

Chapter 4

Section 4.14

Universities— Management of Facilities

Follow-up on VFM Section 3.14, *2007 Annual Report*

Background

Ontario has 19 publicly funded universities (18 in 2006), with full- and part-time enrolment in fall 2008 totalling 448,000 (436,000 in 2006) and ranging from 1,000 to 74,000 students (3,400 to 72,000 in 2006) per institution. In the year ended April 30, 2008, their operating revenues totalled about \$6.3 billion, comprising \$3.1 billion in provincial grants, \$2.4 billion in tuition fees, and the balance from donations, investments, and miscellaneous sources. Total operating expenditures were about \$5.8 billion.

Ontario universities own most of their facilities. A report published by the Council of Ontario Universities in 2007 stated that universities in this province managed a portfolio of 918 buildings with 5.6 million square metres of space, excluding student residences. The estimated replacement value of these facilities was \$14.4 billion as of March 2007, while the value of associated infrastructure, such as boilers and power systems, was an estimated \$2.2 billion. The average age of the buildings was over 30 years as of March 2007.

As owners of their facilities, universities are responsible for utility costs and day-to-day cleaning, repairs, and security services. The Ministry of Training, Colleges and Universities expects these

costs to be funded out of the universities' operating revenues. In addition to daily operating costs, universities are also responsible for maintaining the facilities in good condition. The Ministry assists universities with these costs through its Facilities Renewal Program grants of \$26.7 million per year.

Recognizing the increasing backlog of capital projects required to maintain university facilities in good condition and the need to have good information for decision-making, universities purchased a common capital-asset-management system in 2001. The system indicated that the backlog of deferred maintenance was estimated to be \$1.6 billion as of March 2007.

The objective of our 2007 audit was to assess whether universities had adequate processes in place to manage and maintain their academic and administrative facilities cost effectively. We examined the facility-management practices at three universities—Carleton University, McMaster University, and the University of Guelph. The other 15 universities and the Ontario College of Art and Design completed a questionnaire about their policies and practices.

We found that the three universities would benefit from having better information about space utilization and about their physical-plant operations.

At the three universities, we also found the following:

- In the 2005/06 fiscal year, the combined capital renewal projects at the three universities totalled \$18.3 million—less than 5% of their combined deferred-maintenance amount, which was not sufficient to reduce the backlog of deferred maintenance.
- The usefulness of the universities' capital-asset-management system for prioritizing capital renewal projects could be enhanced by implementing procedures to update the system for completed renewal projects in a more timely manner and, for a sample of facilities, checking the reliability of the deferred maintenance forecasts made by the system.
- Procedures to ensure that academic and administrative space was used efficiently needed to be improved. A new scheduling system at one university was expected to achieve a 30% improvement in the utilization of academic space.
- There was a need for additional analysis to compare the operating costs of each facility to those of similar facilities at the university or to those at other universities in order to identify and take action on opportunities to reduce costs.
- With respect to purchasing, we were pleased to note that the universities' policies promoted open and competitive purchasing practices, and that the policies were generally being complied with for the purchases relating to the physical-plant operations that we examined.

We made a number of recommendations for improvement and received commitments from the Ministry and the three universities that they would take action to address our concerns.

Status of Recommendations

The three universities we visited and the Ministry provided us with information, as of spring 2009, on the status of the implementation of the recommendations in our *2007 Annual Report*. The information provided indicated that, especially given the amount of work involved to fully address our recommendations, good progress was being made. The status of actions taken on each of our recommendations is as follows.

RENEWAL OF FACILITIES

Deferred Maintenance

Recommendation 1

To help ensure that decisions dealing with the maintenance of university facilities are based on adequate information, universities should:

- *periodically verify that the renewal models used by their capital-asset-management system are generating reliable deferred-maintenance forecasts;*
- *establish programs to periodically re-inspect the condition of their facilities;*
- *institute periodic, independent reviews to verify that their procedures meet the intent of the Facilities Condition Assessment Program; and*
- *maintain facility-condition information in their capital-asset-management database at a level of detail that is consistent with the way in which renewal projects are undertaken, and update the database as projects are completed.*

To help ensure that university facilities provide effective work and learning environments, the Ministry of Training, Colleges and Universities should work with universities to develop a plan to reduce the extent of deferred maintenance.

