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ABSTRACT

This article cites how existing space has been used more efficiently and how institutions have acquired space in buildings that have not necessarily been used for education before. The common goal of all the solutions is to avoid resorting to new construction. The solution to redeploy campus space (and the timing of programs) depends on such variables as the institution's goals, location, financial stability, and prospects. Several brief examples are given to show what some colleges and universities have accomplished. Some of the solutions discussed include: year-round campus use; off-campus programs; new clientele; instructional technology; and time-shortened degree programs. (Author/PG)

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Build if you must, but consider...

1 REDEPLOYING CAMPUS SPACE AND TIME

2 Non-Campus Facilities
3 Modernization
4 Found Space
5 Cooperation
6 Interim Facilities
7 Restructuring College Housing

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This is the first of seven articles to address the problem of what higher education can do to meet the space needs of new programs and a widened constituency. The solutions cited show how existing space has been used more efficiently and how institutions have acquired space in buildings that have not necessarily been used for education before. The common goal of all the solutions is to avoid resorting to new construction.

The solution to redeploy campus space (and the timing of programs) depends on such variables as the institution's goals, location, financial stability and prospects. Several brief examples are given to show what some colleges and universities have accomplished. More detailed examples and full case histories are available by writing to Educational Facilities Laboratories, 477 Madison Avenue, New York, N.Y. 10022 specifying areas of particular interest.

The information for these articles and the complementary case studies, compiled for EFL by Jane Lord and Stephen A. Kliment, resulted from a project jointly funded by the National Institute for Education and Educational Facilities Laboratories. Subsequent issues of Planning for Higher Education will carry the remaining articles of this series.

The Issues

Universities and colleges are facing a paradoxical situation in which some institutions have too much space and others don't have enough. In one case falling enrollments and shifting student housing needs leaves empty space that still has to be maintained. This is a drain on resources because some operational and financial costs are fixed whether or not a space is used.

In other cases, institutions are facing a facilities shortage caused by: New clients entering the educational market (for example adults and minorities), the physical or functional obsolescence of facilities, population shifts, and open enrollment.

Both situations call for drastic revision in educational programs to provide economical use of buildings. If a college is short of space it can move its students into facilities off the campus, or let them stay home and use electronic communications, or shorten the length of degree programs. If a college has idle space it can offer new kinds of programs to attract people who would not normally go to college.

1. Year-round Campus Use

Classroom space can be freed by opening up the campus during summer months, and by encouraging students to take on some type of internship, work-study or independent study plans.[1] This also frees back-up spaces used for athletics, food-service and housing.

The major example of year-round campus use known to EFL is at Dartmouth College. It began in 1971 when the Dartmouth trustees voted to admit women without

reducing the number of entering male freshmen and without incurring major capital expenditures. The year-round operation started in 1972 and has come to be known as the Dartmouth Plan.

The plan divides the academic year into four 10-week terms. Each term, a student makes one of three choices: residence on campus; off-campus study for credit (not necessarily on a Dartmouth-sponsored program); or a non-credit "leave" for vacation or a job. In the Fall of 1973, about 455 of the 3,100 undergraduate students were off campus. Over half were on credit programs; the rest were on leave terms. This system has enabled the college to make a net gain of 600 students (and a projected 200 more by 1975) without putting up any new buildings.

What has it cost? The payroll increased because 12% more faculty and 6% more administration positions were needed to adapt athletic and dormitory space for coeducation. All these costs have been met through tuition raises and grants.

Other "year-round" institutions on which EFL has prepared case studies include Colgate, Burlington (N.J.) County College and Beloit (Wis.) College.

2. Gaining Space With Off-Campus Programs

By moving students off campus for part of their programs, institutions can conserve campus space without being part of a year-round program. Off campus programs can take the form of independent study, work/study or cooperative education, or the external degree. About 200 institutions now have some kind of formal off-campus study program.

One of the most ambitious (and oldest) such programs is at Boston's Northeastern University. This institution's cooperative education program in 1974 involved 12,000 out of the 13,000 full-time students. With 4,000 students off-campus at any one time, Northeastern needs facilities for only 9,000.

The schedule puts the student on a job for a 3- or 6-month period; there is no credit for this time, but students cannot graduate without it.

