



STATE FACILITIES QUARTERLY

"Provide and protect public assets"

Official Newsletter of the National Association of State Facilities Administrators
An organization of planning, development, operations and maintenance officials

Winter 1998

Brown County Makes A Case For CAFM

By Dean Gazza

The Brown County Facilities Management Department in Green Bay, Wisconsin manages over 500,000 gross square feet of buildings and their respective grounds. Its mission is to preserve and extend the useful life of existing and future facilities utilizing the most efficient and cost-effective facility practices while providing the highest quality and value to the county's stakeholders. To facilitate this mission, the county decided to implement a Computer-Aided Facilities Management (CAFM) system to manage its facilities more effectively. After much research, the county was convinced the benefits would outweigh the costs.

In order to appreciate the benefits of CAFM, one must be familiar with the facilities management department before CAFM: backlogged and reactive. When a request arrived for the square footage of an area, for example, a staff person would have to physically measure the area with a tape measure! Work orders were issued manually, hours were not tracked, equipment histories unknown, inventories unmanaged, preventive maintenance nonexistent. Today, this information is available in seconds.

The evolution began in 1992 with the purchase of AutoCAD version 11. Paper drawings that included all architectural, electrical, plumbing, mechanical and fire protection systems information for eight facilities were transferred to AutoCAD over a period of three years. In 1993, the County upgraded to AutoCAD Version 12 and in 1994, determined to purchase a program able to handle its current and future needs, ARCHIBUS 6.1 was chosen. ARCHIBUS enabled the county to link its AutoCAD drawings to a database allowing staff members to obtain information previously unimagined. The county invested in the building operations, space, furniture and equipment, and telecommunications and cable modules and passed

1994 and 1995 developing and linking drawings to those databases.

In order to build a database, it is necessary to gather a vast amount of information. Initially Facilities Management staff members developed standards and identification codes for space and equipment, then they inventoried all of the rooms and equipment. The result is a massive database of eight buildings with over 12,000 rooms for which square footage and exact locations of all building equipment are known.

In 1996, Brown County upgraded to ARCHIBUS/FM 10 in Windows. An upgrade to AutoCAD Version 13 and the purchase of the ARCHIBUS/FM CAD Overlay was made in 1997. This year (1998) the county will upgrade to AutoCAD 14 and will purchase a CD writer that will facilitate the transfer of drawings between the county and its contractors. The county also plans to create a web page and eventually, to use the Intranet to receive work requests.

Work requests are processed through the ARCHIBUS/FM 10 Building Operations module. Each work order is assigned a requester, location, equipment identification, and priority. All open and completed work is easily tracked. The county reports that this has increased response times.

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This issue's Focus section:
Capital Budgeting



PRESIDENT'S LETTER

For many of us, this time of year involves budget and legislation. If you are like those of us in Georgia, you eat and breathe budget, budget, budget. We have recently completed a strategic space utilization study which recommends the grouping of state agencies as well as consolidation of agency staffs. Georgia's Governor, Zell Miller, has recommended funds in the FY '99 budget to begin the implementation of this plan. This comprehensive plan raises a number of concerns, namely the disruption of staff working on computer programs for Year 2000 compliance. The decision not to begin construction of any new buildings, and the desire of the legislature to move state functions from the Capitol area to other parts of the State have necessitated ongoing revisions to the budget as the budget follows the legislative process.

To say that there is action, drama, and influence in this process would be an understatement. The question though, is in whose arena is this taking place? How much influence does the facility manager have? Are we a participant or a spectator? How do we, as facility managers, become part of the team? Should this be an area

of discussion among NASFA colleagues?

During the NASFA Strategic Planning Committee conference call in January, the committee discussed how to bring in more involvement from the correctional, transportation, parks, hospital and college facilities staff from each of our states. Our mission statement reads "To provide a forum for sharing information on state facility administration and to prepare state facility professionals to effectively address problems and develop solutions." We are committed to this goal. How can we, as state facility administrators, serve our states better? What areas are we not providing a good service? How can we involve more facility staff in NASFA? How do we become more involved in our state? If you have ideas, let us know. We need your guidance and help.

Luther C. Lewis, Jr., (GA)
NASFA President



NASFA CALENDAR OF EVENTS

NASFA Innovations Award Submissions Deadline

March 9, 1998

For more information, call (606) 244-8179.

6th National Conference on Building Commissioning

May 17-20, 1998

Lake Buena Vista, Florida

Disney's Coronado Springs Resort

For more information, contact Carolyn Dasher, PEI conference manager, at (503) 248-4636.

