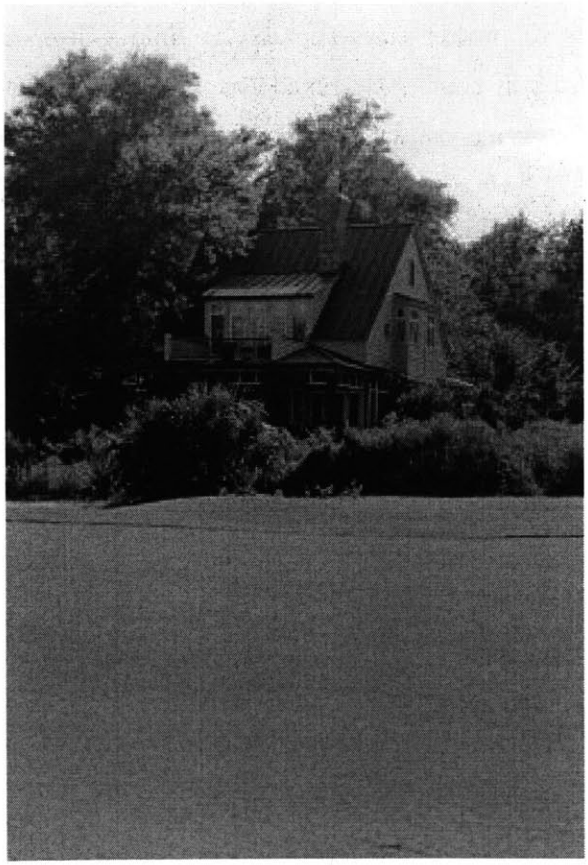
ADDRESS SIGN

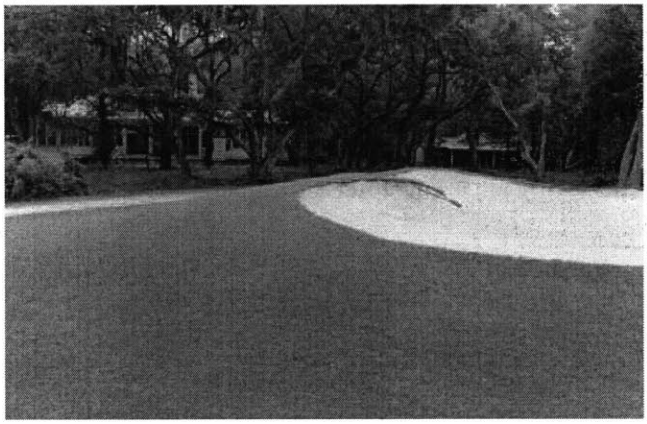
CONTRACTOR/DESIGNERS SIGN

CONSTRUCTION SITE
Signage

E. NOISE

The use of loud radios are not allowed on the construction site. Contractors may be asked to curb use of radios altogether if the HRB receives a complaint.





The following images illustrate the care that is given to integrating the existing surroundings with the new structures under construction. The Habitat Guidelines for the island helped facilitate this type of sensitive development by requiring that builders attend seminars given by the Trust and pay specific attention to their crews so that the necessary precautions are taken to protect the natural surroundings during construction. Photo: JW Rapson

Approvals and Community Support

Spring Island's approval process was essentially uncontested and simple, with little opposition from the community or government agencies[125]. Beaufort County is known for having fairly stringent environmental protection ordinances in its governance code and Spring Island met or exceeded these requirements on all points[126]. The developers never submitted a Planned Unit Development (PUD), but rather worked in a partnership and applied for approvals on an "as needed" basis. Instead they platted single-family lots one phase at a time[127]. This is considered atypical under standard development practices. Charles Gatch, a longtime employee of the county's planning office, had hunted on Spring Island as a child, yet despite seeing his childhood hunting grounds turned into luxury homes, Gatch believes Spring Island's developers have exceeded expectations, "given the reality that the island would eventually be developed[128]." Gatch felt that the lack of opposition to the project might be attributed to the fact that the Island was already approved for four units per acre (5,500 homes) and the developer's plan had a far lower density[129]. Gatch, however, also praised Spring Island's strict codes, covenants and restrictions (CC&R's), conservation easements, efforts to protect trees (notably, a unique live oak forest), archeological preservation, and artfully designed golf course. He noted that Beaufort County draws people who are looking for "peace, quiet, trees, and scenic vistas," so a developer would be stupid to destroy what encourages people to buy[130]."

Dewees Island: Dewees Island, South Carolina

"Development and the environment are natural allies."

-- John Knott, Developer

The history of Dewees Island can be viewed as a microcosm for the history of the Low country. Once designated by the British Empire as part of Christ Church Parish, Dewees today reveals a wealth of historic information from shell middens and artifacts documenting prehistoric activity to written records

dating to the 17th century[131]. Walking the island, a keen eye will notice piles of shells in and around the marsh. Dating back to the Ceramic Late Archaic period (2,000-500 B.C.), these mounds are the trash heaps of early residents who deposited and burned the remnants of their diet, mostly shellfish.[132]

The earliest known document relating to Dewees was written in 1697 and shows the island to be the property of Colonel Thomas Carey. Carey had served as Receiver General of the Lord's Proprietors and Deputy Governor of North Carolina[133]. He received the hunting island, then known as Timicau, as a grant for his service to the crown. In the mid 1700s, William Dewees took possession of the land and soon after, Cornelius Dewees began operating a shipyard on the island supplying ships for the West India trade[134]. An advertisement for the sale of Dewees Island can be found in the "City Gazette and Daily Advertiser" on Friday, February 25, 1791, and implies a wide range of potential land uses. It read, "The tract contains 900 acres of high land, more or less, and on the premises are, a comfortable dwelling house, containing five rooms, an overseer's house of two rooms, a barn 40 by 80, a corn house 28 by 20 feet, a kitchen, stable, poultry house, dairy, smoke house and servant houses, to accommodate 30. Four hundred acres are good for indigo, cotton and corn, 60 of which are cleared and 40 under fence; the remainder well timbered with young live oaks and pine, with a number of palmetto trees fit for market[135]."

The diversity of habitat and landscape on Dewees differentiates this island from all others. The developer, in cooperation with a restoration ecologist, has re-established and protected its dunes and beaches. Photo: JW Rapson

The early 1800s found Dewees Island with two new owners: Elizabeth Deleisseline and John Lewis Poyas[136]. History of the island's ownership for the next 100 years is both cloudy and complex. The island changed hands several times including repossession in 1900 by the Deleisseline family, until October 31, 1925, when it was sold to Coulter D. Huyler[137]. Among other construction, Huyler built the 'long road' in

the 1930s to connect the north and south sections of Dewees by their western ends. Mr. Huyler sold the island to the R. J. Reynolds family in 1952 for $80,000, which used the island as a hunting retreat[138]. In the 1970s, the island was purchased by an investment partnership, and the first "modern" residential homes were built on the island by Robert Royall, Jr., Edward Royall, and Robert "Bobby" Kennedy, IV[139]. In 1992, the existing owners of Dewees Island merged with another investor group, and together they formed Island Preservation Partnership (IPP). IPP is currently developing the island as "a private, oceanfront, and island retreat dedicated to environmental preservation[140]." The developers will be selling no more than 150 homes, and the development plan strictly protects the island's natural beauty.

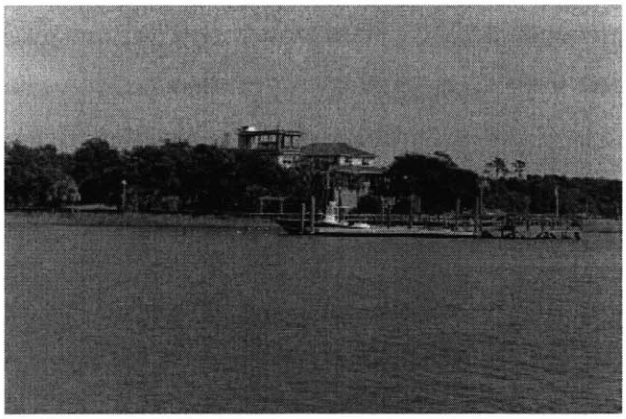
The 1206-acre island, located 12 miles north of Charleston, South Carolina, has attracted national attention as a model of sustainable development. According to Knott, dozens of groups have sought speakers and information on Dewees, or have come to tour the project[141]. These include the American Institute of Architects, Southern California Edison, Environmental Protection Magazine, American Solar Energy Society, U.S. Department of Energy, International Energy Agency, Rocky Mountain Institute and the U.S. Green Building Council.[142]

Dewees Island enjoys sweeping views of the inner-coastal waterway, the marsh environs and the Atlantic Ocean. To protect the sightlines, architectural guidelines and environmental controls prohibit houses from exceeding the height of the top of the surrounding tree line. Photo: JW Rapson

The island's environmental covenants limit the number of homes to 150, and cluster them in the most ecologically hardy area. Builders agree to follow a comprehensive set of design and construction guidelines that aim to ease the impact of construction on the island, as well as to reduce the amount of energy and resources that the island's homes use. The guidelines require homes to minimize energy consumption through the use of solar heating, daylighting, shading devices and prevailing summer

breezes. Highly efficient appliances and environmentally responsible building materials are also encouraged, but not required. Homes must be surrounded by native vegetation (no lawns are allowed) and only 7500 sq. ft. of each lot can be disturbed by construction, regardless of the size of the lot[143]. Waste management and recycling programs have been developed for the construction phase, as well as for the home occupants once the island is built-out.

The island's infrastructure strives to minimize its effects on the environment as well. Though the developers installed the usual underground phone, water, and power lines, the similarity to typical island development projects stops there[144]. The five roads are not paved with impervious surfaces; rather, they are surfaced with crushed limestone. The developers also installed complete recycling and composting systems, as well as a central reverse osmosis water system that supplies the island's drinking water[145].



Dewees Island is not accessible by car instead, the island (developer) operates a water shuttle, shown above, which runs on an hourly schedule transporting residents and their guests on and off the island. The ride between the two destinations is approximately 20 minutes. Photo: JW Rapson

As one might think, building in a development such as this puts a lot of demands on the builder. "Absolutely," says Knott. "Consider the factors that the average Dewees home builder addresses in building a home: these include energy conservation, resource reduction, environmental impact, recycling, green building, indoor air quality, water quality, waste management, flood management, native landscapes, habitat impact and community development[146]." Knott also realizes that while many builders want to pursue environmentally responsible housing, they simply lack the skills[147]. To prepare builders, the Partnership holds seminars on green building, and encourages buyers to choose their architect and builder from the list of those who have completed the course. The education doesn't stop with

management. Each member of the construction crew must read and sign the island's environmental guidelines which commits them to follow and conform to the vision of the development[148]. In addition, the Partnership sponsors trade shows to showcase green building materials, and to create relationships between suppliers of environmentally friendly building materials, builders and architects.

Year-round, planned educational and environmental programs offer property owners and their guests the chance to learn from experts on bird life, barrier island dynamics, conservation easements, and mystery cats. A vista of Old House Lagoon offers the chance to learn more about egrets and herons which call Dewees home. Photo: JW Rapson

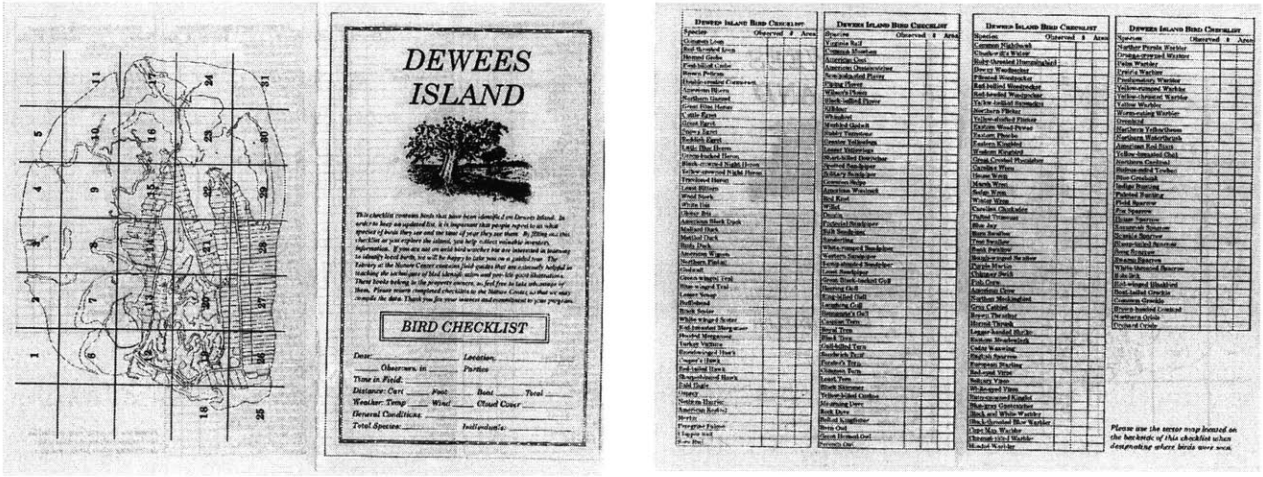
The extra effort has paid off with almost 80 percent of the project's lots being sold as of September 2001. With lot prices on the island from $350,000 to $1,450,000, the project attracts a narrow segment of homebuyers at the upper bound of the income spectrum. These homebuyers believe the goals of environmental awareness, conservation, and comfort can be complementary and are therefore attracted to buying property at Dewees. For the developer, sustainability is an amenity, so it becomes a key part of the marketing package. Dewees' literature stresses the lifestyle benefits of living close to nature, as well as the reduced energy and maintenance costs of running an efficient home.

Community and Environment

Principles of Community Building

Although Dewees has received much recognition for its environmental focus as a leading sustainable residential development[149], it cannot truly be sustainable without serving the needs of its owners...the human community of Dewees[150]. True sustainability relates not only to the environment and long-term value of buildings and infrastructure, but also to the ability of the human community to endure and thrive. John Knott believes that successful communities have at their core a unique heritage, a common

vision and a mission for the future that bonds them together[151]. He feels the key elements that must be present to build an enduring self-sustaining community are education, involvement, control/ownership and a sense of value[152]. A successful community's foundation is built with education in the basic history of its people, events and physical nature, its geography, constitution or governance, the environment and its contributions[153]. Knott feels strongly that knowledge needs to be possessed by each community member to establish an intuitive sense of our individual and collective worth and value. Inherent is this approach in the recognition by each member that we are "Trustees Of The Past" and "Stewards For The Future[154]".

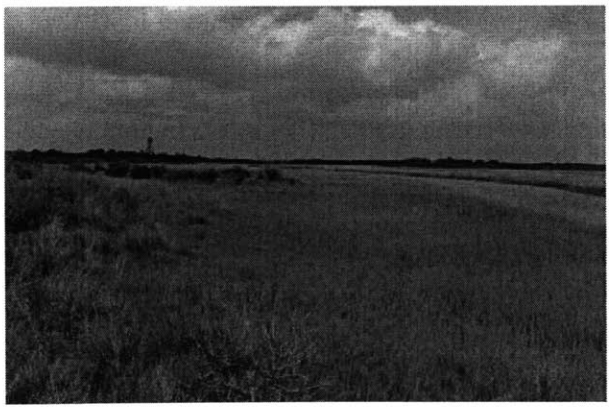


The 'Bird Checklist' is one example of the educational outreach and programming that is structured at Dewees Island. Residents are encouraged to participate in the environmental management efforts of the island by retuning these observation forms to the landscape ecologist so that the data can be complied and tracked over time. Source: The Island Preservation Partnership

Interestingly, Knott believes that each of us has been a member of a successful community. It could be a fraternity or sorority, a new town or revitalized neighborhood, a thriving and dynamic church or school, a civic or social club, a business or nonprofit corporation, or a professional or trade group. Knott reasons that the glue that bonds a community is its vision for the future and how it defines its traditions and values[155]. He feels these two concepts determine the structure and format of the community's governance. It also establishes the priorities and focus for the governing bodies[156].

The Dewees Mission and Philosophy

Similar to most new ideas, real estate developments begin with inspiration or a vision. This is not a vision of what the finished product will look like, but rather what the project will be—its features, its relationship to the environment and the community, and its overarching attributes and characteristics[157]. Development and the environment are natural allies, says the developer of Dewees Island[158]. Taken out of context, you would expect it to catch the ear of the average environmentalist and call for a laugh. In reality, a number of environmental groups have praised this high-end residential development, which bills itself as "a private, oceanfront island retreat dedicated to environmental preservation[159]." The statement sums up a philosophy that this community puts into practice. Its success holds lessons for anyone building energy- and resource-efficient housing sited sensitively within its environmental context.



In recent years increased development has made sweetgrass harder to find. Dewees Island has an agreement with sweetgrass basket weavers in Mt. Pleasant, so that the basket makers can come to Dewees and harvest sweetgrass and palmetto in exchange for their knowledge. Several times a year the basket weavers come to the island to demonstrate this unique form of art, developed during the slave trade period. This is an example of how the developer's philosophy and vision have responded to the regional context of the area while at the same time adding an educational (value creating) event for the owner's of Dewees Island. Photo: JW Rapson

The mission of Dewees Island is quite simple, "to ensure that the Dewees Community is built to last."[160] As it is communicated to the project's owners, the mission and philosophy read as follows[161]:

Ensure that the Dewees Community is built to last. Based on our Dewees Island core values as a private island community, dedicated to environmental preservation, clarify the impact of the transition, proactively communicate with all property owners and staff, and make recommendations to the POA board to help build and maintain a strong community, in which we respect each other and the environment.

It is this mission that has helped the development team remain focused on the project's values[162] and development principles[163]. Knott feels strongly that in order to integrate these principles and values into a development and/or building program, you need to build a data base on the natural site resources of topography, geology, vegetation, sun, wind and water to facilitate the decision making for the goals mentioned above. Similar to Spring Island, Dewees Island utilized a GIS and database system to assist the decision makers[164].

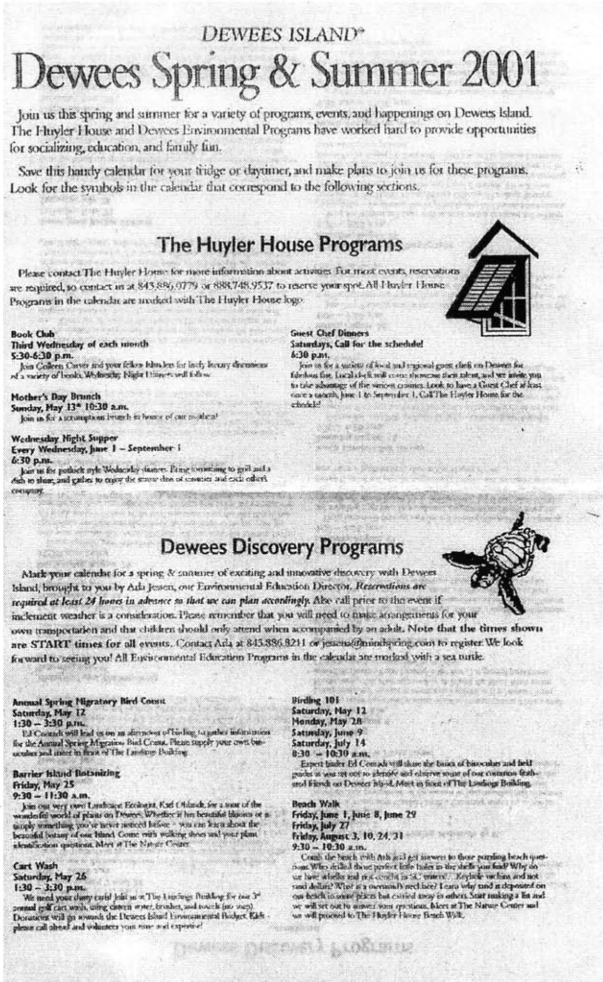
A Self-Governing Community

The management of Dewees Island is directed by the Property Owners' Association Board members, who make their management decisions through regularly scheduled meetings. Everyone who purchases on Dewees Island becomes a member of the POA, and all POA Board meeting are open to all property owners[165]. The year 2000 marks the transfer of leadership and control of Dewees Island from the developer to the property owners association. Gradually the developer has conveyed significant responsibility to the owners', and as of September 2000, the complete transition occurred[166]. The control of Dewees was transferred to the Property Owners Association (POA) from the developer, Island

Preservation Partnership. This change gives majority control of the POA Board to the community[167]. Now the owners who have chosen Dewees Island as their home are in the leadership role for the Island and its future. This transition began two years ago when the developer set up a transition committee whose purpose was to prepare for the transition. The Transition Planning Committee worked with both the property owners and the Developer to anticipate changes that the transition would necessitate. The Dewees Island POA is a dedicated group of individuals who have chosen Dewees as their home and who are now guiding the future of the project[168].

Environmental Stewardship and Operations

Unlike Spring Island, Dewees Island does not have a 'Trust,' *per se*, that has been setup to formally manage and oversee the conservation and development activities on the Island. Rather, Dewees accomplishes the same outcome by using the POA in the same way that Spring Island uses the Land Management Trust[169]. They use a different approach, but accomplish the same outcome—land stewardship and conservation. Like Spring Island, Dewees also accesses a transfer fee on the purchase (1.5%) and sale (1.0%) of property on the Island[170]. Similar to Spring Island, these funds go towards the conservation and environmental protection efforts. One of the primary appeals of buying at Dewees Island is that it is a 'teaching and learning community[171].' Comparable to Spring Island, Dewees has an extensive environmental education and community events program that serves to educate residents about the Island's environment as well as to foster a general sense of community on Dewees. The island has a full time naturalist and an environmental educator who both work to conserve the Island's resources[172]. The following figure demonstrates the breadth of programming at Dewees and serves as an example of the frequent publications from the property owners' association promoting different venues.



DEWEES ISLAND

Dewees Spring & Summer 2001

Join us this spring and summer for a variety of programs, events, and happenings on Dewees Island. The Huyler House and Dewees Environmental Programs have worked hard to provide opportunities for socializing, education, and family fun.

Save this handy calendar for your fridge or daytimer, and make plans to join us for these programs. Look for the symbols in the calendar that correspond to the following sections.

The Huyler House Programs

Book Club
Third Wednesday of each month
5:30-6:30 p.m.

Guest Chef Dinners
Saturdays, Call for the schedule!
6:30 p.m.

Mother's Day Brunch
Sunday, May 13th 10:30 a.m.

Wednesday Night Supper
Every Wednesday, June 1 – September 1
6:30 p.m.

Dewees Discovery Programs

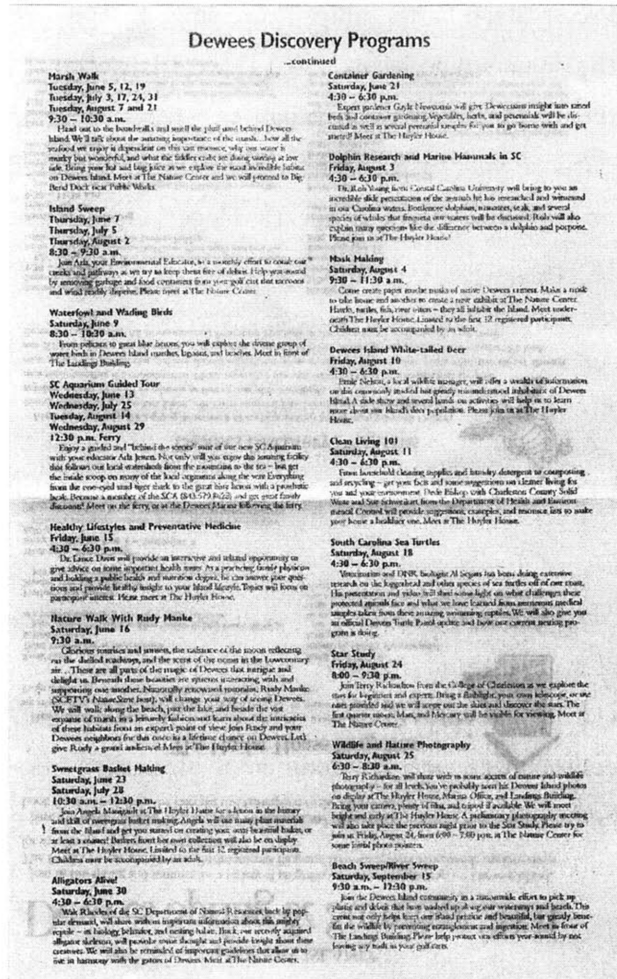
Annual Spring Migratory Bird Count
Saturday, May 12
1:30 – 3:30 p.m.

Barrier Island Botanizing
Friday, May 25
9:30 – 11:30 a.m.

Cart Wash
Saturday, May 26
1:30 – 3:30 p.m.

Birding 101
Saturday, May 12
Monday, May 28
Saturday, June 9
Saturday, July 14
8:30 – 10:30 a.m.

Beach Walk
Friday, June 1, June 8, June 29
Friday, July 27
Friday, August 3, 10, 24, 31
9:30 – 10:30 a.m.



Dewees Discovery Programs

...continued

Marsh Walk
Tuesday, June 5, 12, 19
Tuesday, July 3, 17, 24, 31
Tuesday, August 7 and 21
9:30 – 10:30 a.m.

Island Sweep
Thursday, June 7
Thursday, July 5
Thursday, August 2
8:30 – 9:30 a.m.

Waterfowl and Wading Birds
Saturday, June 9
8:30 – 10:30 a.m.

SC Aquarium Guided Tour
Wednesday, June 13
Wednesday, July 25
Tuesday, August 14
Wednesday, August 29
12:30 p.m. Ferry

Healthy Lifestyles and Preventative Medicine
Friday, June 15
4:30 – 6:30 p.m.

Nature Walk With Rudy Mancke
Saturday, June 16
9:30 a.m.

Sweetgrass Basket Making
Saturday, June 23
Saturday, July 28
10:30 a.m. – 12:30 p.m.

Alligators Alive!
Saturday, June 30
4:30 – 6:30 p.m.

Container Gardening
Saturday, June 21
4:30 – 6:30 p.m.

Dolphin Research and Marine Mammals in SC
Friday, August 3
4:30 – 6:30 p.m.

Mask Making
Saturday, August 4
9:30 – 11:30 a.m.

Dewees Island White-tailed Deer
Friday, August 10
4:30 – 6:30 p.m.

Clean Living 101
Saturday, August 11
4:30 – 6:30 p.m.

South Carolina Sea Turtles
Saturday, August 18
4:30 – 6:30 p.m.

Star Study
Friday, August 24
8:00 – 9:30 p.m.

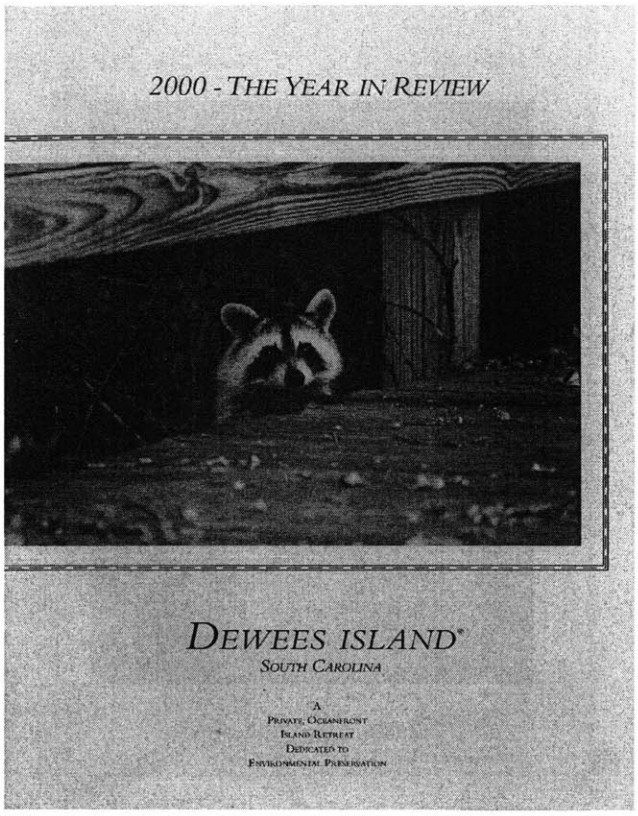
Wildlife and Nature Photography
Saturday, August 25
6:30 – 8:30 a.m.

Beach Sweep/River Sweep
Saturday, September 15
9:30 a.m. – 12:30 p.m.

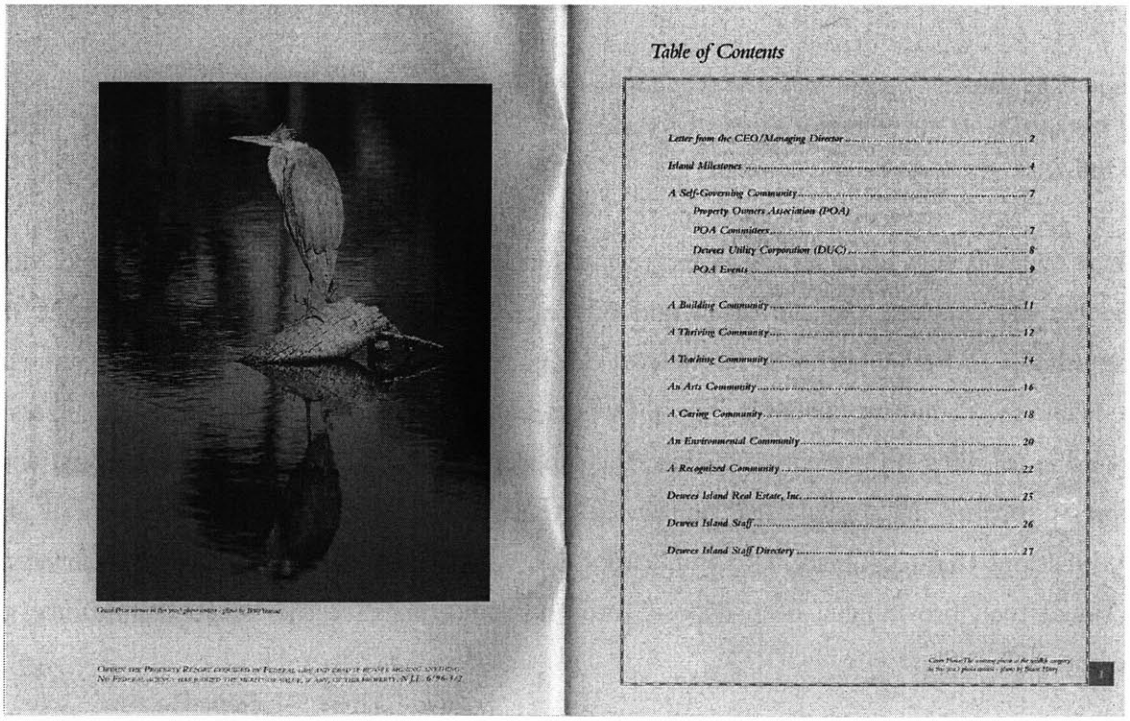
Perhaps the thing that makes Dewees Island the most special are the unique, energetic, and friendly group of people who own homes or property there[173]. They from all over the world and have a wide range of professions and interests. What is common to all owners at Dewees is their love for what Dewees has to offer—the natural untouched environment[174]. I was told it only takes one attendance at a Property Owners' Association function to pick up on the interesting array of backgrounds that form this tight-knit community[175]. Dewees Island residents are encouraged and invited to share in the decision-making process that shapes the Island's future. Residents bought property on Dewees Island because they wanted to create a community through initiatives, involvement, understanding, and education. Using theses principles, residents could fully appreciate the goals set forth by the developer[176].