The cost to the university includes 37 faculty plus 20 professional staff hired by the Office of Cooperative Education to counsel students and work with local employers. The program offices require space equivalent to 10 classrooms.

The difference the program has made to alleviate demands for space can be measured by the fact that Northeastern has been able to carry 45% more students under its plan.

Other programs that have come to EFL's attention include Martin College at Pulaski, Tenn. (five 6-week blocks permit on-location study in urban centers; largest freshman class in Martin's history is housed in same amount of space); Colorado College in Colorado Springs; La Verne College, La Verne, Calif., and others.

3. Using Space for New Clientele

Few movements have put campus space managers more on their mettle than the influx of new kinds of students--students who are adult, elderly, working full-time, or deprived in one way or another.

Programs that fit this new "clientele" differ in many ways from those offered to traditional 18-year-old students. The programs must cover new subjects, many of them non-credit. Campuses must be open during the evenings, and weekends, and classes must be offered at off-campus centers to accommodate working people. These techniques take advantage of spaces that otherwise would be idle.

One example is the "Weekend College" at C.W. Post Center of Long Island University at Greenvale, N.Y. Space and time have been managed to accommodate 300 weekend students.

This alternative delivery system for higher education is designed to meet the continuing education needs of adults. Courses are scheduled in three categories (classes on six consecutive Saturdays; classes on six consecutive Sundays; two intensive weekends linked with a five-week period of independent study). This evens up the load on facilities. Classrooms are open on Saturdays and Sundays, and so is the library, bookstore and food facilities. A nearby private school takes care of the children of weekend students. After two years of operation, income from the program has decisively exceeded expenses.

Other institutions have plans for new clientele that puts campus space to new uses. Madison (Wis.) Area Technical College offers a new degree program in liberal studies to working adults, partly in classroom space not fully used for other programs.

The University of Oklahoma offers guided independent study to adults who attend campus only for several weeks in January, June and July for seminars and counseling. The rest of the time the students work at home, so that strain on campus facilities has been negligible.

4. Instructional Technology to Improve Use of Space

Several institutions have resorted to new technology as a matter of educational philosophy or to resolve space problems. Florida State University, for example, has used auto-tutorial methods on a dozen or so courses since 1970. The major capital-type investment consisted of study carrels, slide viewing sets and tapes, plus renovation of a classroom to serve as a learning lab. Some 2b0 additional students were accommodated in this manner, with no new construction.

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At the University of Akron, extensive closed-circuit television has reduced the need for new laboratories in the physical sciences. Non-science majors, for example, get their science requirements through televised programs of laboratory experiments from demonstration laboratories.

Another program using technology is the Self-Directed Learning program at St. Louis' Meramec Community College. Students either work out "contracts" with supervisors or make use of audiovisual "package" courses. Of 8,000 students on campus, 1,500 were on such programs. Average space utilization has risen sharply because students in the program have tended to use college facilities at low traffic time. Jams at the beginning of term work themselves out after a few weeks.

Other institutions on which EFL has information include Passaic County (N.J.) Community College (self-paced slide and tape programs reduce space from 140 sq. ft. per student to 47 sq. ft.); Michigan State University; Valdosta (Ga.) State College, and New York City's Hunter College.

5. Time-Shortened Degree Programs Save Space

A more drastic response to redeploying campus space and time is to offer the four-year degree in three years.

Appalachian State University at Boone, N.C., admits high school students to its college courses for freshman credits, and sends its college students to use the staff and specialized facilities of local high schools. Duplicate courses are avoided, and as the program has tended to stimulate independent and off-campus study, much space is released.

C.W. Post Center of Long Island University, known for its Weekend College, also runs a FAST (Freshman Academic Study for Talented High School Seniors) program. In place of the regular high school curriculum,

Biology major in Northeastern University's Cooperative Program has worked at fisheries center at Woods Hole, Mass. (Photo courtesy Northeastern University). Below: Administration building at C. W. Post Center, site of its Weekend College (Photo by Edward J. Edahl).

these 12th grade students are taught the entire freshman college year by C.W. Post faculty in the classrooms and labs of participating high schools. The students graduate a year earlier, and campus space is freed.

