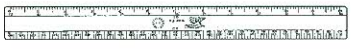
# SPACE COUNTING is NOT SPACE MANAGEMENT

by Ira Fink, Ph.D., FAIA



Campuses, particularly public institutions, need to find solutions to bridging the gap between current space guidelines or standards (entitlement) and future space allocation (resource management).

The management tools most campuses have available are based on space assignment policies (both written and unwritten), on space assignment process (both organizational and political), and on space assignment guidelines (to provide some level of equity among units or departments).

Because there is not a "market" or space costing mechanism to account for the use or reuse of space on most campuses, space once allocated generally becomes a fixed asset. Thus, if a unit or department has grown in the past, it is loathe to give up space if it is not needed. Space is held in inventory. Institutions today are moving away from the space collector's attitude of "just in case," to new models of "just in time" and "just for you." It is simply too expensive for a campus to have an inventory of unused, underused, or undiscovered space, while at the same time adding new space to the inventory.

## Space Issues

The space management issues of most concern include:

- How academic department space is allocated on the campus.
- How administrative unit space is allocated.
- How to improve the allocation or reallocation of space.
- How to provide sufficient office and related support space.
- How to distribute space equitably among departments and units based upon real needs.
- How to recapture currently allocated space that may be in excess of need.
- How to measure how much space should be given to administrative units as well as academic departments.
- How to generate space management ideas and recommendations applicable to the unique environment of each campus.
- How to identify other campuses or organizations faced with the same problem and understand how these campus have solved their space management and allocation issues.

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## Office Space

One area in which campuses can concentrate their effort is in the management and distribution of office and support space. Offices (both faculty and administrative) and accompanying support space generally account for the largest single block of space on a campus. In space data collected from twenty-two comparable U.S. institutions, as shown in Table 1, office space accounts for 22 percent of all the square footage on a campus, whereas classrooms at major institutions account for usually less than 5 percent of the space and class labs less than 7 percent. (Community colleges are an obvious exception, where a preponderance of space is in classrooms and class laboratories.)

In the area of office space allocation—size, distribution, allocation, and use, campuses often do not have a policy on who does or does not receive a private office. On some campuses faculty have two offices—one in their research space, one with their department. While this may be a luxury at some campuses, it can be an important way to manage or use space at another.

## Changes in Technology

Closely linked to the issue of office and support space is the change technology is bringing to the campus both in terms of office space needs and in classroom and class lab instructional

technology space needs. These space issues will become increasingly more difficult to solve in the years ahead, both in retrofitting the existing inventory to accommodate new instructional and information technology and also the space it requires. For example, a classroom that typically might have an average of 15 to 18 assignable feet per station would have less than one-half the square footage needed if every station in the room had a computer terminal.

**Table 1**

**AVERAGE DISTRIBUTION OF SPACE AT 22 PUBLIC U.S. UNIVERSITIES, EXCLUDING HOUSING**

| Room Type | Average | Range |
|---|---|---|
| Classrooms | 5.0% | 3.3% to 12.1% |
| Teaching Labs | 6.7% | 4.3% to 19.5% |
| Research Space | 15.3% | 8.3% to 21.0% |
| Office Space | 22.2% | 11.0% to 26.9% |
| Library Space | 6.4% | 4.9% to 9.2% |
| Special Use | 14.4% | 8.9% to 25.8% |
| General Use | 11.4% | 8.3% to 19.0% |
| Support | 14.8% | 8.1% to 26.7% |
| Health Care | 3.8% | 0.9% to 5.5% |
| TOTAL | 100.0% | |

The changes in technology, which require everyday use of desktop computers and related equipment, result in the need for considerably larger amounts of office space, as well as more space within instructional areas. These needs were not considered in the space standards and guidelines developed for and used in higher education today, particularly in states such as California, as the current standards are a carry forward from the past to the present, not a projection of the needs of the future.

## Staffing

Another change currently occurring in higher education is in instructional staffing, with more part-time and fewer full-time faculty and staff employees. The uneven growth in academic programs often results in a scattering of members of the same department into disparate locations when new positions are added. It also leads to a consideration of the need to share offices, a practice that is becoming more accepted, particularly in the private sector. Some companies reserve office space for employees by the hour or by the day, much the same way hotels rent out rooms for overnight.

The "ratchet" effect of space—that is, once space is acquired the owner or user of the space is loathe to give it up—has also created problems. Space is often hoarded, or kept within a unit's jurisdiction, "just in case." For example, if a department or unit is downsized, how is its excess space measured, recaptured, and reassigned, or reallocated to a unit with a current greater need? Office space assignment ought to be tied to the operating budget and approved staffing levels, in contrast to individual department or unit desires to acquire or hold on to space for unknown future needs.

## Facility Database

It is important to recognize the role the campus facility database can play in the allocation or reallocation of space on campus. Counting space, and maintaining an up-to-date database, is important for many reasons. Besides the annual report, space data can provide one more tool in space management; without data, space management is strictly politics.