Dewees Island is as valuable as the very land that defines it. Very few places have worked as hard as Dewees to preserve the quality of the land and ecosystems which support thousands of species of animals, plants, and marine life. Source: JW Rapson

Residents have the option of living on the Island year round or to use the Island as a second home. Most of the residents are between the age of 30 and 60 years of age, while younger children from the surrounding schools and neighborhoods in the area can be found visiting the environmental center as part of the Island's community outreach efforts. Dewees Island is constantly reviewing itself[177]. To see that the Island is fulfilling its mission and goals, the property owners association, in conjunction with the developer, publishes an annual 'Year in Review' that chronicles the environmental, social and community functions that took place. This publication has served as an extremely successful marketing and promotional tool, providing a deep expose' into the 'happenings' of the Island community for prospective buyers[178].



Last year the Dewees Island Builders won the National Home Builder's (NAHB) 2000 Silver Energy Value Housing Award for building homes which integrate energy efficiency into their design, construction and marketing.[179] The Island's covenants do not allow gasoline-powered engines on the Island. Residents must leave their vehicles on the main land before they take the ferry to the Island. There are five pervious limestone roads, leaving golf carts and bikes as the primary mode of transportation.[180] Source: Island Preservation Partnership



Island Milestones

The year 2000 marks not only the turn of the century, but also some significant milestones for Dewees Island, South Carolina.

New management

2000 saw the departure of the Haley family, the search for the new Island Manager, and the arrival of Barbara and Tim Erbsen. Both couples have made exceptional contributions to the community, from Jeri and Jason's four years living on-Island to the Erbsen's recent move to the Island and a new page in Dewees' history.

Jeri Haley served as the Island Manager 1996–2000 and the Controller for IBP 1995–2000. Jason was the Manager of The Hayley House 1998–1999, and the Property Manager in Charge for Dewees Island Rentals (DIR) 1997–2000. Jason in fact launched both The Hayley House and the DIR rental program. The couple lived on the Island for four years with their children, Brody and Maya. Before moving to Jacksonville, FL, this summer for Jeri to become the Director of Finance for Choice, the nation's first national home technologies sales and service company. The Haleys had become a cornerstone in the Dewees community and they have been missed since their departure.

The staff bid adieu to the Haleys this year.

The POA played a hands-on role in the search and hiring of the new management team. A property owner committee of John Knott, George Hilken, Tom Alexander, and Jack Stoerucker reviewed over 200 applications, conducted a series of interviews, and hired our new Island Manager and Hayley House Manager respectively, Tim and Barbara Erbsen.

Tim and Barbara joined us as the Island management team this summer, bringing to the Island a breadth of experience.

Tim and Barbara Erbsen, Island Manager and Hayley House Manager, respectively.

The Hayleys' Visit

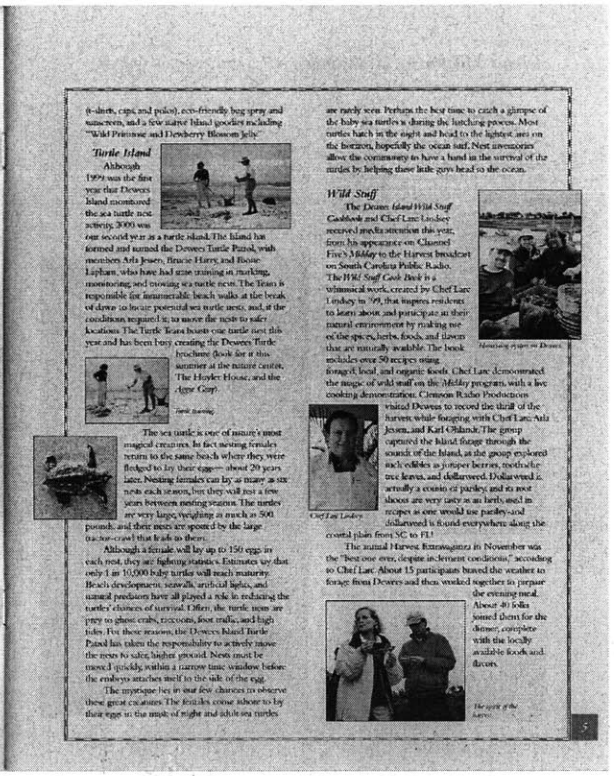
Jack and Margaret Hayley returned to Dewees Island this year to celebrate Jack's 80th birthday! Most of their family joined them on-Island for the celebration, and the Dewees residents and staff enjoyed hearing his tales of growing up on Dewees frontage 3 in 1-4 Jack and his family owned the Island from 1925 to 1956. The Hayleys' stay included a mini-harvest of Dewees edibles with Chef Lare Lindsey at The Hayley House, tours of Charleston, and a visit with Viola White, the Island caretaker's wife during the Hayleys' ownership. The Hayleys' finale was a Dewees-style oyster roast hosted by Jack and Margaret Hayley for all of the Dewees community, for, as Jack says, "there's nothing better than Dewees Island oysters!" The evening included Jack's stories of living on Dewees Island, a show of slides dating as far back as the 1920s, and Jack's bequeathing to the community significant historical items such as photographs, slides, and a 77 mm camera. Dewees naturalist Suzy Jack also presented to the community an advertisement from the *New York Times* in 1952 for the sale of Dewees Island for $8,000, which shows quite an appreciation in today's prices starting at $400,000 for a 2-acre homesite.

Jack and Margaret Hayley enjoying Dewees oysters.

Jack and Margaret sample a bit of "wild stuff" on the Island.

Island Retail Store

The Hayley House opened their Retail Store this year, featuring a selection of Dewee's logo items



(t-shirts, caps, and polos), eco-friendly bug spray and sunscreen, and a few scarce Island goodies including "Wild Primrose and Dewberry Blossom Jelly."

Turtle Island

Although 1999 was the first year that Dewees Island monitored the sea turtle nest activity, 2000 was our second year as a turtle island. The Island has formed and named the Dewees Turtle Patrol, with members Arla Jessen, Bruce Harry, and Elaine Lapham, who have had some training in marking, monitoring, and moving sea turtle nests. The Team is responsible for innumerable beach walks at the break of dawn to locate potential sea turtle nests, and, if the conditions required it, to move the nests to safer locations. The Turtle Team counted one turtle nest this year and has been busy creating the Dewees Turtle brochure (look for it this summer at the nature center, The Hayley House, and the Agne Cup).

Turtle Tracking

The sea turtle is one of nature's most magical creatures. In fact, nesting females return to the same beach where they were fledged to lay their eggs—about 20 years later. Nesting females can lay as many as six nests each season, but they will rest a few years between nesting seasons. The turtles are very large, weighing as much as 500 pounds, and their nests are spotted by the large tractor-crawl that leads to them.

Although a female will lay up to 150 eggs in each nest, they are fighting statistics. Estimates say that only 1 in 10,000 baby turtles will reach maturity. Beach development, seawalls, artificial lights, and natural predators have all played a role in reducing the turtles' chances of survival. Often, the turtle nests are prey to ghost crabs, raccoons, foot traffic, and high tides. For these reasons, the Dewees Island Turtle Patrol has taken the responsibility to actively move the nests to safer, higher ground. Nests must be moved quickly, within a narrow time window before the embryos attaches itself to the side of the egg.

The mystique lies in our few chances to observe these great creatures. The females come ashore to lay their eggs in the mask of night and adult sea turtles are rarely seen. Perhaps the best time to catch a glimpse of the baby sea turtles is during the hatching process. Most turtles hatch in the night and head to the lightest area on the horizon, hopefully the ocean surf. Nest inventories allow the community to have a hand in the survival of the turtles by helping these little guys head to the ocean.

Wild Stuff

The Dewees Island Wild Stuff Cookbook and Chef Lare Lindsey received media attention this year, from his appearance on Channel Five's *Midday* to the Harvest broadcast on South Carolina Public Radio. *The Wild Stuff Cook Book* is a whimsical work, created by Chef Lare Lindsey in '99, that inspires residents to learn about and participate in their natural environment by making use of the species, herbs, foods, and flowers that are naturally available. The book includes over 50 recipes using foraged, local, and organic foods. Chef Lare demonstrated the magic of wild stuff on the *Midday* program, with a live cooking demonstration. Clemson Radio Production visited Dewees to record the thrill of the harvest while foraging with Chef Lare, Arla Jessen, and Karl Oblinski. The group explored the Island foliage through the sounds of the Island, as the group explored such edibles as juniper berries, mock orange tree leaves, and dollarweed. Dollarweed is actually a cousin of parsley and its root shoots are very tasty as an herb, and in recipes as one would use parsley—and dollarweed is found everywhere along the coastal plain from SC to FL!

Monitoring expert on Dewees.

Chef Lare Lindsey

The annual Harvest Extravaganza in November was the "best one ever, despite inclement conditions," according to Chef Lare. About 15 participants braved the weather to forage from Dewees and then worked together to prepare the evening meal. About 40 folks joined them for the dinner, complete with the locally available foods and flavors.

The spoils of the harvest.

A Teaching Community

The wonder of Dewees is such that it inspires us all to want to know more about the natural world around us. A visit of unusual birds in Old House Lagoon often prompts us to learn more about the egrets and herons which call Dewees home, while a walk on the beach stimulates us to ask the names of the shells that we see. Dewees Islanders are blessed to have the resources to answer these questions. With landscape ecologist Karl Oblinski and resident biologist and environmental programs director Arla Jessen on staff, no question goes unanswered. This team, along with the entire Dewees staff, offer a wealth of information about Dewees Island and beyond.

Dewees Discovery

Year-round, plantoid educational and environmental programs offer property owners and their guests the chance to learn from experts in bird life, barrier island dynamics, conservation endeavors, and mystery cats. Likewise, gatherings offer a chance to learn more about squid, sweetgrass and silversprings insights, raccoons, and astrology.

The Dewees Discovery Programs are offered throughout the year, with a concentration in spring, summer, and fall, so that our owners and guests can learn more about the flora and fauna in the place where they live. This year's Discovery Programs included opportunities to take the family for a walk on the beach or the marsh with Arla Jessen to learn more about the coastal blue crab and even to travel to Gillespie and Ensalada. The Dewees Discovery Programs also saw our overturn washing gals earn to raise money for the Dewees Environmental Fund: studying butterflies, and dissecting squid.

Bird-Watching

Once a month, local birding expert, Ed Conrad, has volunteered to lead small groups in the on-going Bird-Watching series. From the marinade forest to Old House Lagoon and the shoreline, birdwatchers witnessed some of the 204 species of birds on Dewees such as the endangered wood duck, glossy ibis, painted bunting, osprey, and bald eagle.

Beach and Marsh Walks

Arla began offering weekly beach and marsh walks this year, with few of the Island's families taking advantage of this opportunity to learn more about Dewees. Groups learned fun facts such as the adult Atlantic oyster, common on Dewees' shores, can filter as much as 100 gallons of water in 24 hours; the stone crab can dig as far as 40 feet in the mud, using one sharp claw and one pounded one; as well as the names of the treasures common to the Dewees beach such as the channeled whelk, knobbed whelk, clam, angel wings, cockles, the lettered olive (the SC state shell), and brightly colored sea widgets (a type of corral). The groups also learned why they should only take a few of their treasures with them; since empty shells serve as new homes for hermit crabs and other sea organisms or are crushed into the very sand and sediment which makes up our beach.

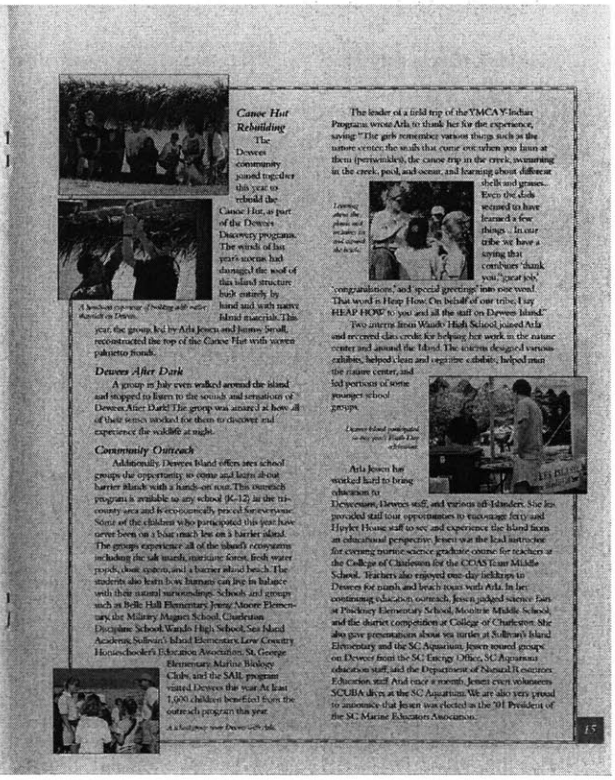
Arla Jessen explores the beach.

Crab Clinic

The Crab Clinic informed the group about the coastal blue crabs which are abundant in the Lowcountry. Jessen indoctrinated the group on perfect crabbing techniques, using a line, of course, as well as crab trap etiquette. These fascinating creatures can be found from Massachusetts to Texas, and their crustacean bodies boast five pairs of legs—one pair for swimming, three for walking, and one as pincers. Locals enjoy a plentiful supply of blue crabs, fresh and harvested by their own hands, with nets, hooks, and traps. Favorite crab recipes include Dewees whelk and blue crab fritters and blue crab and carrot crepes.

The Fish Way to Europe, Key to Cape Romain

Blue crab.



Canoe Hut Rebuilding

The Dewees community joined together this year to rebuild the Canoe Hut, as part of the Dewees Discovery programs. The winds of last years storms had damaged the roof of this island structure built entirely by hand, with native Island materials. This year, the group, led by Arla Jessen and James Small, reconstructed the top of the Canoe Hut with woven palmetto fronds.

A handmade top-cover of braided palm leaves thatched on Dewees.

Dewees After Dark

A group in July even walked around the island and stopped to listen to the sounds and sensations of Dewees After Dark! The group was amazed at how all of their senses worked for them to discover and experience the wildlife at night.

Community Outreach

Additionally, Dewees Island offers area school groups the opportunity to come and learn about barrier islands with a hands-on tour. This outreach program is available to any school (K-12) in the tri-county area and is exceptionally priced for everyone. Some of the children who participated this year have never been on a boat much less on a barrier island. The groups experience all of the island's ecosystems including the salt marsh, maritime forest, fresh water ponds, shark system, and a barrier island beach. The students also learn how humans can live in balance with their natural surroundings. Schools and groups such as Belle Hall Elementary, Jenny Moore Elementary, the Military Magnet School, Charleston Discipline School, Wando High School, Sea Island Academy, Sullivan's Island Elementary, Low Country Homeschoolers Education Association, St. George Elementary, Marine Biology Clubs, and the SAIL program visited Dewees this year. At least 1,000 children benefited from the outreach program this year.

A kindergarten tour Dewees-style.

The leader of a field trip of the YMCA's Indian Programs wrote Arla to thank her for the experience, saying "The girls remember various things such as the nature center, the snails that come out when you listen at them (periwinkles), the canoe trip in the creek, swimming in the creek, pool, and ocean, and learning about different shells and grasses. Even the dads seemed to have learned a few things. In our tribe we have a saying that combines 'thank you,' 'great job,' 'congratulations,' and 'special greetings' into one word. That word is Heap How. On behalf of our tribe, I say HEAP HOW to you and all the staff on Dewees Island."

Learning about the plants and creatures on and around the beach.

Two interns from Wando High School joined Arla and received class credit for helping her work in the nature center and around the Island. The interns designed various exhibits, helped clean and organize exhibits, helped man the nature center, and led portions of some younger school groups.

Dewees Island participated in the year's Youth Expo celebration.

Arla Jessen has worked hard to bring education to Dewees, Dewees staff, and various off-Islanders. She has provided staff tour opportunities to encourage Jerry and Hayley House staff to see and experience the Island from an educational perspective. Jessen was the lead instructor for coming marine science graduate course for teachers at the College of Charleston for the CCIAS four Middle School. Teachers also enjoyed one-day field trips to Dewees for marsh and beach tours with Arla. In her continuing education outreach, Jessen judged science fairs at Pinckney Elementary School, Mt. Pleasant Middle School, and the district competition at College of Charleston. She also gave presentations about sea turtles at Sullivan's Island Elementary and the SC Aquarium. Jessen trained groups on Dewees from the SC Energy Office, SC Aquarium education staff, and the Department of Natural Resources Education staff. And once a month, Jessen even volunteers SCUBA dives at the SC Aquarium. We are also very proud to announce that Jessen was elected as the '01 President of the SC Marine Educators Association.

An Environmental Community

Dewees Island is as valuable as the very land which defines it. No where else has a community worked so hard to preserve the quality of the land and the ecosystems which support thousands of species of animals, plants, and marine life. The very essence of Dewees is the beauty of the land and the nature which is found there. We are very lucky to be able to spend time in this place... And besides it makes for great escapes from the hustle and bustle of mainland life!

Environmental Staff

The staff and owners of Dewees Island have been instrumental in maintaining this way of life on the Island. Every owner and staff member is indoctrinated in a way of life based on a simple respect for one's surroundings, and it is their actions which will uphold this place. The staff includes Karl Ohlandt and Arla Jessen, whose jobs are to ensure that land management, research, and education protect the beauty of the natural environment at Dewees. Ohlandt and Jessen also teach that human habitat can balance and coexist with the natural environment.

Ohlandt earned his BS at Presbyterian College in Biology and his Master's of Landscape Architecture at the University of Georgia, making him the undisputed expert in the Island's native and indigenous flora. Ohlandt commented: "I strive to make sure that all we do to the environment on Dewees as stewards is done working with the natural processes, such as the succession of vegetation and beach accretion, thereby reducing damage to and often enhancing environmental health."

Jessen earned her BS in Marine Biology at the College of Charleston and her Master's in Biology with an emphasis on education from Clemson University, making her the Island's resident teacher of the Island's fauna and seabife. Jessen commented, "I have the opportunity to make a difference by making people aware of the reasons behind the "why." I teach people why we don't walk on the dunes or take every shell we find on the beach, why we use native plants and minimize fertilizer and water use. If you know the reason why, people are more active and willing to participate in what we are doing."

Karl and Arla giving their annual environmental "year in review" presentation at the '00 POA Meeting

The beauty of sweetgrass, a native plant, is unquestionable--especially in October when it turns a brilliant ocean-sandy pink!

Bird Life

Dewees Island is home to 204 species of birds, which has surpassed the 200 mark milestone--that truly is an accomplishment for our 1,206 acres. The nation's birding destinations which boast over 200 species of birds are many times larger than Dewees. And since birds are the top of their food chain, they are a clear indication that all levels of the ecosystem are healthy. Monthly bird-watching excursions with experts Ed Conradi and Perry Nugent offer the community a personal experience of the Island's birdlife.

A blue heron on Dewees

Endangered and Threatened Species

Dewees is also home to various endangered and threatened species which can live peacefully within and around her shores. We are sharing our home with the West Indian manatee, Bald eagle, Piping plover, Wood stork, Red wolves, the American alligator, the Green turtle, the Loggerhead turtle, and Seabeach amaranth.

Alligator Raft

Everyone who visits Dewees has watched the alligators sunning in the pond by The Huyler House. This year a new floating raft was constructed so the alligators and turtles could sun on it. This spot has been very popular for the reptiles and people who like to watch them— from a distance.

The alligators and turtles sunning on their new raft

Lake Timicau Survey

Surveys of the tidal fluctuations in Lake Timicau have been recorded by owner volunteers and graphed by George Hilton. The survey observed the tides inside and outside the six pipes, and this information will be used in a proposal with the purpose of maintaining this tidal marsh area. Many thanks to the help and guidance of Karl Ohlandt and all of the volunteers!

Seabeach Amaranth Restoration

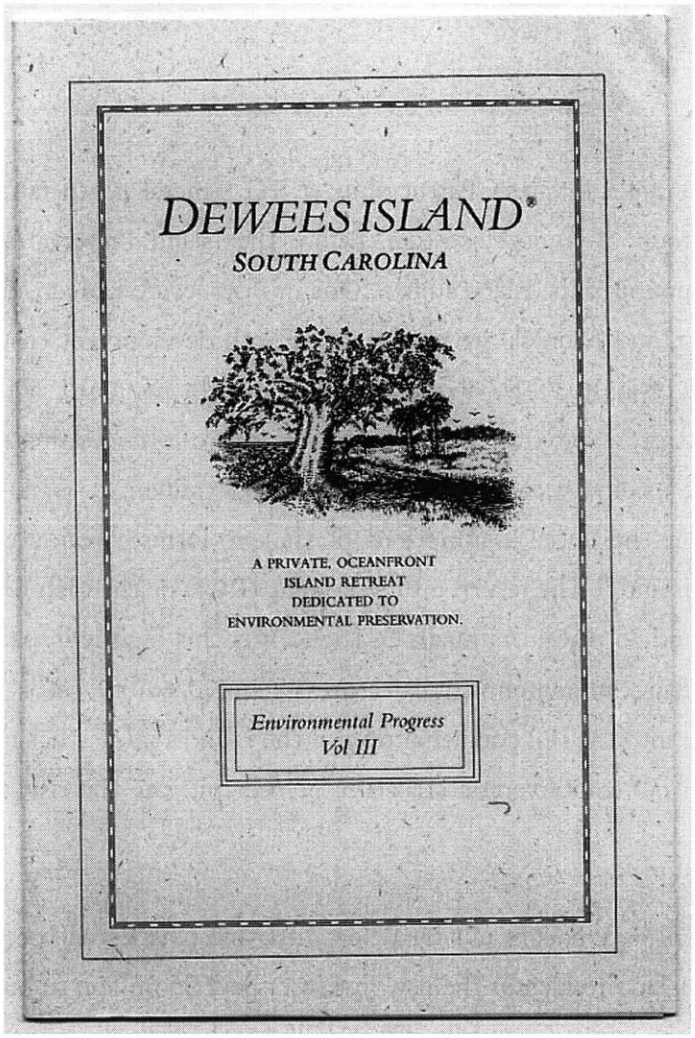
Dewees Island participated in the second year of restoration of the endangered Seabeach Amaranth. Owner volunteers and Karl Ohlandt participated in a program with SC Department of Natural Resources to help restore this natural resource. The plants are instrumental in maintaining a healthy beach, as they encourage dune growth.

Dewees' Mystery Cats

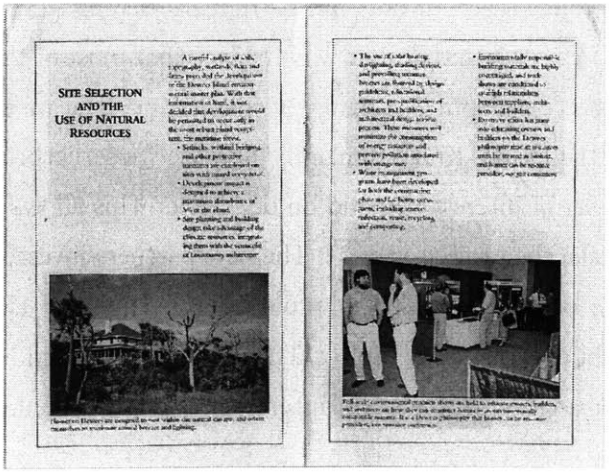
Dewees Island has been visited this year by both the bobcat and cougar! With the information gathered by those who have sighted these creatures stretched across quiet roadways or exploring the wetlands, the cats were described as "creamy colored, several feet high with a long tail; short, darker color with tufts of fur around the neck; long tail and tufts around the neck; tall as a Labrador; redder than a raccoon." It took wildlife biologist Priscilla Wright with the SC Department of Natural Resources to determine that both the bobcat and the cougar have been visiting Dewees. These cats are beautiful and mysterious creatures, and we are privileged to have them visit. These sightings are of particular interest because the cougar was thought to no longer live in the lowcountry area. Both cats have tremendous roaming range, as they venture to where food is available and are capable of swimming across inlets and the Intracoastal Waterway when necessary.

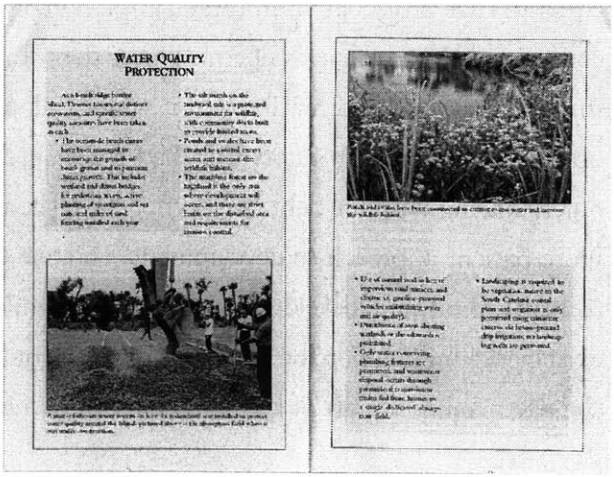
Wood Duck boxes

Wood duck boxes were built for Dewees Island by Dewees Staff, a Boy Scout Troop, and Ernie Nelson (BP/Amoco). The group built several boxes and installed them in the freshwater wetland of the Wildlife Area on the Island. This is a more appropriate habitat for these birds than Old House Lagoon.



The staff at Dewees Island has been instrumental in maintaining this way of life on the island. Every owner and staff member is indoctrinated in a way of life based on a simple respect for one's surroundings. It is their actions that will uphold the place. Dewees is home to various endangered and threatened species which can live peacefully on her shores.[181] Animal in Dewees Island include the West Indian Manatee, Bald Eagle, Piping Plower, Wood stork, Red wolves, the American Alligator, the Green Turtle, the Loggerhead Turtle, and the Seabeach Amaranth.[182] Source: The Island Preservation Partnership





Finance and Investment

Financing Dewees Island

Development began in June 1991 by the Island Preservation Partnership, a S.C. general partnership formed by the original landowners and a group of equity investors. Before the Island Preservation Partnership (IPP) was formed, a significant amount of the island's Phase One infrastructure had already been developed (including roads, power, water, and phones), which decreased both development costs and the developer's up front risk exposure. As of January 1997 about $1 million in debt remained, with gross income projected at $44 million. Current profit projections are nearly double pro-forma estimates and the debt has been retired. Initially, net income was projected to reach $12 million. It is now estimated to reach $23 to $24 million. Under the initial assumptions of the pro-forms, break-even occurred with the sale of the 40th lot on the island[183]. The return on investment (ROI) or the cash-on-cash yield is expected to average between 30 and 35 percent annually[184]. The ROI is this high is in part because cost savings for infrastructure (resulting in environmental features) reduced equity needs[185]. Additionally, all revenues were reinvested back into the IPP partnership until the island's infrastructure was completed and the debt retired. Using an all equity capital structure helped mitigate the risk of default.

In 1996 the original Dewees Island land partners were bought out by a New York and Charleston-based investment group that included some Dewees Island residents. The new investors paid $6 million to buy the 50 percent interest in the project, giving the original owners a return halfway through the project equal to that projected upon total completion of the project[186]. John Knott has particularly strong feeling concerning the advantages of equity over debt. In the Dewees Island deal, it was the fact that most of the project was financed with equity which allowed the development team to ensure the long-range objectives and commitments they had envisioned for the Island. Knott remarks, "Because we structured our financing without debt, we do not have the monster of interest demand on our backs. This allows a more patient approach to development—no one can take the project away[187]." The new partners invested equity capital and development expertise, while the original landowners provided the land and the existing $5 million note on the property—the only debt carried by the project. This note was assumed by the partnership as part of the land contribution in exchange for a 50 percent interest in the joint venture.[188]

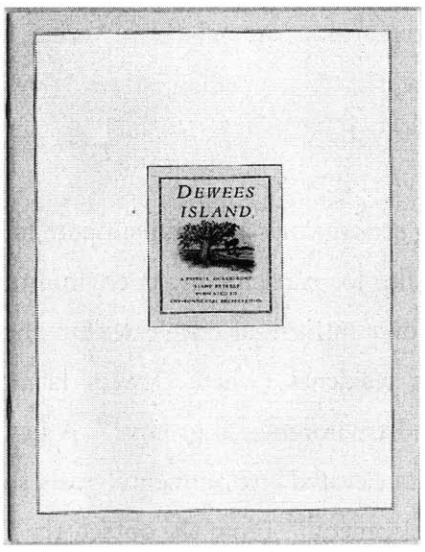
Marketing And Sales

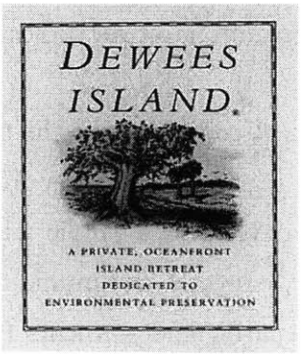
Similar to Spring Island, Dewees Island went to a significant effort to brand and differentiate its community through the creation of logos, print material, videos, and an interactive web site that lists the properties for sale, their location on the island as well as photos from the homesite. Dewees has a broad cross-section of sales and promotional material that demonstrates the environmental and ecological practices and considerations of the island to the diversity of educational programming and resident events. The 'Year-in-Review,' initially published to serve as a 'report card' for the practices on the island as it related to the initial mission, has turned into one of the most influential and convincing pieces of promotional material that the developer uses. Interestingly, this was not the original rationale for its creation. The emphasis of all these materials is on the authentic natural experience one has when at Dewees.

