OFFICE OF THE PROVOST
AND VICE CHANCELLOR FOR ACADEMIC AFFAIRS

REVIEW OF SPACE UTILIZATION

FINAL REPORT 2010

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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Cover photograph: Aerial view of the University of Illinois Urbana-Champaign campus in 1974.

I. COMMITTEE CHARGE

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Chancellor
Swanlund Administration Building
601 East John Street
Champaign, IL 61820

May 10, 2010

Project Team: Space Utilization
Dale Van Harlingen, *Chair*, Department of Physics
Van Anderson, Beckman Institute
Simon Appleford, Graduate Student
Jennifer Cole, Department of Linguistics
Hadi Esfahani, Department of Economics and the
Center for South Asian and Middle Eastern Studies
Mike Gray, Department of Crop Sciences
Steve Hesselschwerdt, Facilities and Services
Jeff Schrader, University Library
Siobhan Somerville, Department of English
David Tewksbury, Department of Communication
Jennifer Themanson, Office of the Registrar

Dear Colleagues:

As a campus, we are engaging in a thoughtful and thorough evaluation of how we use resources toward the broader aim of advancing excellence in our scholarship, education and outreach activities. In this context, we write to invite you to serve on a working team to review space utilization across the campus. The use and management of space historically has been very decentralized at this institution. This approach has been effective for the most part in helping units to deal with local and often idiosyncratic needs and issues. Yet the decentralized nature of our approach has hampered our ability to take a more systematic, broad-based view of the use and cost of space at an institutional level. As a result, our use of space appears often to be inefficient. For example, very little space is shared across units, many spaces are underutilized across time periods during the day, and some faculty members have multiple work spaces. Moreover, we are spending in excess of $4 million on rental space off campus, including locations at the Research Park, on Green Street, and in Chicago.

Your team is asked to begin a review process that examines the current use and cost of space at Illinois. Once key issues are formed and data are gathered, your review may point to a need to bring in outside consultation on our use of campus space. Your working team is one of many that will be asked to review specific units or activities as part of the campus evaluation effort.

The financial context of the University and the state of Illinois is a catalyst for this review. Given a challenging financial climate, it is vital for the campus to carefully consider our expenses and the ways in which our investments contribute to our mission. At the same time, it is critical to emphasize that this review is a complete and open process that does not begin with a predetermined aim of withdrawing or reducing resources or concluding activities. Instead, we

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ask that the review openly examine the extent to which resources and policies pertaining to space utilization enhance the University and its missions.

As your team begins its work, we ask you to explore the following key questions:

- How much space do we have on campus and how is it allocated? How have space policies and assignments on campus changed over the past two decades? How often and in what ways do we determine if space is underutilized?
- Given the significant funds we are allocating for space rental off campus, are there ways we could reduce these expenditures without sacrificing quality of our core missions?
- Do campus and unit space policies support or hinder the effective use of space? How can we incentivize units to manage and share space more effectively?
- Are there creative ways we can better use and manage space? How can classroom space be managed more effectively? Can work stations or hoteling be used to increase office space efficiency and effectiveness? Are there ways to manage lab space more effectively? What are the barriers to these types of innovations? Are there upfront costs associated with such innovations?
- Are there models at other institutions for effective and creative use of space?

In conducting your review, we ask that your team devise a process that allows you to provide well-reasoned, comprehensive responses and recommendations on the key questions outlined above. It will be important for you to consult experts across campus who will have valuable insights on space utilization in departments, colleges, and other units. Members of the Provost's Office leadership team also will stand ready to assist you in this work. Please contact Stig Lanesskog (slanessk@illinois.edu) in the Provost's Office with questions or requests that emerge during your review.

We have invited Professor Van Harlingen, to serve as the chair of your working team, and he has graciously agreed to do so. Staffing for your team's work will be provided by Dr. Van Harlingen's office. We ask that you complete a written report summarizing your review by July 16, 2010.

We are deeply grateful for your time and expertise in this important review process, and look forward to your report and recommendations.

Sincerely,

Robert A. Easter
Chancellor and Provost (Interim)

Richard P. Wheeler
Vice Chancellor for Academic Affairs (Interim)

c: M. Andrechak
S. Lanesskog

II. COMMITTEE MEMBERSHIP

The following individuals served on the Space Utilization Review Committee:

Dale J. Van Harlingen	Head and Professor, Department of Physics *(Committee Chair)*
Van A. Anderson	Associate Director, Beckman Institute
Simon J. Appleford	Graduate Student, Department of History
Jennifer S. Cole	Professor, Department of Linguistics
Hadi S. Esfahani	Professor, Department of Economics, and Director, Center for South Asian and Middle Eastern Studies
Michael E. Gray	Professor, Department of Crop Sciences, and Interim Assistant Dean, Agriculture & Natural Resources Extension
Steven P. Hesselschwerdt	Associate Director for Space Management, Facilities and Services
Jeffrey M. Schrader	Assistant Dean for Facilities, University Library
Siobhan B. Somerville	Associate Professor, Departments of English and Gender & Women's Studies
David H. Tewksbury	Associate Professor, Department of Communication
Jennifer A. Themanson	Associate Registrar for Facilities Management and Scheduling, Office of the Registrar

This committee included a cross-section of faculty from across campus, several unit heads, and directors who have been involved in space management in specific units and for the campus.

III. ASSESSMENT OF THE SCOPE

Restatement of charge and discussion of what to address

Early in our deliberations, we noted the impracticality of attempting to assess all of the space issues at the university and make specific proposals for individual buildings and units. Rather, we interpreted the charge as asking us to gather information about long-term trends on campus and general patterns of space utilization. The information we obtained led us to formulate some basic principles and goals for how space may be managed today and developed for the future.

Perhaps foremost in our discussion was the question of the organization of space management on our campus. We sought to determine whether the management was as transparent as it could be and to identify how it might be improved. We also tried to focus on visible "pressure points" in campus space utilization, places where the available space was inadequate for people and units. Compact classroom scheduling and recent growth in off-campus leased space were two obvious signs of such pressure. Addressing these points may not result in immediate cost savings, but formulating a plan for their relief may reduce the need for future construction and/or save annual expenditures in the long run.

It is our collective vision that the highest priority should be given to the allocation of high quality, institutional grade classroom and teaching laboratory space in a more strategic and concentrated fashion on the primary quad complexes or as nearby as possible. Administrative functions (e.g. auditing, accounting, public relations, business, human resources) should be allocated space of commercial grade in more peripheral locations. We urge that greater care be made in decisions regarding the location of new facilities in terms of student and faculty accessibility. For instance, while the Illinois Conference Center offers some much needed space for certain meetings, it is largely removed from significant faculty and student use. We understand that the national and state economies are under extreme fiscal challenges; however, we believe it is prudent to develop a “Road Map” concerning the future construction and renovation of new facilities for all of our campuses. When we move into an economic resurgence period, the University of Illinois will be poised to move forward swiftly and strategically in securing the necessary resources to implement these construction projects.