Council of State Governments' Spring National Committee Meetings

May 15-17, 1998

Phoenix, Arizona

For more information, contact Carol Johnson at (606) 244-8103.

Orientation to Indoor Air Quality

May 18 - 20, 1998

Boston, Massachusetts

For more information, contact the Harvard School of Business at (617) 432-1171.

NASFA's 11th Annual Conference and Trade Show

June 27 - July 1, 1998

Scottsdale, Arizona

For more information, contact Marcia Stone, association director, at (606) 244-8181 or visit NASFA's website: <http://www.csg.org/nasfa.html>.

Great Plains Association of State Architects, Engineers and Administrators 1998 Regional Conference

September 28 - 29

For more information, contact Gary Grimes at (913) 233-9367.

CORPORATE AFFILIATE SPOTLIGHT

NASFA welcomes its newest affiliate members to the organization

Combined Energies

Combined Energies was formed in 1996 to build upon and expand Central

Maine Power's (an investor-owned electric utility) expertise in energy management services by providing competitively priced energy and performance contracting services throughout the northeast. The following statement best embodies the vision of Combined Energies: "We provide the power to improve life and work."

A business unit of Central Maine Power, Combined Energies exists to provide integrated energy solutions to large federal, institutional, commercial and industrial customers. Engineering, energy and financial strengths allows the company to design and implement energy usage and supply strategies that reduce customers costs and increases their competitive position. Combined Energies has four core business lines, including energy efficiency projects, energy commodity delivery, energy information management services and operations and maintenance.

Combined Energies is based in Augusta, Maine, with

offices located in Portland, Maine and Framingham, Massachusetts. The company's target geographic area of business is the Northeast United States, however they have worked with customers with facilities extending to the southeast and mid-Atlantic areas of the United States.

For more information, contact Alan Henning, program manager, (207) 621-4652.

HCI Systems

HCI Systems, Inc. was founded to create a comprehensive solution to automate the management and operations of real property.

HCI recognizes that a critical requirement of all property and facility managers is to operate property effectively and efficiently. The essential components of any effective property management effort is comprehensive knowledge about the property and proven operation processes and methodologies. By integrating proven operational processes and methodologies with state-of-the-art technology, HCI developed the IPM system, a Property Operations System resulting in complete control over every aspect of property operations.

For more information, contact HCI, Inc. at (207) 646-8363.



Don't forget ... the deadline for submissions for the 1998 NASFA Innovations Award is March 9, 1998!

Send your submission today!

Year 2000: The problem that won't go away

By Karen Purtee

The year 2000, or Y2K as it's called in industry jargon, is an issue that will not go away. It regards whether or not our lives and professions will continue unabated into the next millennium. Many computer programmers since the 1950s have used only two digits to denote the year in their automation operating instructions. Consequently, many computers will read the year 2000 as 00, as in 1900. Quite a glitch, right? The \$64,000 question is: Will this issue be a minor distraction in our facilities or will portions of our business and other parts of our lives come to a complete halt?

To explore the hot topic a videoconference took place November 20, 1997 in Washington state. It was jointly produced by the Plant Operations Support Program and the International Facility Managers Association (IFMA), South Puget Sound Chapter, and was sponsored by Johnson Controls, Incorporated.

The presenters were John Saunders, manager of the Washington Department of Information Services (DIS) Year 2000 Program Office, Lee Knawa of the Washington Department of Transportation (DOT), and Jude Anders, manager of Johnson Controls Engineering Services. Hosting the program were Jim Vane, IFMA South Puget Sound Chapter vice-president and Bob MacKenzie, manager of Washington's Plant Operations Support Program.

Saunders conveyed that Washington state has been a leader in addressing the impending computer problems of the turn of the century. His presentation covered the background of software and the state goal of no interruptions of vital public services or loss of public resources.

"The emphasis of our office's efforts have been in business applications and software programs used by state agencies," he said. "I also share the belief that for each personal computer there are ten operating systems in other devices that have embedded systems, interfaces or software controls that need to be identified, corrected or converted to continue functioning into the 21st century."

DIS offers an independent risk and readiness audit to state agencies and has a web based clearinghouse on the Internet at: <http://www.wa.gov/dis/y2000/y2000.htm>.

Knawa advanced the topic of embedded prompt chips and DOT's response to the problem by identifying the critical systems via a complete audit.

"Metering devices cannot be trusted, but chips that stop equipment operation, halt the ability to do business and put the public in peril should be termed critical," he said.

"Your emergency response and communications equipment should receive the priority attention."

