

KEEP PACE WITH SPACE

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Dealing with underused or inefficient classrooms, offices, or residential buildings? Here's how to rework facilities to be more flexible and efficient.

By Apryl Motley

One college on the campus of the University of North Carolina Charlotte was in the process of hiring 11 new faculty members, but hadn't determined where they would sit. At the University of Colorado Boulder, a number of nonacademic functions were located on the main campus, and there was a need for more student study space. Faculty in a science department at Queensborough Community College were asked to consider holding both labs and lectures in the same space.



These scenarios have become more common as many institutions decide that building more space isn't an option.

"The goal is to better utilize existing space, because there are no plans to add buildings on campus," says Sherri Newcomb, senior vice president and chief operating officer at Queensborough Community College, Bayside, N.Y.

"Like most state institutions, our funding for capital projects has slowed," observes Kathryn Lauria Horne, director of space management at UNC Charlotte. "At the same time, we're growing and need additional space, but we can't build our way out of the problem. We have to use our existing space more effectively."

In his newly created role as associate vice president, capital planning and development, at the University of Washington, Seattle, Michael J. McCormick echoes these sentiments. "We're not going to increase the amount of space that we have on campus at the same rate that we did previously," he says "It's too hard to maintain. Both declining financial resources and deferred maintenance can be addressed if we use our existing space better."

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FROM SIMPLE TO STRATEGIC

Sometimes the solutions for using space better are relatively simple. At Queensborough, for example, "We saw underutilization in some of our labs," Newcomb notes. "While touring them, we asked faculty if they could teach their lectures in them. The response was that they would need stools that swiveled, so we bought new stools."

Office space for the 11 new faculty members at UNC Charlotte was solved by working with the college to identify options, according to Horne. "I met with them, looked at their current space, and came up with a strategy to take over some space in their building that wasn't fully used and moving some staff and graduate students out of offices into an open space environment." (See sidebar, "[Open or Closed? The Office Space Debate](#).")

Other scenarios similar to the one at the University of Colorado are more complex and may require major changes for staff. "Once we determined that a lot of nonacademic functions were located on our main campus, we decided to move some of them, including my office, to our East Campus," says Carla Ho-a, the university's assistant vice chancellor for budget and fiscal planning. The East Campus is physically separated from the main campus. "It's about a 10-minute drive," Ho-a explains. "It was an adjustment, but in making this move, we gained space."

Space changes—both simple and complex—require such adjustments and flexibility on the part of faculty and staff, who have been the primary stakeholders affected by strategic space management initiatives on these campuses thus far. As Horne observes: "Overall implementation of a space use policy is as much about change management as it is about facilities management. It is emotional and hard for people; any change is."

"No one wants to give up space," Newcomb concurs. Nevertheless, these institutions and others have put strategies and structures in place to make the processes associated with strategic space management more palatable.

ANALYTICS OPEN THE DOOR

Obtaining reliable data is a critical first step in calculating space efficiencies. "Our approach was to bring data to the table to better enable us to initiate a conversation about space use at the college," Newcomb says. "Without data, you hear anecdotally that every space is fully utilized, and nothing can change."

Upgrading tools. Although the college already used space management software, the program needed an update in order to be fully operational. Fortunately, Newcomb was able to hire a new staff person, who was dedicated to the project. "It took a full-time effort on his part for a year to get things in order," she says. "It's hard to give existing staff a project like this one. We wouldn't have gotten anywhere if I had not dedicated him to this project."

Once Newcomb and her team were able to generate accurate space utilization analytics about classroom usage, they were better prepared to begin the conversation about strategic use of facilities. "We went back a couple of academic years and looked at scheduling patterns," she explains. "When we aggregated all the rooms in a particular department, we could see a lot of white space in the schedule, indicating that classrooms were vacant. We were able to show people that they may be using 11 rooms when they only need seven."

Newcomb realizes that, "a picture paints a thousand words; analytics made it easier to begin conversations about space. It was still difficult, but the discussions were different than they would have been if we had not had data. After seeing the metrics, people on campus knew they had to engage in talks about space changes."