IV. REVIEW PROCEDURES

Meetings

The committee met seven times during the summer in the Loomis Laboratory for Physics. Each meeting was two-hours long. Summer travel created difficulty in finding times when committee members could meet. The meeting dates, the major topics discussed, and the meeting guests are shown below:

Friday, May 21	Introductory meeting. Discussed the knowledge and experience of committee members, the committee charge, space management on campus, peer institution websites, and developed plans for the review
Thursday, May 27	Discussion about the committee charge with **Stig Lanesskog**, Provost's Office Presentation on the history of current space management policies by **Steve Hesselschwerdt**, Associate Director for Space Management in Facilities and Services
Thursday, June 3	Interview with **Matthew Tomaszewski,** Associate Dean of LAS responsible for Facilities and Space
Wednesday, June 9	Discussion of space management issues including leases
Wednesday, June 16	Interview with **Bill Goodman**, Assistant Dean for Administration & Technology in the College of Applied Health Sciences Interview with **Dan Doolen**, Instructional Media Systems Engineer for CITES-Classroom Technologies
Thursday, July 8	Discussion of recommendations for the report
Tuesday, August 10	Discussion of recommendations for the report
August 11 – 27	Report writing
Friday, August 27	Report Submission

Survey

We sent out a list of questions to campus personnel who have responsibility for space management in units or programs to solicit comments about how we manage space. This questionnaire very closely resembled the original questions that we asked in the charge to this committee. Out of approximately 100 requests sent out, we received responses from about 25 people, a fairly low response rate but not unexpected for summer. The responses ranged from brief comments on specific issues to extensive analyses of space utilization on campus. Since this survey was neither comprehensive nor scientific, we chose not to identify individual respondents or to present specific comments or statistics. However, we found this input to be very helpful in assessing the overall understanding and assessment of how we manage space at Illinois and for suggesting what needs to be changed from the broad campus community. This collective knowledge has helped to shape our report.

Discussions

Informal discussions were held between individual committee members and many people across campus. Again, rather than report on specific input from individuals, we made use of these contacts to gain an overall picture of space availability and management on campus.

Within the committee, we carried out significant discussion and debate on the issues connected with space management and possible ways to both improve efficiencies and reduce costs. These discussions resulted in the answers to the charge questions and our recommendations.

Documents

The committee reviewed the following space-related documents:

Campus Building List (Building Number, Name, Address, NASF, GSF, NASF:GSF Ratio, Date Built)

Aerial Views of Campus: May 1962, 1974 (Shown on report cover),, and 1995

Higher Education Facilities Management Association (HEFMA) Facilities Surveys: 2000 - 2009

Instructional Space documents

- Classroom Capacity, Sorted by Size (http://www.fms.uiuc.edu/Facilities/ClassroomCapacities/index.asp?report=Classroom%20Capacity,%20Sorted%20by%20Size.xml)
- Instructional Space Implementation Team – Final Report (2008-2009) (http://www.provost.illinois.edu/committees/IS_implementation.html)
- Provost Scheduling Guidelines (http://www.fms.uiuc.edu/provostletter/schedule_policies.pdf)
- Proposal for General Assignment Classroom Oversight Structure (April 19, 2010)
- Fall 2008: Students Per Hour (8 AM – 5 PM, M – F)
- Fall 2009 Room Use 8 AM to 5 PM
- Spring 2010 Room Use 8 AM to 5 PM

Campus Leases

- Local Leases
- Other Leases
- Illini Center, Chicago

Data Center Consolidation Committee – Final Report (February 12, 2010)

A Climate Action Plan for the University of Illinois at Urbana-Champaign (May 15, 2010)

Campus Master Plan Documents

- Campus Master Plan Update – Executive Summary (March 2007): http://www.uocpres.uillinois.edu/docs/UIUC/reports/UIUCmpu_execsum.pdf
- Campus Master Plan Update – Full Technical Report (March 2007): http://www.uocpres.uillinois.edu/docs/UIUC/reports/UIUCmpu_report.pdf
- Information Sheets on approved plans: http://www.uocpres.uillinois.edu/docs/UIUC/mastrpln/UIUCplan.pdf
- Core Campus View (2007, University Ave. to St. Mary's Road): http://www.uocpres.uillinois.edu/docs/UIUC/mastrpln/UIUCmp_Core.pdf
- Main Campus View (2007, University Ave. to Windsor Road): http://www.uocpres.uillinois.edu/docs/UIUC/mastrpln/UIUCmp_Main.pdf
- South Campus View (2007, Kirby/Florida Ave. to Airport Road): http://www.uocpres.uillinois.edu/docs/UIUC/mastrpln/UIUCmp_South.pdf
- Entire Campus View (2007, University Avenue to Airport Road): http://www.uocpres.uillinois.edu/docs/UIUC/mastrpln/UIUCmp_Entire.pdf

Summary Report of an Inventory of Significant Architecture and Sites, University of Illinois at Urbana-Champaign, February 1987

Space Related Documents from Other Universities

- CIC Academic Leadership Program, Purdue University, April 8-10, 2010
  - Space Management and Utilization: An Inside Story, Keith Murray, Purdue University
  - Tips for Managing Space Effectively, Frances Mueller, University of Michigan
- Cost Containment at the University of Michigan (CIC Provost's Meeting, June 7, 2010)
- Ben Huey and JoAnne Valdenegro. 2006. Improving Assessment of Space Utilization in a Transdisciplinary Research Environment. *Planning for Higher Education.* 34(4): 24-34.

Benchmarking

Although we decided it is difficult to compare practices on other campuses with our situation at Illinois because of differences in the structure of administration and resource allocation at different institutions, we did review the space management websites and policies of some other institutions, including Purdue University and the University of Michigan.

V. OUR FINDINGS

> "Managing campus space is a lot like herding cats. The nature of academia and the distributed management of schools, colleges, departments, and campuses make measuring, planning for, and managing space a formidable task."
>
> *Managing Space on Campus Planning Resources,*
> Society for College and University Planning

A. Overview

Space management is one of the most important, most challenging, and perhaps most contentious issues facing major universities. Although this did not come as a surprise to any of us on the committee, we were constantly reminded of this throughout the process. The core of the problem is the complexity of balancing the diverse interests of the many users of space on and off the campus and the diverse types and qualities of space on the campus.