Knawa also pointed out "a garage door may not open automatically, but it has a manual operation that can be used, so it's not really critical." However, if an automated vault locking system cannot be operated manually, the system would be determined to have a critical impact on the organization. After the critical systems are identified, back-up plans are developed. Knawa's advice was to plan ahead, especially when purchasing. He supplied handouts of suggested wording for inventory of equipment, contacting vendors for reliability statements, and contract specifications.

Furthering the proactive theme, Anders of Johnson Controls listed an analysis of facility equipment that has date calculations, sequencing, leap year adapters, or any logging or reporting date based capabilities.

"Even if your supplier affirms a system, test all real time clocks, building operating systems and connecting systems," he said. "Some solutions can be a change of software, firmware or upgrade."

The horizon of failure is before, during and after the rollover into the new century. Anders suggested. "Plan for failure at the year 2000 and the equipment that continues working becomes a gift."

MacKenzie's parting words were to "find and deal with those embedded chips." And, since he read that there are over 1,100 embedded chips in certain passenger jets, he doesn't intend to fly on December 31, 1999! All presenters and hosts emphasized the Year 2000 issue as a challenge that cannot be "wished away." The Plant Operations Support program has compiled an extensive information packet on the issue. State facility professionals looking for year 2000-related resources should contact Karen Purtee at (360) 902-7194 or e-mail: kpurtee@ga.wa.gov.

Karen Purtee serves as editorial assistant for the Shop Talk publication team. Shop Talk is the official newsletter of the Plant Operations Support program and can be accessed on-line at:
<http://www.ga.wa.gov/plant/shoptalk.htm>.

When the Time is Right to Roof

By Maureen Patterson

"Reprinted with permission from Buildings, The Facilities Construction and Management Magazine, (November 1997)."

With roofing as with many systems, it's not a matter of "if" but "when."
"Roofs don't last forever," notes John Hoffman, president of North Haven, CT-based Hoffman Architects, which specializes in building envelope repair and replacement.

Albert Ludwig pushes his roofs as far as he can. “We generally choose to patch it as long as we can until it comes to the point where it needs to be replaced,” says the vice president of Selective Development Co., Farmington Hills, MI.

There’s a point in the life of every roof when a little extra care, such as recoating flashings or recoating a membrane, can increase a roof’s life, says Jeff Evans, vice president of roof consultants Benchmark, Inc., Cedar Rapids, IA. “If you let it go too long, the opportunity is lost,” he says.

How long is too long depends on the application, he says. For example, a roof over a hospital operating room that leaks during two consecutive storms may require immediate attention, but a roof in the same condition over a warehouse that leaks during five or six storms may not generate the same level of concern.

Once a building owner decides to take action, the next decision is to recover an existing membrane or to replace the entire system. Most model building codes restrict facilities to two roofs, says Evans, and some structures may not be able to accommodate added weight. Other considerations, he says, include the condition of the roof deck, insulation, attachments, and other system components; whether moisture is trapped in the roof system; and specifics based on building insurance.

“Really, it’s not a good idea to put a new roof on top of an old bad one,” says Hoffman. “Whatever problems you’re having with the old one, if you put a new one on top of it, usually you start to have similar problems again.”

Bob Telepak used detailed advice when evaluating the condition of a roof for The Nine West Group, Inc., White Plains, NY. The vice president of construction at Cherry Hill, NJ-based Trammell Crow Northeast was helping the company relocate to a new campus. He had a general idea of the roof condition before Nine West moved in. Once they moved, a roof consultant conducted a detailed inspection, and Hoffmann Architects completed plans and specifications and made recommendations. The solution: Replace the worst sections of the roof and recover the rest.

“We had a very detailed scope and set of drawings to go out to bid with so there were no ambiguities ... We had a great apples-to-apples bid and drove the best bargain as a result,” says Telepak.

After making a decision to either recover or replace a roof, the variables on deciding the type of system are many. Factors to consider include:

- Application technique. Some owners and occupants strongly prefer either hot- or cold-applied. Some facilities may be too high or close to others to get application equipment to the job site.
- Insulation.
- Vapor barrier.

- Location. Will the roof undergo temperature extremes?
- Budget.
- Amount of roof traffic.
- Drainage.
- Type of facility/type of exhausts emitted.
- Code.
- Life Expectancy.

Many facilities professionals highly consider warranties, thinking that a good warranty is a sign of a manufacturer’s product confidence. That consideration is debated, however. “You don’t want to rely on the warranty. You want to get the best product that you possibly can installed in the first place so you never have to call on the warranty,” Hoffman says. Good installation and design are also critical factors in a roof’s success or failure.