Engaging external experts. Concerns at the University of Colorado about getting these kinds of discussions started resulted in the institution engaging a third party to study and assess its facilities assignments. "By 2014, it was generally understood that we weren't using space as efficiently as we could be," Ho-a says, "but we needed to work with an external body to identify specific problems so that we then could begin to develop strategic solutions."

At the University of Colorado, findings centered on centralized versus decentralized control and scheduling of space; need for a centralized space data system; and lack of a formalized governance process for space allocation decisions.

She notes: "We had limited bandwidth for doing this type of analysis in-house, and because of sensitivities around space use on campus, we needed to work with a neutral party." The campus used a competitive bidding process to select Huron Consulting Group to assess the university's funding, allocation, and utilization of academic, administrative, auxiliary, and research space, explains Ho-a. The assessment took place over a five-month period, surveying faculty, meeting with stakeholders, and reviewing space occupancy and utilization data. "Once the initial assessment was complete," notes Ho-a, "the necessity of establishing a more consistent system for recording and allocating space became quite evident."

The assessment's findings centered on key themes or areas of challenge: centralized versus decentralized control and scheduling of space; need for a centralized space data system; and

lack of a formalized governance process for space allocation decisions. Examples of findings included the fact that: (1) department-scheduled classrooms had less than 50 percent utilization compared to 70 percent utilization for centrally scheduled classrooms; (2) 35 percent of undergraduate lecture and seminar courses were outside the standard block schedule; and (3) prime academic space was being occupied by administrative functions that could be located elsewhere.

"Each college had its own way of tracking data, the campus had its own way, but not all the data matched—and in some cases data were missing," says Chris Ewing, assistant vice chancellor for planning, design, and construction. By completing the assessment, the university was able to identify an appropriate technology solution and plans to roll it out gradually over the next couple of years.

UNC Charlotte also engaged an outside consultant that recently finished a study of the space assigned to various science departments on campus. Encompassing more than 10 departments, "the study confirmed that we do not have enough space to accommodate all of our future needs," Horne explains. "It gave us the data to confirm what we already suspected."

The *Science Space Utilization Study* also confirmed that even with a new science building slated to be complete by 2020, the campus is in need of more academic space given the growth in enrollment. UNC Charlotte is the fastest growing university in the state. Student enrollment has increased by more than 32 percent since 2005, from about 17,000 in 1999 to almost 28,000 today, and the growth is projected to continue. The interest in the STEM fields is driving enrollment growth in the science and engineering majors. For instance, notes Horne, analysis of the science instructional labs showed that some general science labs have a seat occupancy ratio as high as 83 percent, and labs are scheduled throughout the day. "Both of these measures indicate that we need more space for science instruction to serve our students," Horne said. A similar study of non-science space on campus is planned for this fiscal year.

Adding assessment capability. The University of California, San Francisco (UCSF) also found itself limited in its ability to work with existing data in determining and implementing a space use strategy. "We determined that our data were often incomplete or only partially accurate," says Lori Yamauchi, associate vice chancellor, campus planning. Consequently, the university's senior vice chancellor for finance and administration decided to fund the development of a new space management system, which is more robust than its previous software. "I was then tasked with hiring staff to build and implement it," Yamauchi explains.

A new space analytics unit was created within the campus planning department, says Yamauchi, with a director and two analysts to work with UCSF's program management office to scope, design, and build the new system.

"After our space governance policy was established and we were trying to implement metrics for space utilization, it became clear that existing data painted an incomplete picture of space use," says Yamauchi. The new software/system was available for use in June; departmental space coordinators have been trained to use it; and they are checking and verifying the accuracy of the data in the system, which will be summarized in a space analysis report to be submitted in December to the University of California President's Office. The report will include information on the amount of space UCSF owns and leases, types of uses, and the capacity of the space to support different activities.

This type of analysis, and potential purchase of additional technology solutions, is one of the more costly aspects of implementing a space management strategy. However, it's generally well worth it for the long term. "Data are critical to getting buy-in on campus," University of Washington's McCormick says. "We don't talk enough about how much space costs. By

gathering data and calculating operating costs for each building, we're trying to make the cost of space transparent."

From Ho-a's perspective, "We have about \$3 billion in property. The amount of investment made to conduct the assessment is small in comparison. The return on investment would be very high."