We reached the following overarching impressions:

- The University of Illinois at Urbana-Champaign (Illinois) has an enormous resource in the amount of land and real estate space it possesses --- it is one of our greatest assets as an institution.
- In many cases, we have not been very good stewards of this space, favoring special opportunities for new buildings over an optimized campus strategy, deferring necessary maintenance far too long, and avoiding the implementation of policies that allow better utilization of the space we have. Here, "we" refers to the collective of people at the State, University, College, Department, and Faculty and Staff levels --- it is not appropriate nor productive to blame any particular group or decision over the years, but it is clear that we can make improvements in the creation and management of space on campus.
- In general, we endorse the basic philosophy of our current space management --- a system which distributes responsibility between the campus administration and the academic and research units. It is our perspective that significant local control at the department and college level is necessary to meet the needs of faculty and staff who are carrying out the missions of the University, but additional oversight and management at the campus level is needed to ensure optimal use of space and to promote the overall campus strategic plan. Neither a fully top-down nor bottom-up approach can achieve these goals. As a result, we support retaining elements of our existing, relatively decentralized structure while implementing some centralization of space planning and overall allocation. Every major academic unit should be assisted in the development of an academic master plan for its space --- these will be used to maintain and evolve the Campus Master Plan.
- A major challenge of space management is the pervasive view on campus that space is a commodity to be acquired and protected at all costs. Most of us never want to give up space once we have acquired it, perhaps for fear that we will never get it back or that we may need it someday. It is a natural tendency but one that inevitably leads to the inefficient use of some fraction of our space.
- Although this study was motivated largely to find ways to reduce costs on campus, we identified few obvious ways to do that in the short term. However, we did identify actions that we think will ultimately lead to a better use of space and an increase in the overall quality of our space for the faculty, staff, and students at Illinois.

B. Responses To The Key Questions Posed

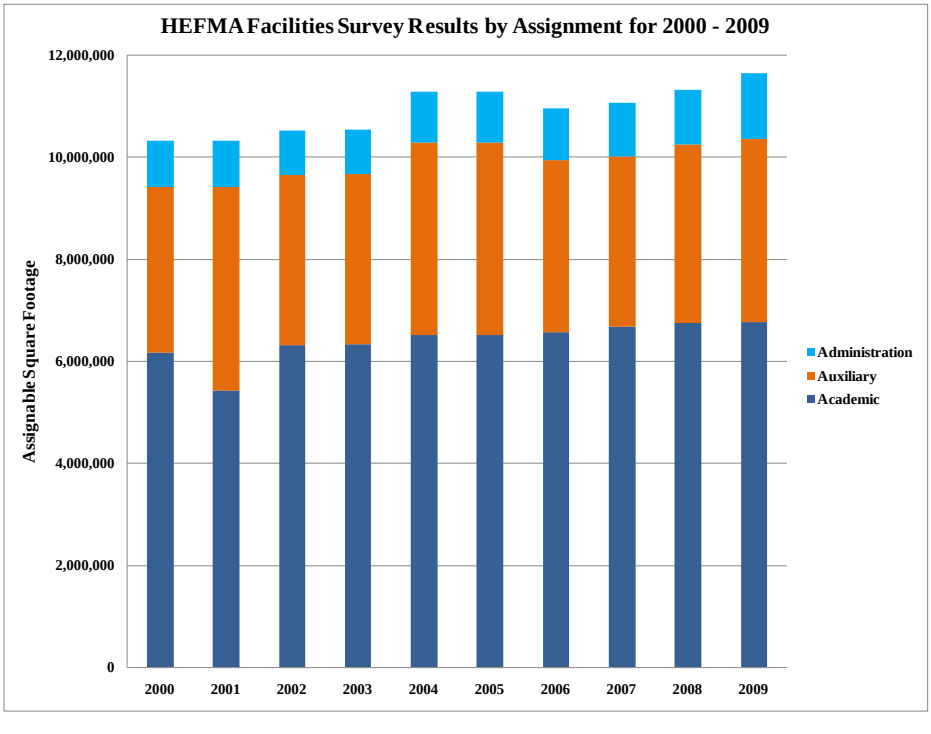
The charge letter for this committee identified a set of key questions to be explored by the committee relative to space utilization on campus. This section of the report provides the specific answers to the questions based on the information presented to and/or gathered by the committee.

1. SPACE ALLOCATION

(a) How much space do we have on campus and how is it allocated?

The Higher Education Facilities Management Association (HEFMA) Facilities Survey provides a standardized space summary for campus. Space allocations in the survey are divided into three major types: academic, auxiliary (i.e., units providing goods or services primarily to individual students, faculty, and staff), and administration (i.e., University and Campus Administration). The table and chart below show the survey results for the period 2000 – 2009, a period that saw an increase in the assignable square footage of 1,331,158 square feet or 12.9%.

Higher Education Facilities Management Association (HEFMA) Facilities Survey Results for 2000 - 2009											
Type	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**Growth**
Academic	6,164,693	5,426,463	6,312,841	6,334,830	6,516,335	6,521,962	6,570,522	6,685,594	6,744,160	6,765,057	9.7%
Auxiliary	3,250,604	3,988,888	3,339,621	3,334,355	3,763,606	3,763,606	3,362,632	3,330,908	3,501,720	3,600,954	10.8%
Administration	902,071	902,028	862,475	871,175	997,869	997,993	1,015,699	1,054,661	1,075,395	1,282,515	42.2%
Total	**10,317,368**	**10,317,379**	**10,514,937**	**10,540,360**	**11,277,810**	**11,283,561**	**10,948,853**	**11,071,163**	**11,321,275**	**11,648,526**	**12.9%**



The auxiliary units are comprised of Athletics, Recreation, Campus Parking, Illini Union, McKinley Health Center, Printing Services, Willard Airport, Housing, and Student Activities, Programs, and Services. These units are self-supporting and were excluded from our study.

In this report, we focus on the **6,765,057** assignable square feet of academic space. This corresponds to approximately 536 square feet for each of the 13,852 faculty and staff employed by the campus. The assignable academic space has grown by approximately 9.7% over the past decade from 6,164,693 to 6,765,057 assignable square feet of academic space.