Status

The Ministry stated that in June 2008 it had asked universities (and colleges) to submit campus facility

information to assist the Ministry in making capital funding decisions. The information requested included space utilization ratios, the value of deferred maintenance on and current replacement cost of their buildings, and capital projects priorities. The Ministry also advised us that, with the support of the Ministry of Energy and Infrastructure, it was developing a comprehensive long-term capital plan and project evaluation methodology to address the ongoing capital investment requirements, including deferred maintenance needs, of Ontario's post-secondary institutions. This initiative includes engaging consultants to work with the management at post-secondary institutions to identify and prioritize capital investment requirements and share best practices. The Ministry expected to complete this initiative in 2009.

The Ministry had also provided universities with significant funding in addition to the \$26.7 million annual facility renewal program grant—a one-time grant of \$335 million in 2008 to reduce the deferred maintenance backlog and \$427 million for 2009/10 and 2010/11 in connection with the Knowledge Infrastructure Program, which can be used for both new buildings and renovation of old buildings.

The three universities we visited had each taken action to implement some of the recommendations as follows:

- As discussed in our 2007 report, Ontario's universities jointly purchased the same capital-asset-management system, which provides them with estimates of the cost of their deferred maintenance backlogs and forecasts of the timing of required capital renewal expenditures. One of the universities we visited advised us that it reviewed the system's estimates of the cost and timing of various types of maintenance needs and found them to be accurate. The other two universities had begun to implement procedures to periodically check system accuracy.
- We were advised that all Ontario universities have agreed that building-condition databases on the capital-asset-management system will

be updated, at a minimum, on a seven-year cycle. One of the universities we visited is updating its building-condition database on a five-year cycle, at a rate of 20% per year. The other two have reported that they are moving to the same system (one was completely re-auditing its entire building portfolio over the next two years, before moving to the five-year cycle).

- At the time of our follow-up, the three universities we visited were in the process of inputting building-condition data at a level of detail sufficient to enable them to update the database as each renewal project is completed, as opposed to waiting until the overall condition of the buildings concerned is periodically reassessed. In addition, Ontario universities have established an infrastructure committee to work with the vendor of the capital-asset-management system to enhance the system so that condition data on campus infrastructure such as water mains, sewers, sidewalks, roads, and street lighting can be input and used to generate estimates of deferred maintenance backlogs and to forecast required capital renewal expenditures for these assets as well.
- We were also advised that the universities have recently completed a request-for-proposal process to select a single facility-assessment firm to provide a consistent and cost-effective facility-audit and data-entry service for the Ontario University System. Over the next 12 months, approximately 25 million square feet of space are to be audited. The proposal included pricing for the standard system-level audit and a modified comprehensive audit that will respond to the recommendation that each institution collect data that is consistent with the way in which renewal projects are generally undertaken. If effectively implemented, it will also help ensure that procedures meet the intent of the Facilities Condition Assessment Program. Six of the participating institutions, totalling 14

million square feet, have committed to the modified comprehensive audit.

Prioritization of Renewal Projects

Recommendation 2

To help better ensure that capital-renewal funds are allocated to the highest-priority projects, universities should take steps to ensure that they have accurate and complete schedules of renewal projects due in each year and, where there are insufficient funds to complete all projects that are due, implement formal project-ranking procedures.

Status

As mentioned earlier, the universities we visited were in the process of inputting data to their building-condition databases at a level of detail sufficient to enable them to update their databases as each renewal project is completed. They informed us that, as progress is made, this project would enable them to use one of their capital-asset-management system's tools that is designed to support formal project-ranking processes. In addition, one of the universities plans to test a system modification that is intended to enable building-condition assessors to input risk factors as they conduct their assessments and thereby make the project-ranking tool more effective.

UTILIZATION OF FACILITIES

Recommendation 3

To help ensure that they minimize their space needs and the associated facility costs, universities should:

- *ensure that they have adequate systems and procedures to measure, analyze, and report on hours of use versus available hours, and space needed versus space used; and*
- *set space utilization objectives to be achieved over a three- to five-year time frame.*

Status

The three universities we visited have made varying degrees of progress in implementing these recommendations, as follows:

- One of the universities already had a management position responsible for space management at the time of our audit in 2007. This manager is responsible for maintaining its database inventory of classroom and laboratory space and continuing to co-ordinate annual space reviews and space-requirement studies. The university was continuing to work toward space-utilization objectives previously recommended by consultants it had engaged to review this area.
- Another university hired a manager of space and capital planning and a space-planning technician to maintain the inventory of classroom and laboratory space and implement a space-management software system. The system is designed to enable the university to prepare a space-management report that compares the space used by each faculty to the space standards published by the Council of Ontario Universities. Starting in the fall of 2009, space audits that will include analyses such as hours of use versus available hours are to be performed for each faculty. A Space Planning Committee has also been established to use this information as the basis for setting space-management policies that encompass utilization, allocation, and management issues.
- The other university has included responsibility for utilization of classroom space in the duties of a new senior management position. This position will be responsible for overseeing a project to re-inventory classroom space and develop a space-utilization plan.