"You could calculate our return on investment in different ways," Newcomb adds. "We look at it primarily in terms of cost avoidance of constructing new space. We estimate that to date we've recaptured and repurposed 35,000 square feet of space and avoided as much as \$14 million in new construction."

Whether the analysis is conducted internally or externally, obtaining accurate space use data was a critical component of beginning to discuss and resolve space use dilemmas on these campuses. As Newcomb says, "The data get you in the door."

GOVERNING PROCESSES, GAINING SUPPORT

Armed with analytics, institutions are able to establish guidelines for space use and processes for the necessary and difficult decision making of facilities and space assignments.

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For example, in 2013, UNC Charlotte established a space policy and a governance process that established the protocol for reviewing space requests and deciding on subsequent allocation based on the highest and best use. Horne arrived as director of space management two years later, and overseeing this process is one of Horne's primary tasks. "The university recognized the problem," she explains, "but how do you socialize the issue and help others understand the problem?"

The university created a two-tier committee structure, Horne explains. She chairs both the space management advisory committee and the space and property steering committee. The first committee includes representatives from university divisions. Its space assignment recommendations are forwarded to the steering committee. "It's still a relatively new process," admits Horne, "and we're working with departments to help them understand the principles and the process." In the end, says Horne, "all final decisions regarding space use are made by the chancellor."

The University of Colorado created a similar structure in the form of a space utilization steering committee. "It's really important to ground people about why changes are being made, for a larger purpose of student success," Ho-a says. With this goal in mind, "It was a collective decision that to be successful we needed to pull folks in from all parts of campus. The composition of the original steering committee was deliberate. We were looking for individuals who would be influencers, but we also wanted naysayers, who would challenge us to find the best solutions." The committee has 20 members and meets monthly.

Several committee subgroups focus on specific areas, such as technology and data, student success, and administrative success. The policy writing subgroup, which issued its first policy last month on the scheduling of instructional space, is the most active.

Another key subgroup is devoted to human center design, and is led by a social scientist. "We still did not have input from the broader campus, so we decided to go out on a road show and meet with various stakeholders on campus," Ewing said. "We asked each group the same series of questions." (See sidebar, "[Conversation Starters.](#)")

"The strength of going through this effort was identifying broader themes and preferences from campus as well as dispelling some assumptions that we had made," he explains. "For

example, faculty had indicated that students wouldn't take classes before 10 a.m. or after 2 p.m., but that's not what students said. If it means graduating on time, they would take classes at those times."

Newcomb acknowledges that "data only take you so far." She had to continue building relationships with all the stakeholders involved, particularly at the departmental level. "I would walk all their space with them and try to understand the different nuances of the different programs. I spent a lot of time with department chairs so that I understood their various needs."

Newcomb offers one piece of advice to senior leaders: "I didn't approach stakeholders by saying, 'This room is underutilized and needs to go back into the collegewide inventory.' Instead, we took a consultative approach, which worked really well."

A key part of Queensborough's strategy, says Newcomb, "was to make sure that academic departments received necessary upgrades and improvements as part of the space reallocation process. In one of our technology departments, we provided new work stations and furniture so that the same space used for computer-aided design classes could also be used for manual drafting courses."

To set a different tone for thinking about space on campus, a space committee was established at UCSF in 2012. "Once the committee was in place, we developed a space governance policy," Yamauchi says. "We had a space policy previously, but it wasn't as clear in articulating the underlying values that we're trying to convey." Those values include: (1) uniform, equitable, transparent, and effective governance of space; (2) accountability for use and economic performance in that space; and (3) nonpermanence of space assignments to allow for flexible and optimal deployment of space.

At the University of Washington, while there is no formal committee structure currently in place, McCormick is in the process of creating an advisory committee that will help him better understand how space is used on campus. "There's a cadre of space managers within the colleges and schools," he says. "They see our operating costs as we make them more transparent. From this group we're creating an advisory committee. They are incredible allies for us."

In addition to working with colleagues internally, McCormick indicates that "a workplace strategy consultant is also on the design team to help us communicate with everyone and get them thinking differently about their space."