Within the academic category, space use is distributed as follows:

Office and Conference	2,126,943	31.44%
Research Labs	1,576,536	23.30%
Study Areas	773,377	11.43%
Teaching Labs	694,241	10.26%
General Use	370,976	5.48%
Special Use	358,731	5.30%
Classrooms	339,776	5.02%
Support	336,114	4.97%
Open Labs	99,741	1.47%
Health Care	72,289	1.07%
Residential	35,205	0.52%
Unassigned	21,129	0.31%

The major academic units on campus have been assigned 4,789,311 square feet of space or 70.8% of the academic space assignment. The following table shows the space assigned to the major academic units relative to the student headcount and the faculty and staff full-time equivalent (FTE) positions:

Academic Unit	Student Head-count	Faculty FTE	Staff FTE	Total	Percent of Total	Assignable Square Footage	Percent of Total
LAS	15,463	1,332	1,438	18,233	36.7%	1,139,169	23.8%
Engineering	7,781	751	622	9,154	18.4%	1,177,931	24.6%
Business	3,950	172	399	4,521	9.1%	119,829	2.5%
ACES	2,890	425	1,002	4,317	8.7%	914,550	19.1%
FAA	2,857	398	340	3,595	7.2%	547,865	11.4%
AHS	2,109	123	211	2,443	4.9%	135,334	2.8%
Education	1,854	174	273	2,301	4.6%	97,304	2.0%
Media	1,040	58	209	1,307	2.6%	54,146	1.1%
Law	624	89	109	822	1.7%	113,538	2.4%
GSLIS	605	44	54	703	1.4%	23,735	0.5%
Vet Med	517	121	294	932	1.9%	326,656	6.8%
Social Work	313	34	49	396	0.8%	24,296	0.5%
Aviation	209	12	61	282	0.6%	949	0.0%
LER	188	30	35	253	0.5%	13,078	0.3%
Grad College	4	1	53	58	0.1%	9,006	0.2%
Medicine	0	48	332	380	0.8%	85,114	1.8%
General Studies	0	0	40	40	0.1%	6,811	0.1%
Total	40,404	3,812	5,521	49,737	100.0%	4,789,311	100.0%

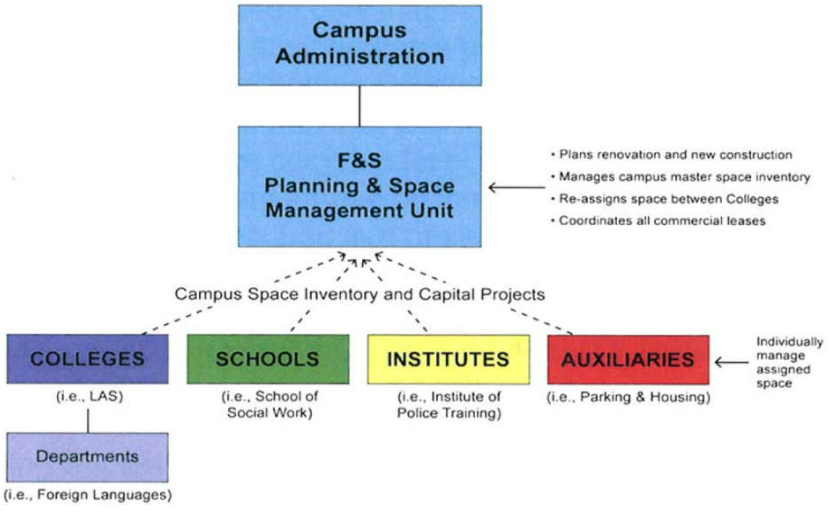
Source: 2009 HEFMA Facilities Survey

The other academic units and their total space assignment are shown in the following table:

Other Academic Unit	Assignable Square Footage	Percent of Total
Library	714,983	36.2%
General Classrooms	433,229	21.9%
Beckman Institute	188,906	9.6%
State Natural History Survey	146,751	7.4%
Institute for Genomic Biology	105,133	5.3%
State Geological Survey	104,825	5.3%
Supercomputing Applications	77,796	3.9%
State Water Survey	69,025	3.5%
Police Training Institute	47,521	2.4%
Fire Service Institute	30,539	1.5%
Waste Management Research	27,932	1.4%
ROTC	21,148	1.1%
Institute for Natural Resources	1,371	0.1%
UIC College	6,587	0.3%
Total	1,975,746	100.0%
Source: 2009 HEFMA Facilities Survey		

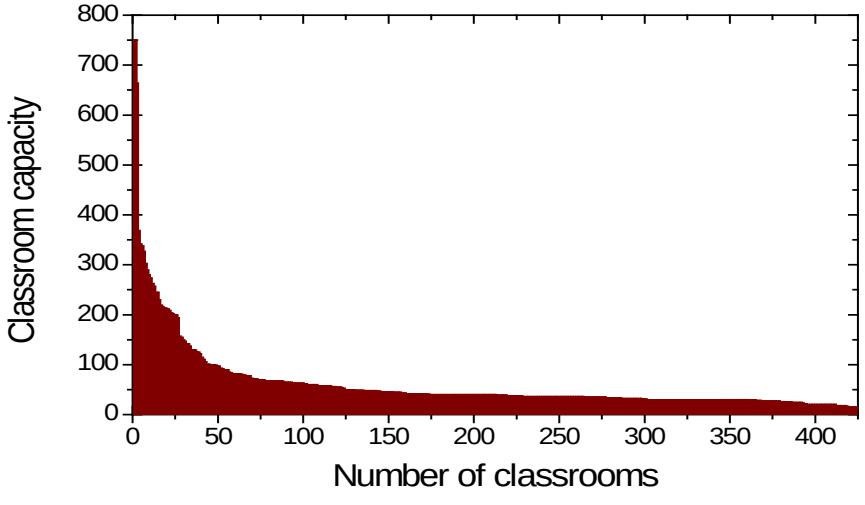
The complete 2009 HEFMA Facilities Survey is provided in the Appendix.

The method of space allocation of space has not changed greatly over the last few decades. Space is currently managed by a distributed system in which most of the space is occupied and controlled by the units at the college, school, department, institute, and auxiliaries level. The following schematic details the role of academic units, auxiliaries, and Facilities and Services, and Campus Administration in the management and oversight of space on campus.



Per the guiding principles for the scheduling of classes, the "Office of the Provost is responsible for setting policies and procedures for the management of all campus classroom and learning spaces." There are approximately 400 classrooms (managed by the Office of the Registrar) in the general pool of classrooms on campus and approximately 380 additional departmental classrooms.

Of the general pool classrooms, only 8 have a capacity of 300 seats or more and only 40 have a capacity of 100-300 seats. Of the remaining classroom, 256 have a capacity of 25-99 seats and 38 have a capacity of 15-24 seats. The large classrooms are the most requested, as more units are creating larger sections of courses to handle increased demand, and in some cases, reduced numbers of instructors.



