

ENCOURAGING BEST PRACTICES IN BUILDING DESIGN: THE FLORIDA DESIGN INITIATIVE

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ABSTRACT

The Florida Design Initiative was established to encourage "best practices" in energy efficiency as a standard for the design and renovation of public buildings in Florida. Opportunities for creative building design that would reduce the burden of energy-related building operating expenses are currently rarely explored. The Design Initiative provides a forum for public building procurement agencies and design professionals to work together to improve the performance of the state's buildings. This paper reviews the activities undertaken by the Florida Design Initiative and provides insight into the actions and reactions of the parties that comprise the Initiative.

To date, the Initiative has focused on statewide agencies with responsibilities for public buildings and on the various

design professions. Agencies have been encouraged to address energy efficiency when writing requests for proposals for design services, to require energy simulations during the design process, to include building commissioning as a project requirement, to increase design compensation for energy-efficient designs, and to reward firms with a good record of energy-efficient design. The design professions have been encouraged to aggressively address energy efficiency during negotiations with state agencies, to increase interdisciplinary coordination during design, and to become familiar with the design and analysis tools required to compete in an environment in which competence in energy efficiency may mean additional commissions.

INTRODUCTION

Building design in Florida is generally governed by the *Energy Efficiency Code for Building Construction* (FDCA 1993). Although this code is widely regarded as being of adequate stringency, as with most codes and standards the intention is to establish a *minimum* level of efficiency that must be met by all covered buildings. The code is not intended, and does not purport, to present optimum or exemplary performance goals. It is up to individual clients and designers to move beyond legally acceptable minimum efficiencies into the realm of "best practices." As a major client for architectural and engineering design services, as well as the operator or leaser of a huge stock of existing facilities, the State of Florida is in a position to exert influence on the practice patterns of building designers. This opportunity has developed into the Florida Design Initiative, serving as a catalyst for the development of state buildings that exceed statutory minimums of performance.

In 1991, Lawton Chiles, the governor of Florida, issued Executive Order 91-253. The order required all state agencies to reduce energy consumption by 30% over a three-year period. There were several rationales for the executive order, including the fact that Florida

has no in-state sources for conventional fuel stocks, that operating expenses for energy are a major component of the annual state budget, and that creativity in addressing energy issues might lead to the development of expanded business opportunities within the state. Put another way, those who would benefit from reduced energy consumption are all state residents; those who might be disadvantaged by more efficient use of resources are generally residents of other states and countries. Providing a governmental example of responsible use of energy is both good business and good politics. The example set by state agencies would also be expected to encourage the private sector to be more aware of energy efficiency opportunities (Peterson 1993; Grondzik et al. 1994) Although a recent revision of the goals of the 1991 executive order has reduced targeted savings to 20%, the intent to improve the use of energy in state operations remains strong, as illustrated by the following statement from the Office of the Governor. "To lead by example, state government must increase its knowledge of energy efficiency technologies and operations strategies; this will allow us to be informed purchasers of design, construction and utility services. We must provide a market that encourages all design pro-

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professionals (engineers and architects of all descriptions, planners, and interior designers) to incorporate the considerations of life-cycle costs and energy efficiency into their designs and operating and maintenance plans. To that end, the state must be willing to invest in energy-efficiency improvements that will yield a return on their investment..." (Executive Office of the Governor 1995).

The idea of a "Florida design initiative" was developed by members of the Governor's Energy Office (subsequently renamed the Florida Energy Office and currently under the Department of Community Affairs). A state university faculty member on professional development leave worked with Energy Office staff to establish a voluntary coalition of state agency leaders with building procurement and acquisition responsibilities and the elected leadership of the state design professions. The first formal meeting of Florida Design Initiative members was held in Tallahassee in October 1992. Based on indications of success from this work begun within the Energy Office, it was proposed that the Florida Design Initiative receive longer-term support. A contract funding Design Initiative activities for the period January 1994 through December 1995 was approved in late 1993. This contract is administered by a state university and provides for staffing of the Initiative with faculty and other required personnel. Continued funding for the Initiative for the period January 1996 through December 1997 is currently being considered.