No matter what, Hoffman recommends that owners plan ahead: “You need to know that at some point you’re going to be doing it again. Roofing is not permanent.”

Maureen Patterson is an associate editor of Buildings magazine.

The Change Moves Ahead

“Reprinted with permission from Buildings, The Facilities Construction and Management Magazine, (January 1998).”

Although chiller shipments more than doubled over the past 10 years, Arlington, VA-based Air-Conditioning and Refrigeration Institute (ARI) estimates that 53 percent of America’s CFC chiller will need the increasingly expensive refrigerant on January 1, 2000 – four years after the production of these ozone-depleting chemicals was halted.

“CFCs (chlorofluorocarbons) traditionally cost between \$9 and \$14, with the exception of R-12, which has cost as much as \$20 a pound – depending upon the location and quantities,” says Jerry Kestenbaum, vice president at Refron Inc., Long Island City, NY, a nationwide refrigerant distributor and reclaimer.

Those numbers could rise quickly if too many building owners demand diminishing quantities.

Owners who do not plan may have to pay burdensome refrigerant prices or risk delays in the supply of new equipment or CFC refrigerants. This could cause buildings to close for undefined periods of time.

The alternative, in lieu of immediate action, is to plan ahead. Three major choices: Contain, Convert and Replace.

In a recent Buildings magazine study, 63 percent of responding buildings professionals indicated they will continue to use CFCs, but have enacted a refrigerant conservation program; 34 percent said they have replaced their chillers; and 24 percent said they have retrofitted

chillers to accommodate new refrigerants.

Typically, say industry experts, chillers less than 7 years old are good candidates for containment; chillers 7 to 15 years old could be converted or replaced; and chillers over 15 years old should be replaced.

Owners who choose to contain should control leaks. “Chillers should not leak more than two percent, 2 to 3 percent, a year,” says Roy Hubbard, manager of marketing development, North America, for York International Corp., York, PA. Owners should also use better purge units to contain refrigerant losses in CFC-11 systems, losing less than a half-pound of refrigerant for every pound of air purged, he says.

While many experts argue replacement may result in better efficiencies than conversion, retrofits may sometimes be appropriate because of significantly lower installed costs – frequently less than half the installed cost of a complete replacement, says Gene Smithart, director of environmental affairs at The Trane Company, La Crosse, WI. There are additional ways to save money, he explains. “I could typically save on a 500-ton machine at least \$15,000 off the cost of doing the conversion if I will just do this at the time of a major overhaul,” says Smithart.

With replacement, owners can enjoy the full benefits of CFC-free chillers with dramatically decreased energy requirements. Many manufacturers offer programs that enable owners to pay off the new system with utility savings. An added benefit: Because these systems use less energy, power companies produce less energy, lowering carbon dioxide emissions that contribute to global warming.

Another option – for owners with multiple facilities – is to use a combination approach, using refrigerant from a converted or replace system for a facility in which refrigerant is being contained. If owners contain refrigerant correctly, refrigerant from one machine could serve one to two machines for 10 to 20 years, says Smithart.

These options will only be available, however, if building owners address the problem of the CFC phase-out by taking action. “The challenge is for us to have a steady supply of units coming out of service so that there can be a steady supply of refrigerant to be reclaimed. If too many CFC units stay in service, then the supply of refrigerant will be diminished,” says ARI’s Edward W. Dooley, vice president of communications.

Brown County Makes A Case For CAFM

Continued from page 1

In addition to the on-demand work performed, the Brown County Facilities Management Department has set up a reliable preventive maintenance system. Schedules and procedures have been developed, and each work order displays an image of the piece of equipment scheduled for maintenance.

ARCHIBUS has also facilitated report generation for the county because of the ease with which reports can be generated and because of the confidence staff members have in the accuracy of the information reported. More reports are generated enabling the county to manage more effectively. Many of the reports developed and included in the ARCHIBUS product are ready to use and suit many of the county’s needs. This information is often crucial to every management decision made. In addition, the reports look professional.

The Brown County Facilities Management Department employs one full-time employee dedicated to maintaining the databases and updating the drawings. This ensures consistency of information and format. All updates to the database are made within one week of the action completed. This ensures accuracy of information at any

given time. Training for CAFM system operators is continual but the county minimizes costs by sending users to local training seminars and technical colleges and feels the benefits certainly outweigh the cost.