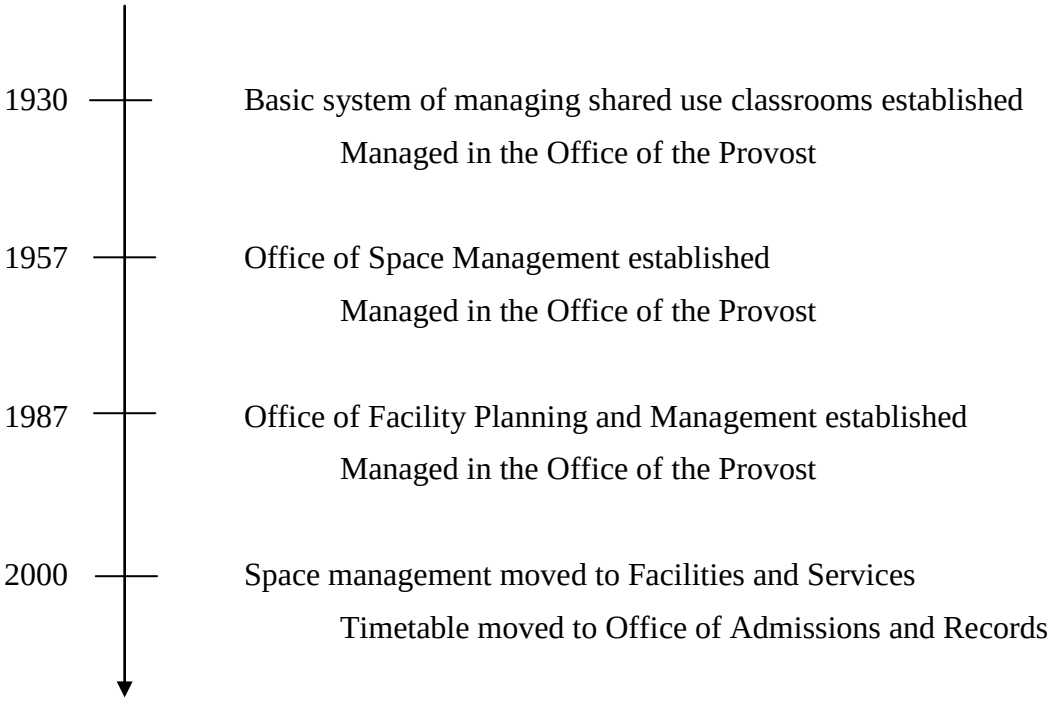
Currently 189 of the general pool classrooms are outfitted with basic classroom instructional technology that includes display/projection devices and sound capabilities for convenient use with laptops. This leaves approximately 210 of the general pool classroom with only overhead projectors for the instructor to use. The need for contemporary technology in classrooms is the number one request by units across campus and the lack of basic projection capabilities from laptops/computers often creates scheduling bottlenecks. Simply put, we do not have enough equipped classrooms to meet current demand. We believe that modern classroom technology should be made available within every general pool classroom on campus, and in fact, even in every departmental classroom.

In Fall 2009, the campus instituted scheduling guidelines that have resulted in increased efficiency in scheduling and use of instructional space. For example, priority scheduling is given to those courses that follow the standard teaching schedule (i.e., classes on MWF that begin on the hour and classes on TTh that are taught for 75 to 80 minutes beginning at 8 a.m., for instance 8 a.m.-9:20 a.m., 9:30 a.m.-10:50 a.m., etc). The next step in increasing use and improving utilization would be identifying the challenges (e.g., technology) in our space to further increase effectiveness and utilization.

There is currently no oversight committee for classroom use, technology, and overall facility needs.

(b) How have space policies and assignments on campus changed over the past two decades?

There have been some changes in the administration of space management. The following timetable provides an overview of the history of space management on campus:



However, it is our perception that the basic philosophy of space management has not significantly changed on campus, with most space being managed at the unit level with oversight from the campus.

(c) How often and in what ways do we determine if space is underutilized?

Like most space issues, this is primarily done at the department level. Some departments carry out formal space audits, often in response to new hires or new research directions creating pressure on existing facilities. Others rely on the department head and/or space committees to monitor space usage and assess how well space is being utilized.

Some Colleges have also carried out space surveys to determine how much space is assigned to departments and individual faculty. In some cases, research space has been correlated with research expenditures to assess how efficiently space is being used.

2. LEASED SPACE

Given the significant funds we are allocating for space rental off campus, are there ways we could reduce these expenditures without sacrificing quality of our core missions?

Prior to our study, most committee members were unaware of how much space is being leased and how much it is costing. We believe that this is in most cases not an efficient use of funds and that we own enough space to accommodate most of our operations in University-owned buildings, certainly within the Champaign-Urbana area. However, there are many reasons for leasing space so it is necessary to look at each case separately and determine where University space can be found and its relative merits as opposed to leasing.

We separated leased space into two categories, leases in the Champaign-Urbana area and leases outside of the area. We assumed that units renting space outside of the area did so out of a need to reach a particular audience or take advantage of some resource. As a result, we did not question whether these distant locations constituted an efficient use of space.

3. SPACE MANAGEMENT POLICY

(a) Do campus and unit space policies support or hinder the effective use of space?

We are not convinced that there is a serious flaw in the structure of space management on campus. The campus officials we interviewed and heard from through surveys and other means generally expressed satisfaction with their ability to identify and allocate space within their units (e.g., within colleges or schools). Many of them noted the importance of units being able to respond to changes in research and instructional needs through internal reallocation of space.

The one element of campus space management that needs to be reconsidered is the decentralized nature of the management of space that lies outside the colleges and other units (e.g., general assignment classrooms) and the allocation of space between colleges and units. It appears that the location of control of space in these cases in units outside the main office of the provost may be problematic. Decision-making spread across several areas of campus may hinder the ability of planners and users to make the most efficient use of space.

(b) How can we incentivize units to manage and share space more effectively?

The committee considered ideas for providing incentives to units. One idea involved the departmental classrooms. It would be ideal if those rooms could be scheduled as part of the general pool of classrooms once the departmental needs are met. The suggested incentive for department relinquishing some control was that the campus would provide and manage the standard technology installed in the classroom.

Another discussion centered on charging units for use of space. This idea was rejected as it seemed to reinforce the notion of space as a commodity to be traded. Instead, the committee embraced the notion that space on campus is a valuable common resource that needs to be distributed without being directly or strictly tied to the financial resources of individual academic units.