LESSONS LEARNED

As illustrated by space management efforts profiled here, stakeholders on campuses take their space very seriously. Since this is the case, these initiatives need to be approached strategically in terms of staffing and communicating about them. Here are some strategies that proved successful on these campuses.

Dedicate staff to space management. "I could see that the project could have failed if we hadn't done exactly what we did by dedicating a person to the project," Newcomb emphasizes. "Can you afford *not* to hire someone? Think of the return on investment." Within McCormick's organization, there is a specific group of seven staff dedicated to working on space management. These administrative costs are part of his departmental budget, but this group's time is not charged to specific projects.

Communicate openly; be inclusive. "It's really important that the process associated with space allocation be well communicated and transparent," Horne says. "People throughout the university know that there's a process, and that it's open and transparent. Even if you don't agree with decisions coming out of the process, all stakeholders are involved, which is critical

to buy-in."

"The importance of communication can't be overemphasized," Ho-a agrees. "This isn't just about changing how we use space. It's an overall change management initiative."

Clearly articulate the values and principles for space management. "Begin there," Yamauchi says. "What are you trying to achieve? What does success look like? As you go through the process of communicating to the campus community, be true to those values and principles. You must build and manage trust to have an effective space management system. If people think you aren't being transparent, that undermines trust, which will undermine the success of your efforts."

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OPEN OR CLOSED? THE OFFICE SPACE DEBATE

Faculty on many campuses oppose the move toward open-space office designs as a space management strategy, in part because they take the term "office hours" quite literally. Those are the designated times of day when professors and instructors occupy their private (possibly shared, preferably not) offices. While this has been a fine higher education tradition, the practice has significant impact on campus space management.

"Most of our space for labs and offices is configured in closed suites," says Lori Yamauchi, associate vice chancellor, campus planning, at the University of California, San Francisco. "It isn't obvious where space is not being used in office suites." However, an open-space design has been implemented in at least one facility on the UCSF campus, the Mission Hall building, where she says that there are "no private offices, not even for faculty." Yamauchi notes that representatives from the university's academic senate have become quite engaged in the work of UCSF's space committee, "especially as we try to apply an open-design plan to other parts of campus."

Open space, stubborn questions. The open-office concept is also being explored at the University of Colorado Boulder. "Admittedly, it's a tough sell," says Chris Ewing, assistant vice chancellor for planning, design, and construction, "but we have explored adding amenities to the design, such as shared huddle spaces, break rooms, collaboration spaces, and phone booths for making private calls, rather than just recommending gutting the space and replacing it with open cubicles."

Even with additional amenities to make open office space more attractive to staff, one of the more challenging tasks at both the University of North Carolina Charlotte and the University of Washington, Seattle, has been determining who actually sits in which offices. "People move between departments or leave, and new people are hired," says Kathryn Lauria Home, UNC Charlotte's director of space management. "It had been left up to departments to update and record changes in use and occupancy, and sometimes all office spaces would be assigned to the same person, usually the departmental space coordinator, for the sake of convenience."

To get a better sense of how office space is being occupied, work is underway to link office occupants to the university's human resources database. "We want to start using metrics, such as the amount of office space per person, as a way to determine if facilities need to be renovated or reallocated," Home explains.

In the meantime, some older, relatively small residence halls are being repurposed for offices, which will free up space in other buildings. While this will be brand new, renovated space, Home notes that "there's some concerns about moving to a new location."

Mixing it up. Michael McCormick, associate vice president, capital planning and development, at the University of Washington, Seattle, estimates that office and administrative space occupies about a quarter of institutions' total square footage. "We're working really hard on using this space efficiently," he says. "For example, we have a project where we're combining three different departments that often work together. Each department gave us a list of the number of offices they needed. We then asked, 'Do you have names attached to each of these?'" It turned out that, for one thing, some faculty had double offices due to dual appointments. Similar to UNC Charlotte's approach, McCormick says, "We have a strong effort underway to update floor plans and attach them to the HR payroll system, so we know who is in what space."

Meanwhile, The Tower, a 14-story building on UW's campus, does have open office space. Initially, McCormick took the approach of calculating square footage per person, but found it "difficult to get anywhere." Now, the university has adopted a different philosophy of modernizing and improving work spaces, in hopes that faculty and staff will be more amenable to the open-office model.