Benefits are so obvious that rallying support is easy once “customers” have been exposed to the capabilities of a CAFM system. Now a customer might ask: “When was the last time the air handler in the courthouse underwent preventive maintenance?” and rather than answering, “I’ll get back to you,” within a minute FM staffers can say: “October 14th, a B-52 belt and ten 16x25x2 pleated filters were changed.” After impressing people like that a couple of times, gaining support is no problem.

The county reports that the most notable change is that the department has become proactive and is much more efficient since the implementation of the CAFM system. Budgeting is much easier and surprise costs are minimized. While the department’s budget has been decreasing, its services continue to increase. For Brown County, CAFM has been the answer to doing more with less.

For more information, contact Dean Gazza, (920) 448-4053.

Dean Gazza is a facilities information manager for Brown County, Wisconsin



Committee Chair's Corner

Well, no one sent any flaming arrows my way from my last little piece, so I get to wax eloquently again. (Please allow me my minor fantasies, I think it's eloquent!)

By the time most of you get this issue and read this article, you will already have made New Year's resolutions and probably broken one or two. But that's not what I want to talk about. Breaking a few resolutions is not that bad, what is bad is not making any at all.

Whenever I sit down to do something like this, I get caught up in the drama of the moment and looking back over this past year ... thinking of both the good and bad things that have happened. It was a wonderful and exciting year! Attending the NASFA conference right here in Atlanta, the regional meeting in Panama City, Florida and attending the Super Construction Conference in San Francisco. Georgia also set up an intrastate organization attempting to consolidate and coordinate facility maintenance and construction. Plus, my wife and I had our thirtieth wedding

anniversary! It has certainly been a great year.

Looking back is a way for all of us to recognize our failures and celebrate our successes in order to make the future even better. Some people say we can't change the world. I disagree. People can change things and people can change people. We know that there will be change in the year to come. We know there will be problems. But, we also know there will be solutions.

With this in mind, I want to ask you to make one resolution this year and keep it! Find something that you enjoy doing and do it more often. For instance, you are probably not in your job for the money. If you were, you'd be somewhere else, doing something different. Face it, you love your job! This coming year admit that and do something about it. Join a group, get involved. You have good ideas that others want and need to hear. Others have good ideas that you want and need to hear. Share what you have and we'll all have more.

Happy New Year!



The Hacienda of the Future **NASFA's 11th Annual Conference and Trade Show** Marriott's Camelback Inn • Scottsdale, Arizona June 27 - July 1, 1998

Conference Registration Fees:

Government Member:	\$325
Corporate Affiliate Member:	\$350
Non-Member:	\$750
Spouse/Guest:	\$100

Exhibitor Space Fees:

Corporate Affiliate Member:	\$500
Non-Member:	\$900
per 8'x10' booth	

Hotel room rates are \$85 single or double occupancy. Reserve your room **NOW** by phoning Marriott's Camelback Inn at (602) 948-1700 (*limited rooms available*).

Remember to mention you will be attending the NASFA Annual Conference and Trade Show.

Don't miss this opportunity for information sharing with state government facilities administrators and private sector representatives!

For more information visit our web site at: <http://www.csg.org/nasfa.html>

Some of the topics at this year's conference include:

Utility Deregulation • Indoor Air Quality • Design Errors & Omissions • Year 2000
 Flooring Systems • Benchmarking • Performance Contracting • Roofing Maintenance
 AIA Updates • Commissioning • Risk Management • Defective Products

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The objective of the State Facilities Quarterly newsletter is to provide a broad perspective on issues affecting all aspects of state facilities management. Your ideas and topic suggestions are welcome at all times and will be invaluable to other state facilities managers. Please send information about studies, new projects, legislation, etc. to:

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The National Association of State Facilities Administrators is an organization which brings together state officials involved in the planning, development, operations and maintenance of state facilities. The association was formed in 1987 to provide a forum for sharing information on effective facility administration, as well as for the sharing of problems and solutions with peers on a national level.

Any state is eligible for membership in NASFA. Annual dues entitles your state to select the individuals you want to be involved with the association. All facility administration personnel can access the information network, receive the newsletter and other mailings, and attend the association's annual meeting. Many states have elected to divide the membership fee among several departments interested in active membership.

If you are interested in obtaining more information about NASFA, contact NASFA Staff, The Council of State Governments, 2760 Research Park Drive, P.O. Box 11910, Lexington, KY 40578-1910, (606) 244-8181

Attention States!!

Share your good ideas with your colleagues in the spring issue of *State Facilities Quarterly*.

The deadline is April 13, 1998.

Contact Kim Kinser at (606) 244-8179 or e-mail her at kkinser@csg.org for more details.