THE INITIATIVE STAFF

The Florida Design Initiative may be viewed from several perspectives. Contractually, the Initiative is a funded research project, administered by faculty investigators, with defined (although flexible) project deliverables and workplan. Practically speaking, the Initiative is a membership service organization with a core staff, voluntary member participation, and long-term objectives to change the way state buildings are acquired, designed, and operated. These two roles are sometimes not mutually supportive, as, for example, when contract compliance requires the nonfunded participation of design professionals at an event of marginal direct economic benefit. Moral suasion is an important tool for Design Initiative staff. Figure 1 provides a schematic illustration of the structure of the Florida Design Initiative.

From the membership perspective, the Florida Design Initiative tends to function in both service and cheerleader roles. Members may request assistance from Initiative staff in a variety of matters, including the sharing and dissemination of information, obtaining peer review for materials related to energy efficiency, and making connections between parties to the building procurement and design processes. A much more important role for Initiative staff, however, is the role of catalyst or provocateur. Most Design Initiative members

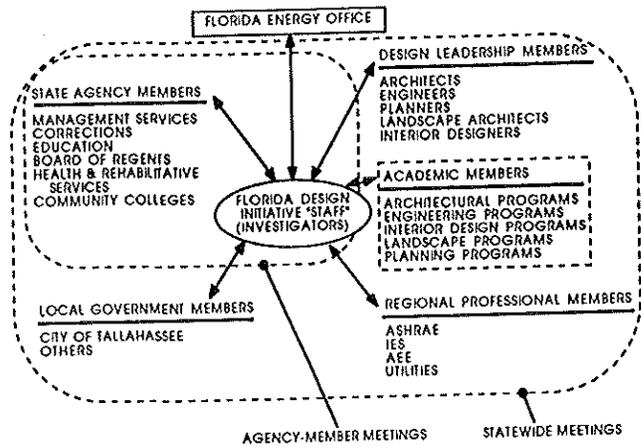


Figure 1 Schematic Organization of the Florida Design Initiative.

are interested in and committed to providing high-performance, energy-efficient state buildings. Almost universally, this is only one of many important objectives that must be considered for each project. A key function of the Initiative staff is keeping performance and energy issues on or near the front burners of all participants in the building design, renovation, and leasing arenas. A number of means of keeping Initiative members focused on these concerns have been considered, developed, and attempted—some with more success than others.

Currently, the Initiative staff consists of three architecture faculty members who are involved with Initiative activities at varying levels throughout the year. One faculty member serves as director of the Florida Design Initiative (and as principal investigator for the contract). The other two faculty members provide technical and information dissemination support services to the members and the project. A half-time OPS (part-time, limited contract) position is allotted to a librarian/research assistant. Two student research assistants may be involved with the project at a quarter-time level throughout the year. Basically, the staffing of the Initiative is typically equivalent to approximately one-and-a-half full-time positions—considering the part-time nature of appointments and release-time contributions from the university.

STATE-AGENCY MEMBER ACTIVITIES

State-agency members have been the focus of many of the start-up efforts of the Florida Design Initiative. As representatives of the state agencies that have been instructed to reduce energy consumption and as important clients to the state's design professions, the agencies have a pivotal role in the promotion of "best practices." If better buildings are to be provided to the state, these agencies must want, request, and demand them. Representatives of major state agencies that procure buildings were invited to the first meeting of the Florida Design Initiative in October 1992. These agencies and their responsibilities are summarized in Table 1.