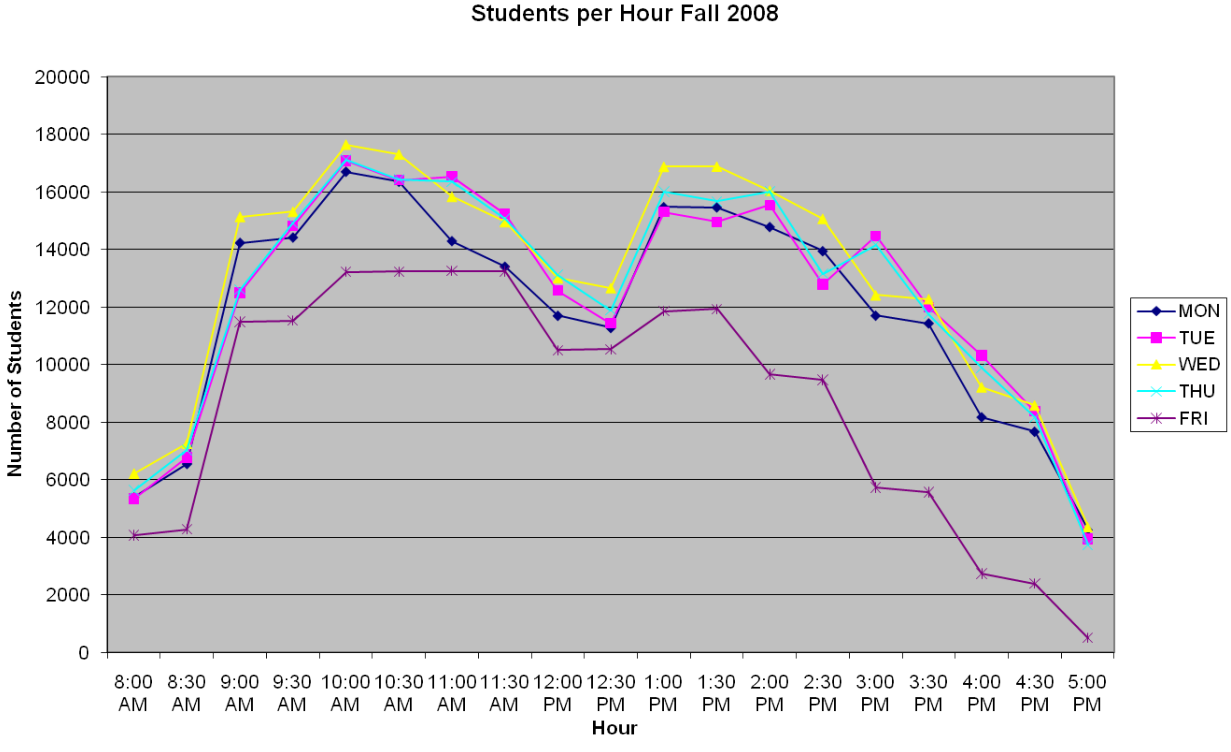
4. IMPROVING SPACE MANAGEMENT

(a) Are there creative ways in which we can use and manage space?

Throughout our study, we considered many ideas for improving space management --- these form the majority of our recommendations. However, one general realization of our committee was the overall complexity of the space management problem. Most ideas that were good for one function would compromise others and we found it necessary to take a broad view of space allocation.

(b) How can classroom space be managed more effectively?

Although the campus maintains a large number (~400) of general pool classrooms and the units maintain an almost equal number in their buildings, there is a general feeling that we do not have enough classroom space. This stems from several basic problems. First, these rooms are distributed unevenly across campus. Second, the quality of classrooms differs greatly and many of the rooms have not been upgraded to include standard technology that all instructors now want and all students now expect. Third, many of these rooms are not fully utilized each day or across the week, although recent initiatives from the Provost's Office have helped to encourage more efficient scheduling and wider usage. The following shows a graph of classroom use across campus during the day and week:



Not surprisingly, peak usage occurs Monday through Thursday, between 9 and 11 in the morning and 1 and 3 in the afternoon. It is clear that we could relieve classroom scheduling pressure if we could determine ways to shift more classes to Friday and distribute them more evenly between 8 and 5 --- this approach would require a shift in the thinking of the faculty and students and/or incentives. However, whether such efficiency should be the primary value in decision-making about space allocation is an open question.

(c) Can work stations or hoteling be used to increase office space efficiency/effectiveness?

Hoteling and hot desking (work stations) are two methods of accommodating workers using unassigned seating or workspaces. Hoteling involves a reservation-based system in which an individual can reserve an office or workspace for a period of time when they expect to be present in a facility. Hot desking involves work stations that are available on a first-come, first-served basis. Somewhat analogous in the academic setting were the library carrels that were available for walk-up use that may extend for several hours (hot desking) or that could be reserved for a semester or longer (hoteling).

In general, our committee does not think this is an approach that works in most cases. Although sharing of office space and computers has been effectively implemented for graduate students in some research units, most of faculty and staff have compelling needs for assigned desks (e.g., storage of books and documents relevant to their scholarship) and/or private offices. The Illinois campus culture generally values a sense that faculty and staff are resident in spaces where our students and fellow employees can find and interact with them.

However, there are some units on campus, e.g. the Beckman Institute and the Micro Nano Technology Laboratory (MNTL), that have begun to use hot desking as a method to increase the utilization of faculty office spaces that are secondary to their home department offices and used intermittently. At the Beckman Institute, up to four faculty members have been assigned to an office that has two desks. The limited use of hot desking in this case is too new to provide any insights into the long-term viability of using the concept to increase office space efficiency/effectiveness on campus or to determine whether it will aid or inhibit productive collaborations.

(d) Are there ways to manage lab space more effectively?

It is clear that there is lab space on campus that is not optimally utilized. However, it is our strong opinion that lab space can be managed only at the department or research lab level. Researchers have needs for space and services that are highly-specific to the task, quite different from the uniform requirements of an academic office. Only the unit administrators are in a good position to assess those needs and balance them with respect to costs and the need of other researchers. This is already done in most units, with the Unit Head or designees keeping track of the space allocated to the unit and monitoring its use and the needs of the personnel.

(e) What are the barriers to these types of innovations?

People are inherently resistant to change. Perhaps unintentionally, we have bred a culture of faculty and students who expect to teach when they want and take courses when they want. In some cases, there are good reasons why classes early in the morning and late in the day and on Fridays are not ideal, including family commitments, research obligations, and protection of time to think and study. However, in many cases, this is just an expectation and convenience.

In our internal discussions and in discussions with others, there is very clear resistance to movement away from the long-term, solitary occupation of office and laboratory space. Researchers value the continuity and convenience of office space and perceive laboratory space as a valuable and scarce resource.

5. COSTS AND COMPARISONS

(a) Are there upfront costs associated with such innovations?

The innovations that we identified fall into two categories : 1) actions that require changes in the management and use of space on campus; and 2) actions that require adding or improving space. The first category requires little investment of funds but will require time and labor by faculty, staff, and administrators on committees to assess the space on campus and to restructure our management system. The second category will require a major commitment to new growth, remodeling, and continual maintenance of campus buildings. In the short term, this will be costly, but immediate savings will be realized in the decreased expenditure for leased space, only be seen with further savings in the long term as buildings become better utilized. However, the potential benefits are significant and will justify the investment.

(b) Are there models at other institutions for effective and creative use of space?

At the beginning of our study, we did look at many other institutions, especially peer public universities. Although we saw many interesting structures and systems, we did not find it useful to try to adapt any of those to our campus. The administrative and financial structures are so different and the campus geography so unique that we concluded that we have to create an approach to space management that works for us.