INFORMATION FOR CONTROLLING COSTS

Recommendation 4

To help manage facility costs, universities should implement systems and procedures to provide management with the information required to:

- *enable them to take facility costs into account when making decisions, including those regarding the design and approval of new educational programs and research projects; and*
- *perform both the internal- and external-cost comparisons required to identify poor and good practices, and take action to correct or promote them respectively.*

Status

All three universities were participating in broad-based surveys of building costs and comparing their total operating costs by category to the published averages. Such comparisons are useful in identifying instances of above-average costs for the university as a whole in certain categories and may provide a basis for taking corrective action.

We were advised that the Canadian Association of University Business Officers has initiated a joint project with the Association of Higher Education Facilities Officers (known as APPA) to establish a Canadian version of the APPA Facilities Performance Indicators benchmarking system. The system is set up to collect facilities-operations data related to administration, construction, energy, maintenance, custodial and grounds services, the condition of facilities, and customer satisfaction. The Canadian version is intended to support comprehensive facilities-operations benchmarking across Canada, and Ontario universities have endorsed participation in the initiative. The universities were also participating in an energy benchmarking initiative with the Ontario Power Authority, the results of which were expected in fall 2009.

The universities we visited had different levels of information about the operating costs of individual buildings. Two universities had custodial and maintenance costs by building; one did not have a

rigorous system for allocating these costs. Two had utility costs by building through extensive use of sub-metering; one had such information only for newer and renovated buildings. Such information is used to identify opportunities for savings by analyzing and comparing costs. For example, one university reported that analyzing power consumption has allowed them to plan energy conservation projects in a more strategic and focused way.

Implementing our recommendations requires detailed analyses of the operating cost and utilization data of individual buildings to determine the impact on operating costs of various factors—such as hours of use, intensity of use, building design, and the type of finishing materials used in construction—and thereby identify poor and good practices. The universities we visited did not have plans to perform such analyses. While we recognize that it may be practical to collect the necessary information only for newer and renovated buildings, some of the findings that result from analyzing data from these buildings may also help to control operating costs in older buildings.

MONITORING PERFORMANCE AND QUALITY CONTROL

Recommendation 5

To help ensure that they receive value for the money they spend and that work is properly completed, universities should:

- *consider establishing service-level objectives and require that their physical-plant and security departments report on the achievement of these objectives;*
- *implement supervisory inspections of the work of staff and contractors for quality and completeness, and document the results of these inspections; and*
- *use survey results and complaint information to help evaluate departmental and staff performance.*

Status

The physical-plant departments of the universities we visited had expanded or initiated the measurement of the service levels they provided with respect to building custodial and maintenance services, and in one case groundskeeping. They measured themselves against the five levels of service that the Association of Higher Education Facilities Officers has defined for each category.

Although the initiatives of the physical-plant departments are useful, implementing our recommendation requires that the available information on service levels and related costs be used by universities to set service-level objectives that best balance a safe and productive working and learning environment against available funding. One university indicated that, although it is not yet setting service-level objectives for its physical-plant department, the most recent budget decisions ensured that the minimum custodial-service levels that the university believed to be necessary to provide acceptable learning and working environments were maintained. This is a step toward relating expenditures to particular service levels.

The three universities we visited also advised us that they were developing or expanding procedures to:

- perform and document inspections to verify that expected or contracted levels of service are being achieved—for example, one of the universities was equipping its custodial service managers with hand-held equipment to monitor and record performance; and
- use survey information to help evaluate departmental performance—at one of the universities, the faculty and students at one of the faculties designed and administered an extensive survey of satisfaction with the upkeep and cleanliness of all of the university's facilities.

One university indicated that it had also trained maintenance staff to use its management information system to more effectively manage work orders. It stated that its backlog of work orders older than 90 days had dropped by 75% as a result. It also implemented a more efficient way of transporting trades staff around campus that it believed would result in substantial cost savings.