

2003 INNOVATIONS AWARDS PROGRAM
Application Form

1. Program Name

Higher Education Asset Protection Program

2. Administering Agency

Connecticut Department of Higher Education

3. Contact Person (Name & Title)

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8. Please provide a two-sentence description of the program.

The Higher Education Asset Protection Program evaluates the present condition of Connecticut's public higher education facilities through a comprehensive facility condition assessment which involves a physical inspection of the buildings and its component systems by a team of qualified engineers. As part of the program, a web-based, database application provides each institution and the state with a capital planning and management tool which will facilitate the preservation of Connecticut's public higher education facilities and optimize state investment.

9. How long has this program been operational (month and year)?

The first phase of the program was completed in June 2002 and has been operational for about 10 months.

10. Why was the program created? (What problem[s] or issue[s] was it designed to address?)

The program was created to facilitate the preservation of Connecticut's public higher education facilities which total more than 22 million gross square feet (gsf) and represent over 40 percent of Connecticut's owned space. Also, the program will ensure that state investment is optimized across the entire public system of higher education. Currently, Connecticut is midway through a \$4 billion capital investment program to rebuild the public higher education infrastructure that was previously allowed to deteriorate over many years due to the lack of capital renewal/deferred maintenance funding.

Problems or issues the program was designed to address:

- The program was designed to provide an accountability mechanism for the significant capital investment (nearly \$4 billion over 20 years beginning in 1995) Connecticut is making rebuilding its public higher education campuses.
- A system wide accountability indicator (part of a statewide higher education annual performance measure report) was adopted which requires the deferred maintenance liability in the system to be reported annually. A pre-project survey of institutions determined that data was not available or, if it did exist, lacked consistency and uniformity.
- There is strong evidence that the deficiency backlog had not been addressed in an effective manner for many reasons:
 - Backlog projects are not as attractive as other expansion and renovations projects,
 - Much of the funding is dedicated toward building new, rather than protecting and preserving existing facilities,
 - There is a tremendous amount of flexibility within Connecticut higher education in spending deferred maintenance funds on other types of projects,
 - With the recent construction boom and escalation of costs, construction funding is not going as far as originally anticipated.

11. Describe the specific activities and operations of the program in chronological order.

The Higher Education Asset Protection Program is a cyclical model with the following steps:

- a. **Assessment:** The process begins with a physical inspection of buildings by a team of three qualified (architectural, mechanical, and electrical) engineers to provide a baseline condition for each building. The team identifies, prioritizes and categorizes deficiencies/deferred maintenance items and develops a

correction cost estimate for each. In addition to identifying deficiencies, the lifecycles of major building components are evaluated in terms of their remaining useful life. Finally, a current replacement value of each facility is developed using a cost model based on the buildings systems.

- b. Document:** Upon completion of the physical inspection, the data gathered in the field is entered into a web accessible database application to warehouse the facility data and information collected including CAD drawings and digital photographs of the buildings and their deficiencies. Thereby, institutionalizing and consolidating the facilities data in a single data warehouse with convenient access provide via the internet to all levels of the organization.
- c. Analyze:** Once the data has been entered, the data can be analyzed from a variety of perspectives including benchmarking, using the Facility Condition Index (FCI) which is the value of the total deficiencies divided by the current replacement value. On the FCI scale, zero to five percent indicates the building or portfolio of buildings is in excellent condition, five to ten percent is good condition, and greater than 10 percent is fair to poor. Using the funding scenario tool within the application, the level of funding required can be calculated by targeting the FCI to your desired level of condition.
- d. Monitor:** As deficiencies are corrected, the system needs to be updated to reflect these changes since it will result in improvements to the building condition and FCI. In addition, as new deficiencies are identified they need to be input into the system to accurately reflect the true building/campus condition. The monitoring and update process are critical to making this a dynamic, living system that becomes an effective management tool for allocating resources to maintain the functionality of the physical plant.
- e. Plan:** The system provides for capital planning and project planning. As part of the project planning process, similar deficiencies can be grouped to leverage collective buying power across Connecticut's public higher education system.
- f. Reassessment:** A reassessment of the facilities should be done every three to five years to gage the improvements achieved over the prior years and to insure the capital renewal and deferred maintenance funding is being appropriately targeted to maintain the functionality of the campus physical plant.