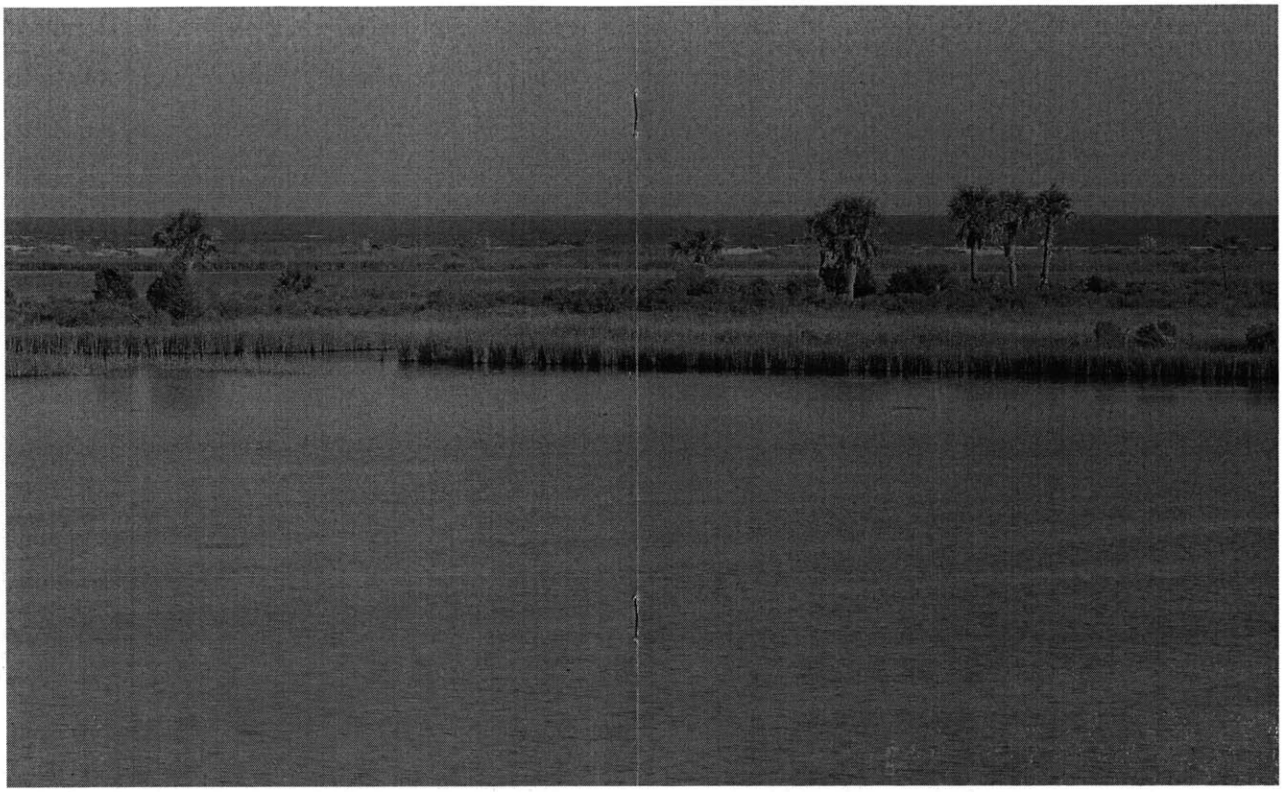
From the outset of the marketing of Dewees Island, the developer's market research told him that there was a market subgroup that valued ideas like 'interaction with the natural world' and 'a retreat for an intergenerational community'.[189] In developing their marketing strategy, the Dewees Island team saw their challenge as very simple one: "we don't have to go after the 2% of the entire population, rather we need to go after 2% of a very selective group[190]." By defining their market segment clearly, they were able to focus and target their promotional materials appropriately to this specific group. At the inception of the project, the development team identified the key selling points and out of this session emerged the positioning strategy for the project[191]. The list was then cross-referenced with the market analysis report and several key selling points were agreed upon: beach; environmental preservation; proximity to Charleston; limited access; exclusive retreat; learning, intergenerational; and the historical legacy[192]. The positioning statement that emerged emphasized four of the island's key selling points: "Dewees Island—a private, oceanfront retreat dedicated to environmental preservation[193]."

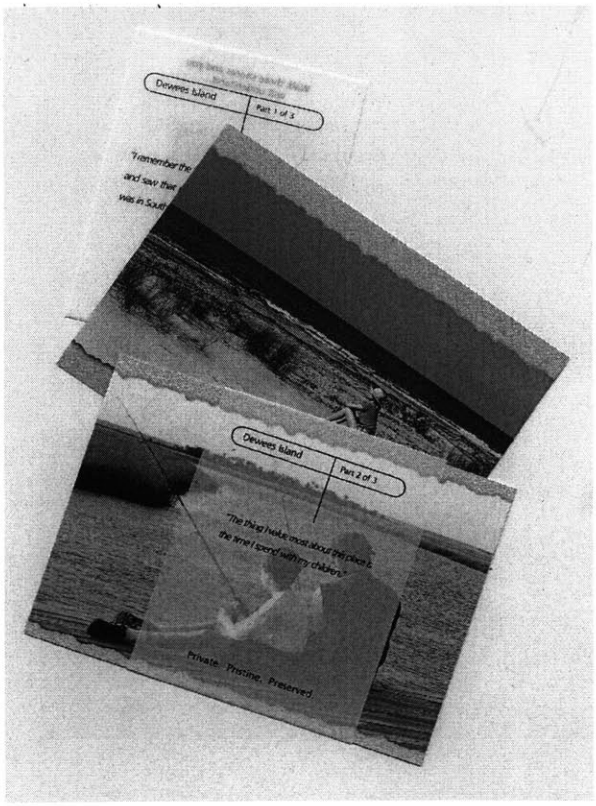
An important component of the Dewees Island marketing strategy was to build support for the project within the regional community. The marketing strategy called for participating in environmental awards programs, developing a public relations program to win over influential people within the Charleston community, directly communicating with Isle of Palms residents (where Dewees Island marina is located), securing endorsements from regional wildlife and environmental groups[194]. A key part of the marketing strategy was to ensure that Dewees did meet its elevated environmental goals so that third-party environmental organizations would support the development[195]. From the outset, the Dewees team

recognized the expectations they were creating for themselves and realized very early on that everything they did had to be 'first class'. To emphasize the exclusiveness of the development, similar to Spring Island, Dewees did not utilize a public advertising campaign initiated by the developer. Rather, the marketing and sales strategy focused on networking through personal referral and word-of-mouth testimonies from residents that had already purchased property at Dewees[196]. The developer's opinion is that third party testimonials of what you are just affirm your uniqueness and builds trust in prospects and pride in your owner[197], says Knott. More than 50 percent of Dewees sales thus far have resulted from owner referrals—a telling example of owners' enthusiasm, especially in the early stages of the development project[198]. Dewees Islands emphasis on networking and public relations has resulted in smaller than average advertising expenditures. By June 1996 the development had received approximately $5 million dollars in free media coverage[199]. Certainly the environmental features have generated extensive press coverage, but Knott also attributes coverage to their efforts in education, community partnerships, and other forms of outreach. Participation in regional educational outreach has been an important component to the marketing strategy of the project's public relations endeavors. By taking what could appear as negative attributes and selling them as positive features to the appropriate market segment, Knott found a willing segment of buyers who were willing to pay a premium for a community that does not cater to golfers or boaters, but rather provides a small, quiet, intimate neighborhood of homes nestled within the unharmed natural beauty of Dewees Island[200]. The brochure (10"x12") and logo were the final product generated to sell and promote the dynamic and peaceful environment at Dewees Island.



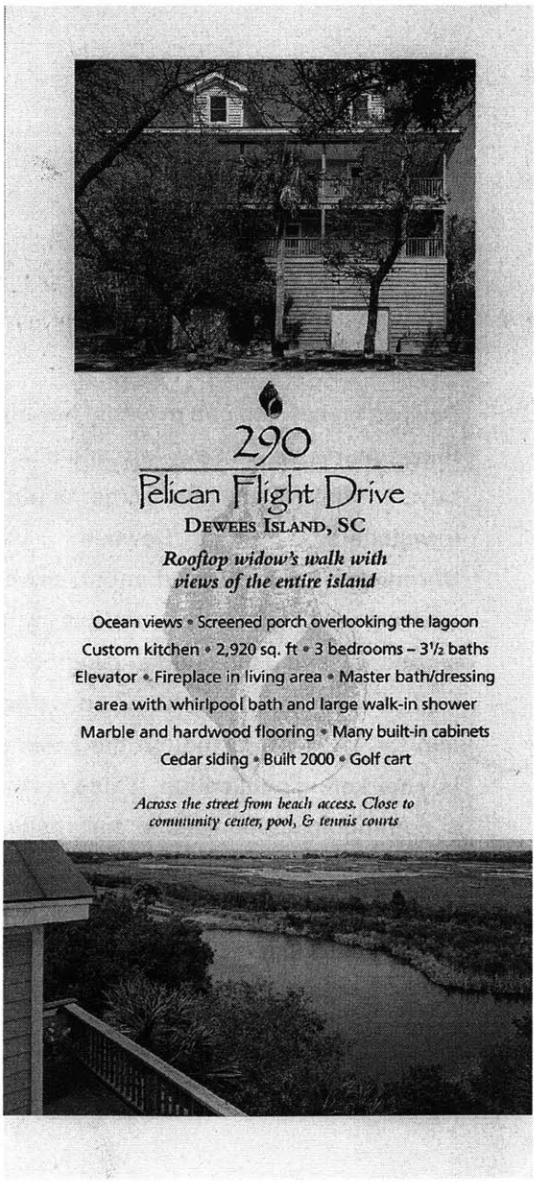


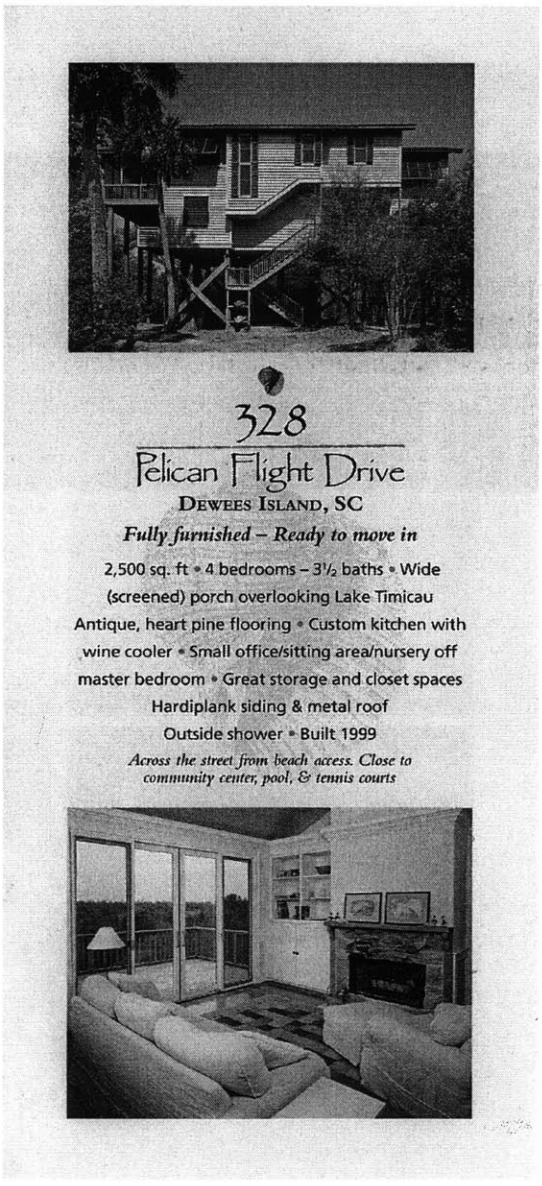




Dewees makes use of a monthly newsletter to communicate with owners, and potential buyers. While many developments publish newsletters, the 'Dewees Island Chronicles' goes beyond most, covering environmental activities, unique wildlife sightings, and educational programs, as well as progress in new home construction and lot sales. Even though the newsletter is a marketing publication, it also serves as a communications vehicle for residents, conveying to potential buyers that a tight community is developing on the island. Other marketing materials (right) use a series of 'parts' in a mailing sequence to tell the story of the island through powerful photographs. Source: The Island Preservation Partnership

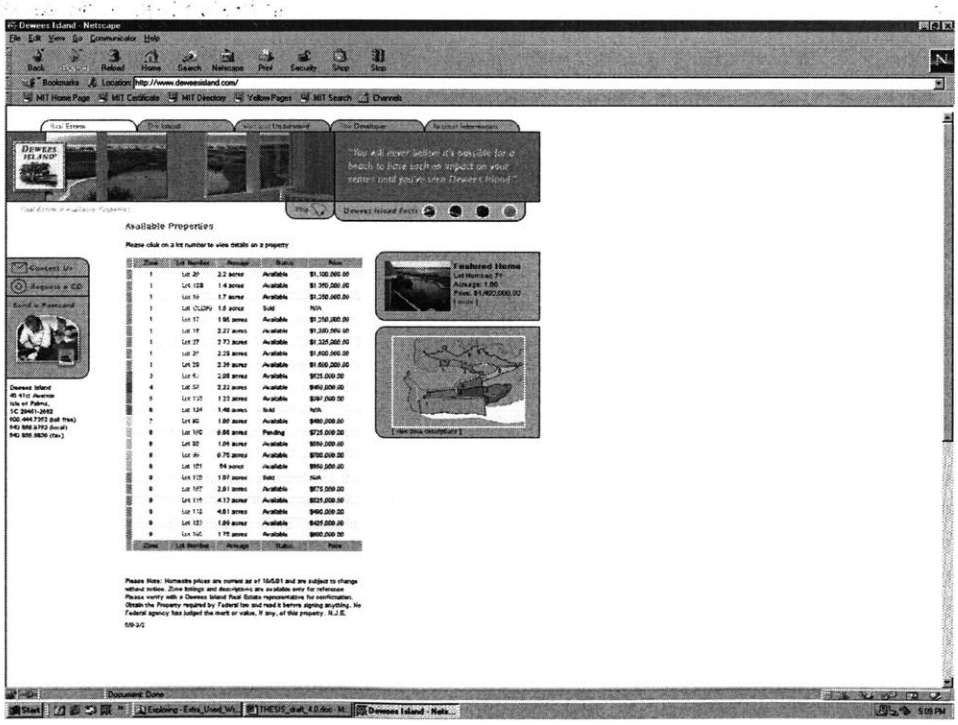
Local real estate agents thought that the environmental restrictions placed on the proposed development would be too restrictive and subsequently slow the sale of land on the island[201]. Preventing people from building right by the shore, not allowing cars, limiting the 'impact area' (the area affected by putting in a driveway and constructing a house) to 7,500 square feet per lot, restricting overall building size to 5,000 square feet, prohibiting conventional lawns and other nonnative landscaping, telling home owners they cannot pave their driveways or water their plantings with anything except collected rain water—these restrictions were just not going to help developer John Knott sell his 150 home lots, said the area realtors[202].

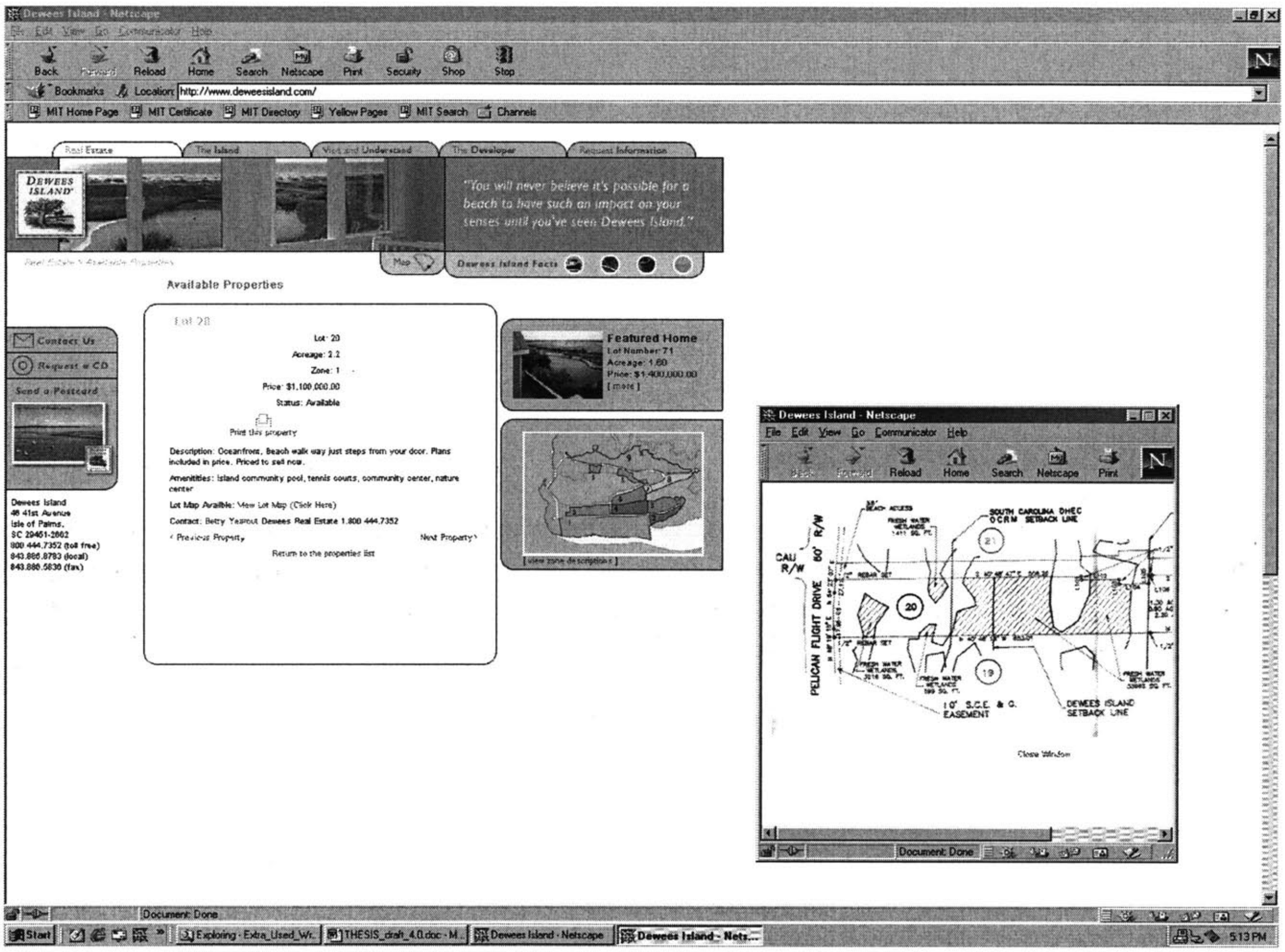


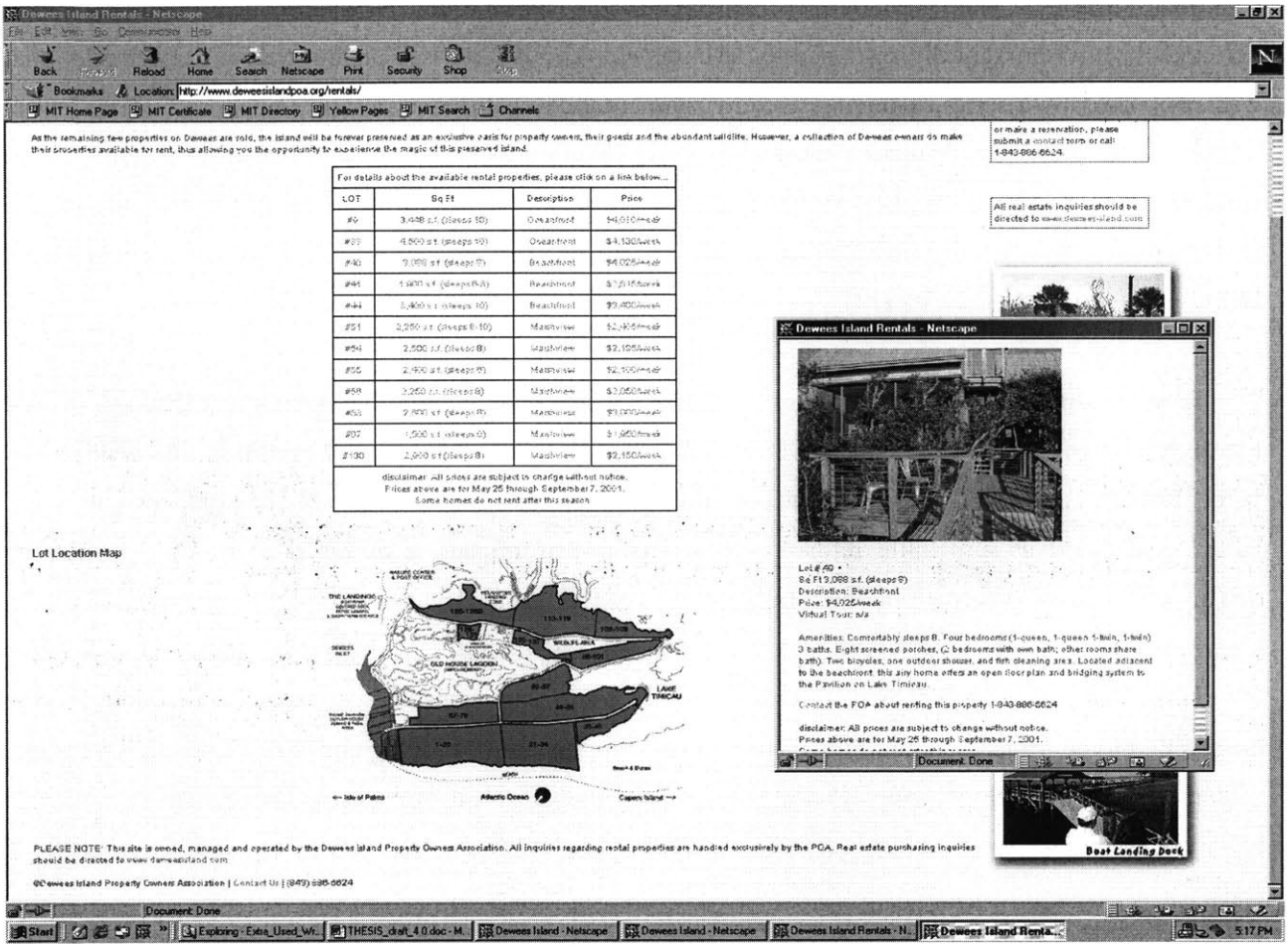


As it turned out, these restrictions had no major impacts on lot sales at Dewees[203]. By early 1997, 60 lots had been sold, which completed the first phase and a portion of the second, placing the project ahead of its initial projections and absorption schedule[204]. The impervious crushed stone road surfaces were planned to be installed in the third phase. In 1998, as cited by Rocky Mountain Green Development Services, lot prices had appreciated significantly since 1992 and net profits were exceeding pro forma targets by about 90 percent[205]. By accounts of the residents and visitors, Dewees Island is a remarkable place to live and own property[206]. In the 2000 'year-in-review' published by Dewees Island, the publication makes note of a visit that year from the Huylers, for which the 'Huyler House' is named. That welcoming message mentions how Jack Huyler brought with him to this reunion a copy of sales listing from the New York Times where the entire Dewees Island was advertised for $80,000. In his reflection upon the changes that have transformed the island he once owned, Huyler referenced the strong appreciation in value by comparing a recent sale transaction of a single 2-acre homesite that sold for $560,000[207].

Dewees Island has an extensive web site which explains the scope of the development as available property that can be bought. The site includes photos of all the available property's and a boundary survey that shows the potential building envelope so that a buyer can get a better sense of the opportunities and constraints of a particular lot. Source: The Island Preservation Partnership




Dewees Island - Netscape
Back
Forward
Reload
Home
Search
Netscape
Print
Security
Shop
Stop
Bookmarks
Location: http://www.deweesisland.com/
MIT Home Page
MIT Certificate
MIT Directory
Yellow Pages
MIT Search
Channels
Real Estate
The Island
The Developer
Request Information
DEWEES ISLAND
"You will never believe it's possible for a beach to have such an impact on your senses until you've seen Dewees Island."
Map
Dewees Island Facts
Available Properties
Lot 28
Lot: 20
Acreage: 2.2
Zone: 1
Price: $1,100,000.00
Status: Available
Print this property
Description: Oceanfront. Beach walk way just steps from your door. Plans included in price. Priced to sell now.
Amenitities: Island community pool, tennis courts, community center, nature center
Lot Map Availble: View Lot Map (Click Here)
Contact: Betty Yearout Dewees Real Estate 1.800 444.7352
Next Property
Return to the properties list
Contact Us
Request a CD
Send a Postcard
Dewees Island
46 41st Avenue
Isle of Palms,
SC 29451-2602
800 444.7352 (toll free)
843.886.8783 (local)
843.886.5830 (fax)
Featured Home
Lot Number 71
Acreage: 1.60
Price: $1,400,000.00
[more]
Document: Done



The Dewees Island Property Owner's Association web site features properties that can be rented, including regular owners houses as well as several units at the Huyler House complex that are owned and managed by the property owners' association. The revenue generated from the rentals at belonging to the POA is used to cover the costs of the rental units, but more importantly, is applied to conservation efforts in the Island. This is another unique example of how costs are shared and deferred in an effort to protect the environmental integrity of the Dewees Island[208]**.** Source: The Island Preservation Partnership

Planning and Design

Dewees Island was started ten years ago by a group of investors who believed that a healthy market existed for environmentally friendly construction and development[209]. Understanding the potential ecological impacts of residential development on a fragile barrier island, as well as the growing consumer demand for environmentally responsible development, the IPP devised an innovative master plan that was supported by a series of progressive environmental covenants and design guidelines[210]. The Dewees Island master plan is not only a strategic planning tool but also a legal document administered by the state of South Carolina, in the form of a deeded conservation easement across the entire island. The island's master plan/environmental covenants limit development on the island to 150 private residences, built on one- to three-acre parcels[211].

The issue of disrupting ecosystems and wildlife corridors were carefully considered throughout the planning, design and development of Dewees Island. As a result of this careful inventory and analysis, 65 percent of the island will remain completely undeveloped, with over 350 acres of the northern end of the island designated as a wildlife refuse[212]. The development impact is designed to reach a maximum disturbance of only 5 percent of the total gross area of the Island. The IPP worked from the out-set with environmental groups throughout the development process to establish a high performance threshold for the project, but more importantly, to establish open communications and collaborative decision-making on several of the project's potentially controversial components (including the island's sewage treatment system)[213]. Environmental groups also played an instrumental role in supporting the regulatory approvals of environmentally responsible building materials and techniques not permitted under conventional code[214].

The Dewees Island architectural and environmental guidelines promote environmental responsibility, resource efficiency, community development, and the use of local vernacular architecture. To minimize habitat disturbance, storm water run-off, and nonpoint source pollution, the development of impervious surfaces is strictly prohibited on Dewees[215]. Natural sand-based roads effectively transport the island's fleet of electric vehicles and preserve the island's undeveloped character. Poured concrete driveways and paths are forbidden. Instead, natural sand, pine needle mulch and crushed oyster shells are used throughout the island. The sand-based roadways and paths have reduced dramatically the developer's infrastructure development and maintenance expenses.

In an effort to prevent the destruction of native vegetation and other natural features, a maximum of only 7,500 square feet of disturbed space is allowed on each site, regardless of lot size. Disturbable area includes the footprint of the structure, the driveway, pathways, porches, decks, patios, and easements. Site planning considerations are given high priority in the guidelines which include tree preservation, viewshed analysis, passive solar orientation (including the path of the sun and prevailing breezes), and drainage impact[216]. To preserve the island's prominent tree canopy, building heights throughout the island cannot exceed 40 feet. Home sizes on Dewees are limited to a maximum of 5,000 square feet. In addition, unlike many exclusive island community developments, Dewees has no minimum residential square footage requirement, and no requirement for landowners to build[217].