TABLE 1 Key State Agencies and Their Building Responsibilities

AGENCY	RESPONSIBILITY	FLOOR AREA ^a
Department of Management Services	Major landlord for self and smaller state agencies	5.8 (0.5)
Board of Regents	State comprehensive university campuses	33.8 (3.1)
Department of Education	Facilities review for local school boards	250.0 (23.2) Indirectly
Department of Corrections	All penal facilities	12.7 (1.2)
Department of Health and Rehabilitative Services	State-run hospitals, clinics and social services units	9.7 (0.9)
Division of Community Colleges	State community college campuses	17 (1.6)

^aEstimated floor area under direct or indirect control of agency or department; million ft² (m²)

Because the facilities-related offices for most state agencies with building procurement responsibilities are located in Tallahassee, it is very convenient to meet in Tallahassee on a regular basis. Utilizing this location also allows agencies with a less direct role in buildings procurement (such as the Department of Transportation and the Public Service Commission) to readily participate in Initiative meetings, along with representatives of the Florida Energy Office and the Governor's Office as appropriate. Facilities and energy service personnel from the City of Tallahassee and Leon County have also been invited to participate in the Tallahassee state-agency meetings. The original workplan for the Design Initiative proposed monthly meetings of state agency representatives. This frequency proved too demanding and was unrealistic for the majority of participants. An informal schedule of bimonthly meetings has since developed—with some flexibility to adapt to the demanding schedules of these key Initiative members.

A cornerstone product of the earliest state-agency member meetings was the establishment of a set of guidelines for the procurement of state building facilities. These Florida Design Initiative guidelines were developed in response to the question: "What relatively simple steps could you take to improve the quality of buildings being provided to the state." In brief, the guidelines recommend the following:

- Energy-efficiency goals for each project should be explicitly noted in a scope-of-work statement, preferably in the Request for Proposals soliciting design firm participation. The scope-of-work statement should require that cost-effective, energy-efficient design alternatives be considered, that performance simulations be used to inform design decisions, and that life-cycle costs be used as a basis for decision making.
- A scoping meeting to include all members of the design team must be held prior to fee-split nego-

tiations. The goals and nature of the project would be explained to all parties, with emphasis on the energy and performance expectations for the project.

- The design team should provide contract administration services during construction.
- An independent commissioning agent should be retained to work with the design team from project inception through occupancy.
- A post-occupancy evaluation and energy audit should be conducted for each project prior to the expiration of equipment warranties.
- Firms that successfully demonstrate the ability to design energy-efficient, high-performance buildings should be awarded bonus points during the proposal evaluation process; conversely, penalty points should be assessed for firms with poor energy and performance track records.

The objective of these guidelines is simple—to place energy efficiency clearly on the table, up front, as an issue of substantial concern to the client that must be addressed during the design and construction process. Noting that energy efficiency is an important goal when advertising a project sends a clear and unambiguous signal of intent. A scoping meeting allows all design professionals to jointly discuss the project objectives, including energy efficiency, with the client/owner and to promote their respective roles in the project that will best deliver the desired product. (Asking a consulting engineer to "salvage" building energy efficiency during the construction documents phase for a standard fee percentage is not rational.) It is also critical that the intent of the design team be transferred to the as-built project; contract administration and commissioning functions can help ensure this. Providing the equivalent of "good driver" points for firms with demonstrated capabilities is seen as a means of emphasizing the client's intent to obtain high-quality buildings. Figure 2 illustrates how these guidelines are intended to be incorporated into the existing state building procurement process. As yet, no state agency has fully adopted the guidelines, although different agencies have selected individual issues to incorporate in their building acquisition programs.

DESIGN-PROFESSION MEMBER ACTIVITIES

Clients must demand buildings that exceed the minimum acceptable threshold for energy efficiency. The design professions, however, must deliver products that respond to such demands. This link between the key parties in the building design process led the Florida Design Initiative to include the elected leadership of the various design professions as members from the inception of the Initiative. Presidents of the Florida sections or chapters of the following associations were invited to the October