12. Why is the program a new and creative approach or method?

The program is both a new and creative approach because it:

- Provides the institutions, and the State with accurate, impartial, consistent data regarding the present condition of public higher education facilities. Many of Connecticut's public higher education institutions have never had the opportunity to have an FCA performed and therefore, never had a complete picture of the institution's deferred maintenance backlog. Even if an FCA was done previously, the data could not be compared across the state since the assessment methodology used was typically different and data was in written report format which was not easily accessible to various levels of management. In addition, no roll-up to a statewide picture could be provided to assist the Governor and state legislature with establishing priorities for capital investment.
- Provides a standard basis on which prudent, effective and informed recommendations can be based for the allocations of resources both to and within institutions to best preserve and protect their campus physical plant.
- Provides facilities lifecycle capital planning to accurately assess and forecast past-due, current and upcoming capital needs to enable the institutions and state to achieve their long-term capital planning goals.
- Establishes guidelines and procedures that can be used as a model for other state agencies.
- Establishes a standard system for public higher education which provides a single facility condition assessment methodology to ensure consistency from institution to institution and campus to campus.
- Provides a centralized system to avoid unnecessary duplication.
- Provides cost savings from a single application purchase and implementation.
- Provides accountability reporting compliance – allowing the Department of Higher Education to report on Deferred Maintenance Liability across the system annually.
- Leverages collective buying power across the public higher education system by allowing capital projects to be developed by grouping deficiencies from across the system.
- Provides data for benchmarking within the system as well as between like buildings across campuses within the state: for example the condition of science buildings or libraries could be compared across the state.
- Provides impartial evaluation of building portfolios to help secure the additional funding required to preserve and protect the state's significant investment in public higher education facilities.

13. What were the program's start-up costs? (Provide detail about specific purchases for this program, staffing needs and other financial expenditures, as well as existing materials, technology and staff already in place.)

During FY 2002, as part of phase I of the Higher Education Asset Protection Program, a comprehensive facility condition assessment (FCA) was conducted by a

professional consulting group - VFA, Inc. on 69 buildings covering over 4.0 million gross square feet (roughly 20 percent of the system's 22 million gsf) at Southern Connecticut State University, Asnuntuck, Gateway, Housatonic, Manchester, Middlesex, Naugatuck Valley, Northwestern, Norwalk, Quinebaug Valley, Three Rivers and Tunxis Community Colleges and Charter Oak State College. Based on Phase I implementation, the start-up costs are as follows:

Description	Amount
DHE – Project Manager (In-kind)	\$45,000
Facility Condition Assessment – Phase I	\$354,592
Application Service Provider (ASP) Year 1	\$38,845
Application Service Provider (ASP) Year 2	\$38,845
One-time ASP Set-up Fee	\$1,500
Software Training – 4 days	\$6,000
Subtotal Phase I	\$439,782
Total Phase I	\$484,782

The project manager from the Department of Higher Education (Department) shepherded the project from original concept to Request for Proposals, consultant selection, contract signing, project kickoff, inspections, report scrubbing, training, final reports and presentations. The project manager was the point person on all aspects of the project and acted as the liaison between the consulting firm engaged to conduct assessments and manage the web-based system, as well as each of the 13 institutions participating in the project. About 50 percent of the project manager's time was dedicated to this project during the year.

The consulting firm (VFA, Inc. from Boston, Massachusetts) provided the complete set of services for the project. The FCA portion represents the largest cost and averages between \$.08 and \$.10 per gsf of building assessed. As mentioned before, the FCA entails a physical inspection of the building by a team of three engineers followed by extensive data input and importing both digital photo and CAD drawing into the database application by the team. The team meets, interviews and is escorted into each facility by the institutional physical plant staff. The on campus physical plant staff provides the engineering team vital information and highlights areas in need of particular attention at each of the facilities. The physical plant staff time and cost has not been included in the start-up costs.

The ASP (VFA Hosting) is detailed below in question #17.

The consulting firm provided complete hands-on software training over four days with an instructor and project manager. A total of 40 campus people attended the various training sessions. The computer training rooms were provided by four of the institutions that participated in the project at no cost to the Department.

14. What are the program’s annual operational costs?

At the current time, the level of annual operating costs to the Department is solely the cost of the ASP – VFA Hosting amounting to about \$40,000 annually. Any updating of the data in the vendor software solution would be performed by the respective institutions with the aid of the Department as required. Currently, the institutions have not dedicated any additional staff to this project but have been willing to dedicate the resources as needed. Ideally, the Department would like to hire a staff person to head the project and actively seek updates from the institutions in order to ensure the system is kept up to date. The cost of this dedicated staff person with benefits would range from \$60,000 to \$80,000 annually depending on the level of experience.