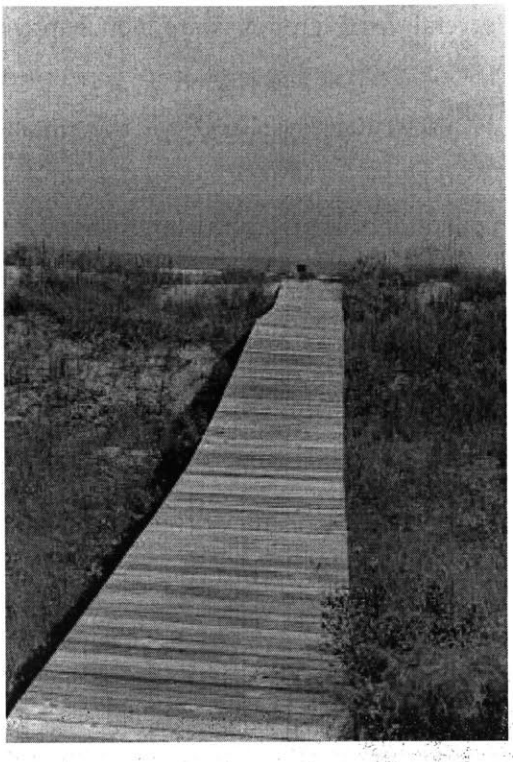
All buildings developed on Dewees are required to maintain the regional architectural character of the South Carolina Lowcountry by using the traditional wide overhanging eaves and porches, operable shutters, buildings on pilings, and narrow wings. These design features are not only distinctive to the Charleston region but are a direct response to the area's climate, increasing the energy efficiency and enhancing the functionality of the buildings. Photo: JW Rapson

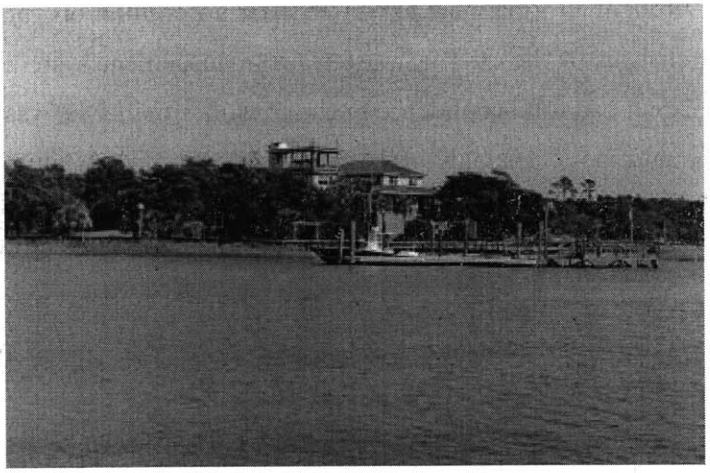
Dewees has served as a model of and testing ground for resource and energy- efficient building materials and systems. Efficient design and development applications that have been frequently implemented in island construction include passive solar ventilation/cooling, shading, daylighting, solar water heating, and water conservation fixtures. With an average development/construction cost of $110 a square foot, home construction on Dewees costs approximately 15 percent higher than on the local mainland[218]. This can be attributed largely to the island's limited access as well as to amenity requirements such as sprinkler and central security systems.

Approvals And Community Support

Unlike Spring Island, Dewees Island encountered numerous obstacles in the approvals process. Although many other barrier islands had been developed, Dewees had remained relatively pristine for a surprisingly long time. In the 1970's and 1980's, three attempts to develop the island failed, and according to Charleston Magazine, rumors began to circulate that the island was "undevelopable, and only a fool would sink another dollar into trying because the local environmental groups had gained such strength, they'd kill the project in the tracks[219]." Given these circumstances it beckons the question, how did the developers of Dewees Island manage to get approvals to develop 150 home sites on the island?

Island Preservation Partnership, formed in 1990 to develop Dewees Island, brought John Knott on board to accomplish its goal of developing the island in a way that was dedicated to environmental preservation and enhancement. They believed that a man who had spent his life doing historic preservation would bring with him the process and perspective of inventorying available assets and building from within rather than staring over from ground zero[220]. Knott jumped at the chance, he says. "Here was this magnificent boat-access island, and the owners wanted to do the development right: unpaved roads, no golf course, no cars, and prearranged investors to position the project as an equity-based development. It was the once-in-a-lifetime chance to show that environmentalism and development can go hand in hand. I couldn't wait to start[221]," exclaims John.





Ongoing environmental education is the key to protecting and enhancing Dewees Island. To that end, the island welcomes and encourages tours by school groups, civic \ community groups and others. A full-time naturalist lead education programs; nature interpretive center \ field work. Among the amenities homeowners enjoy at Dewees Island is direct access to the Atlantic Ocean with approximately 2.5 miles of beach, boat access, an environmental education center staffed by a full-time naturalist, interactive nature trails, 200-acre tidal lake, 120-acre impoundment, swimming pool, two tennis courts, community pavilion, fishing docks, and guest house. Photo: JW Rapson

Knott took great precautions to ensure that the project's environmental sensitivity would be genuine and endure over time. The partnership setup very strict covenants that, among other things, limit the total number of homes to 150 and permanently protect two-thirds of the island from any development. Yet

several local groups were not happy. The nonprofit South Carolina coastal Conservation League (SCCCL)[222] and several other concerned groups filed and appeal to block the permitting of the Dewees Island sewage system. Even though it was well designed, they feared that the sewer system would overload, contaminating ground and surface water. The suit concerned Knott. He told the local consultants that he had hired that he felt it was important to meet with Dana Beach, director of the SCCCL. His intention was not to further antagonize Beach, but to discover what the group thought was wrong with the proposed sewer system—and fix it[223]. Through a series of meetings, Knott convinced Beach that he was genuinely concerned. He paid for improvements recommended by the group and the appeal was dropped[224].

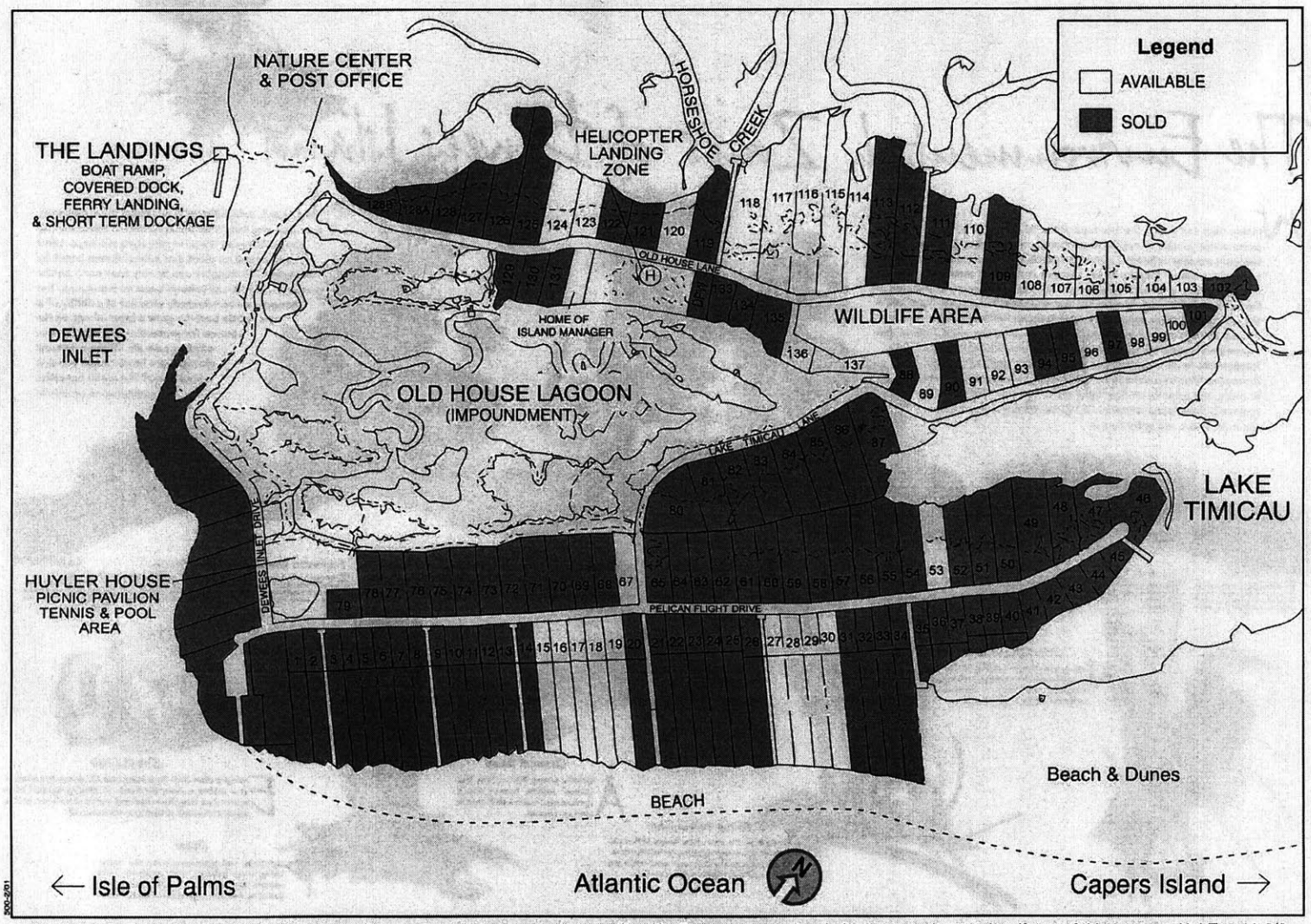
Beach, the opponent to the proposed system, brought in a national expert to offer an opinion on the existing system and to consult on redesigning changes to the existing wastewater management system for the island. This was a positive step because Beach had total confidence in the consultant since he was allowed to hire a person to find the appropriate solution[225]. The only problem created by doing this was the high cost. "To Knott's credit," Beach told the Charleston Magazine, "they did not try to negotiate the system. Unlike every other situation we've been in, this was no nickel and dime process ... their board agreed to everything[226]." While Beach is still opposed to many aspects of the project, like the land plan and the number of home sites, he does not like to criticize developers who go beyond established standards, which he believes Dewees Island does[227].

According to Knott, the issue is about trust and mutual gains bargaining—"... doing what you say and doing more than you say[228] ..." Knott's recommendation to developers is simple, "Don't promise more than you can deliver, and deliver more than you promise[229]." This is what builds trust, he believes. Knott's team tried to bring planning officials in from the beginning but had little success. Much of the resistance came in the area of infrastructure. Public health and water agencies resisted innovative wastewater treatment systems; and the utility company balked at the idea of using alternative power generation technologies[230]. Charleston County's public works department was adamantly opposed to using pervious materials for the road surfaces rather than using asphalt. As a result, Island Preservation Partnership had to has t resort to appealing for variance on each separate issue, item by item[231]. Ultimately they won most of the variances by arguing that Dewees Island development methods would result in reduced toxicity, lower pollution, energy and water savings, and habitat enhancement. Although the partnership spent

more time than usual with officials and consultants, the approvals they secured saved much money in direct infrastructure costs[232].

Knott suggests that codes are often based on prescriptive standards whose origins are long forgotten and no longer applicable[233]. Often, he argues, all that remains is the standard. Knott's strategy in the face of opposition was first to understand what effects the existing codes were intended to achieve, then to show that the codes were outdated and that there were other—better—ways to satisfy the original goal[234]. This required the development team to research the initial intention of the code and then they had to develop performance standards that provided some way of measuring the desired effects in terms of benefits. Finally, the development team had to get agreement from the code officials that their proposals would achieve the same or better results than the existing prescriptive codes[235].

DEWEES ISLAND®, SC



Obtain the Property Report required by Federal law and read it before signing anything. No Federal agency has judged the merits or value, if any, of this property. N.J.E. 6-96-3/2

For more information on Dewees Island homesites, call 843-886-8783 or 1-800-444-7352. Dewees Island Real Estate, Inc., Kim Knight, BIC

Site Design and Native Landscapes

While Dewees Island has many environmental features, its site design elements are perhaps the most striking. Its ecological site design respects and works with the land's natural processes and features, adapting the development components—buildings, utilities, infrastructure, and other features—to the patterns of the place. In the case of rural sites like Dewees Island, ecological site design involves developing a close relationship with the environment—protecting, restoring, and celebrating the biological diversity and beauty that can only be found in a pristine environment such as this.

No impervious surfaces are on the island which allows 100% restoration of underground aquifer. Only indigenous or native vegetation to the S.C. coastal plains are allowed. This xeriscaping approach removes the need for irrigation, fertilizers and pesticides. Homes are required to use water conservation fixtures; reduces water consumption 60%. Photo: JW Rapson

Dewees Island is as much a nature preserve as it is a residential retreat development. Instead of golf courses as the main attraction, Dewees Island boasts miles of nature trails and shoreline to explore, extensive salt marsh estuaries that are rich in wildlife, freshwater lagoons with alligators, superb birding opportunities (including elevated observation platforms), and forests that are home to bobcats and foxes. Sixty-five percent of the island, including a 200-acre tidal lake, was set aside as a wildlife refuge to be left forever wild. An extensive land stewardship program, identical to Spring Island, is supported by a 1.5 percent fee charged on each lot sold or on resale (lot or lot and home) transactions.

The master plan for Dewees Island was developed by the firm Burt Hill Kosar Rittleman Associates, which is well respected for its environmental designs. Planning and site design were guided by input from numerous experts, including wildlife consultants, beach and dune management engineers, representatives from the Department of Natural Resources and Wildlife, a soils engineer, a civil engineer, environmental consultants, and architects, all of whom participated in the planning and design charette with the development team[236]. John Knott notes that the process was a collective one[237]. Specifically, the team, and the developer in particular, were guided by what "Dewees Island told us what should be done with her. We just have to respect what Dewees tells us about herself [238]."

The developers of Dewees Island used a multidisciplinary team of participants and consultants as well as input from local residents. Before and design was even put down on paper, Knott invited locals to participate in discussions on the use and layout of the site[239]. Teamwork—bringing landscape architects together with developers, engineers, future occupants, local community members and others—can promote front-loaded planning and whole-systems thinking. These coupled with an end-use perspective that seeks to minimize costs and ecological damage to the site, lead to a development that is more attractive, both financially and visually[240].

Design Standards and Guidelines

Dewees Island's site design is intended to minimize the impact to the natural environment, protect the island's resources, and capitalize on the advantages of the coastal climate to help conserve energy. Before construction begins on any new home site, representatives from Dewees Island's Architectural Resource Board review plans to guide homeowners through sustainable development practices[241]. Homes are required to 'nest' within their natural habitat and to take advantage of winter sun, summer shade, prevailing breezes, and natural lighting in order to minimize energy use. The absence of impervious paved surfaces on the island means that rain and runoff will feed into the island's underground aquifer. Sewage is treated with a biologically based, closed-loop wastewater system that keeps discharge out of local waterways[242].

Homes are designed to "nest" within the habitat, taking advantage of winter\summer sun, shade, prevailing breezes and natural lighting. Recycled and non-toxic building products are utilized, such as: recycled cotton insulation, Hydra-stop roofing systems to simulate metal roofs, recycled decking and non-toxic interior home products. The Architectural Resource Board also helps establish a diversity of Lowcountry architectural styles. The S.C. Energy Center is conducting research for a self-sustaining energy source for the island to harness wind, sun and ocean tides to provide electric power. Energy independence is possible because homes utilize passive heating and cooling techniques through design. As a result, homeowners use 50 to 60-percent less electricity than normal single-family dwelling units.
Photo: JW Rapson

"Letting the land and nature do the site planning is always less expensive[243]," says Knott, who claims that the buildings and other infrastructure on the island will last longer as a result of climatically appropriate siting and material choices[244]. The development has received numerous awards and was the first ever to be honored by the President's Council on Sustainable Development for environmentally sensitive development. The Dewees Island comprehensive review process requires builders to incorporate green design and site sensitivity measures into each project before it is built[245]. Architectural and Environmental Guidelines, included in the Island's CC&R's, stress reduced dependency on resources from outside the island and improved efficiency in utilizing all resources. The Architectural and Environmental Guidelines for Dewees Island seek to ensure green design and site sensitivity for each project. Each homebuyer is asked to sign off on the guidelines when he or she signs a contract to purchase a property[246]. The covenants also empower the Architectural Resource Board (ARB), which reviews design submissions and determines whether the Dewees Island environmental principles are adhered to—from site design to building material selection and landscaping. The board includes homeowners, an architect, a landscape architect, an environmentalist, and a Dewees staff person. The ARB has the final word on all design decisions and it is the only appeals board[247].

DEWEES ISLAND

ARCHITECTURAL & ENVIRONMENTAL DESIGN GUIDELINES

(October 25, 1996)

STATEMENT OF PURPOSE

In response to the Dewees Island commitment to environmental preservation, Architectural and Environmental Design Guidelines have been established, and are administered by the Dewees Island Architectural Resource Board. The purpose of this information is to inform the homeowner, architect, landscape architect, and the contractor on environmental issues relevant to building on Dewees Island. Regulations for construction, design and materials were developed to ensure compatibility with the various Dewees Island Covenants, with environmental protection, and with the island's natural landscape.

These Design Guidelines have as their objective, harmonious integration of the built environment with Dewees Island's native environment. To maintain and enhance the island's integrity, to preserve the ecosystems, and indigenous landscape, and to reduce dependence on non-renewable resources is the goal.

It is important that each owner, design professional, and contractor be educated on environmental issues required to preserve the island's aesthetic value. The environmental standards set by the Architectural Resource Board not only serve the island, but also protect the owner's investment. Adherence to these standards will enable the community to continue to enjoy the beauty of Dewees Island.

a. North arrow.

b. Identification and description of views and vistas.

c. Descriptions of special or unusual features on the site and outward, to note all amenities such as marshes, ponds, tidal creeks or the ocean.

d. To assist with the site analysis, a thorough survey of land form (topography) and vegetation should be prepared. The survey should extend as far into the adjacent lots, or areas, as necessary in order to assure the designer pays careful attention to all environmental issues. Indicate location and description of significant existing plant materials, including those extending onto portions of adjacent lots. Utilities locations should be noted. Contours should be shown at one foot intervals. The survey shall show the location and footprint of any buildings on adjacent lots (Figure 1).

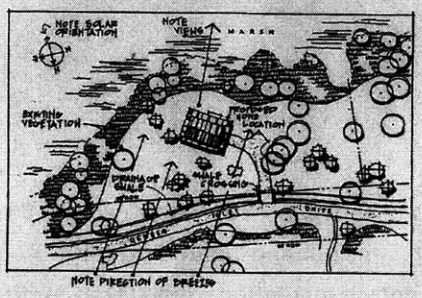


Figure 1: Considerations for Site Evaluation, Sample Plan

B. Site Planning

Integrating the home design with the natural island environment is critical to preserving the character of the island. Minimizing the impact on neighbors and the environment should be the primary objective for site planning. Each homesite provides unique design opportunities and limitations. Correctly evaluating the property will yield an optimal and unique site design. The survey will be the key document used in evaluating your site. It should be used as a base sheet when formulating a any site plan. Important things to consider when evaluating your property:

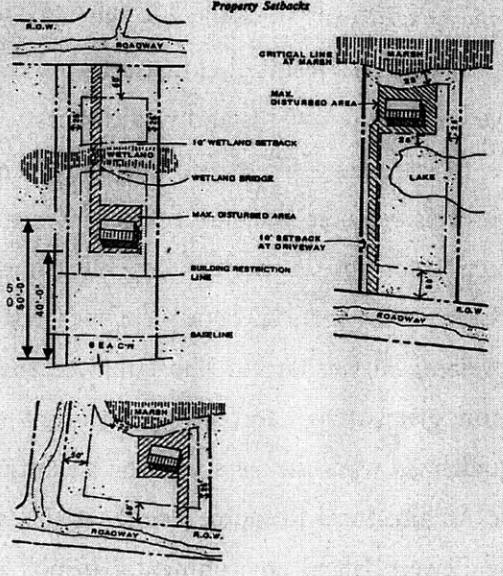


Figure 7: Property Setbacks.

I. Maintenance

Consider the mature size of plant material you are introducing so that the design grows in harmony with the landscape and maintenance will be minimized. When

4. Standards for Quality of Community

a. Views

When selecting a site, consider all prominent views and take advantage of any natural views. While deciding which views are best, take into account the location of neighbors, any future development on adjacent properties, and the view others will have of your home.

b. Cart Parking & Boat Storage

To lessen visual impact, cart parking and boat storage must occur under the home or at some other designated community facility. As all homes on the island will be on high pilings, this can easily be accommodated if when designed, the driveway and parking area are wide enough for boats and trailers. Keep this in mind when locating your driveway, and under-house access points.

c. Building Height Limitations

The maximum height of any roof element, with the exception of chimneys, is not to exceed 52 feet above mean sea level (Figure 8). The height to the mid-point of the dominant roof area is not to exceed 40 feet, relative to the average elevation of the grade within the building footprint. Although flat roofs are not permitted, a relatively small portion of the roof may be a flat, railed observation deck. The minimum roof pitch permitted shall be no less than 4:12.

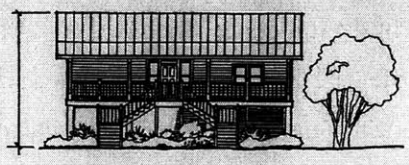


Figure 8: Building Height.

The FEMA and Charleston County regulations set the minimum elevation above grade at which structures may be built, however, it is important to consider other factors in the final decision about a building's height (Appendix 10). There are some favorable insurance issues if building above the minimum elevation is possible. The concept of nesting within nature should be taken literally. The tree canopy is a prominent feature of the island and should be respected. You are encouraged to keep the roofline within the tree canopy and are permitted only minimal penetration of this feature. Exceptions may be approved by the A.R.B. due to unusual site conditions.

5. Zoning

Dewees Island is zoned Agricultural General (AG). (Refer to the Charleston County Zoning Ordinance for additional zoning information)

C. Architectural Design

Creative architectural solutions are encouraged to complement the uniqueness of each site, to express the design concept of the individual property owner and to contribute to the island as a whole. Integrating the home in harmony with the sea island environment shall be the theme of the architecture on Dewees Island (Figure 10).

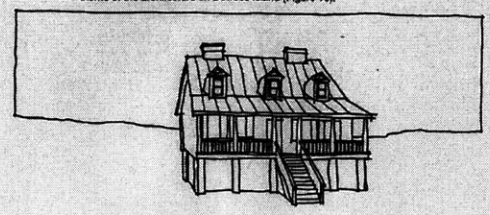


Figure 10: A typical lowcountry cottage.

1. Standards for Efficient Resource Use

a. Structural Frame

No large dimension solid lumber (greater than 2 x 12) is allowed. The use of engineered, manufactured lumber products is encouraged to reduce construction waste and the use of limited timber resources.

b. Siding

Siding material shall be wood, cement board or other environmentally compatible materials approved by the A.R.B. Aluminum, plywood, and vinyl sidings are not allowed nor are stucco finishes. High-quality, weather resistant woods such as cypress, cedar, or treated pine are preferred. Woods that are from endangered species should definitely be avoided. Your lumberyard should have a current listing of these species. Tropical woods should be certified as plantation grown.

c. Roofing

Roofing materials are to be high quality, standing-seam metal, slate or approved tile. Composite asphalt or fiberglass shingles are not permitted for original or re-roofing. Re-roofing includes any instance when more than 50% is required to be replaced after physical damage.

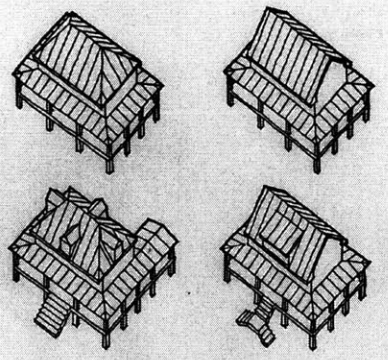


Figure 11

g. Plumbing and Water Heating

(1) Only water conserving plumbing fixtures should be used. Low-flow toilets are mandated.

(2) Insulate all water pipes to R-7 in unconditioned spaces.

(3) Water heater(s) to have energy factor (EF) of more than 0.80.

(4) Water heater(s) to be located within 25' of prime use locations.

(5) Consider the installation of a rainwater storage cistern and associated plumbing.

h. Appliances

(1) Dishwasher with energy-saving cycle.

(2) Clothes washer allows for cold wash and rinses in cold water. Water-saving, front-loading models are encouraged.

(3) Clothes dryer with automatic dry sensor shut off.

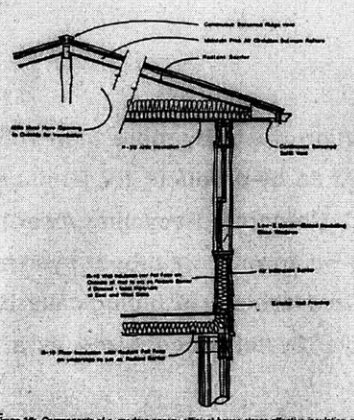


Figure 16: Components of a modern energy efficient house stress effective insulation, proper attic ventilation, radiant and air-infiltration barriers.

Energy Efficient Construction:

The quality of design and appearance sought by the Design Guidelines shall apply not only to proposed homes, and homes under construction, but to the maintenance of completed homes as well. Homes built before the implementation of the Dewees Island Master Plan will not have to upgrade to meet the requirements of these Guidelines, but any new work, renovations, or landscape work will require compliance.

Site Orientation:

Careful site planning reduces residential energy costs. When locating an energy efficient home these criteria should be addressed: blocking winter winds and summer sun; maximizing winter sun and summer breezes. The orientation of your home on the site is the critical factor by which to achieve these goals. For hot, humid, regions like Dewees Island, minimizing solar heat gain and maximizing cooling breezes should be a priority.

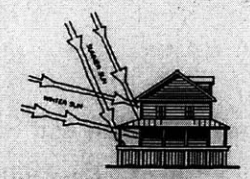


Figure 17: Porches and eaves protect the home from hot summer sun.

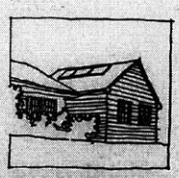


Figure 18: Solar water heaters need not be an eyesore as many modern units look like skylights.

Environmental Factors for Proper Site Orientation:

Orient active indoor and outdoor living areas to the south with properly designed roof overhangs. South facing spaces allow maximum winter sun penetration into a room and are generally considered more pleasing spaces. - Prevailing summer breezes should cross over the long side of the house. - Solar heat gain is greatest from westerly sun. To reduce this you can reduce the length of the exposed side, use shading materials, and reduce glazing on the west side.

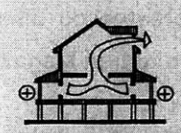


Figure 19: The Stack Effect is created by rising currents of warm air.

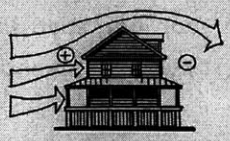
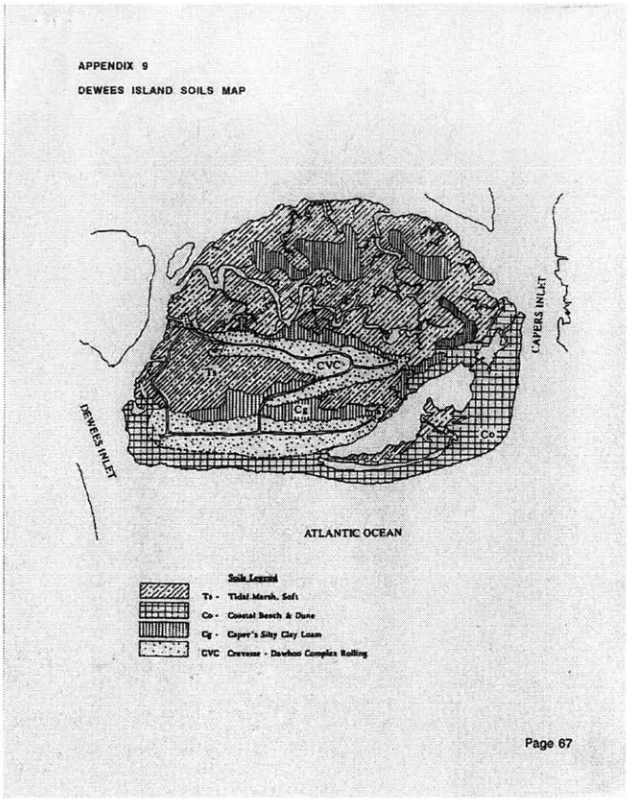


Figure 20: Orienting your home with prevailing breezes compliments the stack effect. The principle of "in low, out high" should be observed.

Passive Ventilation and Cooling:

Passive ventilation is a means of ventilation that has reduced dependency upon mechanical systems such as fans or air conditioning. The primary function of natural ventilation is to prevent heat build-up inside the building and to provide air movement. Moving air makes warm temperatures seem cooler by quickly removing heat from our bodies. By utilizing passive ventilation we are able to start air conditioning later in the summer and halt air-conditioning earlier, relying only on good design and natural breezes for cooling. Not only does this reduce the dependency on energy intensive air-conditioning, but it also gives one a sense of closeness to the place we inhabit.



APPENDIX 9

DEWEES ISLAND SOILS MAP

CAPERS INLET

DEWEES INLET

ATLANTIC OCEAN

Soils Legend

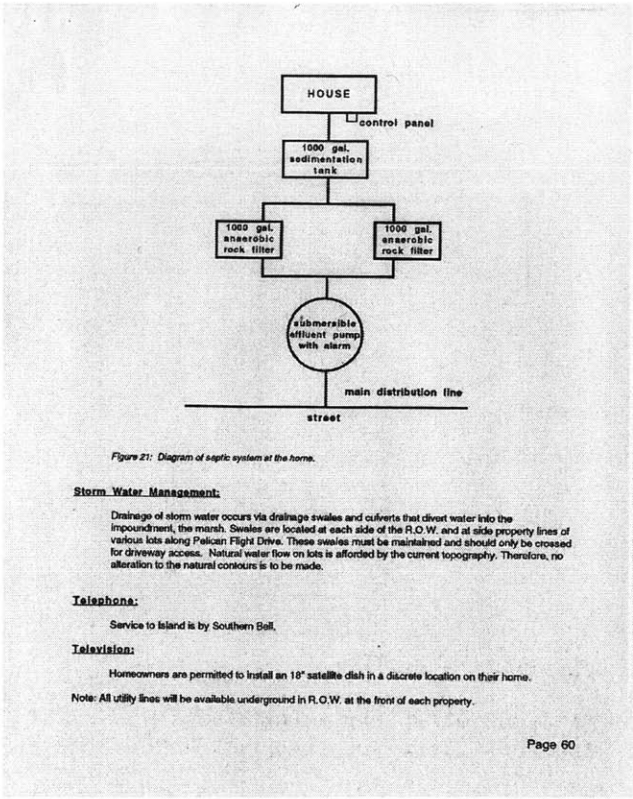
Ts - Tidal Marsh, Soft

Co - Coastal Beach & Dune

Cg - Capers Silty Clay Loam

CVC Crevasse - Dawhoo Complex Rolling

Page 67



HOUSE

control panel

1000 gal. sedimentation tank

1000 gal. anaerobic rock filter

1000 gal. anaerobic rock filter

submersible effluent pump with alarm

main distribution line

street

Figure 21: Diagram of septic system at the home.