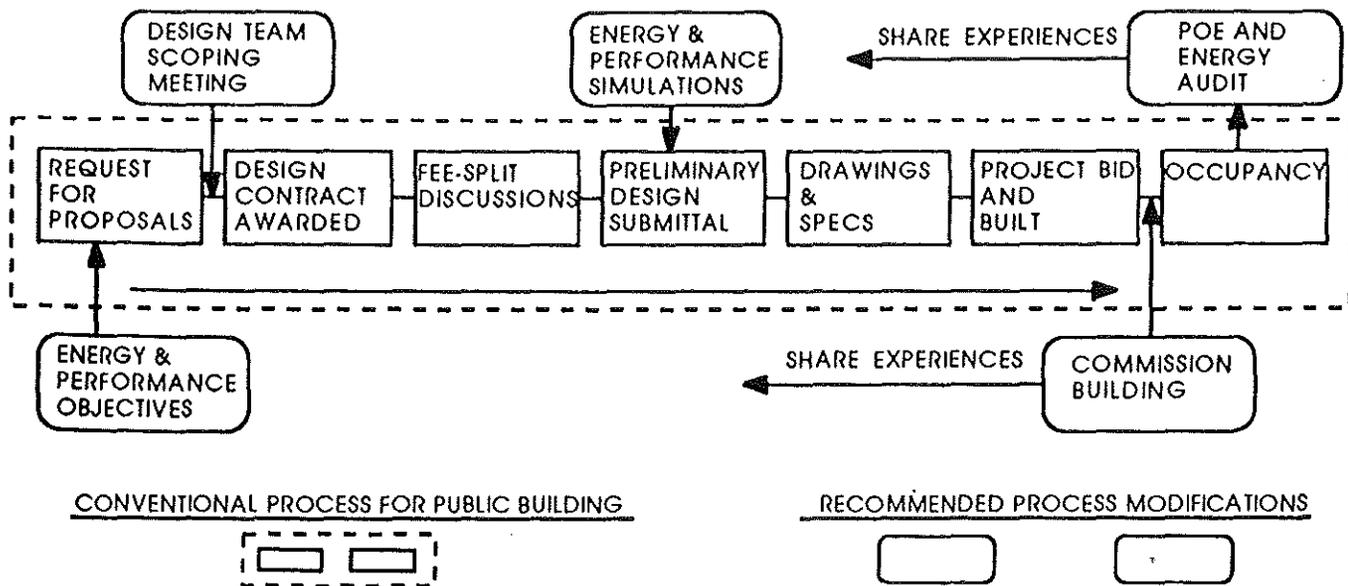


Figure 2 Procurement Process Modifications per Florida Design Initiative Guidelines.

1992 inaugural Initiative meeting: the American Institute of Architects, the Florida Engineering Society, the American Society of Interior Designers, the American Society of Landscape Architects, the American Planning Association, and the Interior Design Association of Florida. Representatives of more specialized associations (American Society of Heating, Refrigerating and Air-Conditioning Engineers and the Illuminating Engineering Society, for example) have been subsequently invited to participate in Initiative activities.

There are two main objectives behind the inclusion of design-profession members in the Initiative. First, the design professions must understand the energy-efficiency intentions of state clients, and the state clients must understand the abilities of the design professions and the constraints under which they operate. This type of understanding is best achieved in a cooperative setting—such as the Design Initiative—rather than in an adversarial setting, as too often develops during the design and construction process. A focus for discussions in this realm has been the established state fee curves—which are based on first costs and do not necessarily include “extra” services such as energy simulations, contract administration, or commissioning. A number of lively discussions about this issue have taken place, but a resolution of this very basic concern has not been reached. Second, truly innovative and effective designs need to be a collaborative effort between the design professions. No single discipline can expect to provide the expertise required to move a whole project into “best practices.” Again, discussions in a cooperative atmosphere are more likely to lead to fruitful collaborations than is financial dickering in the midst of a contract negotiation. It is too early to tell whether such discussions will lead to an improved design process.