15. How is the program funded?

The first phase of the program was funded through a one-time surplus appropriation from the State. Currently, the Department is working to secure funding to continue the roll-out of the program.

16. Did this program require the passage of legislation, executive order or regulations? If YES, please indicate the citation number.

No.

17. What equipment, technology and software are used to operate and administer this program?

The Department elected to go with an Application Service Provider (ASP) where the consultant hosts the application and warehouses the data on its server hardware. Under the ASP, the consultant provides the hardware, system back-ups, access to the website housing the data and Oracle Database, all software upgrades, help desk support, annual sweep of database with RS Means (embedded estimating tool) cost updates and training. The ASP afforded the Department a rapid and flawless implementation and eliminated the need for the Department to purchase, service and support the hardware and software required to implement the VFA’s software suite. Essentially, the Department could focus on the data integrity and let the technology experts at VFA maintain the systems. The data is accessed from a personal computer with an internet connection providing anywhere connectivity. The site is password protected with various levels of security.

The vendor software suite includes three modules: (1) facility: building and infrastructure condition assessment; (2) scenario modeling: financial analysis and planning for reinvestment; (3) project plan development: capital project planning. It also has report generation capabilities in each module. The software solution provides the core functionality for data integration, assessment automation, automated costing, automated reporting, CAD capabilities, digital photograph

documentation, renewal projection calculation, and sophisticated database sorting/querying capability to analyze capital needs by priority, building systems, type of need, building to name a few.

18. To the best of your knowledge, did this program originate in your state? If YES, please indicate the innovator's name, present address and telephone number.

No, not in respect to single institution usage, but the concept of a total statewide measure of deferred maintenance and implementation of a single, statewide system for public higher education may be the first in the nation.

19. Are you aware of similar programs in other states? If YES, which ones and how does this program differ?

See answer to question #18.

20. Has the program been fully implemented? If NO, what actions remain to be taken?

No, a total of about 18 million gsf in over 450 buildings at 7 institutions on 16 campuses across the state need to undergo the baseline comprehensive facility condition assessment. About 20 percent, or 4.0 million gsf of the public higher education facilities in Connecticut has been assessed under phase I of the program. As the program is rolled out to the remaining institutions, the staff on those campuses would require training in the assessment methodology and software. However, before the next phase of the project can begin, funding must be secured.

In addition, the institutions who participated in the first phase need to develop deferred maintenance plans for backlog reduction and obtain the necessary funding to execute these plans using the defensible data provided through the program.

21. Briefly evaluate (pro and con) the program's effectiveness in addressing the defined problem[s] or issue[s]. Provide tangible examples.

Pro: Asset Protection Program has fully met its initial goals to provide: a consistent, baseline assessment of existing facility condition, prioritization of deferred maintenance needs, and migration of that information into a web-based software tool that allows an easy-to-use budgeting, forecasting and planning tool. For example, the Community College system utilized the data provided through the system to complete its biennial capital budget request and five-year capital plan. The Department has been able to summarize information on deferred maintenance needs by campus, type of building, age of building, type of project at literally the touch of a button. This information has been used to develop impressive reports and presentations to the Governor's office and state legislature.

Con: Need funding stream to fully-implement program so that the information is available for all of public higher education.

22. How has the program grown and/or changed since its inception?

The program has just completed Phase I and will grow to include all public higher education facilities, assuming funding for continuation is secured.

23. What limitations or obstacles might other states expect to encounter if they attempt to adopt this program?

Some of the initial barriers that the Department of Higher Education had to overcome and would likely be encountered by other states if they were to implement a similar program are as follows:

- Garnering the support from the state legislature to provide the funding to get the program started. In the end, a phased approach can be beneficial since it will show some results which can convince key legislators of the significant benefits such a system affords the state and higher education community.
- There are significant ramifications from having the baseline data to report (sticker shock). Inevitably, the amount of backlog, both current and projected, will be significant and will exceed any estimation the institutions had previously provided.
- Many institutions initially saw the standard system as a loss of flexibility and control rather than as a beneficial planning tool to help them make their case for capital renewal funding to maintain and protect their campus infrastructure; their attitude is changing.
- With the current pressures on state budgets, the institutions were reluctant to dedicate resources to staff the program. Management must take an active role in requiring facilities' staffs to embrace the tool for the benefit of the organization and to effectively manage their increasingly more complex physical plants.

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CSG Innovations Awards 2003

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