VI. ADDITIONAL CONSIDERATIONS

In the course of our meetings and discussions, we touched on a number of subjects that we considered important but did not have time to address in sufficient detail. Here is a short summary of some of those topics:

Online education: We had an extensive discussion of what impact the increasing number of online courses and students would have on our need for campus space classroom space. Although we expect this trend to continue, we found it difficult to assess its effect. For the most part, these courses are designed to increase the total number of students taught, and to increase enrollments from non-traditional and non-local students, rather than switch student from classroom to online course delivery. Further, these courses still require studio space and interaction classrooms. We determined that this issue did not fall under the scope of this committee but should be revisited at some point.

Space allocated to athletic programs: We briefly discussed the expansion of athletic facilities and their impact on affecting academic space on campus, especially programs in ACES. We concluded that this issue, although critical for developing an overall campus space utilization plan, did not fall under the scope of our study.

Reserve space: When the Natural History Building needed to be vacated recently due to safety concerns and classes needed to be relocated, many units generously offered space. Although one might see this as an indication that space is not being efficiently utilized in many buildings, the committee generally viewed this simply as a positive willingness of units to help another department. We do not think it is unreasonable for some fraction of space in a building to be temporarily underutilized or saved for a new hire or program. This space provides flexibility to the unit for special events, new personnel, and new initiatives.

Records management: In our survey, several people commented that a significant amount of space in their buildings is occupied by the storage of paper records. In some cases, these are considered to create a fire hazard and staff costs to access and maintain. Although this issue is not directly relevant to our study, we do agree that a more efficient record management program would relieve pressure on space and have many other benefits. There was some support for an off-campus data record storage facility that would be compatible with the administration building we recommend. There was also wide support for moving more quickly toward a paperless environment.

VII. RECOMMENDATIONS

Our committee proposes the following recommendations, divided into three categories:

A) space management policies and procedures
B) quality and utilization of existing space
C) creation of new space on campus

A. Space management policies and procedures

1. Move space management to the Office of the Provost.

Because space allocation is primarily an academic function, the Provost (rather than Facilities and Services) is in the best position to balance the needs of individual units with those of the broader campus community. As stated before, we support a model that provides some decentralized control by individual units to allocate and control space within their buildings. This includes both research and some educational space. Department heads are most aware of the needs of individual teachers and researchers and can assess and balance space requirements. Colleges are positioned to allocate spaces between units within their organization. However, in cases in which buildings are shared by units from different colleges, the Provost's Office is the optimum authority to help facilitate the allocation of space. That overview is also essential to campus-wide space planning.

The allocation of classrooms is perhaps the function most in need of Provost oversight. General assignment classrooms are shared by units across campus. Efficient use of these shared facilities is in the best interests of the university, as a whole.

2. Maintain an accurate record of space usage.

Although some auditing of space is carried out on campus and in specific units, we did not believe that enough information is collected or made available to get a full picture of space usage on campus. We propose that a database for space be established, a place where space allocation, occupation, and usage be documented and made available to appropriate administrators. A significant part of this challenge will be to determine procedures to poll space allocation and usage and to establish metrics for assessing its utilization. This must be done cautiously and thoughtfully since the space needs differ greatly between units and disciplines and among individual faculty.

3. Create a plan for reducing, and eventually eliminating, the leasing of space off campus.

The current costs of renting space off campus are prohibitive. It also inefficient to lease space when the campus has the large space inventory described above. In the long term, the committee agreed that the campus would generally be better served by investing resources in upgrading or expanding existing facilities or building new ones, rather than leasing facilities off campus, except in emergency situations.

The case of the Illini Center in Chicago is a unique use of leased space. While the costs and benefits of the Illini Center deserve more study, the committee recommends that the campus find ways to better advertise and utilize this leased facility. Many on the committee were totally unaware of the existence and capabilities of this valuable resource.

4. Require that each College and campus Research Unit develop a master plan for new buildings and renovation projects.

Academic goals should determine facility needs. If long-term plans are developed by every college for both academic goals and the resultant facility needs, it will be possible to prioritize maintenance, new construction and future energy needs. These plans can form the basis of decision-making within the Provost's Office, and the Provost's Office can in turn help F&S and the Colleges coordinate and develop these plans. Based on these College Facility Master Plans, the Provost's Office should then work to develop/coordinate Campus wide capital projects and funding.

It is particularly important to undertake this exercise now so that when the economy does improve, hopefully within the next few years, we will be ready to move forward aggressively. Historically, campus expansion and new building comes in spurts and we expect to enter one of these high growth phases at some point.

B. Optimization of existing space

1. Make a campus commitment to upgrade all classrooms to a minimum level of instructional technology within the next five years.

Basic instructional technology (such as projectors with a laptop connection) is not available in all classrooms on campus, with the result that some instructors cannot effectively employ new instructional methods and modes of engaging our students. Although many people might be surprised that a substantial number of classrooms at a top-caliber university like the University of Illinois are still outfitted only with a blackboard and chalk (the standard two centuries ago!), that is the case in some of our current classrooms. The quality of the classroom sends a concrete signal to the student of the university's commitment to a quality education, and creates a lasting impression. Our current students are the future alumni of this institution, and investing in ways to improve the students' educational experience at Illinois may pay off in the future in increased involvement and support for the university for our current classrooms.

We recommend that the campus invest resources in outfitting every single classroom on the campus, including those managed by individual units, with basic instructional technology, as soon as possible, to meet the current basic needs of students and faculty. This will require a substantial upfront investment. However, we believe it will dramatically improve teaching efficiency and creativity, boost morale for students and faculty, and make a strong statement that education of the students is our top objective. All of these are particularly important now to attract top students here and give them the training and student experience that will endear them to Illinois in the future.

2. Appoint a standing committee to oversee classroom space, including maintenance, design, scheduling, and technology standards.

The current planning, management and maintenance of general classroom space on Campus is performed by three Campus offices; the Office of the Registrar, Facilities & Services and CITES Classroom Technologies. Each office provides exceptional service in their respective areas of scheduling, maintenance and technology as their individual policies prescribes. The decentralized management structure affords each office the flexibility to manage their respective duties and responsibilities as they relate to the general classroom pool. However, the decision-making spread across several areas of campus may hinder the ability of planners and users to make the most efficient use of classroom space.

We recommend establishing an oversight committee for all classroom and instructional laboratories to review and update current policies and regulations governing those types of spaces. The way we teach and the way students learn have evolved dramatically since most of classroom and instructional laboratories were built. We need to stay at the cutting edge of these innovations if we wish to remain attractive and effective in our educational mission.

3. Establish a committee at the Provost level to evaluate the needs of faculty and students for research space on campus and develop ways to utilize it more efficiently.