Getting state agency clients and design professionals together is much more difficult than assembling the agency representatives alone. The majority of the design professionals do not reside in Tallahassee, and are in fact

widely distributed across a large state. There is no single event that draws even a moderate cross section of design professionals to one location. Each discipline tends to hold separate annual meetings in a variety of locales. Thus, the inclusion of design professionals in the regular workings of the Initiative has proven difficult. Several methods to resolve this problem, such as annual roundtable meetings featuring nationally prominent speakers, are currently being explored.

It was also considered important that the design professions be prepared to provide the types of services that would be expected and required of them by state agencies. Information dissemination was, therefore, a major component of the original Design Initiative workplan. This is, as might be expected, a touchy subject. Most professionals do not wish to admit that they do not have the knowledge and skills needed to provide exemplary design responses. However, this seems to often be the case as energy and building performance issues are moved beyond code minimums. One basic reason is that such capabilities have neither been valued nor requested by most clients in the past. In response to a recent City of Tallahassee request for proposals that demanded energy efficiency, for example, all short-listed firms included external energy-efficiency consultants in their proposals and presentations—an unheard-of step considering the relatively small scale of the project. From the Initiative perspective, this was a great development—the winning firm will provide a better building than otherwise would be the case and learn lessons in the process that may be transferred to the next project. The firms that did not win the commission for the project were educated in energy issues by their consultants and will also likely think of energy efficiency in a different light on future projects.

SUCCESSSES

The approximately two years of operation of the Florida Design Initiative that are documented in this

paper have led to a number of successful efforts. Likewise, there have been a number of not-so-successful activities. Both the successes and failures may be educational to others and will be discussed in turn. The state-agency member meetings that are held nominally every other month are one of the successes. There has been a consistent commitment from a core group of agency representatives to meet and share information on energy efficiency and related matters. Critical early support from the Secretary of the Department of Management Services, the state's lead buildings agency, was most beneficial in setting an institutional atmosphere in which participation in Initiative activities was valued and encouraged. Historically, each agency has operated more or less in isolation from other agencies, especially with respect to building issues. The most important benefit of the state agency meetings is probably the inter-agency sharing of information that is fostered. If one department is skeptical about the use of electronic ballasts, for example, and another has had a track record of problem-free installations, this information might never be exchanged in the course of day-to-day operations. The state agency meetings are the perfect forum for sharing of real world data on what works and what doesn't.

A review of the February 1995 state agency meeting will provide a sense of the character of this Initiative activity. Eighteen representatives from 14 different agencies and departments attended this meeting along with 5 Initiative staff. The meeting, held in the Governor's Conference Room in the state capitol (not a minor detail), lasted for two hours and covered a range of topics. An update on Design Initiative activities (*eDesign* newsletter, fall roundtable meeting, fax-back survey, Florida Energy Planning Network) was provided by the Initiative director. A representative of the Florida Energy Office (FEO) gave an update on FEO activities, several of which were of direct interest to various state agencies. Another FEO representative reviewed proposed legislation for a revolving energy loan program that was being considered by the 1995 legislature. This loan program would have an immediate impact on the way in which agencies could deal with energy-efficiency aspects of new and existing buildings. Energy audit program legislation proposed by the Office of the Governor was reviewed and discussed. Copies of *Energy-Efficient Design for Florida Educational Facilities*, a manual developed for the Department of Education, were distributed and workshops to train personnel in the use of the manual were announced (FSEC 1994). A representative of the Department of Management Services provided insight into the energy-efficiency features of a major prototype office complex currently under construction in Tallahassee (and eventually also in Jacksonville). The lead engineer for commissioning activities at the prototype office complex discussed the nature of the commis-

sioning work and its benefit to the state. Although it is difficult to place a value on a meeting such as this, the fact that the participants felt that energy efficiency was worth two hours of their busy schedules is some testimony to the success of this recurring meeting series.