Storm Water Management:

Drainage of storm water occurs via drainage swales and culverts that divert water into the impoundment, the marsh. Swales are located at each side of the R.O.W. and at side property lines of various lots along Pelican Flight Drive. These swales must be maintained and should only be crossed for driveway access. Natural water flow on lots is afforded by the current topography. Therefore, no alteration to the natural contours is to be made.

Telephone:

Service to island is by Southern Bell.

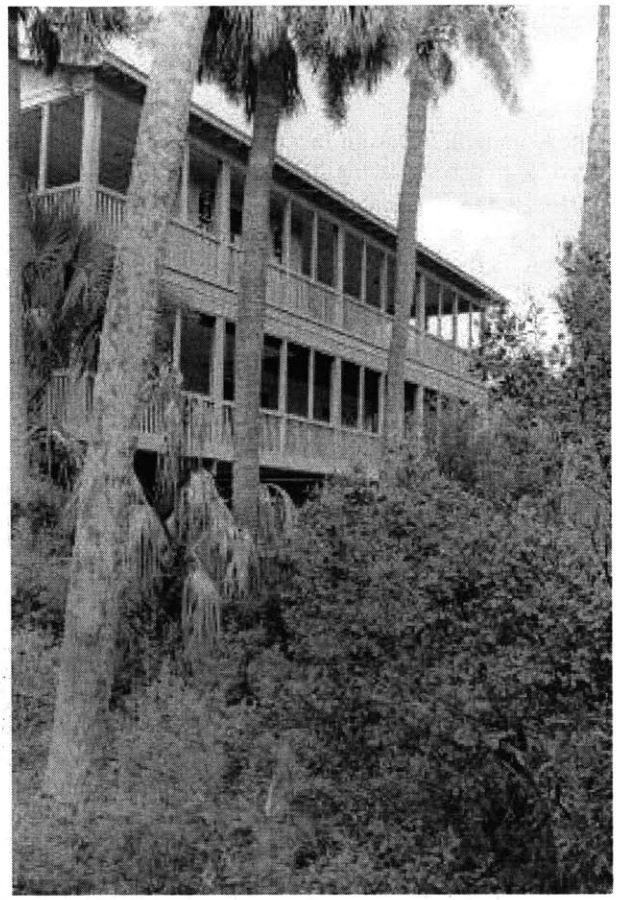
Television:

Homeowners are permitted to install an 18" satellite dish in a discrete location on their home.

Note: All utility lines will be available underground in R.O.W. at the front of each property.

Page 60

Source reduction, re-use, recycling and composting reduces construction waste by more than 70% and household waste by more than 50%. Pilings, lumber, etc. are recycled as by-products for landscaping, mulch, walk paths and other uses on the island. Awarded the 1994 S.C. Corporate Recycling Award from the S.C. Recycling Assoc. The island's Public Works Center features a wastewater treatment system that delivers no negative impact on the native environment. This centralized system is biologically based, closed- loop operation that creates no discharge into local waterways. System recognized as a "New Frontier" by Environmental Protection Magazine. Photo: JW Rapson



References

[1] As president of Charles E. Fraser Co, Ltd. and president of the Community Design Institute, renowned real estate developer, Charles Fraser, provides planning/programming services to private sector clients with large-scale new town or beach resort development interests. A leading developer in the U.S. and abroad, Fraser has provided top-level consulting services for The Walt Disney Company's new town of Celebration in Orlando, FL (1987-1997); the Metropolitan Water District of Southern California (1996-1998) on its five billion dollar Eastern Water Reservoir now under construction; and Abu Dhabi Offsets on new town planning, among other key projects.

Fraser was also the founder and chairman of The Sea Pines Company, 1956-1983, where he spearheaded planning and community growth for the principal resort on Hilton Head Island, South Carolina. Under his leadership, this eight-square-mile area grew to become one of the largest privately owned beach and golf resorts in the United States. There are currently more than 5,000 residences and four golf courses in this community. It is ranked by Tennis magazine as the top tennis resort in the world, and boasts renowned golf courses, drawing thousands of sports enthusiasts and vacationers annually. Under Fraser's direction, other communities planned and initiated by Sea Pines include: Amelia Island Plantation, Florida; River Hills Plantation, South Carolina; Hilton Head Plantation, South Carolina; Kiawah Island Resort, South Carolina; Brandermill, Virginia; and Palmas del Mar, Puerto Rico, which today has more than 18,000 dwellings.

In the 1980s, Fraser developed an interest beyond real estate, and established companies to acquire FCC licenses in the Specialized Mobile Radio (SMR) field. These licenses were merged in 1994 with Dial Page, which in turn merged with Nextel, today's dominant SMR wireless provider. As an advisor to Coactive Networks, he will merge his interest in technology and real estate development via the company's residential gateway solutions for the truly smart home. Prior to The Sea Pines Company, Fraser worked as an associate with Hull, Barrett & Norman, and as attorney-advisor to the office of the Secretary of the Air Force, where he served for two years. Fraser is a graduate of the University of Georgia and attended Presbyterian College. He also holds a J.D. from Yale Law School.

[2] Munday, Dave. (1995) *"Lot Sales Finally Booming At Exclusive Island Resorts."* (14 May, C1). Charleston, South Carolina. The Post and Courier News Paper.
[4] Ibid.
[5] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[6] At Berkeley Hall, Bluffton, S.C.'s latest cream-of-the-crop development, more than 200 home sites ranging from $179,000 to $1 million-plus were sold in one-day, pre-opening release[6]. At Kiawah Island, 26 lots priced from $375,000 to $675,000 were released on the community's new Tom Watson-designed Cassique Course. After a random draw among 50 potential buyers, all 26 lots were sold. At Daufuskie Island's Haig Point-a community accessible only by boat-the grand opening of the development's final neighborhood, Osprey Lakes, saw 22 of 31 available lots sold in one weekend for a total of $3.1 million. Since Hilton Head-based Resort Management Associates took over sales and marketing of Haig Point in June 1998, the community has attracted more than 300 families and generated over $85 million in sales. Other high-end communities like Colleton River Plantation, Belfair and Spring Island are either sold out or close to it. The lure of the Lowcountry is readily apparent: beautiful beaches, marshes and tidal creeks; year-round temperatures averaging in the mid-70s; easy accessibility for visiting friends and relatives; and for those with the means, the best homes, neighborhoods and amenities in which to enjoy it all. "More people are experiencing greater wealth at a young age, and they realize you can't just make more land, so they're going ahead and buying these properties while they're still available," says Jim Matoska, one of three principals with Resort Management Associates. "There will always be land, but prime waterfront property has become a commodity. People really seem to like living near the water, and they want to build lasting memories for their families."
[7] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).

[8] Ibid.
[9] Ibid.
[10] Located at the very tip, or "toe" of Hilton Head Island is the 5,000 acres which make-up Sea Pines Plantation. Sea Pines was the first community developed, by Charles Fraser, as part of a Master Plan to blend and harmonize architecture with natural surroundings. This set an environmental standard of excellence that was mirrored throughout the communities of Hilton Head Island. Sea Pines is a whole resort providing for tennis, golf, boating, beach, and riding activities. The forest preserve provides for miles of tranquil nature trails, bird sanctuaries and fishing. Three shopping areas host a collection of gift shops, clothing stores and restaurants. The widely recognized Harbour Town Lighthouse can be found at the resplendent deep-water Harbour Town marina. Another favorite shopping area gaining nationwide recognition is the quaint New England-style village of South Beach Marina. Sea Pines proudly hosts two nationally renowned sporting events: The MCI Classic – The Heritage of Golf and the Family Circle Magazine Cup Tennis Championship.
[11] The Department of Natural Resources presented its 1994 Land Development Stewardship Award to Spring Island for outstanding development and accomplishment in the improvement of natural resources. Edward Pickney /Associates, Ltd. (EP/A) prepared the Master Plan for Spring Island, Maintaining the integrity of the 200 year old live oak forests and tabby ruins while providing 500 home sites, and Arnold Palmer golf course, and other amenities. Special people who understand the Island's natural beauty are developing Spring Island. The team of Jim Chaffin, Jim Light and Dr. Peter LaMotte created an Island Trust to promote preservation, conservation and understanding of the Low country's cultural and artistic heritage. The development is located near the rapidly expanding growth corridor between Hilton Head and Beaufort, S.C. and provides a welcome retreat from the hustle and bustle that occurs just beyond its doorstep. Currently, EP/A is providing additional planning services for Spring Island and adjacent Callawassie Island, as well as a new golf course development nearby with course design by Coore and Crenshaw.

[12] Jim Chaffin's youth was spent in rural Virginia and his college days at the University of Virginia. All of his adult life has either been spent in the Low Country of South Carolina or in the Rock Mountains, both regions saturated with natural beauty.12 With projects in the Pacific Northwest, Colorado, and now South Carolina, this team is spreading a philosophy of environmentally sensitive development. Although it was in the South Carolina Low Country that Jim Chaffin and Jim Light began working in development, 10 years spent near Aspen gave rise to the vision that makes Chaffin and Light leaders in environmental development today. "In the West, the amount of shared public space was amazing. The county where we lived near Aspen had 83 percent public land," says Chaffin.

Chaffin and Light combined this idea of space with what they learned from mentors Charlie Fraser, who initiated Sea Pines Plantation on Hilton Head Island in the 1950s and 1960s, and Ian McHarg, author of the influential book Design with Nature. "There were really some visionary things going on there," Chaffin recalls of Sea Pines and Amelia Island, Florida, where he and Light worked with McHarg. "They really taught us to have a sensitivity to the natural environment."12 Chaffin and Light started envisioning their ideal development, one with all the services available at places such as Hilton Head Island but in an "unmanicured" environment like they'd seen in the West. Beginning in March 1990, that vision was realized on Spring Island, South Carolina, their most comprehensive project to date.

Chaffin is the cofounder (with James W Light) and president of Chaffin/Light Associates, a firm that specializes in developing resort and recreational communities. For 25 years, Chaffin has been involved in the development of communities across the country—Snowmass Village in Colorado, Semiahmoo in Washington, Callawassie Island (adjacent to Spring Island) in South Carolina, Palmas Del Mar in Puerto Rico, Amelia Island Plantation in Florida, Brandermill in Richmond, Virginia, and many others in the U.S.12 Chaffin is active in many professional and community organizations, including ULI, the National Real Estate Advisory Board of the Nature Conservancy, and local arts and education groups. Jim Chaffin, Dr. Peter LaMotte and Jim Light began development of Spring Island in 1990. They were also involved with the development of Amelia Island Plantation in Florida and Sea Pines Plantation on Hilton Head Island. Dr. Peter LaMotte is a retired surgeon on Hilton Head.

[13] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[14] Ibid.
[15] Located halfway between Hilton Head and Beaufort, Spring Island was purchased twelve years ago by developers Jim Chaffin, Jim Light and Peter LaMotte, who plan to retain the flora and fauna. Elisha and Lucille T. Walker bought the property in 1964 as a hunting preserve for themselves and their friends. In 1966, the Walkers hired Mobley to manage the property. They soon discovered Mobley was also a good cook, so when there was wild game to be cooked or a Frogmore stew to be made, Mobley was in charge. His barbecue method has been such a hit that he has earned himself fixture status. "Smoke in the hole" is as much performance as food preparation. You can improvise your own ceremony to suit your needs and your guests' whimsies.
[16] The Spring Island Development Company.
[17] The River House is a simple, rambling structure reminiscent of an old private hunting lodge of previous generation. It's an inviting, "relax your body and mind" kind of place. Big old fireplaces warm cool evenings, and the decor is comfortable and unpretentious. Hearty family-style meals are served and many ingredients come from the Island. The "gathering" room (bar) is a favorite spot for sunsets.
[18] The Golf House has a fully stocked pro shop, locker rooms, and delightful dining room with broad verandahs that overlook the 18th hole and marshes of the Chechessee River.
[19] A playful, open-air gathering spot overlooking Chechessee Creek with heated swimming pool, tennis courts, children's tree house and playground, croquet greensward, badminton lawn, volleyball court, softball and sports field, and boat docks. Spring Island Crab Boils are legendary. A hearty mixture is boiled on open fires and then dashed out on newspaper-covered tables. No flatware - only fingers - and lots of paper towels.
[20] Schwanke, Dean. (1997). *Resort Development Handbook.* Washington, D.C. Urban Land Institute.
[21] Ibid.
[22] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[23] Ibid.
[24] Interview with Spring Island resident and John Baker. (Sale Associate), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).

[25] Environmental News Network, EEN, Finding the Green in Green. Tuesday, May 29, 2001 (FIX)
[26] John Baker. (Sale Associate), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).

[27] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[28] Ibid.
[29] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[30] Ibid.
[31] Ibid.
[32] Mike E. Miles, Hanley, Berens. *Real Estate Development: Principles and Process.* Second Edition. Urban Land Institute, Washington, D.C. 1998.
[33] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[34] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[35] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).

[36] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[37] Tommy Baysden. (Vice President for Crescent-Resources, LLP; Oldfield and Palmetto Bluff project's), Interview, (27 September 2001).
[38] Environmental News Network, EEN, Finding the Green in Green. Tuesday, May 29, 2001.
[39] Spring Island Private Equity Offering Document (1998).
[40] Ibid.
[41] Ibid.
[42] Ibid.
[43] Spring Island Private Equity Offering Document (1998).
[44] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[45] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities.* Washington, D.C. Urban Land Institute.
[46] Geoff Applegate. (Broker-in-Charge), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[47] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[48] (Charleston .net, 4/22/01)
[49] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[50] Spring Island Private Equity Offering Document (1998).
[51] Ibid.
[52] Ibid.
[53] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[54] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[55] Ibid.
[56] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[57] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[58] Ibid.
[59] Ibid.
[60] Ibid.
[61] Community Stewardship Exchange, Spring Island Development / Spring Island Trust. , July 12, 2001, web: http://www.sonoran.org.
[62] Ibid.
[63] The Trust sponsors a Visiting Artist Program to invite national and regional artists to reside on the island, offering room and board in exchange for an original work of art.

[64] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[65] Ibid.
[66] As a project is built out and the developer has finished the community, ... Transfer of ownership occurs"What is the Spring Island Trust.", from the SI dev. Company
[67] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).

[68] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[69] Ibid.
[70] Ibid.
[71] Schnitz, Adrienne. (1998). *Trends and Innovations in Master-Planned Communities.* Washington, D.C. Urban Land Institute.
[72] Browning, William D. (1991). *Green Development: Determining the Cost of Environmentally Responsive Development.* Massachusetts Institute of Technology, MIT Center for Real Estate. Thesis Collection, Rotch Library.
[73] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[74] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[75] Ibid.
[76] Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[77] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[78] Ibid.
[79] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[80] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[81] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[82] Ibid.
[83] Ibid.
[84] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[85] A release is the amount (percentage) a bank or lending institution requires a developer to be put toward repayment of the loan; the larger the release percentage, the more difficult it will be for the developer to generate cash flow from the sales to apply towards debt service payments while also paying up-front costs of marketing, sales, capital improvements, and other required and immediate development expenses.
[86] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[87] Ibid.
[88] Ibid.
[89] Ewing, Reid. (1990). *Financing New Communities.* (August). Washington D.C. Urban Land Institute. Urban Land Magazine. 10-15.
[90] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[91] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[92] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.

[93] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[94] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[95] Ibid.
[96] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[97] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[98] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[99] Ibid.
[100] Ibid.
[101] Ibid.
[102] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[103] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[104] Ibid.
[105] Geoff Applegate. (Broker-in-Charge), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[106] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[107] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[108] Ibid.
[109] See Appendix 6 in the rear of this research.
[110] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001)., Mont Blaisdell. (Chief Financial Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[111] Chris Marsh. (Director of the Lowcountry Institute and the Spring Island Trust), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[112] Ibid.
[113] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[114] Ibid.
[115] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[116] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[117] Ibid.
[118] Ibid.
[119] Currently more than 2,000 courses have been certified by Audubon International since 1991. To comply with the program, which is sponsored by the U.S. Golf Association, courses must demonstrate that they have made a significant effort to improve environmental quality in six areas: habitat management, water conservation, water quality, integrated pest management, environmental planning, and public/member involvement. Although this

program represents and important step in the right direction, it has also been criticized by some because no site visits are made to ensure compliance and certification is based solely on information supplied by the golf course.
[120] Jim Chaffin. (Partner and Chief Executive Officer), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[121] Ibid.
[122] Ibid.
[123] Ibid.
[124] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[125] Charles Gatch. (Director of Planning and Zoning Review), Beaufort County Planning Office, Interview, (26 September 2001).
[126] Ibid.
[127] Ann DeBrosse. (Director of Planning), Chaffin/Light: The Spring Island Company, Interview, (26 September 2001).
[128] Jim Anthony, past President and CEO of Chaffin Light at the time of approvals and initial development noted, "Our philosophy is to try and form partnerships instead of creating adversaries."
[129] Cindy Comacho. (Assistant Director of Planning), Beaufort County Planning Office, Interview, (26 September 2001).
[130] Ibid.
[131] Charles Gatch. (Director of Planning and Zoning Review), Beaufort County Planning Office, Interview, (26 September 2001).
[132] Shawn Baldy. (Marketing and Public Relations), Dewees Island (IPP), Interview, (25 September 2001).
[133] Ibid.
[134] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[135] Ibid.
[136] Ibid.
[137] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[138] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[139] Ibid.
[140] Ibid.
[141] Ibid.
[142] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[143] Ibid.
[144] Ibid.
[145] Ibid.
[146] Ibid.
[147] Ibid.
[148] Ibid.
[149] Dewees Island Awards: 1999 Coastal Living Magazine Responsible Development National Award, 1998 RENEW America Environmental Success Index, 1999 RENEW America Certificate of Environmental Achievement, 1996 South Carolina Wildlife Federation & The National Wildlife Federation Industrial/Commercial Conservationist Of The Year Award, 1996 Dept. of Natural Resources Stewardship Award, 1995 Keep America Beautiful, National 1st Place Award, 1995 Certification by National Wildlife Federation - Wildlife Habitat, 1995 Department of Natural Resources Stewardship Award For Outstanding Natural Resource Protection, 1994 S.C. Corporate Recycling Award from the SC Recycling Association, 1993 SC Land Development Stewardship Award, Presidential Sustainable Development Award, Nomination, Renew America Award, Nomination.

[150] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[151] Ibid.
[152] Ibid.
[153] Ibid.
[154] Ibid.
[155] Ibid.
[156] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[157] Ibid.
[158] Dewees Island Awards: 1999 Coastal Living Magazine Responsible Development National Award, 1998 RENEW America Environmental Success Index, 1999 RENEW America Certificate of Environmental Achievement, 1996 South Carolina Wildlife Federation & The National Wildlife Federation Industrial/Commercial Conservationist Of The Year Award, 1996 Dept. of Natural Resources Stewardship Award, 1995 Keep America Beautiful, National 1st Place Award, 1995 Certification by National Wildlife Federation - Wildlife Habitat, 1995 Department of Natural Resources Stewardship Award For Outstanding Natural Resource Protection, 1994 S.C. Corporate Recycling Award from the SC Recycling Association, 1993 SC Land Development Stewardship Award, Presidential Sustainable Development Award, Nomination, Renew America Award, Nomination.
[159] Rodman Smith, Mark. (1997). Integrating Sustainable Design and the Real Estate Development Process: A Survey of Real Estate Professionals: Obstacles and Solutions. (Technical Papers pgs. 353-359). Environmental and Economic Balance: The 21st Century Outlook, US Green Building Council, AIA, and DOE.
[160] Source: http://www.deweesisland.com, October 20, 2001.
[161] Ibid.

[162] Value of: Diversity, Beauty and Aesthetics, Accidental meeting places, Surprise and Discovery, Resource Efficiency, Leaving your Mark, and Human form Emerging Naturally from its place.

[163] Development and environment are natural allies, All development & building should occur in the context that all resources are limited, Communities and buildings can be resource provider's not just resource users, Land is a stewardship role for future generations, It is less expensive short and long term to build in harmony with the environment, Communities are planned for people and technologies are to be supportive not dominant, Environmental education is an essential "first step" in the rediscovery of our intuitive sense of integrating with the environment.
[164] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[165] Ibid.
[166] Ibid.
[167] Ibid
[168] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[169] Arla Jessen. (Naturlaist and Environmental Educator), Dewees Island (IPP), Interview, (25 September 2001).
[170] Rodman Smith, Mark. (1997). Integrating Sustainable Design and the Real Estate Development Process: A Survey of Real Estate Professionals: Obstacles and Solutions. (Technical Papers pgs. 353-359). Environmental and Economic Balance: The 21st Century Outlook, US Green Building Council, AIA, and DOE.

[171] Shawn Baldy. (Marketing and Public Relations), Dewees Island (IPP), Interview, (25 September 2001).

[172] Ibid.
[173] Ibid.
[174] Ibid.
[175] Ibid.
[176] Ibid.

[177] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[178] Shawn Baldy. (Marketing and Public Relations), Dewees Island (IPP), Interview, (25 September 2001).
[179] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[180] Ibid.
[181] Ibid.
[182] Ibid.
[183] Arla Jessen. (Naturlaist and Environmental Educator), Dewees Island (IPP), Interview, (25 September 2001).
[184] Ibid.
[185] Ibid.
[186] Shawn Baldy. (Marketing and Public Relations), Dewees Island (IPP), Interview, (25 September 2001).
[187] Arla Jessen. (Naturlaist and Environmental Educator), Dewees Island (IPP), Interview, (25 September 2001).
[188] Shawn Baldy. (Marketing and Public Relations), Dewees Island (IPP), Interview, (25 September 2001).
[189] Ibid.
[190] Ibid.
[191] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[192] Elise Schmidt. (Director of Environmental Stewardship Program), South Carolina Department of Natural Resources, Interview, (27 September 2001).
[193] Ibid.
[194] Ibid.
[195] Rodman Smith, Mark. (1997). Integrating Sustainable Design and the Real Estate Development Process: A Survey of Real Estate Professionals: Obstacles and Solutions. (Technical Papers pgs. 353-359). Environmental and Economic Balance: The 21st Century Outlook, US Green Building Council, AIA, and DOE.
[196] Ibid.
[197] Ibid.
[198] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[199] Kana, Timothy. (1989). *Erosion and Beach Restoration at Seabrook, South Carolina.* (July, 3–17). Shore and Beach Journal.
[200] Ibid.
[201] Ibid.
[167] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[203] Ibid.
[204] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[205] Ibid.
[206] Ibid.
[207] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[208] Elise Schmidt. (Director of Environmental Stewardship Program), South Carolina Department of Natural Resources, Interview, (27 September 2001).

[209] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[210] Ibid.
[211] Existing prior to the most recent Dewees Island plan, 13 preexisting out-parcels on the Island were not part of the Island Preservation Partnership plan.
[212] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[213] Ibid.
[214] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[215] Browning, William D. (1991). *Green Development: Determining the Cost of Environmentally Responsive Development.* Massachusetts Institute of Technology, MIT Center for Real Estate. Thesis Collection, Rotch Library.
[216] Ibid.
[217] Ibid.
[218] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[219] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[220] Ibid.
[221] Ibid.
[222] The South Carolina Coastal Conservation League is a non-profit conservation organization. Its mission is to protect the threatened resources of the South Carolina coastal plain - its natural landscapes, abundant wildlife, clean water, and traditional communities. www.scccl.org.
[223] Ibid.
[224] Ibid.
[225] John Knott. (Partner and Chief Executive Officer), Dewees Island (IPP), Interview, (25 September 2001).
[226] Karl Ohlt. (Naturlaist and Landscape Architect), Dewees Island (IPP), Interview, (25 September 2001).
[227] Ibid.
[228] Ibid.
[229] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[230] Ibid.
[231] Ibid.
[232] Ibid.
[233] Karl Ohlt. (Naturlaist and Landscape Architect), Dewees Island (IPP), Interview, (25 September 2001).
[234] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
[235] Brewster, George, et al. (November 1996). *"The Ecology of Development: Integrating the Built and Natural Environments."* (Research and Working Paper Series - Paper 649). Washington D.C. Urban Land institute.
[236] Karl Ohlt. (Naturlaist and Landscape Architect), Dewees Island (IPP), Interview, (25 September 2001).
[237] Ibid.
[238] Browning, William D. (1991). *Green Development: Determining the Cost of Environmentally Responsive Development.* Massachusetts Institute of Technology, MIT Center for Real Estate. Thesis Collection, Rotch Library.
[239] Ibid.
[240] Ibid.
[241] Karl Ohlt. (Naturlaist and Landscape Architect), Dewees Island (IPP), Interview, (25 September 2001).
[242] Danielson, Michael N. (1995). *Profits and Politics in Paradise: The Development of Hilton Head Island.* Columbia: University of South Carolina Press.

[243] Ibid.
[244] Karl Ohlt. (Naturlaist and Landscape Architect), Dewees Island (IPP), Interview, (25 September 2001).
[245] Rocky Mountain Institute: Wilson, Alex, Uncapher, Jennifer L., McManigal, Lisa L. Lovins, Hunter, Cureton, Maureen, Browning, William D. (1998). *Green Development: Integrating Ecology and Real Estate.* New York: John Wiley & Sons.
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Chapter 4

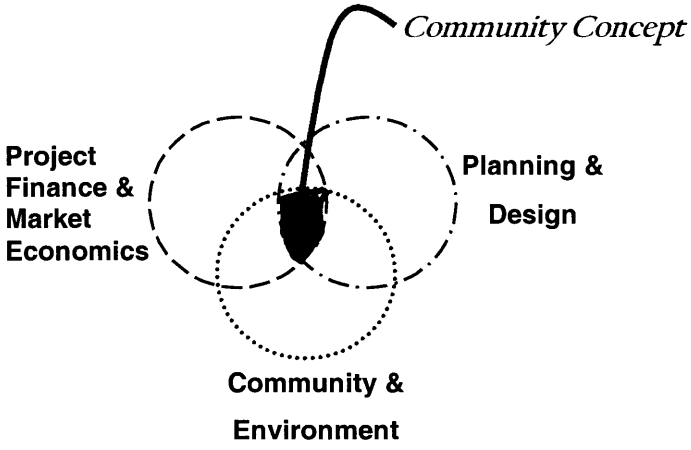
Implications and Opportunities for Developers

Introduction

This thesis finds that residential community developers in the South Carolina Low Country second-home market can generate significant premiums and differentiate their communities in a highly competitive marketplace, while making better decisions that are more responsive to a project's social, aesthetic, environmental, and economic site through a whole-systems market-based development approach. It has been shown that bringing three primary drivers together (economics and finance, community and environment, and planning and design) and capitalizing on their interconnections has realized multiple benefits over their competition while creating a new residential prototype. As I defined in the beginning of this thesis, the intent of this research was to qualitatively investigate HOW? developers in this market were able to significantly downzone their projects, preserve the natural environment, and generate higher investment returns. This fundamental question is answered by investigating two planned resort second-home residential developments: Spring Island, Bluffton, South Carolina and Dewees Island, Isle of Palms, South Carolina.

Peripheral research questions leading from this general inquiry were also examined in the context of supporting the downzoning of their projects and the subsequent 'competitive effects' that these decisions had. This included related questions examining the physical development standards and Codes, Covenants, and Restrictions for these projects. Additionally, this thesis examined how the CC and R's were enforced in addition to their effects on the projects' marketability. For example, how were

these projects perceived by the underwriting marketplace and what, if any, were the effects or (penalties) on the finance, investment, or zoning standards? Moreover, what were the effects of these environmentally oriented residential developments on the entitlements process? Did they experience an advantage? This chapter will address and explain the costs, benefits, and effects of these questions. Using the *Multi-disciplinary Feasibility Model Diagram* below as the primary means for understanding each project, I will explain both HOW and WHERE these specific projects experienced their competitive advantages as well as how other developers might capitalize on the positive externalities of these two successful environmentally-oriented residential developments.



You may recall that a competitive advantage is defined as a strategic decision made by a competitor in an industry, market and product which enables that competitor to exploit the industry structure better than its rival competitors allowing it to create a gain that is superior to its competition. This is the essence of competition. The primary variables that affect real estate value and thus a competitor's competitive advantage are the following[1]:

(1) A change in a projects' RISK.

(2) A change in the amount of TIME it take to procure a project.

(3) A change in a projects' CAPITAL flows.

Given this context on competition, I will address and answer the effect on the following questions that were posed in the beginning of this thesis with respect to the three variables noted above in the *Multi-disciplinary Feasibility Model Diagram.*

The Effects on Finance and Investment

Of the three primary sectors examined in this research, the finance and capital investment area of these communities bore the greatest difficulties. At the time of their inception, Spring and Dewees Islands were viewed as 'new' and unproven development prototypes. They were thus seen as 'alternative' to the status quo of what had been built and financed in their respective markets. They were seen as high risk, with no proven marketability or customer base. Financial institutions are primarily interested in financing a predetermined list of standard real estate products. There are approximately 19 individual prototypes[2]. In a paper recently written by Christopher Leinberger, Managing Director of Robert Charles Lesser and Associates, a market research firm, all but two of these 19 standard real estate products are seen as fundamentally sprawl-producing and adversely impacting the environment. Additionally, financial institutions currently concentrate on short-term investments (five years maximum). Short-term investments help reduce the risk of negative exposure in a real estate downturn and by their very nature, as was discussed in Chapter 2, planned residential developments are a longer-term investment.