However, the three-year program is not without drawbacks—for social and behavioral reasons more than in matters of space management. Thirty or so institutions are known to have adopted the plan. Of these, many have discovered lapses of quality of academic programs, unexpectedly meager student interest, and no real cost savings. (Indeed, with the drop in applications and enrollments, colleges with 3-year degree programs have had to spend more to step up recruiting.) Most students apparently prefer to spend their four years at a four-year college. But for the highly motivated it is a very good opportunity.

(In *Less Time, More Options*, the Carnegie Commission on Higher Education said that better prepared students leaving high school do not need four years to their first degree. But clearly other influences interfered—status, varying motivation.)

The controversy is not over, and the results are clearly not all in, since most programs are new. But in another report, the Carnegie Commission found average operating cost savings of the 3-year B.A. program to be between 10 and 15%, and savings on construction costs about 33%.

Other Programs

Many colleges and universities have used other ingenious methods to help solve space problems (or, conversely, used space to resolve financial dilemmas). One approach is the summer program. Cornell University charges adults $145 per week and their children $90 for its so-called Alumni College. Cornell believes it is a good way to use expensive facilities and staff during the summer "slack season." About two dozen institutions (including Harvard, Princeton, Dartmouth, Brown, Pennsylvania, Drew, Stanford, Oregon and Pomona) have tried this approach, but they do not necessarily make money.

These alumni colleges, called Vacation College, Summer College, etc., last from four days to two weeks and draw up to several hundred people for each session.

On a bigger scale, over 400 college programs exist for high school students. Some 300 institutions offer such programs. They are listed in "College Programs for High School Students."[2]

A noneducational way to add income is in operation at several institutions which have opened their dormitories to traveling students, despite predictable pique from motel-hotel interests. (Northern Michigan University accommodated 2,000 tourists per summer but stopped the plan for this reason.) North American Student Centers of Salt Lake City coordinates this program.

Measuring the Benefits of Redeployment

What kind of space yield you obtain from such new instructional formats is not easy to compute. The State University of New York tried to compare the impact on space needs of conventional versus new formats for a future period of time. The unpublished study, *New Instructional Formats and Space Requirements*, took up three kinds of options: a) changing from Fall to year-round enrollment; b) using new student/faculty ratios; and c) introducing new instructional formats (such as off-campus programs, programmed learning, external degree, degree by examination).

The study tentatively concluded that by combining year-round enrollment with adjusted student/faculty ratios, it would be possible to save up to 6% of the space. And, adding some form of nontraditional instructional format would double these projected space savings.

These kinds of computations required very precise inventory and projection figures that, unfortunately, are not always at hand. In any event, the decision to redeploy space and time will depend on the institution, its educational goals, location, staff, financial stability and prospects, and many other variables.

One can, of course, overstress budget consciousness, and a note of caution emerges from the so-called Newman Report of 1971 (p. 29): "Concentration on budget consciousness can even be *inimical* to cost consciousness. For example, when funds for constructing new classrooms are saved by using existing ones a larger part of the day, the savings achieved—however desirable in themselves—may mute the issue of whether given subjects are best taught in classrooms at all. Classrooms at a college can be scheduled 24 hours a day, and every seat occupied, but if the classes themselves are relatively unproductive of learning, then the institution is grossly inefficient all the same."

Similarly, in *The More Efficient Use of Resources* issued by the Carnegie Commission for Higher Education, the point is made that pushing for higher classroom utilization in unpopular periods may result in smaller classes and higher teaching costs.

Yet the overall experience has been encouraging. Studies such as those by the Carnegie Commission found that conventional students were just as keen on enrolling in space and resource saving nontraditional study programs as are members of the "new clientele."

EFL's own look at 80 institutions revealed a broad base of success in the redeployment of campus time and space. Readers requesting these case studies should indicate which areas taken up in this article might best meet their particular need.

—Stephen A. Kliment
Jane Lord

[1]Sheehan, Bernard S., and Bradley, A. Paul, "Year-Round Operation: Mixed Blessing," Planning For Higher Education, Vol. III, No. 1: 5/5, February, 1974, surveys the literature in the field.

[2]Guide available from Hillsdale Publishers Company, Hillsdale, New Jersey 07642.