Building commissioning is an integral part of the Florida Design Initiative guidelines for building procurement. Commissioning can help ensure that the product delivered to the client has been constructed in accordance with the design team's intent. When an opportunity arose to act as host sponsor for the Second National Conference on Building Commissioning, the Design Initiative convinced the Florida Energy Office to act in that role. Thus, St. Petersburg Beach, Florida, was the site of the Second National Conference (PECI 1994). Only a few Florida-based design professionals attended the conference (despite extensive advertising and announcements), which at first seemed an indication of a less-than-successful event from the Initiative's point of view. Fortunately, a number of key facilities personnel from the Department of Management Services did attend and were convinced of the benefits of building commissioning. A commissioning agent was retained for a state laboratory facility that was nearing occupancy, with such success that the same agent was retained to commission the prototype office building complex under construction in Tallahassee. Preliminary estimates indicate that these two commissionings have saved the state more than the cost to host the conference and to pay the commissioning agent—an excellent example of an investment versus an expense.

In December 1994, the first issue of *eDesign*, a bi-monthly newsletter of the Florida Design Initiative, was published. The newsletter is distributed to all Initiative members (now totaling approximately 200) and to around 600 other interested parties. There has been substantial positive feedback on the three issues of *eDesign* published to date. The newsletter seems to serve the information dissemination and communication needs of the Initiative much better than some other approaches that were previously considered. A typical issue of *eDesign* includes a message from the director (a dose of moral persuasion); energy-related news briefs culled from a range of sources; energy, building performance, and sustainability-related book and video reviews; reviews of relevant computer software; information on electronic sources of energy information; and a calendar of state and national events of interest to members. As a periodical, *eDesign* can deliver timely and concise information to members in a manner that is probably much more digestible than a design manual or a workshop.

DEAD-ENDS

Several apparently good ideas from the Florida Design Initiative staff have proven unsuccessful. It was originally intended to have two or three statewide meet-

ings of the Design Initiative membership each year at locations throughout the state. Although two statewide meetings were held, this method of communication did not seem to be sustainable. There was no funding to pay travel expenses for design professionals to attend these meetings, and getting approval for travel for state-agency members was not always easy. Thus, attendance was a substantial financial burden for most members. In addition, attendees were away from their offices for one or two days, at some expense in productivity. Even though the meetings that were held were interesting, there did not appear to be a future in this activity. Current thinking is to hold one annual roundtable meeting for Initiative members that will combine cutting-edge seminars with discussion of Initiative business.

The original workplan for the Design Initiative envisioned staff developing a "High-Performance Building Design Handbook." Members generally agree that there is a lot of information available on energy efficiency and building performance—but not always readily so. The handbook was seen as a means of collating existing information and making it available from a single source. Discussions among staff and Initiative members, however, began to suggest that this might not be the best use of Initiative resources. Current thinking is to disseminate new information via *eDesign* and to use the newsletter to point members to critical sources of design information. The development of the Department of Education design manual also suggested that department- or agency-specific design guides might be the most direct and useful means of addressing energy efficiency for a particular class of building types.

A major disappointment for the staff of the Design Initiative was the failure of the High-Performance Building Design Awards program to spark any interest among design professionals in the state. The purpose of the awards program was to publicize and reward exemplary building projects that combined documented performance, aesthetics, and design process. An extensive award application and documentation procedure was developed but never publicly released. A call for entries was announced and advertised in spring 1994, but only two inquiries were received by the deadline for applications. There was some concern that the demands for documentation associated with the awards program scared potential applicants away; the details of the applications, however, were not noted in the call for entries. Further investigation seemed to suggest that most state design professionals did not feel they had exemplary "energy-efficient" buildings to put forward for the awards program. Lack of cash prizes, uncertainty about "who" the Initiative was, and potential confusion among competing awards programs may also have contributed to the lack of response to this awards program.

The focus on documented performance and cooperative design process that was the hallmark of the High-

Performance Building Design Awards program received very positive comments from the panel of nationally known jurors assembled for this program. Likewise, interest in the awards program has been expressed at the national level. For the present, it appears that the concepts embodied in the Design Awards program will be used to develop case studies for inclusion in future editions of *eDesign*. In this way the publicity objectives of the awards program can still be met, although for a somewhat more restricted audience.