Spring Island, more than Dewees Island, was adversely impacted by this 'alternative' residential development prototype perception and was therefore unable to get conventional financing in the beginning. The market risk associated with the project forced the developer to seek alternative means to initially fund the project until the developer could prove that a market existed and that the risks were in fact lower than the perceptions of the financial underwriters. One of the innovations that took place at Spring Island was the 'Founder's Program'. The Founder's program not only generated the necessary equity capital to get the project off the drawing board, but created "sale ambassadors" to give the project early momentum in the referred sales process[3]. For their contribution, founding members received at closing a five-acre home site, a golf membership, and other financial consideration in the project. In addition to the capital raised through the founders program, the general partners also contributed $1.0 million in equity capital. Part of the initial $10.8 million funded construction of a bridge and other necessary infrastructure. The success of the presales convinced NationsBank to lend another $17 million to the project. This adequately capitalized the deal to finish the remainder of the project[4]. About six

months later, a Japanese firm, Nippon Landic, provided another $20 million in venture capital as an equity partner. By late 1996, 90 percent of the debt had been retired[5]. It was at this time that Chaffin reported a "very strong absorption rate and at a high price[6]." With the financial performance of the project exceeding projections, the development company was put in a position to fund the remaining infrastructure requirements ($13 million) with cash flow from the project. This eliminated the need for the firm to borrow more capital. The current ROI is approximately 23 percent annually after debt service, projected over a 10-year holding period.[7]

While Spring Island faced significant opposition raising capital to begin the project, Dewees Island, more of a specialized destination retreat development, faced less opposition with its capital partners. Dewees's battle was waged with environmentalists more than with the financiers. Development began on Dewees Island in June 1991 by the Island Preservation Partnership. In 1996 the original Dewees Island land partners were bought out by a New York and Charleston-based investment group that included some Dewees Island residents. The new investors paid $6 million to buy the 50 percent interest in the project, giving the original owners a return halfway through the project equal to that projected upon total completion of the project[8]. As of January 1997 about $1 million in debt remained, with gross income projected at $44 million. Current profit projections are nearly double pro-forma estimates and the debt has been retired. Initially, net income was projected to reach $12 million. It is now estimated to reach $23 to $24 million. Under the initial assumptions of the pro-forms, break-even occurred with the sale of the 40th lot on the island[9]. The return on investment (ROI) or the cash-on-cash yield is expected to average between 30 and 35 percent annually[10]. The ROI is this high is in part because cost savings for infrastructure (resulting in environmental features) reduced equity needs[11]. Additionally, all revenues were reinvested back into the IPP partnership until the island's infrastructure was completed and the debt retired. Using an all equity capital structure helped mitigate the risk of default.

John Knott, the Dewees Island developer, has particularly strong feeling concerning the advantages of equity over debt. In the Dewees Island deal, it was the fact that most of the project was financed with equity which allowed the development team to ensure the long-range objectives and commitments they had envisioned for the Island. Knott remarks, "Because we structured our financing without debt, we do not have the monster of interest demand on our backs. This allows a more patient approach to development—no one can take the project away[12]." The new partners invested equity capital and development expertise, while the original landowners provided the land and the existing $5 million note

on the property—the only debt carried by the project. This note was assumed by the partnership as part of the land contribution in exchange for a 50 percent interest in the joint venture. [13]

Conventional real estate investors have a number of tendencies that steer them away from environmentally oriented residential communities. Investors "follow the money," which is currently flowing to conventional development projects more than 'alternative' forms of development outside of the 19 standard real estate prototypes. They make decisions quickly, and area attracted to "no brainers with no barriers," whereas environmentally oriented projects are more complex and require more thought, time and due diligence. Most investors do not want entitlement or construction risk. Also, the trend in the financial industry towards securitization (i.e. packaging real estate so that it can be bought and sold on Wall Street) favors standardization of real estate prototypes, not their innovation. The complexity of environmentally oriented residential communities often puts them at a disadvantage with regard to the financial industry's trend toward securitizing real estate lending and investing. On a ten year adjusted basis, the returns for both Dewees and Spring Islands were above par and very respectable in the low- to mid-twenties for an internal rate of return on the investment.

The Effects on Community and Environment

Conserving and Enabling Environmental Goods

Creating and sustaining 'community' around environmental and other social programs that the developers created with the development has significantly differentiated both developments from their competition. From my conversations with residents and sales personnel at both developments this has proven to be one of the primary reasons they were attracted to buy at these developments. Additionally, both projects have formed outreach programs with public schools where children are brought to the islands to participate in environmental education programs and experience the beauty of their native regional landscape. During 2001, Spring Island had every 5th grader in Beaufort County out to the island where they participated in a coastal wetlands workshop which taught students about their region and landscape.

To ensure that the environment would be preserved in perpetuity, so the set of 'environmental goods' purchased by the residents would not be destroyed or 'eroded' over time as the project was built out, both developments created innovative non-profit organizations funded by fees accessed on land and

home sales transactions. This new institutionization of innovation in residential development proactively works to prevent a "tragedy of the commons" scenario while enforcing the CC and R's of the two communities. The primary functions of the Spring Island Trust and the Dewees Island Property Owner's Association area as follows: (1) Land management and conservation under the not for profit institutional; (2) Environmental education initiatives which enable users of these sensitive sites to appreciate and understand the diversity and sensitivity of living in such a community. Essentially, the developers created programs to create land stewards; (3) Land Covenants and the Design/Development and Habitat Review Guidelines, creating a legally and institutionally enforceable system that ensures the integrity of the natural environment; and (4) the creation of strategic alliances with local community and environmental groups who otherwise might have worked against the developers project. This created open partnerships, where adversaries became advisors and trusted partners in building better communities. This was initially more evident at Dewees than at Spring Island, but as Spring Island developed it has builtup a significant leadership reputation in the region with the Lowcountry Institute. This is a not for profit advisory service with works with the Nature Conservancy and the Beaufort County Open Lands Trust to establish and set aside open space and conservation land in the county.

Specifically, the strong development standards initially created negative perceptions of increased uncertainty and risk in the financial marketplace, but there later proved to be the deciding factor for buying at the two communities. At both projects, the CC and R's and the Habitat Review Guidelines provided significant market differentiation. Both projects experienced decreased development costs for infrastructure and amenities. Since the existing natural environment was the primary amenity the community was selling, roads were built narrower or from material previously existing on the properties. Not having to provide paved impervious surfaces enabled the developer to decrease the initial upfront development costs. The within a highly competitive market and proved to be a significant variable as to why these residents bought here. This enhanced sales and therefore enhanced profitability. While it took some time for the new concepts to be understood by consumers, once they saw the effect, it was a "slam dunk of an idea[14]." The Department of Natural Resources presented its 1994 Land Development Stewardship Award to Spring Island for outstanding development and accomplishment in the improvement of natural resources. Today the island is home to a thriving community whose occupants agree that is the stands of old-growth oak trees and subtropical forests, the bald eagles, deer, fox squirrels, and other wildlife that have drawn them to the island to enjoy the connection with nature. Many lessons exist in these two projects concerning environmental conservation and community

building. These profitable lessons are transferable to other types of residential development that can use the precedents created at Spring and Dewees Island.

The Effects on Planning and Design

The effects for the zoning and entitlements process for both projects resulted in greater certainty that the master plans would receive approvals and be entitled. Having a greater certainty that a project will 'work' according to plan reduces uncertainty during the entitlements process and therefore eliminates variables that could adversely affect the financial returns on the capital investment. For Dewees Island, taking this approach to development was the only way approvals would be given to a developer to build in the Island. Spring Island, facing less opposition than Dewees, looked superior when compared to other developments in the county because the project downzoned the property to 1/10th of the previous plan. One key benefit of developing in this fashion is that the developer more often than not exceeds the requirements set forth by the local governing institutions and thus ensures, more often that not, that a more timely permitting and approvals process will result.

The Dewees Island master plan is not only a strategic planning tool, but a legal document administered by the state of South Carolina in the form of a deeded conservation easement across the entire island. The island's master plan/environmental covenants limit development on the island to 150 private residences, built on one- to three-acre parcels[15]. The issue of disrupting ecosystems and wildlife corridors were carefully considered throughout the planning, design and development of Dewees Island. As a result of this careful inventory and analysis, 65 percent of the island will remain completely undeveloped, with over 350 acres of the northern end of the island designated as a wildlife refuge[16]. The development impact is designed to reach a maximum disturbance of only 5 percent of the total gross area of the Island. The IPP worked from the outset with environmental groups throughout the development process to establish a high performance threshold for the project, and, more importantly, to establish open communications and collaborative decision-making on several of the project's potentially controversial components, including the island's sewage treatment system[17]. Environmental groups also played an instrumental role in supporting the regulatory approvals of environmentally responsible building materials and techniques not permitted under conventional codes[18].

Determining the Optimal Density

Undeniably, the success of implementing this specific type of community prototype is directly related to the high pricing structure (or the consumer's willingness to pay) and the narrow market segment these projects are positioned in. The developers determined the optimal density for their projects under the conditions of preserving and meeting the 'environmental agenda' of the community concept and creating a project that was financially competitive. Dewees Island's density was driven from the wants and desires of a conservation group and a developer who was committed to environmental preservation and education. If the Dewees Island developer had not have taken this approach, it was highly probable that the plan would not have been approved at all. This is evident from past failures by previous developers who did not use the environment as a central concept in their plan. These developers were "shut down" in the approvals process by community and environmental groups' opposition to the project.

The Spring Island developer's motivation was also driven from a preservation and conservation approach. However, since the community is three times the size of Dewees Island, located in one of America's most traditional competitive second-home golfing markets, they chose to include a golf course to help defer the risk of the development. Unlike Dewees Island, Spring Island is automobile-accessible, appealing to a broader and more traditional second-home market within the environmentally-oriented consumer segment that the developer is selling to. As I discussed in the finance section of Chapter 2, the financial analysis is relatively straightforward. If a project is down-zoned, the cost function relationship between land cost per square foot and density per square foot has a direct relationship with one another and therefore has to change as the density decreased or increased.

A developer optimizes these dependent variables so that they maximize profits as a function of the consumer's willingness to pay for FAR. Common to all profitable real estate projects, regardless of the density modification to the development program, the present value of net revenues has to equal zero or be greater than zero, so that the hurdle rate is met and investors are compensated for the risk they took in building or investing in the project. Given that the minimum return of the project is met, a financially viable project will exist. It is important to note that the goal of most developers[19] is to make 1+1=3. What this essentially means is that the required rate of return has been met (1+1=2), and that the project has in fact exceeded the required rate of return and has generated an 'entrepreneurial return' and additional profit. This additional profit, the (+1), is the additional present value of the net profit and is considered to be the entrepreneurial reward for undertaking the investment. Both of the developers in this research

were able to downzone their projects as a result of identifying an emerging segment of consumer demand, where the consumer's willingness to pay (price per square foot of land), was at a level that enabled a low-density development, which also therefore provided a environmentally sensitive development and conservation agenda for these developments.

Lessons Learned

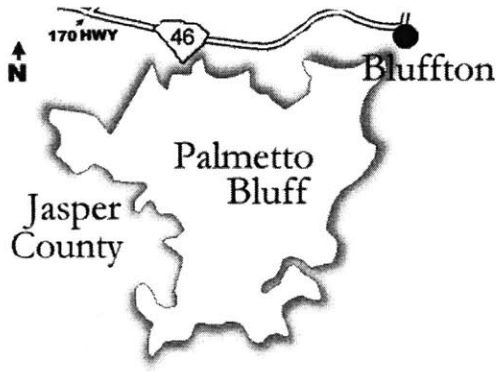
A natural question is how much of what's done in a high-end project like Dewees or Spring Island can benefit the average developer building residential communities for a more moderately priced segment of the market. One sign that the Dewees approach is applicable is the fact that it has gained the attention of Habitat for Humanity, which has made a priority of environmentally friendly construction. Dewees has become a resource for Habitat's quest because the sustainable design techniques that Dewees demonstrates make sense economically, and reinforce resource-efficient practices.[20] Given that the development strategies used in these case examples are competitive, perhaps the key contribution of this inquiry will be to help popularize and change the norms of land developers across many sectors of the residential development business. U

Without a doubt, Spring and Dewees Islands offer several key lessons with regards to: environmental protection; differentiating a community from its peers with little financial investment in amenities other than preservation and education; Spring Island demonstrates innovative approaches to raising capital, increasing financial returns and mitigating risk; the creation and development of 'community' and 'exclusivity'; less uncertainty in the entitlements and approvals process through strategic partnerships with opposition organizations; and finally developing a new residential development prototype that others can begin manipulate and replicate in the marketplace. Perhaps the most important indicator as to whether or not this development approach is competitive is if it is being replicated in the marketplace. In fact, core ideas from both Dewees and Spring Island are, in whole or part, currently being duplicated around the nation. The Spring Island developer currently has 5 projects underway across the United States that use Spring Island as the model for which these projects have been undertaken. Several of the key members from the Spring Island development team have since moved on and formed their own development companies where they are using the land trust concept as a tool for preservation and community building, while another key member of the Spring Island team, Tommy Baysden, is building a 26,000-acre development he described to me as "SPRING ISLAND ON STEROIDS."

While the benefits of introducing something new to the market are real, they are short lived. It's a common competitive tactic in business to copy your competition as soon as they start doing something innovative. Unfortunately, this eventually diminishes the advantage in the market for all competitors as the initial tactic quickly becomes the expected norm for customers. The only sustainable competitive advantage is the ability to innovate again and again and again. Like arbitrage opportunities in competitive financial markets, the developers of Dewees and Spring Island will not maintain their competitive advantage and project differentiation indefinitely in their respective markets. Already, competitors are entering their market area and replicating these innovative and profitable community development ideas. As a result, these competitors will eventually erode their competitive advantage. The following is a sampling of several residential developments that mirror or copy ideas initially developed at Spring or Dewees Island.

Palmetto Bluff, Bluffton, South Carolina

Just across the May River from Bluffton, South Carolina, a town of 750 where parking tickets once largely financed government, a 26,000-acre tract of pinewoods dotted with majestic oaks remains largely undisturbed. For generations the expanse of woods, known as Palmetto Bluff, served as ground for hunting deer and feral pig, duck and fox. A wild and earthy place bounded by the May, the New and the Cooper rivers, it was once a home of Richard T. Wilson, a brother-in-law of the industrialist Cornelius Vanderbilt[21]. Most recently, though, as South Carolina's coastal region experiences more and more development, the property became the focus of debate about its future and how a development of thousands of homes, some expected to cost more than $1 million, would shape and change the surrounding area.



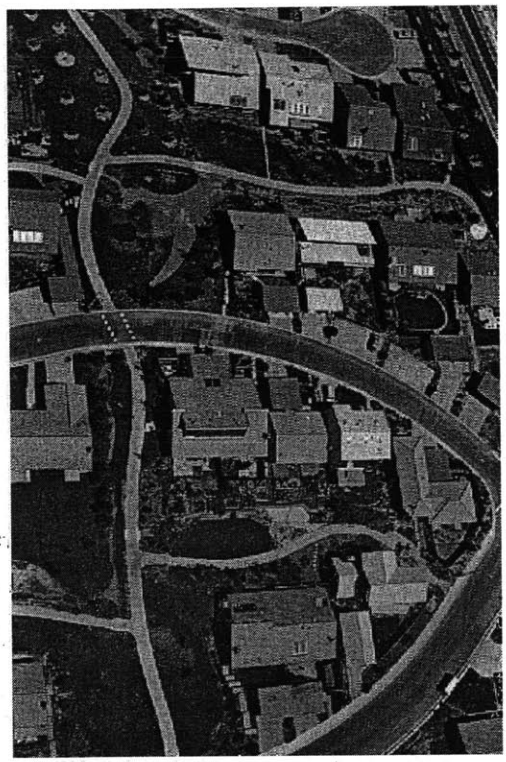
WalCam, a Louisiana investment group, and its partner, Crescent-Resources, intend to build as many as 5,000 homes on the tract, which is roughly the size of Manhattan, along with three golf courses and a small village. The project encompasses fully half of Beaufort County, South Carolina's fastest growing county, located about 40 miles north of Savannah and less than 10 miles west of Hilton Head Island[22]. The Union Camp Corporation, then the Union Bag Company, bought the property in 1937 and set about a threefold plan for its use: to protect wildlife, preserve scenic areas within its property and grow pine trees for pulp. Charles W. Bales, who began managing the property for Union Camp in 1979, said a wildlife biologist drew up the first plan in 1960[23]. Less than a third of the property has been designated for timber harvesting, he said. Union Camp executives and clients used the property and 14-bedroom lodge for hunting and fishing. It was a particular favorite for a company president, Alexander Calder, who along with his wife is buried overlooking the May River[24].

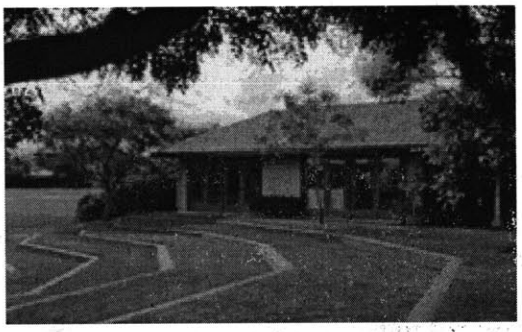
The International Paper Company announced its intention to acquire Union Camp in 1998, and rumors began circulating that the property would be sold. Last year, WalCam paid $100 million for it and hired Crescent-Resources, the land management subsidiary of Duke Energy, a North Carolina utility, to develop it[25]. At Palmetto Bluff, old-growth maritime forests edge the riverfront. Dirt roads wind through the interior pine forest. WalCam and Crescent intend to build three golf courses, riding trails, a riverfront village and as many as 5,000 houses on sites ranging in size from 1 to 50 acres, and 5,000 acres will remain in a nature preserve[26]. Construction of the infrastructure for the first phase is to begin in the spring. The first phase will include 732 homes and an inn, with some homes expected to be ready for occupancy by late spring 2003. The first phase should be completed within eight years[27]. Tommy Baysden, the prior developer and Senior Vice President at Spring Island who was instrumental in developing that projects environmentally oriented concept is now leading the Crescent-Resources development team to create what he describes as a "Spring Island on steroids[28]." He feels the market is still exponentially expanding for this type of residential product and the Hilton Head market remains an attractive destination for second-home buyers and retirees[29].

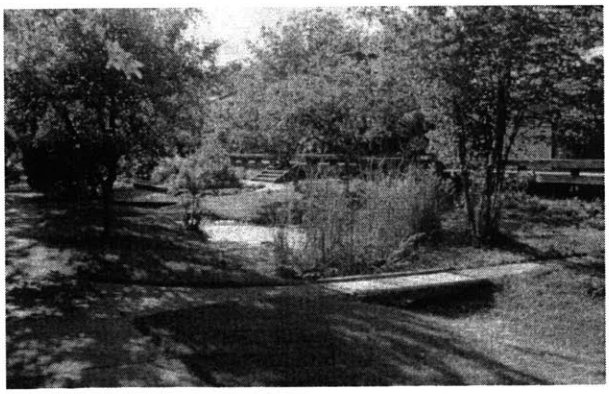
Village Homes, Davis, California

While not a direct descendant influenced by Spring or Dewees Island, a successful example of conservation development emerged from friends who shared the same sense of dislocation, disconnection, and powerlessness with regards to their concern for the environment. They contemplated a new idea for the modern residential neighborhood—living lighter on the land. Succeeding in the face of adversity over 'different' development standards and regulations, the planning staff representing Davis, California opposed the narrowness of streets, the inward-facing houses, and the long cul-de-sacs[30]. The spacing of the houses, closer than usual to the street and to one another, was in violation of the standard rules for subdivisions. Moreover, the city planning director did not believe that agriculture would be compatible with housing[31]. The fire and police objected to the tight configuration of the neighborhood streets and were concerned about access for their emergency vehicles. The drainage concept for the development was viewed by one planning official as a reversion back in time well before the industrial

revolution[32]. Interestingly, the developer recalls the only point in the development plan that drew no criticism were the proposed drought resistant plants[33].

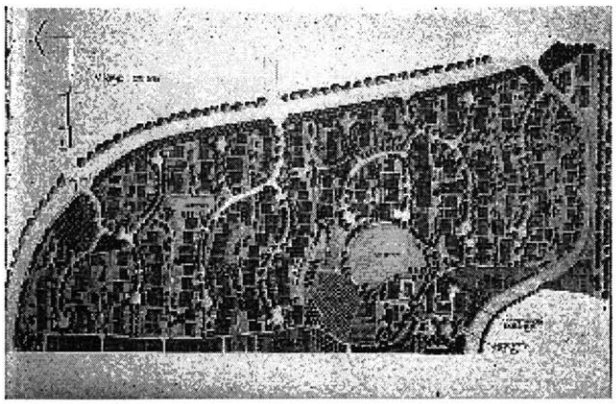






The city recommended non-approval of the plan and asked us to review the deviations from the norm, eliminating all the controversial features. The developer of village homes, similar to what John Knott did at Dewees Island, went point by point through the objections and argued point by point before the city council. This involved critiquing and arguing against the true logic and intent behind the regulation and its intended 'performance' outcome[34]. In the end, fortunately, the city council members were willing to

think outside the box. Nonetheless, Village Homes proved to be a highly profitable development venture creating value in excess of $11 greater per square foot than surrounding developments as of the year 2000, when the analysis was done[35]. The houses went on sale during a recession period and home sales were bad throughout the region surrounding Village Homes and Davis, California. In spite of this, Village Homes sold out immediately through the first phase. Within a year work began on the second phase and it was clear that the project would be financially successful. Contrary to the predevelopment and first phase of the project, the remaining phases of the project had no trouble attracting capital to finance the remaining phases. The first phases of the project has significant trouble getting financed, resulting in the developer being turned down by thirty-two banks. After rewriting the financial proposal and downplaying the projects innovations, they were able to get initial financing for the first phase of the project. Completing the entire project took six more years, and while initial home sale prices were comparable and equivalent to other developments at the first phase of the project, on average, appreciation for the Village Homes houses were greater than the surrounding housing and currently selling at an 11% premium to comparable residential product in the same market area[36]. This premium is attributed less to the house itself, but more to the neighborhood which is viewed as a very desirable place to live. Consequently, the homes come onto the market less frequently than other areas in Davis and sell twice as fast[37].

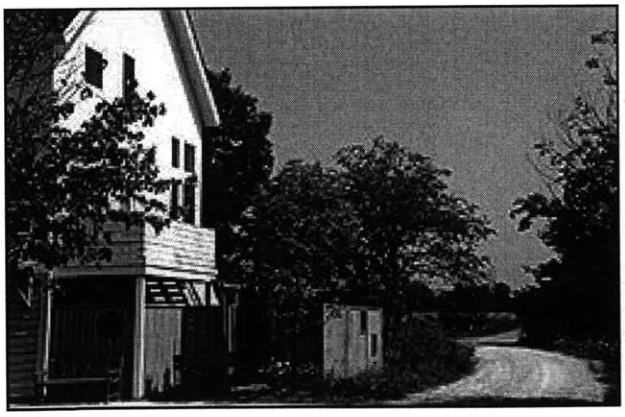


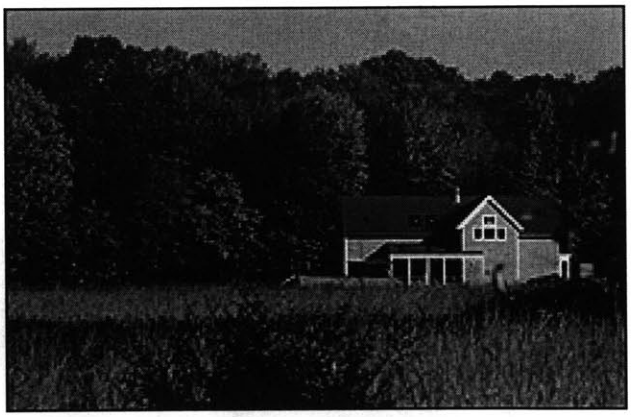
The developers of Village homes chose the respective design features that made up Village Homes a to either enhance the social life of the community or to create a more environmentally sensitive development plan. Interestingly, many features accomplish both. A planning or design idea was considered 'right' when it accomplished more than one of the original goals established for the community[38]. Although receiving approvals and financing for the projects innovations required extensive work convincing government agencies and financiers, the developer makes note that "innovators are

rarely appreciated, but the end product has proven well worth the time and trouble[39]." Additionally, the developer feels that the innovations result in a design that allows a sense of community to be developed while promoting water and energy conservation, use of solar energy, walking and biking, and a lifestyle that is closer to nature. Adding it all up he feels this has been a successful venture in development when judged on economic, social, or and ecological point of view[40].

Tyron Farm, Michigan City, Indiana

Tryon Farm, a 170-acre environmentally sensitive farm-based development in northwest Indiana, is a family enterprise, designed, developed and managed by Chicago architect, Edward J. Noonan and his family. "It was a dairy farm that for a century was a terrific place to live. It's still a farm. . . What we've tried to do is fit the homes into the landscape without intruding," says Eve Noonan, a marketing specialist and Mr. Noonan's wife. In the design, groups of 8 to 20 homes are clustered in eight "settlements" separated by fields, woods or meadows. More than 120 of the farm's 170 acres are permanently off limits to construction. Buyers own their own homes and a small skirt of land around the building, but the rest of the land is in common ownership. Prices range from $100,000 for 650-square-foot lodges to $400,000 for 2,400-square-foot four-bedroom homes. Michigan City's zoning code allows 150 homes on the property; so far 25 homes have sold. Tryon Farm goes further than other alternative housing developments in encouraging fealty to nature and community. Wastewater from homes, for example, is cleansed in constructed wetlands that also serve as habitat for birds; the water is then used to irrigate alfalfa fields. To encourage interaction among neighbors, there's a community garden and a common area for parking cars.





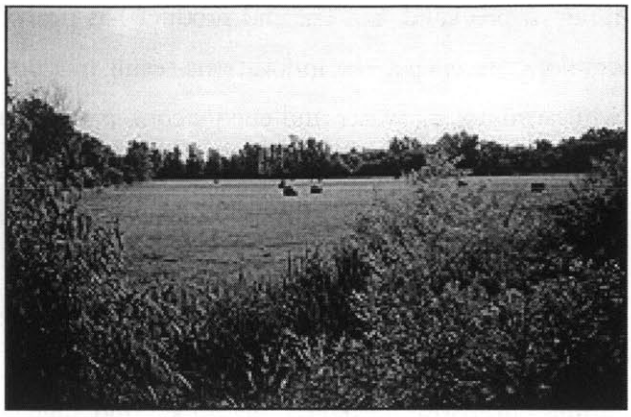
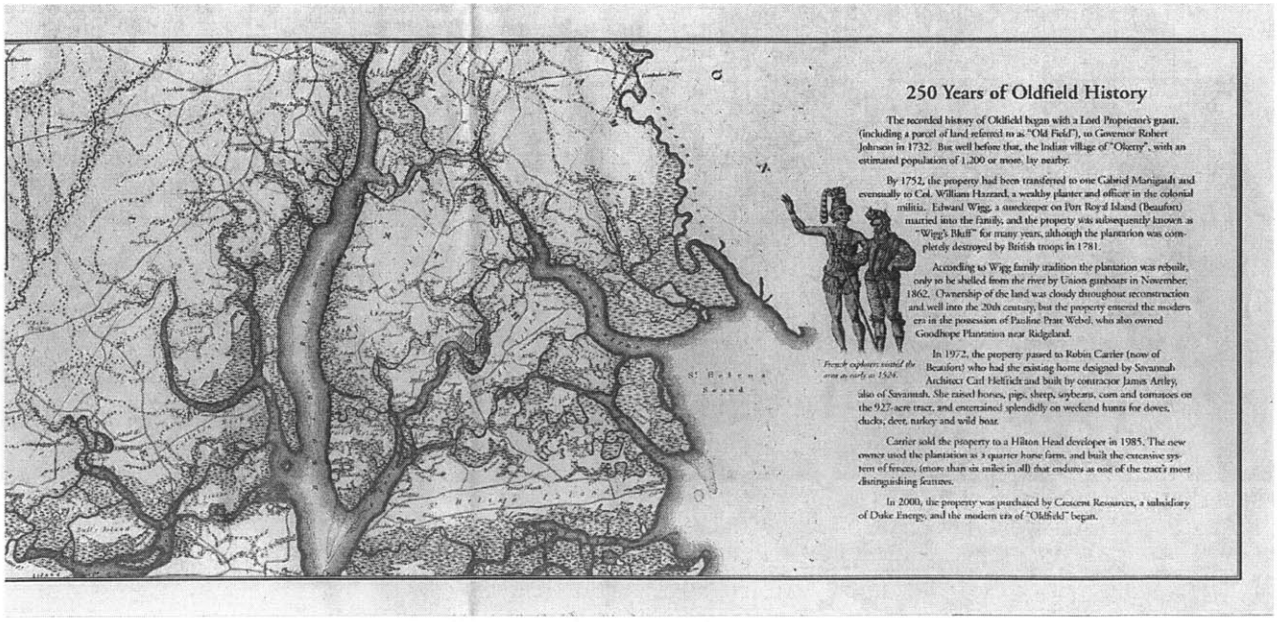