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CAPITAL BUDGETING

Winter 1998

Budgeting for the Florida Facility

by Jim Mayne

The planning that underlies the capital budget for state agencies in Florida is largely decentralized to the individual agencies that provide their services through state owned facilities. The major participants in the capital budget are the state transportation system, education facilities, environmental land acquisition, adult prisons and juvenile facilities, health facilities and office facilities.

To achieve consistency in budget development, a joint legislative/executive process called consensus estimating conferences has been in place in Florida for about 20 years. There are several conferences that reach consensus on economic, demographic, and revenue issues; but others are formed to reach agreement on the forecast of the population to be served by certain types of facilities. These include consensus estimating conferences for education, criminal justice, transportation and juvenile justice. The agencies, governor and legislature must use these forecasts to support their capital budgets.

The state statute entitled the Capital Facilities Planning and Budgeting Act directs agencies to assess their facility needs and submit a plan annually that provides for these needs for the next five years. The plan must include needs for new space and capital maintenance. The Department of Management Services (DMS) conducts a statewide inventory and condition assessment on all state facilities over 3,000 square feet. The information provided to the agencies is designed to form the basis for their capital maintenance request. The first year of the five year plan is the fixed capital outlay budget request. The state departments of transportation, education, corrections, juvenile justice, and health prepare their five year plans following an examination of existing facilities and determination of capacity adjustments needed to meet consensus estimating conference forecasts. Other state agencies develop their own planning methodology.

For example, DMS is responsible for planning the state's office space needs. The consensus estimating conference on demographics produces the official population forecasts at the local and state level. DMS maintains a database of all office space occupied (owned or leased) by state agencies. The existing office space occupied in each of the 67 Florida counties is projected to change according to the population forecast for each

county. The underlining assumption is that the need for state government services will fluctuate according to population changes. State government office space needs are initially met by leasing. When the volume of space leased and the related rent payments economically support state ownership in a particular location, a state office building is proposed. The plan, which is updated annually, is a 20 year layout of proposed buildings, which attempts to maintain a balance between ownership and leasing and maximize rent savings. Each year the first five years of the plan is further developed in budget request format and included in the department's five year capital improvements program. The capital maintenance is derived from the deficiency correction projects in the DMS portion of the statewide inventory and condition assessment program. The DMS uniform rental rate paid by the state agency tenants in DMS office buildings includes an amount that is deposited in a capital depreciation reserve fund. This fund, which currently receives an annual increment of \$7 million, is dedicated to the maintenance and repair of the DMS office buildings.

Jim Mayne is the chief for facilities planning in the Florida Division of Facilities Management.

Vermont's Capital Budgeting Process

By Dave Burley and Tom Sandretto

Vermont's booming years for state capital construction started in the 1980's and continued into the early 1990's. Bonding for capital construction quadrupled in four years, peaking in FY '91. As Vermont's debt burden grew, its fiscal standing as determined by Moody's, Standards & Poor and Fitch Investor Services appeared to be in jeopardy. A debt affordability committee, established in 1989 to attempt to control the state's debt, began struggling in earnest with the emerging problem. Critical factors were established to assess the debt burden including:

- debt as a percentage of state revenues
- debt as a percentage of personal income
- debt per capita

Target figures for each of these factors were established in an effort to stabilize or even decrease debt load.

As a result of adhering to the debt affordability advisory committee recommendations regarding bonded indebtedness and the resulting reduction of existing debt, the state's rating has improved dramatically over the last several years. If the state continues to follow the debt affordability advisory committee recommendations, the debt amassed during the early 1990's should be manageable and the state's fiscal outlook should continue to improve.

Although the fiscal picture is improving, the effect on capital construction has been to create considerable competition for infinite resources. Last year requests exceeded bonding authority by a margin of three to one.

To help determine which projects should be funded, each agency or department must now create a five-year plan. The administration then assigns priorities to these five-year plans. Consideration is given to projects based on the following priorities:

- continued support required to bring previously funded projects to closure
- clear demonstration of the application of sound business principals (rate of return on investment, payback period, operating savings - deferred costs, enhanced revenues)
- public need

The prioritized projects are then submitted to the Vermont Legislature as the capital construction budget. Following five months of testimony, amendments and compromise, the final version is passed into law.

Vermont recognized the impending fiscal problems early and took aggressive corrective measures to manage its debt load. As a result, a new process for capital budgeting is on-line and requires a five-year plan so that the state's limited resources can be invested in those projects whose benefits most closely align with the state's mission to provide services to its citizens on a priority basis. While not all projects can or should be funded, the process allows for the most important and beneficial projects to go forward for the public good.