## Space Use

Often the issue with space has less to do with how much space one has and more with how one uses the space. Campuses have tried various models to allocate or reallocate space within the overall enclosure of space on a campus, ranging from complete decentralization of space management to complete central control over space. Generally, the space problem on most campuses is solved by adding more space, rather than managing the asset.

How space is allocated is part of the culture of some campuses. As an example, both Purdue University and the University of Michigan have enrollments of 35,000 students. At Purdue, where space is centrally managed through the Office of Space Management and Academic Scheduling, they are able to meet their instructional needs with an inventory of 340 classrooms. At the University of Michigan, where space management is decentralized to the seventeen "entrepreneurial" colleges, a total of 690 classrooms are used for instruction. While there is no right or wrong in this example, it is clear that if space is in short supply on campus, centralized management and allocation may be a useful way to manage it.

Another common trait is to carve up larger spaces into smaller spaces—classrooms into offices, for example. This was the situation at Gonzaga University in Spokane, Washington, until a new building for the School of Education was built that allowed Gonzaga to reclaim classrooms that for years were out of the inventory, having been subdivided into office space.

## Space Guidelines as Policy

Space guidelines or entitlement of space are, of themselves, policy. Every discussion of policy involves the comparison of what is or might be with newer guidelines of what is acceptable. The general result of changing space guidelines is that they serve as a control mechanism in a three-phase process: space need information is received, it is compared to guidelines or to actual space available, and an action is selected in response.

It is also important to look at the purpose of the space guidelines used by systems of higher education and see how they are currently used. There are a number of conditions that are necessary before any change is made in space guidelines. These include:

- Careful choice of appropriate variables for the space guidelines.
- Proven consistency among the space guidelines to make change possible.
- Known ability to select guidelines that have a good chance of being successful.

It is also important to identify campus space policies, as well as those of governing boards or state agencies that affect the allocation and distribution of space. The goal is to determine the overall allotment of space on the campus, and what effect different allocation and utilization systems would have in improving satisfaction and meeting needs.

Space Utilization Analysis-- Building Walkthrough/Program Review Form

1. SPACE INVENTORY

Building Number: _____ Building Name: _____
Gross Square Feet: _____ Building Use: _____
Assignable Square Feet: _____ Major Uses: _____
Year Occupied: _____

| 2. SYSTEMS EVALUATION | Yes | | No | Comments |
|---|---|---|---|---|
| Flexible Design Concept | | | | |
| Partitions (Movable or Rigid) | | | | |
| Specialized Building Type | | | | |
| Stationary Equipment | | | | |

| 3. SUITABILITY EVALUATION | Suitable A | B | C | Unsuitable D | E | Comments |
|---|---|---|---|---|---|---|
| Circulation | | | | | | |
| Conflicting Uses | | | | | | |
| Crowding | | | | | | |
| Functional Relationships | | | | | | |
| Instructional Spaces | | | | | | |
| Instructional Technology | | | | | | |
| Research Space | | | | | | |
| Working Environment | | | | | | |
| Other | | | | | | |

4. COMMENTS

_____
_____
_____
_____

5. OVERALL BUILDING/PROGRAM RATING

_____ (A ) Programmatically Optimum Space
_____ (B ) Programmatically Adequate Space
_____ (C ) Programmatically Fair Space
_____ (D ) Programmatically Poor Space
_____ (E ) Programmatically Unsatisfactory

Prepared by: _____ Date: _____

## Approach

Space management is a multi-step process to:

- Provide mechanisms for identifying space needs, based upon both mission and organizational structure.
- Obtain information on the use and usefulness of space to satisfy current and future education needs.
- Assess the distribution of existing space.
- Analyze needs and recommend changes to accommodate growth or shifts in enrollment, in instructional programs, in improving interdepartmental and intradepartmental adjacencies, and provide flexibility for changes to occur and to accommodate growth.

The focus should be on solving space issues, whether it be the reallocation of office and related support space, or the placement of instructional space such as classrooms and class labs, which generally are fixed and therefore not as subject to reallocation.

## Methodology

A step-by-step methodology should involve four types of information activities:

- Acquisition of space data or information.
- Analysis of the information.

Comparison of needs and wants to space availability.

- Presentation of findings and recommendations for action.

One of the most significant challenges of data collection is to gather and present data in a form that is useful to decision makers. Changing how a campus allocates its investment in capital facilities will require a clear understanding of what exists, how it can be changed, and what the implications will be. To do so requires a space optimization study.

## Space Guidelines vs. Space Allocation

Space guideline formulas, such as occur in California and many other states, provide a means to determine overall space needs or entitlement, but are not helpful in the actual distribution and allocation process. Moreover, for the most part, they are out-of-date. For example, the current standards do not account for extensive use of information and computer technology in the office and in the classroom and lab. They also fail to address other important campus needs such as student lounge or gathering space, or other space needs related to nonacademic needs.