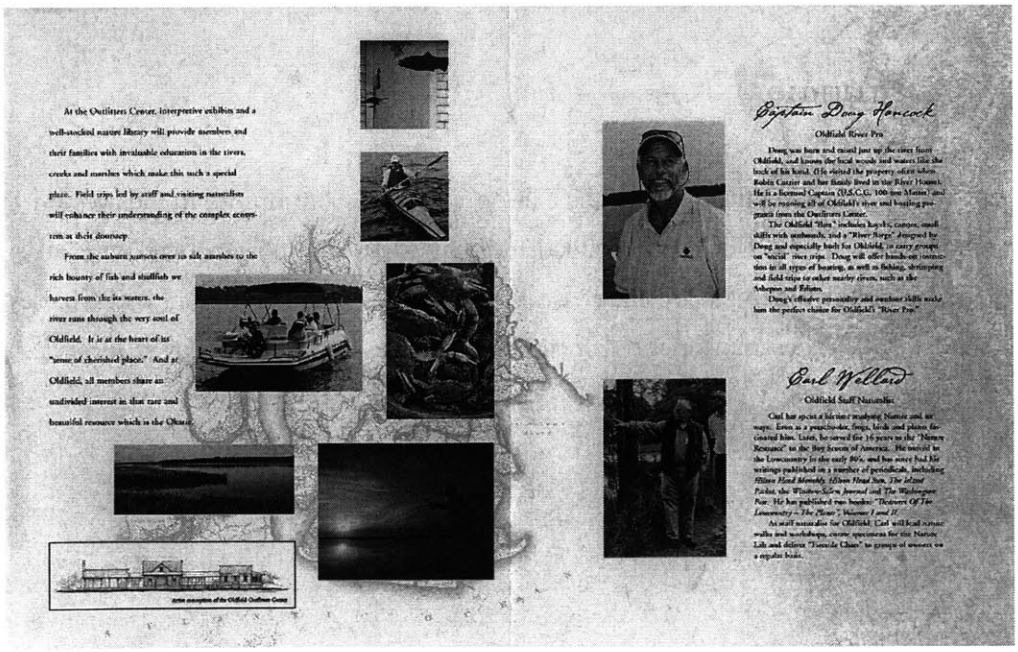
Photo: Tyron Farm Development Company

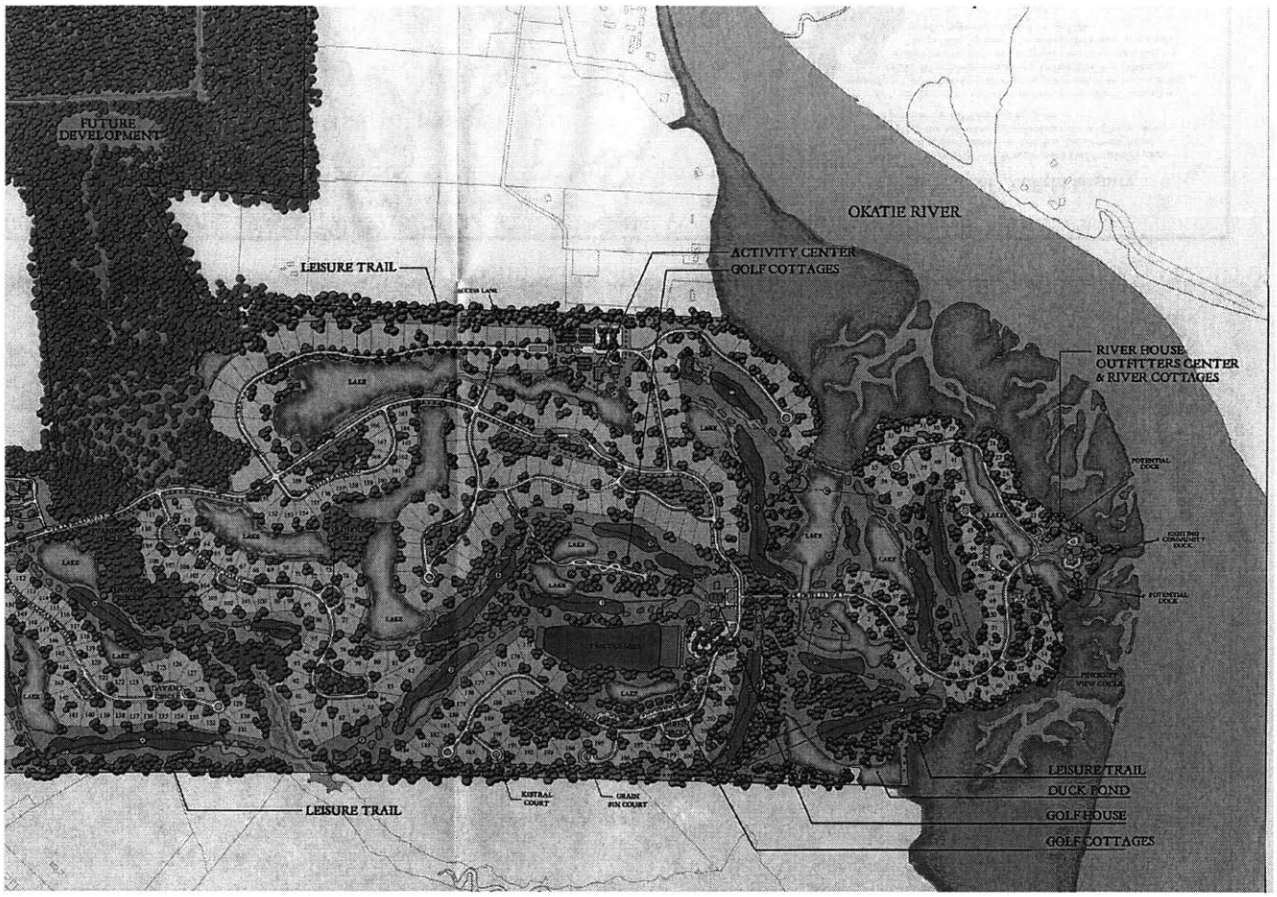
Oldfield, Okatie, South Carolina

At Oldfield, a new, refreshingly different community is coming to life. Located between Beaufort and Hilton Head Island, Oldfield overlooks a spectacular horseshoe bend in the Okatie River, deep in South Carolina's legendary Lowcountry. Its 800 acres are replete with the magnificent moss-draped live oaks and dramatic marsh vistas for which this area is known. Only about 500 families will share this extraordinary community experience, and only 375 members will enjoy the highly anticipated golf course Greg Norman is creating here. Although Norman will surely weave his magic amidst the site's extraordinary natural beauty, Oldfield will be far more than a great golf community.



River access and recreation, overseen by Oldfield's River Pro, will be part of daily life. Classic architecture and a sincere dedication to hospitality and service will infuse Oldfield with authentic Southern style. At Oldfield, you'll know your neighbors and share with them a community with a true sense of place. You'll celebrate the active outdoor life on a river and enjoy Greg Norman's only Lowcountry golf course just outside your door! With homesites beginning in the low $100s and ranging to the $800s, Oldfield truly offers an inviting community and uncommon way of life.



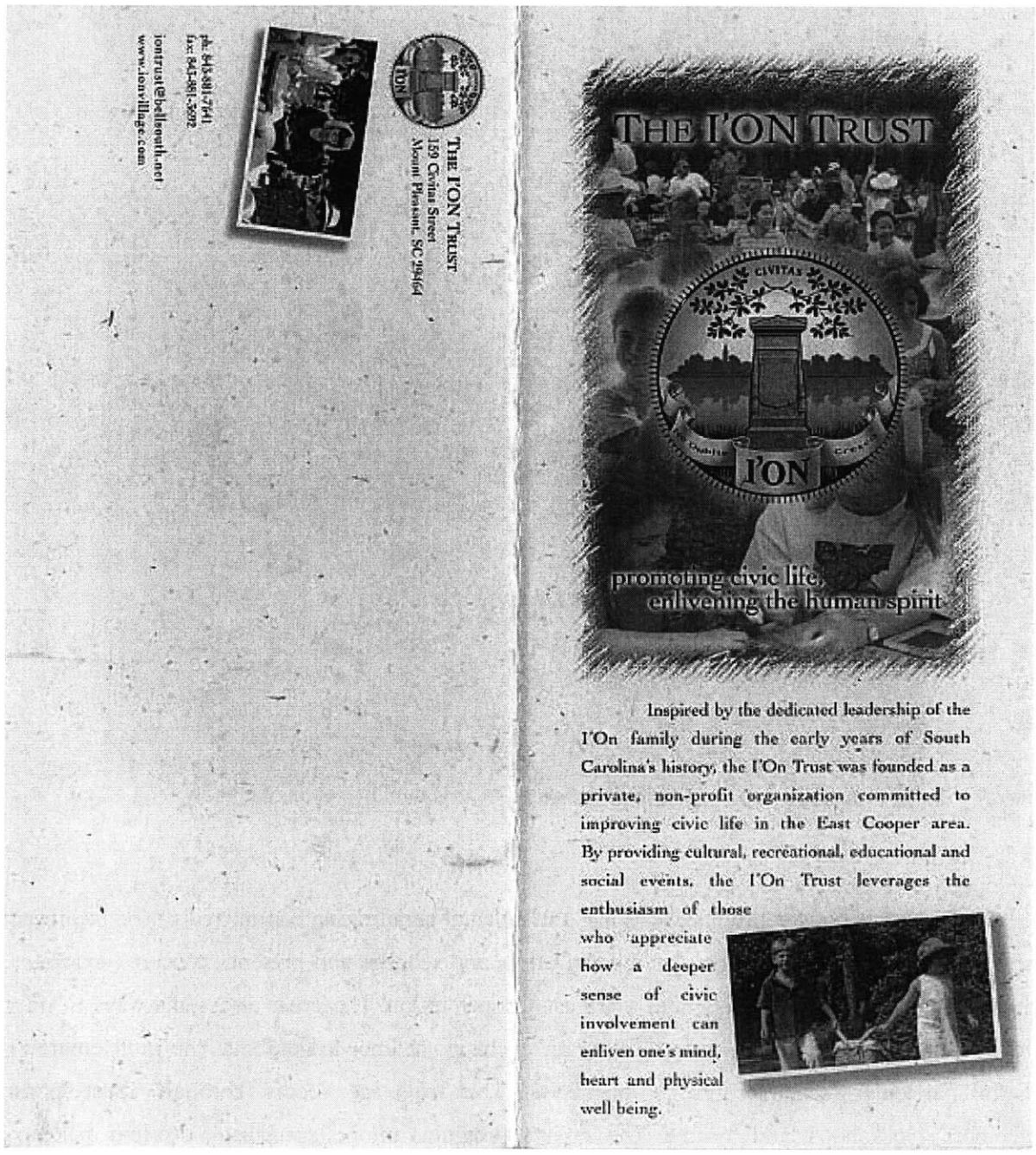


I'on, Mt. Pleasant, South Carolina

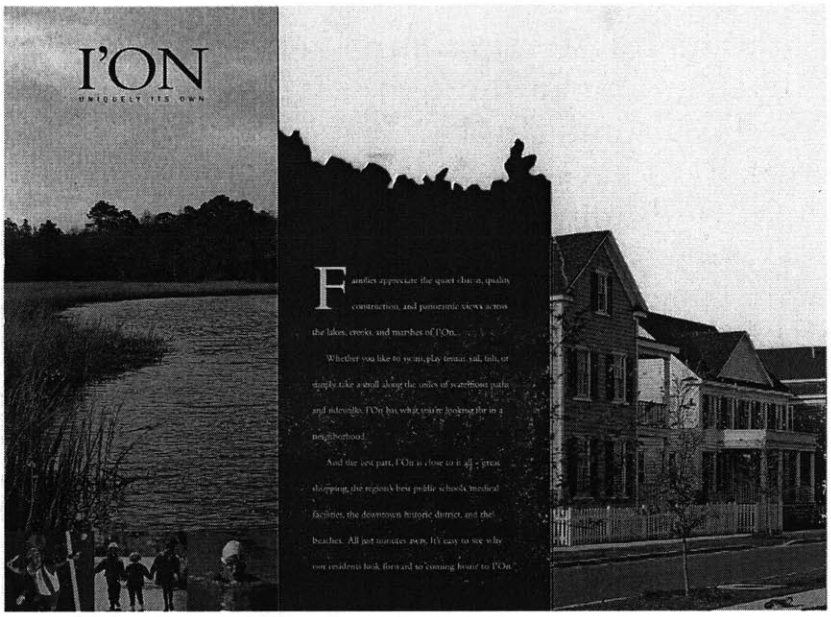
Selected as one of the 'Best Communities in the Nation' and 'Best Community in Charleston' two years in a row, I'On exemplifies the best of neighborhood building and planning practices with an eye toward a classical architectural style. Inspired by the coastal towns of Beaufort, Savannah, and Charleston, we are creating a traditional, pedestrian-oriented neighborhood designed for today's lifestyles in Mount Pleasant, South Carolina.

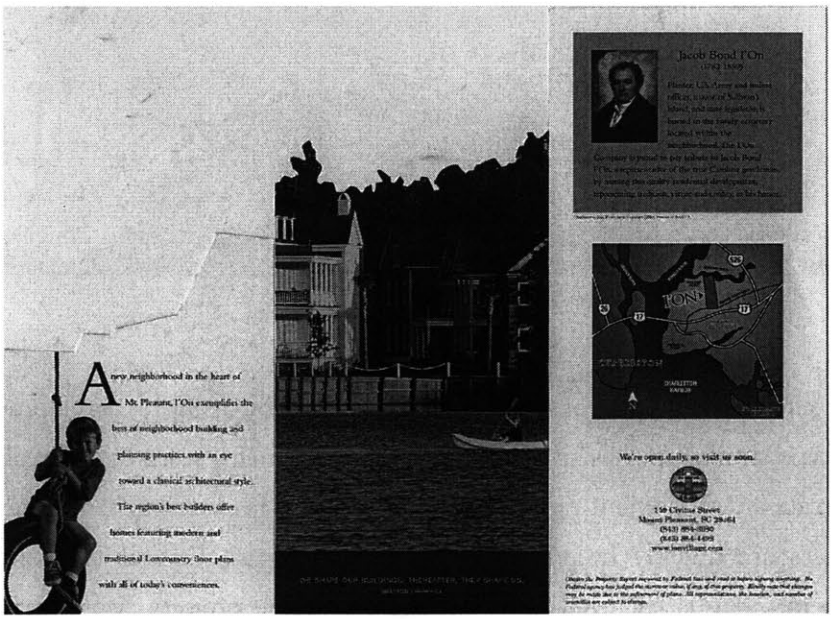
The I'On Trust is a not-for-profit educational and cultural organization committed to the improvement of civic life. The Trust supports programs for artists and scholars and presents concerts, exhibits, and literary events in I'On and throughout the East Cooper region. The Trust also seeks ways to improve South Carolina's communities by facilitating an exchange of knowledge about the built environment and, in particular, sensible growth principles. This exchange occurs through Trust-sponsored conferences, workshops, and forums. The Trust's programs inform specialists, decision-makers, and

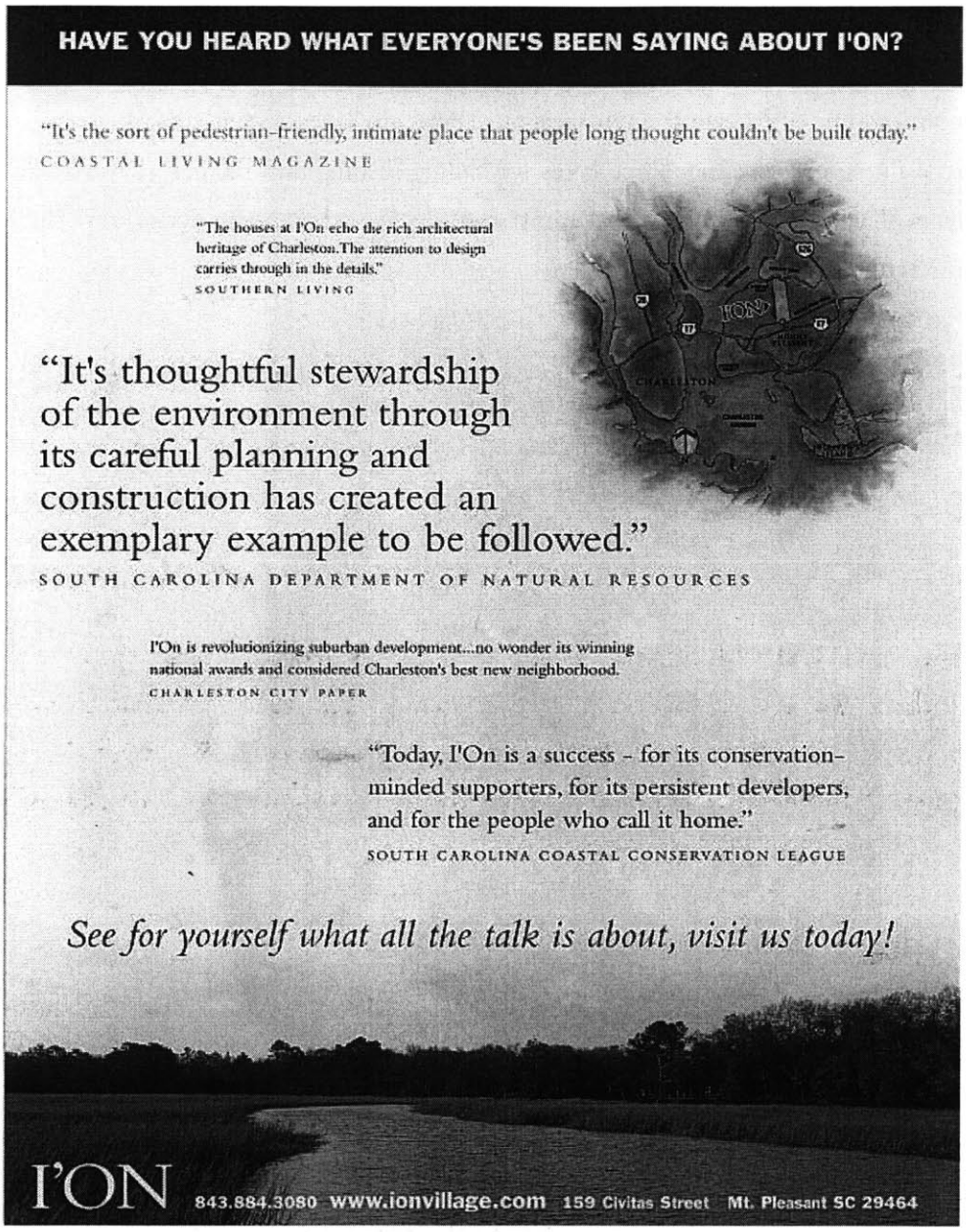
students, as well as the broader public. The existence and goals of the trust are to: promote neighborliness and civic life; foster creative energy and the arts within the East Cooper area; further the enjoyment of the Lowcountry's natural resources; nurture a pride in craftsmanship; engage citizens to restore and improve upon South Carolina's planning and architectural traditions for the benefit of ourselves and future generations.



I'On has been developed with community and recreation in mind and takes full advantage of the beauty of the Lowcountry and its natural environment. There are lakeside and marsh front walkways and sidewalks for walking or bicycling, three lakes for sailing, fishing and picnics, playgrounds and playing fields for kids of all ages, a community boat ramp, boat docks and crabbing docks, and The I'On Club for swimming and tennis.







One of the most exciting findings of this research is that by using a development approach and community prototype similar to these case studies examined in this research, a developer could build a community and create a development opportunity where one otherwise might not have existed. Simple, 'slam dunk' projects are quickly becoming a notion of the past. One of the foremost concerns of residential developers today is the availability of land for future projects. Most important, having the

foresight and capability to develop often controversial and environmentally sensitive sites such as Spring and Dewees Island also creates a new set of development opportunities that other wise would not be available. In the case of Spring Island, the density of the project was 1 DU/per 7.31 acres. In the case of Dewees Island, the density was 1 DU/per 8.0 acres. Since developers are profit maximizing operators, and the developers in this research are working to maximize the return on their capital while conserving the environment through an optimal mix of real estate and ecology, if the investment analysis on a present value risk adjusted basis is not positive, a developer will still not exercise their option to develop the site. This being said, the single goal in these cases was not to solely preserve the environment. Instead it was twofold: finding the balance between profit and environmental preservation. If one were to ask, why can't we do this in lower end 'production' oriented housing, given that an appropriate density is determined such that the environment is not destroyed as a result of the development and a consumer's willingness to pay is high enough to offset the decrease in density necessary to preserve the environment and cover the cost of land, its probable that one could apply many of the concepts explained in these communities to lower cost and broader housing market segments. Regardless, the cost of land has to either be low enough to offset the reduced FAR, or a public incentive has to offered to 'fill the economic gap' between what the developer should build, to protect the environment and what they are allowed to build 'as of right.' In the case of Spring Island and Dewees Island, both developers assembled a multidisciplinary team that enabled them to make an intelligent set of decisions with regards to the appropriate balance between real estate and ecology.

Most importantly, this thesis exposes many crucial findings which can enable residential community developers to differentiate their communities in a highly competitive marketplace, while making better decisions that are more responsive to a project's social, aesthetic, environmental, and economic site through a whole-systems market-based development approach. By bringing three primary drivers together (economics and finance, community and environment, and planning and design) and capitalizing on their interconnections one can realize multiple benefits over their competition.

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Appendices

Appendix 1: Spring Island Contacts

Organization / Consultant	Contact Information
The Spring Island Company James Chaffin, President/CEO Mont Blaisdell, CFO Ann Debrosse, Director of Planning Geoff Applegate, Broker-in-Charge John Baker, Sale Associate Glenny Ryan, Jim Chaffin Personal Assistant	42 Mobley Oaks Lane Spring Island, SC 29910 (Bluffton, SC) TEL: 843-987-2200 FAX: 843-987-2025 springsales@islc.net springisland@islc.net www.chaffinlight.com www.springisland.com
The Lowcountry Institute Chris Marsh, Executive Director **Spring Island Trust** Bruce Lampright, SR Naturalist	Route 6, Box 284 Okatie, South Carolina 29910 (803) 986-2016 Fax: (803) 986-2025 www.lowcountryinstitute.org
SITE PLANNER **Ed Pinckney Associates**	14 Westbury Park Way Suite 200 Bluffton, SC 29910 TEL: 843-757-9800 FAX: 843-757-9801
PRIMARY PLANNER **Robert E. Marvin Associates** Robert E. Marvin (deceased)	Landscape Architect that worked on Bray's Island, Spring Island and others with Charles Fraser.

Appendix 2: Spring Island Estimated Cost of Ownership

Spring Island Estimated Cost of Ownership

(as of May 23, 2001)

Property Owners Association

$ 1450 / year for 2001. After that, increases will be capped at the greater of 10% or the CPI % increase.

Equity Club Membership Contribution

$	125,000.00	Golf Membership
$	25,000.00	Social Membership

Estimated Annual Club Dues

(as of January 1, 2001)

$	6,500.00	Golf
$	3,250.00	Social

Real Estate Taxes

Example A: Unimproved Lot

		Estimated Appraised Value:
		$ 300,000.00
		X 0.06
Assessed Value		$ 18,000.00
Millage Rate		X 0.199
Annual Ad Valorem Tax		$ 3,582.00

On Improved Lots:

Primary homeowners are rated at 4%.

Secondary homeowners are rated at 6%.

Utilities

Water

All homesites are to be serviced by the Beaufort / Jasper Water Authority

$	525.00	Water Connection
$	3.00	Linear Foot from home to water meter

Sewer

Homesites will be serviced by private septic tanks or central sewer system depending on the location of the homesite.

$	1,500.00	SepticTank
$	3,500.00	Grinder Pump System
$	625.00	Sewer Connection Fee
$	3.00	Line from home to sewer tap (cost/linear foot)

Appendix 3: Spring Island Real Estate Prices

Spring Island Real Estate Prices

(as of September 25, 2001)

Homesites	Description	Price	Resale
Lot			
1	Rice Gate Circle	$ 775,000.00	X
2	Old Tabby Road	$ 270,000.00	X
2	Bee Tree Drive	$ 465,000.00	X
4	Pickney Point Bluff	$ 925,000.00	X
pcpo5	Live Oak Forest	$ 975,000.00	X
5	Old Tabby Road	$ 290,000.00	X
6	Pickney Point Bluff	$ 950,000.00	X
7	Fox Squirrel Court	$ 445,000.00	X
9	Live Oak Forest	$ 950,000.00	X
10	Bird Patch Trail	$ 435,000.00	X
10	Spring Island Drive, Ph. V	$ 680,000.00	X
12	Walker House Drive	$ 525,000.00	X
20	Spring Island Drive	$ 539,000.00	X
21	Live Oak Forest	$ 995,000.00	X
21	Old Tabby Road	$ 325,000.00	X
22	Walker House Drive	$ 295,000.00	X
25	Tidal Creek Lane	$ 975,000.00	X
26	Walker House Drive	$ 365,000.00	X
28	Walker House Drive	$ 395,000.00	X
32	Walker House Drive	$ 315,000.00	X
36	Ibis Lane	$ 1,300,000.00	X
106	Spring Island Drive	$ 350,000.00	X
108	Spring Island Drive	$ 350,000.00	X
132	Spring Island Drive	$ 495,000.00	X
138	Spring Island Drive	$ 450,000.00	X
141	Spring Island Drive	$ 930,000.00	X
146	Spring Island Drive	$ 350,000.00	X
152	Spring Island Drive	$ 385,000.00	X
203	Goose Pond Road	$ 725,000.00	X
220	Bee Tree Drive	$ 450,000.00	X
229	Little Neck Crossing	$ 350,000.00	X
234	Little Neck Crossing	$ 350,000.00	X
242	Little Neck Crossing	$ 345,000.00	X
253	River Camp	$ 1,595,000.00	X
255	Goose Pond Road	$ 1,200,000.00	X

259	Goose Pond Road	$ 1,200,000.00	X
275	Fox Squirrel Court	$ 365,000.00	
277	Blackberry Ridge	$ 465,000.00	X
281	Bee Tree Drive	$ 395,000.00	
282	Trading Post Trail	$ 845,000.00	X
284	Trading Post Trail	$ 1,100,000.00	X
285	Trading Post Trail	$ 1,100,000.00	X
295	Barksdale Lane	$ 270,000.00	
300	Barksdale Lane	$ 299,500.00	X
301	Straight Road	$ 355,000.00	
302	Straight Road	$ 355,000.00	
303	Straight Road	$ 325,000.00	
304	Straight Road	$ 325,000.00	
306	Straight Road	$ 395,000.00	
307	Straight Road	$ 395,000.00	
309	Straight Road	$ 355,000.00	
310	Straight Road	$ 355,000.00	
311	Straight Road	$ 355,000.00	
312	Straight Road	$ 370,000.00	
313	Straight Road	$ 395,000.00	
314	Straight Road	$ 545,000.00	X
318	Spring Island Drive	$ 410,000.00	
320	Spring Island Drive	$ 415,000.00	
322	Spring Island Drive	$ 390,000.00	
323	Spring Island Drive	$ 415,000.00	
324	Spring Island Drive	$ 415,000.00	
325	Spring Island Drive	$ 475,000.00	X
326	Spring Island Drive	$ 420,000.00	X
327	Spring Island Drive	$ 430,000.00	X
328	Spring Island Drive	$ 385,000.00	
329	Spring Island Drive	$ 395,000.00	
334	Shrimp Pond Road	$ 375,000.00	
339	Shrimp Pond Road	$ 795,000.00	X

Home

5	Copp Landing	$ 7,375,000.00	X
41	Ibis Circle	$ 1,975,000.00	X
124	Spring Island Drive	$ 1,550,000.00	X
1-A	Duck Pen Court	$ 3,900,000.00	X

$	542,007.25	Average homesite price from the data presented in this table.
$	3,700,000.00	Average homeprice from the data presented in this table (not that it is skewed b/c of small sample).

Appendix 4: Spring Island Introduction Sales Letter

Thank you for your request for information about Spring Island. The enclosed brochure will provide you with an overview of this community, but I have summarized below what I consider to be the most important "need to know" facts about this special place in the Lowcountry of South Carolina.

Spring Island has 3000 acres of upland, surrounded by an additional 3500 acres of beautiful marshes and two pristine rivers, the Chechessee and the Colleton. Located between Hilton Head Island and the historic town of Beaufort, it is about 25 minutes from both, and 40 minutes from Savannah and its new airport on interstate 95. Charleston is a 1 1/2 hour drive north. A maritime island, close to the Intracoastal, Spring is a 30 minute boat ride to Port Royal Sound and the Atlantic Ocean. It is accessible from the mainland by a causeway to Callawassie Island and a 1400' bridge, the latter which we built in 1991.

Born in an earlier geological epoch, it is about 40 thousand years older than other islands in the Lowcountry and has as a result, considerably higher elevations and different topography. The history and natural beauty, the abundant flaura and fauna, the ruins of the Old Edwards Plantation home, and an enchanting 200 acre live oak forest all contribute to what everyone feels here - Spring Island's "mystical charm".

The Spring Island members, a diverse group that come from all over the country - there are also seven families from Europe - have been drawn here by a variety of reasons.

First and foremost perhaps, is the natural beauty of the island and the very real efforts to preserve it while developing a plan for a maximum of 410 homes on the 3,000 acres. Under the plan, over 1,000 acres - more than a third of the island - has been set aside and protected as open space and Nature Preserve. This land is owned and managed by the Spring Island Trust, a not-for-profit, third party entity created solely for this purpose. The philosophy is expressed in two words - Nature Park. You will see no street lamps, mail boxes or curb and gutter here, and an absolute minimum amount of signage. Maybe the best question you could ask about Spring Island is "What will it look like in 20-30 years?" Our answer would be "Very much like it is today!"

Another, is the diversity of activities families can enjoy on Spring. While the Old Tabby Links - limited to 350 members - is maybe the best kept secret in the Lowcountry, fishing, boating, kayaking, sporting clays, riding one of the twenty Tennessee Walkers or Missouri Foxtroters, hiking, and a variety of "Nature" experiences, all rank highly on the list of "things to do" here. Also, membership in the Spring Island Hunt Club is available at Pleasant Hill, about 35 minutes from here, where the old team of dogs, mules and wagon, horses and guides take members quail hunting. Duck, turkey and deer hunting is also available on a more limited basis.

42 Mobley Oaks Lane, Okatie, South Carolina 29910
Spring Island Club: 843-987-2000 • Fax 843-987-4170
Spring Island Company: 843-987-2200 • Fax 843-987-2025

The lifestyle choice, while not for everyone, is also very different and appealing to our members. Often called an "Adult/family Camp" or "an unpretentious place where nice people gather", Spring Island has attracted families that enjoy being here together for special occasions and holidays, who stay in some of the thirty bedrooms in several guest cottages on the island, or in their own private homes. One hundred ten (110) of these have already been built with another eighty under construction or in the review process.

Of the possible 410 homesites here, 380 have been purchased. The available homesites start in the mid $200,000's, with the prime marsh front, tidal creek and deepwater lots in the $400,000 to $1,000,000 range. The majority of these homesites, including those around the Old Tabby Links, are 2 1/2-3 acres in size. All of the members of Spring Island are property owners, ensuring its privacy.