For more information, contact Tom Sandretto at (802) 828-3314.

Dave Burley is the chief of Engineering for the Department of State Buildings and General Services. Tom Sandretto is Deputy Commissioner for the Department of State Buildings and General Services.

Budgeting in the Bluegrass

By William O. Slone, PE

The Commonwealth of Kentucky operates on a biennium budget, enacted during even-numbered years. During each odd-numbered year, each state agency submits a report to the Capital

Planning Advisory Board (CPAB), outlining capital construction needs. Under Kentucky law, capital projects which must be included as "line item" expenditures in each budget include any project and computer or information system costing \$400,000 or more, equipment items costing \$100,000 or more, and new or expanded leases of real property. These limits apply without respect to the funding source.

Highway projects are budgeted in a separate process and are not under the authority of the CPAB.

Each agency provides information on currently authorized projects as well as those proposed for the next six years. Information systems require submittals for the next biennium only, however other requests must be included for the next three biennia (also known as the "Six Year Plan"). The agency reports are submitted in a common electronic format, and include the following summary information:

- Overview (narrative)
- Identification of all agency owned or leased facilities, with locations and uses
- Review of existing conditions
- Explanation of capital needs
- Deferred maintenance needs
- Agency plans and priorities

Additional information for each project includes:

- Project description
- Estimated project scope (i.e. total cost, including design, furnishings, etc.)
- Discussion of needs that will be addressed by the project
- Project purpose and relationship to the agency operating budget
- Historical budget information (i.e. was project previously requested?)
- Timetable for project completion

The agency reports are compiled by the CPAB and issued to the Kentucky Legislature as a comprehensive statewide capital improvement plan. The plan includes overall recommended priorities and project funding, a forecast of required capital funding, a schedule of recommended bond funds from previously authorized bond issues, and recommendations on the maintenance of physical properties and equipment of state agencies.

All projects requested for funding must be included in this plan. This plan becomes the basis for the capital construction portion of the state biennium budget that is enacted by the Legislature.

University projects are reviewed by the Council on Higher Education, which makes specific project comments to the CPAB.

The CPAB is made up of representatives appointed by the legislative, executive and judicial Branches (four

each), plus three citizens at-large.

For a more information on Kentucky's budget process, go to the Internet and access <http://www.lrc.state.ky.us>.

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Washington State's Capital Budgeting Process: A Primer

By Harvey C. Childs, AIA

The capital budgeting process in Washington state is unique in that it involves a long-term look at the needs of the state. The Washington State Budget and Accounting Act (RCW 43.88) mandates a long-range approach to capital budgeting and planning. The act requires state agencies and institutions to submit a plan of proposed capital spending for a 10-year period each biennium. This long-range planning is designed to identify future issues and major capital projects proposed to address those issues.

The 10-year planning horizon recognizes that many major capital projects span several biennia from start to finish. In many cases, capital budget decisions must precede the implementation of operating programs with facility requirements by several years. For this reason it is essential to plan so that decision-makers, both the governor and legislature, can determine how various capital budget options will affect state programs in the future and how today's capital decisions will affect future operating costs.

When agencies or institutions submit a 10-year plan to the governor's budget office, it includes:

- An agency capital narrative providing a general description of the agency mission and strategic plan, its capital facilities and their condition.
- A preservation budget request, describing those proposed projects intended to preserve and protect existing physical assets.
- A program budget request, listing those projects necessary to address program needs.
- An alternate financing request, identifying those proposed projects involving contractual arrangements for space or facilities.
- A capital budget FTE summary displaying actual staff and expenditures charged to capital projects.
- A capital expenditure summary displaying actual and estimated expenditures by project.

These capital projects are grouped into two main classifications: preservation projects and program projects. These classifications provide a framework where projects

can be compared and selected by the budget office.

- Preservation projects maintain and preserve existing state facilities and assets, and do not significantly change the program use of a facility. Examples include renovation of building systems and finishes, utility system upgrade, repairing streets and parking lots, etc.
- Program projects are those intended to accomplish a program goal such as changing or improving the use of existing space, or creating a new facility or asset through construction or purchase. This category is quite broad, and includes everything from building a new university library to renovating a mental health ward.