Consistent with our recommendation that the Provost's office be ultimately responsible for space allocation, we see a need for a Provost-led effort to maximize the efficiency of research space. The creation of a committee to study how research space is created, allocated, and used may be able to identify ways to increase research productivity and maximize the instructional utility of research spaces without significant expenditures. At the very least, such a committee could be a conduit for sharing space allocation practices between units on campus.

4. Weigh the costs and benefits of decommissioning and/or demolishing some buildings on campus to reduce maintenance burden and energy footprint.

There is enormous resistance to tearing down existing buildings on campus but in the long run this would improve the look and efficiency of the campus. In some cases the costs of maintaining buildings outweighs the benefits of their usage. Further, it may be necessary to create space in parts of campus for new building initiatives (see Section C below).

The Space Management office has identified a number of buildings that could be removed, given the right circumstances. While such decisions need to be made carefully in full consultation with a variety of constituencies across the campus, the committee acknowledged that a campus-wide master plan should not rule out this option in some cases. Their list could be the starting point of campus discussions. The goal should be to emphasize function over emotional attachment to space that is outdated and inefficient.

One long-standing debate in space planning at all levels is the balance between preserving old buildings vs. creating new modern facilities. Our heritage is important, but the realities have to be considered also --- for the cost of renovating traditional buildings into "adequate" space, we can build new state-of-the art educational facilities that far better serve our students and faculty.

C. Creation of new space

Looking at the big picture, we propose that the campus adopt a new philosophy for space creation. Despite many attempts at the campus and college level to plan for the future needs of the campus, the reality has been that new buildings have been constructed mostly as a result of research opportunities, donor wishes, and special commitments. Although this has brought some showcase programs and productive facilities to the campus, it has in some ways diverted our attention away from the core mission and constituents of the University. We propose a new approach for the next few years based on function rather than specific disciplines, addressing the need for new, modern, energy-efficient space that serves a large number of students and faculty. This means deciding what we need to make Illinois the model of a public university for carrying out our teaching and research missions and making this the best place to study and work for our faculty, staff, and students.

To achieve this goal, we propose formation of a campus planning committee to develop a master plan for the campus, in consultation with individual units. This committee would coordinate the strategic space plans of the Colleges and research units with a campus-wide perspective, preserving the balance between top-down and bottom-up control of space that we believe to be essential for meeting all of the campus objectives.

In the course of our discussions, the committee discussed a number of ideas that could be considered part of a campus master plan. These include:

1. Constructing a series of dedicated classroom buildings on key locations on campus to provide central modern lecture halls and classroom spaces.

One concept that we discussed is to design and build modern educational complexes with a series of large lecture halls on the ground level, with upper floors housing classrooms, flexible teaching spaces, and student learning spaces. Each building might include dedicated IT staff that can maintain and support teaching technology.

This plan will require substantial investment. However, this space is not nearly as expensive as research space (such as labs) and would make a transformative improvement in our teaching facilities. We note that this approach will not work for all of our classes, such as courses with substantial laboratory/lecture demonstration components (e.g. physics, chemistry), which are best left in discipline-specific buildings. However, for a substantial number of disciplines, this kind of building would provide an immediate improvement in the quality of classroom space and at the same time free up space in the unit buildings for research and offices. Some academic units currently housed in smaller buildings with little or no classroom space would be well-served by this kind of building, which would provide more stable access to higher quality instructional spaces.

2. Constructing an administrative building at the edge of campus.

Much of the space currently being leased by the university is used for administrative support functions that do not need to be, and in some cases should not be, located in the central part of campus. We could greatly reduce our lease budget and gain benefits from consolidating these functions into a single location. The facility could be built in stages and would be relatively low-cost compared to research space. It could also serve as an ideal location for an off-campus records storage facility if this concept were adopted.

A plan for this building has already been developed by the Space Management office and could serve as a starting point for consideration by the campus planning committee.

3. Constructing a centrally-located building with flexible space that can be used for short-term, focused research projects.

The idea of constructing a flexible building stems from the view of some committee members that one of the most effective ways to increase the productivity and visibility of our university research portfolio is to attract major federally-funded research centers. These centers, available through competitions sponsored by NSF, DOE, and various defense agencies, bring substantial funding and support for students, postdoctoral students, and faculty summer salaries. They also serve to promote creative and interdisciplinary approaches to challenging research problems and form a mechanism for developing central research facilities and capabilities. We already have a long tradition of such centers in campus labs such as the Beckman Institute and the Institute of Genomic Biology, and college centers across campus.

To encourage and increase the chances of attracting new programs, we propose a research building with flexible space that could house new centers, providing office, interaction, and laboratory spaces that would be occupied during the life of a center. It could also be used as temporary space during a building renovation, when units need to relocate for short-term periods.

As part of that concept, we could also create a space for holding academic and scientific workshops in the central part of campus. This could be modeled after, for example, the successful Kavli Institute for Theoretical Physics at UC Santa Barbara that holds workshops all year in a wide variety of topics. It consists of a series of seminar and workshop rooms, a block of shared offices to house participants, and offices for staff to organize and manage the workshops. The visibility and productivity gained from bringing top scholars and researchers to our campus would be immeasurable.

VIII. EXECUTIVE SUMMARY

Space is one of the most valuable commodities that the University of Illinois at Urbana-Champaign possesses. Quality laboratory space enables the research that puts us on the map. Quality teaching space enables the training and learning of students at all levels. Quality office space and interaction areas energize the faculty, staff, and students and promote creativity and discovery. Our space overall defines us as an institution.

Managing space is a complex challenge, requiring weighing the needs of many people and diverse activities on campus. On our campus, it is compounded by many factors: significant growth in student enrollment, expansion of research funding and activity --- some requiring specialized lab space, the aging of our buildings and insufficient investment in maintenance, limited financial resources, and rising energy costs. Overall, it is our assessment that our current space management approach of sharing responsibility between the college and departmental units and the campus administration is an effective strategy. This approach places the primary control of space in the unit which best understands the space needs of the faculty and staff for meeting their research and teaching objectives. At the same time, it provides oversight from the campus necessary to coordinate strategic objectives and promote cross-disciplinary activities. However, the execution of our space management strategy can be improved.

In this report, we have proposed a series of recommendations that we think can focus our space management policies and practices. The overall theme of our recommendations is to address the critical functional needs on our campus for modern teaching and research space, looking forward to what we want to be as a major public university instead of holding on to what we have always done in the past. We propose that we set lofty and noble goals and then put our creative minds together to find a way to achieve them, something we are good at doing at the University of Illinois.

It is not clear that many, if any, of our recommendations will save money in the short term, one of the goals of the Sustaining Excellence exercise. In fact, what we have targeted is a longer term plan for redirecting the way we think about, use, and create space --- the benefits, improvement in services, and cost reductions will come farther down the road. Our overriding objective is to make the Urbana-Champaign campus the best place to work, study, learn, create new knowledge, and discover new things about our universe and our culture.