To manage space, not just count it, it is important for a campus to develop new allocation models and methodologies to meet current conditions and future changing needs.

## Benefits of Space Optimization

A space optimization study should provide the campus with useful products that can be used immediately for improving space allocation on campus. The primary product of the study should be reports that present space information, analysis, and specific recommendations for improving space utilization. Other valuable products and space management tools can include:

- Creation of facilities database as a flexible "relational" database. This will enable facilities personnel to plan, track, and report the new space assignments resulting from the implementation process. The database can also be tailored, such as for use by an internal audit department to help confirm facilities-related costs associated with sponsored research.

- As-built drawings that can be updated should be used as part of a building by building walk-through to record changed conditions to assist in future updates of existing drawings.

## Key Objectives of Optimization Plan

A key objective of a space optimization study is to facilitate the implementation of the recommended plan. Too often facilities studies are performed without careful consideration of how the recommendations can be executed. When working with the vice presidents and deans, it is important to devote significant time to developing and testing practical space moves or migration steps needed to optimize use of space. These are critical to achieving important and successful outcomes of the study. The migration steps should be geared to solving the most urgent space problems first. They should maximize the use of valuable space, minimize the required number of disruptive and costly moves, and be accomplished within a reasonable budget.

In short, facilities and space are valuable university resources. Acquiring, renovating, reusing, or constructing new space represent a major, long-term financial commitment that will affect academic program offerings and administrative functions. The effective utilization of campus facility resources is the purpose of a space optimization study.

## Optimization Study Process

A space optimization study process involves a number of steps. First, perform a facilities survey and develop a relational facilities database. Review the existing facilities database for currency and accuracy or create one if one does not currently exist. A review of the new or existing facilities database should record results of these primary tasks:

- A room-use survey of academic space (classrooms, class labs, instructional offices, conference rooms, support and research space) and administrative space.
- A building-by-building visual survey and assessment of the physical conditions of interior spaces. This includes verification of square footage areas in the database.
- A building-by-building visual survey of the programmatic capability and adequacy of the interior spaces. (A form used for this purpose is shown as Exhibit A.)

Second, perform a campus-wide needs assessment review. This work will involve research and field analysis of needs. It should include the following:

- Interviews of all deans and vice presidents to identify university goals, trends, general space needs, and adjacency requirements. (This may also include department chairs, and similar administrative unit directors.)
- In-depth interviews of all academic department chairs and selected administrative and student service unit heads to define trends and function, organization, staffing, space needs, and adjacency requirements.
- Development of a listing of requested physical adjacencies among academic and administrative units.

Third, complete the facilities optimization study. This can include performing a use study of classrooms and class laboratories. The type of study will record and analyze patterns of use by hour and day of week.

Lastly, develop planning alternatives and recommendations. During this analysis phase, a number of products can be developed including optimization plan options that balance space needs and resources.

## Study Application

Throughout the study process, and especially during the interviews, the key space utilization issues should be identified. This will likely include new space needs for some departments to address their issues, as well as identifying units that have an excess of space relative to their needs.

At that time it is important to determine space reallocation priorities based on the optimization study and ongoing academic and administrative policy commitments that require space modifications, including:

- Impact on the overall campus optimization plan;
- Total area of departmental assigned space (excluding classrooms and class labs);
- Impact on non-departmental related spaces (classrooms, class labs and any special building service requirements);
- Class schedule implications of university operations; and,
- Space planning concepts.

While the facilities optimization study will be a useful tool, prior to making actual facility changes, the campus will still need to:

- Conduct detailed unit/department space programming interviews and develop specific concept plans based on the optimization plan.
- Validate construction order-of-magnitude budget estimates based on current program requirements.

  Investigate building code implications.
- Evaluate, in detail, building system technical attributes (mechanical, electrical, structural).
- Prepare design drawings indicating the scope of the renovation.
- Develop outline specifications.
- Identify and initiate action on long lead items such as elevators.
- Maintain and update an implementation schedule.
- Recommend and implement a construction contractor procurement strategy.
- Develop a total project budget.
- Bid/negotiate construction contracts.

## The Importance of Facilities

Facilities are important to the delivery of educational services and other aspects of a college's or university's mission. However, owning and operating campus facilities is expensive. Buildings are the largest component of an institution's capital budget and require a significant portion of its annual operating revenues.

Inefficient use of facilities and space increases the consumption of scarce resources. Acquisition or construction of additional building space represent major, long-term financial commitments that affect program offerings for a significant period of time.

The over-reaching goal is not simply to count campus space, but to understand and manage it as a resource that is subject to allocation and reallocation, the same as any other resource of the campus. Careful use of the resource will not only save money, but will aid the institution in meeting its higher education goals. ■