Capital projects for the 10-year capital plan are prioritized in two ways. The first relates projects to the agency's strategic plan and corresponds directly to the goals and objectives derived from that plan. The second listing corresponds to the priority structure used in reviewing capital budget requests. By cross-referencing these two lists, one can assess how agency priorities relate to statewide priority classifications, which include:

1. Protection of people: actions to alleviate health hazards or reduce risks to building occupants or clients.
2. Protection of assets: work to extend the life of infrastructure and facilities.
3. Protection of the environment: projects to reduce environmental risk.
4. Cost savings: projects in this category should have a payback period of seven years or less.
5. Program need or requirement: capital requests to accommodate new programs, improve service delivery, maximize federal aid, or meet space needs that are the result of program expansion.

Once projects are selected for inclusion in the capital plan, appropriate funding sources are identified. For short-term improvements, cash accounts are used whenever possible. For larger "program" projects with a long useful life, long-term bond sales or other long-term financing options are appropriate. The term "capital project" is used to distinguish capital from operating activities and is based on the longevity or useful life of the work to be accomplished. This "useful life" criteria is also used in determining which projects are eligible for funding from the proceeds of long-term bond sales or other forms of long-term financing.

Based on review and evaluation of agency capital plan proposals, the governor will prepare his 10-year capital plan. Projects included in the first biennium of the plan constitute the governor's capital budget. The governor's 10-year capital plan is submitted to the Legislature for action.

This same process is repeated every two years and the 10-year capital plan is updated.

Harvey Childs is capital budget assistant/architect in the Washington State Office of Financial Management.

Planning Prowess

By George S. Zier

We all know how to plan a major construction project, don't we? We have a plethora of checklists, code requirements, engineering reports and mandated inspections to guide us. Every year new codes, regulations and permits (federal and otherwise) appear and are dealt with by experienced people in a prompt and efficient manner. Often, this does not occur without significantly increasing costs.

As a matter of course, the routine pre-planning functions, such as title examinations, site planning, environmental inspections, erosion control and so forth are usually done within reasonable cost. However, more and more projects have unusual engineering requirements, site specific requirements, or new regulatory processes which are not recognized until the contractor is mobilized and the potential for costly delay is at hand.

Or, much worse, at contract close-out, basic issues of substantial performance arise to haunt the project team. For example, does the particular building system really work? Or, were key "nitty-gritty" must have items fully defined in the contract at all?

Each planning agency should have a portion of the programming process dedicated to looking for the specialized or unusual condition, generally falling into two categories: site-specific requirements and special building performance requirements.

Probably, the predominantly new emerging site specific issue is the identification and planning for historical and archeological considerations. Up until now, this has been in most situations a rather perfunctory matter. Now however, the process is shifting to a more highly regulated process.

For example, a recent Georgia project encountered over a year's delay after project approval. The project, geographically located in the state where potential archeological sites abound, was awaiting completion of a \$100,000 archeological investigation. The purpose was to identify actual and potential areas of archeological concern. With extra time and significant cost it was, ultimately, built with little modification.

In another example, a university was building a facility which included two "clean rooms." As we all know, contractors, through shop drawings and "value engineering techniques," are taking on more of a design role. The university correctly identified that the clean rooms should be treated more like equipment than

construction, and bid documents required the contractor to include the design and installation of the clean rooms to meet specific specialized performance standards. In this case, several well-designed bids were received, and the planning paid off in an efficiently delivered project.

Would your capital planning process catch these types of issues? The watchword is, of course, identification. If you can identify the potential problem, you can plan for it, and most importantly, quantify and hopefully reduce the capital cost impact.

George S. Zier is the assistant attorney general, Georgia Department of Law.

The Corporate Picture

By J. Craig Nixon

In a corporate or private business, the process of budgeting typically begins with a designated officer or financial personnel interviewing the department heads. This meeting will produce a "wish list" of future needs. Based on a projection of the next year's business, the list will include anticipated growth or sometimes downsizing within the department in the areas of personnel, space needs, furniture and equipment.

Smallwood, Reynolds, Stewart, Stewart & Associates, Incorporated have worked closely with numerous companies in space planning diagrams to determine if expansion of these departments can be accommodated within existing areas and if building expansion is necessary or if consolidation of existing space can be utilized. This process is accomplished by touring existing facilities, taking inventory of equipment and developing space standards for the various employees. The information is then input into an Auto CADD system where specific plans are developed.

After the lists from all departments are completed, a designated officer or financial personnel will assign projected cost (by using rental rates for building areas, actual equipment cost, salaries and overhead for employees) to the needs and prepare a presentation for the board or owners of the company. The board then decides how and what will be funded for the next year.

Nixon is a principal for the Atlanta-based firm of Smallwood, Reynolds, Stewart, Stewart & Associates, Inc.