FUTURE PROSPECTS

Current plans call for the Florida Design Initiative to focus on four major issues during the remainder of the existing contract period (through December 1995). State agency-member meetings will continue on a bimonthly basis. These meetings have proved to be effective and are expected to remain an important means of raising awareness among the state clients. A roundtable meeting for the entire Initiative membership is being planned for early fall 1995. The benefits of face-to-face meetings between professionals and clients and among the different professional disciplines were demonstrated in earlier statewide meetings. It is anticipated that the roundtable meeting will prove attractive to many of the Initiative constituent members. The publication of *eDesign* will continue on a bimonthly schedule. The newsletter has grown through three issues from four to six to eight pages. The development of case studies as an insert to future issues is being considered. Other outreach activities, such as presentations at annual meetings of the design professions and writing articles for association journals, will also continue.

The Florida Design Initiative team will play a key role in the revision of three important tools for energy efficiency in the state of Florida. These tools are the State Energy Management Plan (SEMP), an energy use reporting system for state buildings, and a state energy conservation manual. These three products are about to be revised, and the ability of the Design Initiative to bring a range of diverse insights to the revision process has led to major Initiative involvement in the effort. Another critical element in the revision of these tools is a concern on the part of the Initiative staff that these products start to move away from an ink-on-paper format into the electronic-access realm. The Initiative will play a critical role in making the revised SEM, energy reporting system, and conservation manual available to agency personnel and design professionals through the Internet-based Florida Communities Network.

The Florida Communities Network is an electronic information system housed in the Internet's World Wide Web. Developed and maintained by the Department of Management Services, the Florida Communities Network is envisioned as a one-stop shopping location for anyone seeking information about Florida. Table 2 out-

TABLE 2 The Florida Communities Network on the World Wide Web

OUR LEARNING	OUR GOVERNMENT
On-line catalogs & books	Research databases
Homework help lines	Electronic permitting and licenses
Distance learning	Electronic government services
Library research	RFP listings & legal notices
Professional continuing education	Design project announcements
OUR ENVIRONMENT	OUR FAMILIES & COMMUNITIES
Recycling information	
Local zoning restrictions	OUR ECONOMY
Comprehensive planning	
Water consumption notices	OUR SAFETY
Sustainable design & planning network	OUR HEALTH

(bold text indicates areas of Florida Design Initiative Interest and/or input)

lines the structure of the Florida Communities Network (FDMS 1995). As noted, there are several slots in the Network organization for input from the Design Initiative. Some data assembly for this information system will be completed during the existing Florida Design Initiative contract. A larger role for the electronic dissemination of energy-efficiency information, through the development of a Florida Energy Planning Network link to the Communities Network, is seen if the Initiative contract is renewed for another two years.

SUMMARY

The Florida Design Initiative has an expressed objective of promoting and supporting "best practices" in the design of state buildings. The application of such practices will lead to the development of more energy-efficient and higher-performance buildings for the public sector that will save taxpayer dollars for recurring operating expenses. Improvements in indoor air quality, occupant productivity and enjoyment, operating expenses, and maintenance practices are included under the banner of high performance. Experience gained through the design of improved state facilities is expected to be transferred to the private sector. The energies of the Design Initiative staff are, and will continue to be, directed toward supplying design professionals and design procurers with the information they need to demand and produce the most energy-efficient buildings possible under current "best practices."

It is difficult to determine the energy savings attributable to Florida Design Initiative efforts. Acting mainly

in a catalytic role, the activities of the Initiative are seldom directly traceable to any specific building design response. In addition, Initiative actions are seldom so focused that monitoring would be able to demonstrate savings of any definable magnitude. Furthermore, the state does not currently meter its buildings at a level that would permit the savings from any given efficiency measure to be accurately tracked. Nevertheless, the Initiative has provided the impetus for a number of efforts, such as the commissioning of key state buildings, which clearly have energy-efficiency ramifications—and which would not have occurred without the urging of Florida Design Initiative members and staff.

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