After reviewing the enclosed information, please feel free to call me at 843-987-2200 if you have additional questions, or to arrange a visit.

Yours truly,

John Baker

JB:tjb
Enclosures

john/genltr.wps

Appendix 5: Dewees Island Contacts

Organization / Consultant	Contact Information
The Island Preservation Partnership (IPP) John Knott, President / CEO	Dewees Island 46 41st Avenue Isle of Palms, SC 29451-2662 800.444.7352 (toll free) 843.886.8783 (local) 843.886.5836 (fax) http://www.deweesisland.com
Dewees Island Property Owners Association (POA) Karl Ohlt, Naturalist / Landscape Ecologist	http://www.deweesislandpoa.org http://www.deweesislandpoa.org/rentals
Site Planner: Burt Hill Kosar Rittelmann Associates 1056 Thomas Jefferson Street, N.W. Washington, D.C. 20007-3813 202/ 333-2711 **Engineer / Surveyor:** E.M. Seabrook, Engineers, Inc. Located in Charleston, South Carolina **Landscape Design:** Steve Goggns & Associates The Brickman Group, Ltd. Located in Laurel, Maryland	

Appendix 6: Dewees Island Real Estate Prices

Dewees Island Real Estate Prices

(as of August 20, 2001)

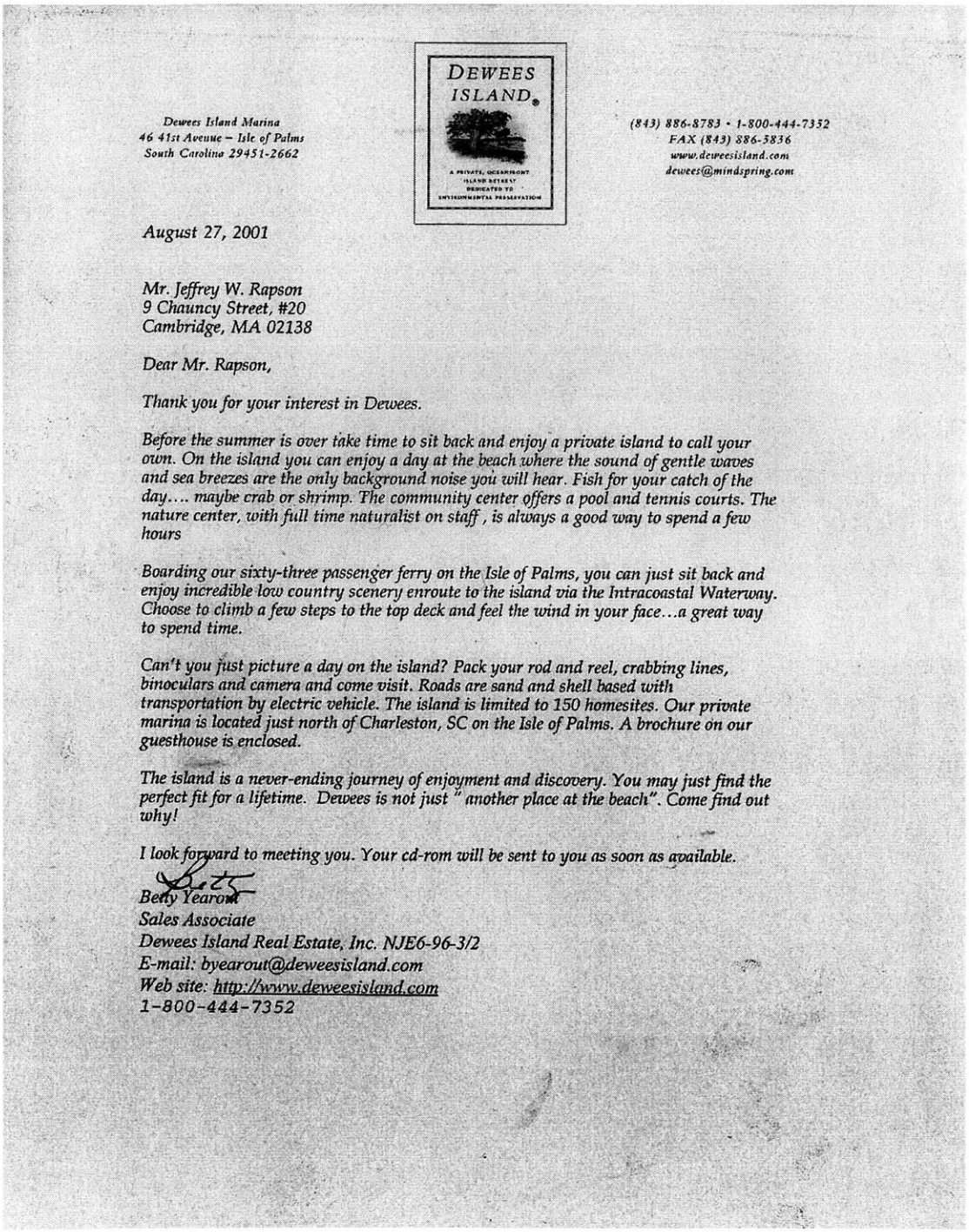
Homesites	Description	Acres	Price	Total SF	Cost per/SF
				43,560.00	
Pelican Flight Drive					
Old Lot 9	Oceanfront, overlooking Dewees Inlet and Atlantic Ocean. One of a kind.	1.5	***Pending***	65,340.00	
10	Oceanfront	1.7	$ 1,350,000.00	74,052.00	18.23
17	Oceanfront	1.95	$ 1,250,000.00	84,942.00	14.72
18	Oceanfront	2.22	$ 1,250,000.00	96,703.20	12.93
27	Oceanfront	2.23	$ 1,325,000.00	97,138.80	13.64
28	Oceanfront	2.29	$ 1,600,000.00	99,752.40	16.04
29	Oceanfront	2.36	$ 1,600,000.00	102,801.60	15.56
53	Views of Lake Timicau, Capers Island, and the Intercoastal.	2.08	$ 525,000.00	90,604.80	5.79
57	Marsh View. Close to beach access.	2.22	$ 450,000.00	96,703.20	4.65
10-B	Oceanfront	1.4	$ 1,350,000.00	60,984.00	22.14
Lake Timicau Lane					
89	Oceanview	1	$ 480,000.00	43,560.00	11.02
91	Oceanview	1.06	$ 520,000.00	46,173.60	11.26
92	Oceanview	1.06	$ 560,000.00	46,173.60	12.13
99	Oceanview	0.76	$ 700,000.00	33,105.60	21.14
100	Oceanview	0.66	***Pending***	28,749.60	
Old House Lane					
105	Intercoastal and Ocean Views	1.76	$ 600,000.00	76,665.60	7.83
106	Intercoastal and Ocean Views	2.03	$ 575,000.00	88,426.80	6.50
107	Intercoastal Views	2	$ 575,000.00	87,120.00	6.60
114	Intercoastal Views	3.92	$ 460,000.00	170,755.20	2.69
115	Intercoastal Views	4.61	$ 490,000.00	200,811.60	2.44
116	Intercoastal Views	4.13	$ 525,000.00	179,902.80	2.92
120	Intercoastal Views	1.07	***Pending***	46,609.20	
124	Intercoastal Views	1.46	***Pending***	63,597.60	
133	View of Lagoon to Dewees Inlet, Great Sunsets	1.23	$ 397,000.00	53,578.80	7.41
136	Lagoon	1.19	$ 435,000.00	51,836.40	8.39

Homes

290 Pelican Flight Drive - 71	Spectacular Views from Widow's Walk of Ocean and Lagoon. Decks, Elevator, Custom Home.	1.68	$ 1,400,000.00	73,180.80	19.13
312 Pelican Flight Drive - 67	Quarter Share/3BRs, 2 Bath Cottage, Wooded Lot with Marsh Views. Easy access to beach, furnished with gold cart.	1.65	$ 225,000.00	71,874.00	3.13
375 Pelican Flight Drive - 34	Magnificent oceanfront home. Overlooks Lake Timicau. Dramatic Design.	2.49	$ 3,600,000.00	108,464.40	3.19
382 Pelican Flight Drive - 54	Furnished Custom to Built. Views of lake Timicau. Close to beach access.	2.13	$ 1,400,000.00	92,782.80	15.09

$	810,333.33	Average homesite price from the data presented in this table.
$	1,656,250.00	Average homeprice from the data presented in this table (not that it is skewed b/c of small sample).

Appendix 7: Dewees Island Introduction Sales Letter



Dewees Island Marina
46 41st Avenue – Isle of Palms
South Carolina 29451-2662

DEWEES ISLAND

A PRIVATE, OCEANFRONT ISLAND RETREAT DEDICATED TO ENVIRONMENTAL PRESERVATION

(843) 886-8783 • 1-800-444-7352
FAX (843) 886-5836
www.deweesisland.com
dewees@mindspring.com

August 27, 2001

Mr. Jeffrey W. Rapson
9 Chauncy Street, #20
Cambridge, MA 02138

Dear Mr. Rapson,

Thank you for your interest in Dewees.

Before the summer is over take time to sit back and enjoy a private island to call your own. On the island you can enjoy a day at the beach where the sound of gentle waves and sea breezes are the only background noise you will hear. Fish for your catch of the day.... maybe crab or shrimp. The community center offers a pool and tennis courts. The nature center, with full time naturalist on staff , is always a good way to spend a few hours

Boarding our sixty-three passenger ferry on the Isle of Palms, you can just sit back and enjoy incredible low country scenery enroute to the island via the Intracoastal Waterway. Choose to climb a few steps to the top deck and feel the wind in your face...a great way to spend time.

Can't you just picture a day on the island? Pack your rod and reel, crabbing lines, binoculars and camera and come visit. Roads are sand and shell based with transportation by electric vehicle. The island is limited to 150 homesites. Our private marina is located just north of Charleston, SC on the Isle of Palms. A brochure on our guesthouse is enclosed.

The island is a never-ending journey of enjoyment and discovery. You may just find the perfect fit for a lifetime. Dewees is not just " another place at the beach". Come find out why!

I look forward to meeting you. Your cd-rom will be sent to you as soon as available.

Betty Yearout
Sales Associate
Dewees Island Real Estate, Inc. NJE6-96-3/2
E-mail: byearout@deweesisland.com
Web site: http://www.deweesisland.com
1-800-444-7352

Appendix 8: Competitive Projects in the Spring Island Market Area

Belfair

From its grand "Avenue of Oaks" entrance to two immaculate Tom Fazio golf courses, Belfair raised the standard for the genre when it opened in late 1995. In keeping with Fraser's original Lowcountry concept, environmental sensitivity has been a priority. Hidden Lake, for example, is a 42-acre freshwater reserve that borders holes 9 and 12 of the West Course and serves as a protected home for egrets, herons and other winged residents. The courses balance each other nicely: West is long and demanding; East is slightly more open and forgiving; both finish with inspiring views of the marshes along the Colleton River. A recently opened, 26,000-square-foot clubhouse here is reminiscent of a Charleston manor home. Call (800) 587-7710 or (843) 842-1100, or visit www.belfairhiltonhead.com.

Berkeley Hall

The distinguishing characteristic here is "core golf"-two Tom Fazio-designed courses unencumbered by interior streets, homes or long walks between greens and tees. The North Course was built in a lightning-fast five months, thanks to a $1.5 million decision to sod all 5.3 million square feet of the course. It's set to open in March; construction is underway on the South Course, with a scheduled opening for fall. Like Belfair, its sister development just a few miles away, Berkeley has 770 memberships, but more than 300 of those were designated for non-residents after managing partners John Reed and Gary Rowe trimmed 200 home sites to give Fazio more room to work. More nature trails and a 30-acre golf-learning center may even one-up those highly regarded amenities at Belfair. Call (888) 817-8458 or (843) 815-8400, or visit www.berkeleyhallsc.com.

Bray's Island Plantation

Bray's Island Plantation is a 5,200-acre tract along the Pocotaligo River and Haulover Creek near Sheldon. It was a working plantation until 1987 under former owner Sumner Pingree. But times were changing, and he couldn't make the land pay for its self. Developers approached him with plans for 4,000 houses on the land, but Pingree wanted to preserve the wilderness. So he mapped out 325 circular one-acre lots scattered over 1, acres, where owners would share a hunting lodge, gun club, equestrian center, stables, golf course, swimming pools, boating center and 13-room inn. Professionals were hired to oversee the outdoor activities. But with 195 lots remaining, expenses ran ahead of sales, and buyers began to balk. So a group of landowners formed the Shelbray Group last year and bought the remaining lots themselves for $7. Million. They paid off debts, spruced up the amenities, deposited a cash cushion, and brought in Hilton Head Island real-estate agents Chip Dolan and Peter Pollak to put out the word. With buyer's assured of the future and an endorsement from Orvis for fly-fishing, sales took off again. Last year's sales were $ million, and this year's sales through March were $3.5 million, according to Dolan. Some of those were resales. About 175 lots have been sold, with 25 more under contract. That leaves 125 for sale, but sales probably will be stopped when total lots are sold, Dolan said. That's all the owners need to break even, and they want to keep the population to a minimum. Unsold lots would revert to common land. Lot prices depend on location and range from $150,000 to $400,000. Lots sold last year averaged $300,000. "Price is not really a concern with these buyers," Dolan said. "What they want more than anything is the assurance that you're not going to hit them with a surprise assessment at the end of the year."

Owners pay $600 a month to belong to the club, and they pay user fees for some of the activities. There's no requirement to build. About 35 homes have been built, with 20 more under construction. Dolan expects 20 to 30 homes to be built each year for the next several years. About 15 families live there full time. There's no minimum size for a house. Some are fancy cabins, but the typical arrangement is a main house and separate guesthouse, connected by a breezeway. Charleston architects Chris Schmitt and Associates have won numerous awards for their work on Bray's Island Plantation, including the Plantation Inn, the golf clubhouse, and a private residence. The local architects also designed the equestrian center. Bray's Island Plantation is five miles south of Garden's Corner on U.S. Highway 17, past a security gate. More information is available at 803-846-3100.

Colleton River Plantation

This 1,500-acre spread located two miles from the Hilton Head Bridge was a bold statement when it began development in the late 1980s. It's become even better with time. The Jack Nicklaus course, opened in 1993, represents a departure from the Golden Bear's more penal designs of the 1980s. In 1998 Pete Dye took advantage of newly purchased riverfront terrain to fashion an equally compelling layout. The courses have been tabbed by one ranking as two of America's 100 finest. Members now look forward to the 2002 opening of the Dye Course clubhouse, where a 360-degree vista of river, marsh and golf course will highlight the 18,000-square-foot, Southern plantation-style structure. Call (800) 673-6456 or (843) 689-3131, or www.colletonriver.com.

Daniel Island

Located 20 minutes north of downtown Charleston on former farmland that was once inaccessible from the city by car, Daniel Island is the Low country's throwback to small-town living. This 4,000-acre development, now easily reachable via Interstate 526, is modeled after a traditional town, replete with sidewalks, corner markets, neighborhoods, parks and even a church and school. The focal point is the Daniel Island Club, where superstar architect Tom Fazio designed a 7,093-yard golf course that flows from open, windswept fields through native forests to a seven-hole finale among tidal creeks and salt marsh. "This is a new -old' golf course," says Fazio, who was given free reign to route the course before any town development was begun. "It will have the feeling that it's been here forever." Call (800) 958-5635 or (843) 971-7100, or visit www.danielisland.com.

Kiawah Island

Tom Watson's Cassique Course is the latest buzz among residents of this 10,000-acre community located 21 miles south of Charleston. Built at the confluence of the Kiawah River and the Atlantic Ocean, the 6,940-yard, links-style design complements Tom Fazio's celebrated River Course, which opened in 1995 to a top-five listing on several "Best New Private" rankings. The two courses and an oceanfront beach club make up the private Kiawah Island Club. A new clubhouse, patterned after a 19th-century English countryside manor, is due to open at Cassique this summer. Throughout nearly three decades of development, Kiawah's overriding goal has been to protect the island's natural beauty. Miles of uncluttered beachfront, woodland and marsh, without a high-rise or fast food restaurant in sight, confirm the commitment to that ideal. Call (800) 277-7008 or (843) 768-3400, or visit www.kiawahisland.com.

Oldfield

This brand new development 12 miles southwest of Beaufort is another throwback, one that honors the leisurely Lowcountry sporting plantations of the late 19th century. It sits on 1,000 acres along the Okatie River, where fishing, boating and kayaking will be encouraged. A 50-acre island called Wigg's Bluff sports a park-like setting and is home to a renovated mansion that will serve as the development's social hub. The golf comes courtesy of a design by Greg Norman, the Shark's first in the Lowcountry. Expect a layout that incorporates the property's ample supply of centuries-old live oaks when it opens this fall. "We'll save as many of those as we possibly can," says Norman. "There's just enough flow to the ground where we won't have to push a lot of dirt around." Call (866) 653-3435 or (843) 227-2500.

Haig Point

Located a mile from Hilton Head on primitive-but-charming Daufuskie Island, this 1,050-acre community is a different breed. Rees Jones' Calibogue Course ambles from the Atlantic Ocean through maritime forest and along wide stretches of sea marsh. With the additional Osprey nine and two alternate par-3s on the Calibogue Course, the layout has a total of 29 holes. The golf has been on nearly everyone's "best of" list for years, but notoriety for the residential community was lacking until Resort Management Associates took over in 1998. Since then, home sites have been going fast, and today fewer than 70 of 725 remain. "It's certainly not for everybody," says RMA principle Jim Matoska. "But once we got the word out, people seem to have fallen in love with it." Call (800) 992-3635 or (843) 686-2000, or visit www.haigpoint.com.

The Landings at Skidaway Island

The Landings is set apart by its sheer size and scope: 4,450 acres and six golf courses designed by the likes of Arnold Palmer, Tom Fazio, Arthur Hills and Willard Byrd. It's the most golf offered by any private community in the U.S. Born of a master plan by the Branigar Organization in the late 1960s, The Landings works hard to maintain its resort-like quality and amenities: Three golf courses received facelifts in the past two years, as did two of the four clubhouses on property. Located between the Wilmington River and Intracoastal Waterway 12 miles southeast of Savannah, Ga., the Landings has received the Urban Land Institute's coveted Award of Excellence. Call (800) 841-7011 or (912) 598-0500, or visit www.thelandings.com.

Appendix 9: Additional References and Readings

Readings and Resources

Center of Excellence for Sustainable Development. The web's most comprehensive and thoroughly linked sustainable development site. Impressive in its own right and more so considering the author. Overheard: "The U.S. government put this together?" Anyone who has lost faith (or was born without any) in Uncle Sam should browse this site for an inspirational shot in the arm. Highlights include "Fast Breaking News in Sustainable Development" and multitudinous sustainable community development case studies. www.sustainable.doe.gov.

Environmental Building News: Environmental Building News is chock full of clear, concise information on energy-efficient, resource-efficient, and healthy building practices. It addresses material selection, siting, indoor air quality, daylighting, and many other topics such as product reviews. This site will keep you posted on upcoming green building conferences and can connect you to a number of green building sites through its "greenlinks". Also available Product Catalog: Green Building Resource, and searchable CD ROM of past EBN issues at www.buildingreen.com

EPA Energy Star®. Commercial Real Estate site shows how to measurably lower operating costs, increase net operating income, and funds from operations as a result of improved energy performance. For every dollar invested in energy performance upgrades in leased properties, cash flow changes can result in a $2 to $3 increase in asset value.
http://yosemite1.epa.gov/estar/business.nsf/webmenus/CommercialRealEstate

Green Building Advisor CD ROM - CREST. An interactive CD ROM for Windows and the Macintosh featuring specific design strategies that can improve the environmental performance, cost-effectiveness, and healthiness of a building and its site, from pre-design through occupancy.

Green Developments CD ROM by Rocky Mountain Institute. (RMI, 1997) The CD ROM enables viewers to explore 100 individual green real-estate development case studies and presents information in a unique manner, providing richness in details. It features photographs, plans, and drawings along with video and audio clips of projects, resources, Web-links, financing, marketing, and approvals highlights, and an introduction to the green development approach and sustainable building.

Green Development: Integrating Ecology & Real Estate by Rocky Mountain Institute: Alex Wilson, Jennifer L. Uncapher, Lisa A. McManigal, L. Hunter Lovins, Maureen Cureton, and William D.

Browning. (John Wiley & Sons, Inc, 1998.) Every stage of the development process is examined in detail: market research, site planning, design, approvals, financing, construction, marketing, and occupancy. Also included are lists of project vital statistics and contacts, books and other information sources, and development strategies. Green Development is based on 80 case studies drawn from Rocky Mountain Institute's extensive worldwide research and consulting work. From these real-world experiences, it distills proven procedures, potential pitfalls, and practical lessons that will help shorten the learning curve on the path to environmentally sound, community-supportive, and financially rewarding real estate development.

Natural Capitalism: Creating the Next Industrial Revolution by Paul Hawken, Amory B. Lovins, and L. Hunter Lovins. (Little, Brown, 1999 - www.naturalcapitalism.org). Citing hundreds of compelling stories from a wide array of sectors, the book shows how to realize benefits both for today's shareholders and for future generations—and how, by firing the "unproductive tons, gallons, and kilowatt-hours," it's possible to keep the people who will foster the innovation that drives future improvement. "An ambitious, visionary monster of a book.the book's reach is phenomenal."

U.S. Green Building Council. The USGBC is a non-profit trade association whose primary purpose is to promote green building policies, programs, and technologies. Membership is offered to manufacturers, utilities, building owners, real estate advisors, scientific and technical organizations, and non-profit trade associations that are supportive of green buildings.

Case Studies

Adam Lewis Center for Environmental Studies: http://www.oberlin.edu/newserv/esc/Default.html. A cutting-edge building that is powered by the sun, purifies its wastewater, and was built with the intent to not compromise human and environmental heath somewhere else or at some later time.

Battery Park City, New York: http://www.batteryparkcity.org/. Establishing a process for the creation of environmentally responsible residential buildings that are appreciably ahead of current standards and practices for development.

Coffee Creek, Indiana: http://www.coffeecreekcenter.com/ and http://www.mcdonough.com/. Describes an innovative project that combines the concepts of New Urbanism to create a pedestrian-oriented community with principles of sustainable design. The more than 640 acres that encompass Coffee Creek Center will include a mix of residential, commercial and retail areas set within distinct neighborhoods, together with a significant portion of land that will remain natural green belt.

Dewees Island, South Carolina: http://www.sustainable.doe.gov/success/dewislan.shtml. Island Preservation Partnership (IPP), the consortium of developers who are building on the island, has designed a model that ensures minimum environmental impact while maximizing economic value.

Four Times Square, New York: http://www.durst.org. This 1.6 million SF office tower was the first very large scale speculative green office building and is realizing a 50% energy savings PSF and was completed at market rates.

Highland Garden Village, Colorado: http://www.rose-network.com/projects/highland.html This walkable, green neighborhood development provides for single family homes with carriage houses, senior housing, town houses, offices, artist live/work studios and neighborhood retail shopping. Proposed amenities include restaurants, an early childhood education center, plazas, gardens, a farmer's market, and a meditation center.

Village Homes, California: http://www.sustainable.doe.gov/success/village.shtml. This is a 68-acre development of single-family homes, apartments, a community center and an office building that features solar construction, natural cooling systems, communal agricultural areas, a natural drainage system and a pedestrian- and bike-friendly layout.

Sustainable Design Websites

The California Integrated Waste Management Board publishes Designing with Vision: A Technical Manual for Materials Choices in Sustainable Construction, which can be downloaded from www.ciwmb.ca.gov/ConDemo/Pubs.htm.

Center of Excellence for Sustainable Development. http://www.sustainable.doe.gov This truly excellent site has a wealth of information on green building. A comprehensive and thoroughly linked sustainable development site. Highlights include "Fast Breaking News in Sustainable Development" and many sustainable community development case studies.

Center of Excellence for Sustainable Development: www.sustainable.doe.gov yet another website from the Department of Energy.

Center for Livable Communities www.lgc.org/clc

Conservation Assistance Tools, http://www.sonoran.org/cat/default.asp› is a searchable database of grants, cost sharing, and technical assistance available for natural resources projects in the western United States. It is designed to help local communities reach the information, potential partners, and financial support needed to accomplish grassroots conservation projects in the West.

Conservation Based Development, www.explorecbd.org

Eco Village of Loudon County, VA, www.ecovil.com

Environmental Building News: www.BuildingGreen.com Includes material from EBN, excellent bibliography and other resources, calendar of events, ordering information for GreenSpec, Green Building Advisor, and other resources.

For information on certified wood, see the websites of the **Forest Stewardship Council** of the United States www.fscus.org and the **Certified Forest Products Council** www.certifiedwood.org.

The Global Ecovillage Network (GEN) http://www.gaia.org/ is a grassroots non-profit organization that links together ecovillages and related projects around the world. GEN promotes and supports models of sustainable living globally, in order to inspire and encourage the creation of more viable lifestyles on this Earth.

Green Building Challenge: www.greenbuilding.ca Information on an international effort to develop a method for assessing the green-ness of buildings.

Green Builder Program, www.greenbuilder.com/general/BuildingSources.html. Includes materials from the Austin, Texas, Green Builder Program and other resources.

Greenbuilding Discussion Group: www.crest.org/sustainable/greenbuilding-list-archive Active, wide-ranging discussion of green building issues and ideas.

Green Buildings: Commonwealth of Pennsylvania Guidelines for Creating High-Performance Green Buildings (1999) contains good case studies and an excellent bibliography. It can be downloaded through the following website: www.gggc.state.pa.us. Also available from this website is an excellent free video regarding the development of the Commonwealth of Pennsylvania's Department of Environmental Protection building.

Green Clips: GreenClips@aol.com A clippings subscription that includes information from worldwide journals, newspapers, etc.

General Services Administration/Planet GSA: www.gsa.gov/planetgsa Government agency website. Includes case studies and resources.

GEO Green Building Resource Center: www.geonetwork.org/gbrc Resources and referrals to other Internet sites, books, and professionals.

Green Building Consultants, www.GreenBuild.com

GreenSpec is an Environmental Building News directory of environmentally friendly building products. It can be ordered through the following website: www.greenspec.com.

The High Performance Building Guidelines (April 1999) developed by the City of New York's Department of Design and Construction is a very useful document regarding design of public buildings.

It is available for downloading from the following website: www.ci.nyc.ny.us/nyclink/html/ddc/home.html. The 144-page document can also be ordered for $25.00 plus $3.00 shipping charge and $2.31 tax from City Store, 1 Center Street, Room 2223, New York NY 10007, phone (212) 669-8246.

High Performance Green Building Standards, www.tjcog.dst.nc.us/

Indicators and Sustainable Measures, www.sustainablemeasures.com

Johnson Controls, Inc. currently has under development a brochure describing expected return on investment from specific provisions listed in LEED's. The document describes whether each provision will increase or decrease capital costs or operating costs. It also categorizes the environmental, social, and economic return on investment for each provision. For further information, contact Paul von Paumgarten, Johnson Controls, Inc., Controls Group, and PO BOX 423, MILWAUKEE, WI 53201-0423. -Phone (414) 274-4546, E-mail paul.vonpaumgarten@jci.com.

LEED, Leadership in Energy and Environmental Design (March 2000), more commonly referred to as LEED's, is available for downloading through the following website: www.leedbuilding.org. The LEED Version 2.0 Reference Guide, a very useful document giving detailed examples of strategies that can be used to achieve LEED's standards, can be ordered through this same website.

Livable Communities, www.livablecommunities.gov

National Association of Home Builders (NAHB) www.nahb.org

Policy Link: http://www.policylink.org/

Smart Growth Network, www.smartgrowth.org

The REDI Database is a searchable database with up-to-date information on products and materials. It can be accessed through the following website: www.oikos.com.

Renewable Energy Policy Project, CREST: www.crest.org

Rocky Mountain Institute. www.rmi.org is an entrepreneurial, nonprofit organization that fosters the efficient and restorative use of resources to create a more secure, prosperous, and life-sustaining world. RMI staff shows businesses, communities, individuals, and governments how to create more wealth and employment, protect and enhance natural and human capital, increase profit and competitive advantage, and enjoy many other benefits—largely by doing what they do far more efficiently.

Sonoran Institute www.sonoran.org Established in 1991, the Sonoran Institute is a tax-exempt organization dedicated to promoting community-based strategies that preserve the ecological integrity of protected lands and at the same time meet the economic aspirations of adjoining landowners and

communities. Underlying the Institute's mission is the conviction that community-driven and inclusive approaches to conservation produce the most effective results. We are committed to testing a wide range of approaches to community-based conservation, evaluating the results, and adapting its approaches based on these real experiences. We also are committed to widely disseminating its findings and the tools it develops.

Urban Ecology: Rebuilding our Communities in Balance with Nature
http://www.urbanecology.org/home.html Urban Ecology works to build cities that are ecologically thriving and socially just. Founded in 1975, UE envisions, designs, and plans cities to support a healthy natural environment, a multicultural and thriving community, and an innovative and vigorous local economy.

U.S. Department of Energy: www.eren.doe.gov/buildings Software tools, case studies, and other resources. Federal Energy Management Program, U.S. Department of Energy: www.eren.doe.gov/femp Information on alternative financing, case studies, training opportunities, and other resources. Includes Greening of Grand Canyon and other Greening reports and Greening Federal Facilities Guide.

Urban Land Institute: http://www.uli.org/

U.S. Environmental Protection Agency: www.epa.gov Includes information on statutes and regulations, indoor air quality, and environmental databases. (See, for example, Surf Your Watershed.) It has a design for the environment site at www.epa.gov/dfe.

The US EPA Environmentally Preferable Purchasing Program has information and resources available from the following website: www.epa.gov/opptintr/epp

"What's Working," David Johnston, Principal, www.whatsworking.com

White House Publications/Executive Orders: www.pub.whitehouse.gov Contains downloadable versions of all executive orders.

Whole Building Design Guide: www.wbdg.org Good overall site for sustainable building information. Energy issues are covered extensively; it is quickly being updated for materials and other sustainable considerations. The site also has information on productivity.