As Alexandria Roe, associate vice president, capital planning and budget, for the University of Wisconsin System learned, just the mention of an open-space-office model can cause an uproar on campus. Roe was working with a new planner who suggested looking at shared space for faculty of the University of Wisconsin, La Crosse. "You would have thought that I told them their jobs were ending," she says. "Faculty there printed and wore buttons bearing cubicle farms with X's drawn through them."

Roe hopes that ongoing space studies coupled with peer analysis and refocusing faculty on the university's mission will help persuade them to consider nontraditional options for office space. For instance, a space study is currently underway in the College of Arts and Sciences at the University of Wisconsin, Madison. According to Roe, in the chemistry and biology departments, UW Madison faculty have double the amount of office space that their academic peers do at other research level 1 institutions, and half the amount of research space. "Buy-in is still a work in progress for us," Roe admits. "We want to try and show them, through peer analysis, that they're not as bad off as they may think."

In addition, notes Roe, "What we've tried to say to faculty is that we want to put the money where students are, by modernizing labs or upgrading laboratories, for example. The goal is to get them more focused on creating a top-notch student environment. Our whole drive is the student experience."

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CONVERSATION STARTERS

At the University of Colorado Boulder, various stakeholders were asked to address the same set of questions during meetings held with the goal of getting broader input from the campus. According to Chris Ewing, assistant vice chancellor for planning, design, and construction, more than 800 lines of qualitative data from statements of more than 100 people, were gathered. Perhaps, these questions might serve as a model for developing your own "conversation starters," as you begin or continue the dialogue about space management on your campus.

Classroom selection

- o In any given semester, is your department able to find sufficient classrooms to run all the courses and course sections it needs, and at your desired enrollments?
- o What is your department's strategy for addressing any problems that arise?
- o Do you have recommendations for how the campus could help you in this endeavor?

Classroom scheduling

- o How does your department schedule classes?
- o What works, what does not work, and why?

Unit constraint

- o What type of space do you feel is most lacking for your unit (e.g., office, classroom, labs, study, student, or faculty)?

Space management process

- o What are the stakes involved in a campus space management process?
- o How should communication between faculty, staff, chairs, deans, and administration flow as we explore strategies for establishing such a process?
- o What would inspire the most fair, transparent, and flexible solutions to our space management problems?
- o Would you support a campus space management office? If so, with what level of authority?

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SUSTAINABILITY-FOCUSED FACILITIES

The goal of additional energy savings has been the driving force behind the space management efforts at Nova Scotia Community College.

By Michael Chapman

With sustainability as one of our key values, optimizing building performance is a priority of Nova Scotia Community College (NSCC), Canada. Good space utilization ties into our sustainability goals. Since 2008, we have reduced our energy use by 22 percent and our greenhouse gas emissions by 32 percent. This means \$1 million in annual energy savings—money that can be reinvested into the college.

As an example of our work, the college has implemented scheduling and space utilization software, simplifying the development of efficient schedules and the tracking of the use of space. Effective use of space is key to running an efficient building. There are real energy savings to be realized and a need to ensure that the college does not heat and cool spaces that are empty. Since implementing our new software, the college has seen utilization improvement rates at several of our 13 campuses jump from 40 to 70 percent.

Another example of our work is the Centre for the Built Environment (CBE), which was constructed in 2010, and is an example of an innovative design approach to space management. The college challenged itself to work with a reduced footprint, while still providing the learning spaces required for high-quality program delivery. To make these spaces effective, we used an integrated design approach, which meant ensuring that all the necessary people were at the design table from the beginning: academic chairs, curriculum development staff, facilities staff, construction managers, and an industrial process engineer.

We designed open-concept spaces that could be flexible and quickly adapted for various programs. A detailed material handling process was put in place to cut down the need for fixed equipment, and overhead doors were installed between shops to support flexibility. Changing to more portable training aids was also required, along with specific infrastructure supports, including drop-down electrical connections and high-density racking systems.

This year, NSCC is set to begin its next phase of major renovations. The CBE provided us with a new way of looking at space design and has allowed us to work through a similar integrated design approach, as we continue to develop and improve our space utilization processes.

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