The Chair takes this opportunity to thank all of the members of the Committee for their candid and spirited discussion of the issues that came before them, as well as for their considerable contributions to this report. In particular, I would like to thank Rich Stanley for his background data and analysis, Phil Furmanski and Tony Movshon for their contributions to the section on science facilities, and Marilyn MacMillan for the section on technology. Vice President Bob Goldfeld, although not a member of the Committee, made significant contributions to the discussion of land use regulations as they affect the University's efforts to acquire additional instructional space. Finally, I would like to thank my special assistant, Robert Cameron, for his excellent minutes and indefatigable editorial oversight of this report.

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INTRODUCTION

If New York University is to continue its ascendance into the ranks of elite institutions, remedying the deficiencies of instructional space—its quality, quantity, and management—will become a critical issue. Our academic and administrative units operate on a more cramped basis than is the case at schools of comparable quality. A survey by Cambridge Associates of space use at Cal Tech, Yale, Syracuse, Duke, Catholic, Notre Dame, Miami, Brown, Vanderbilt, Emory, and NYU showed gross square footage per FTE student, faculty and staff in 1997 averaging 408 GSF. While NYU had the largest overall amount of space (over 9 million SF), its average per FTE was second lowest at 273 GSF—33% less than the average. The top institutions showed GSF averages of 450 to 515 GSF per FTE. Clearly, as new academic initiatives are identified, the need for long-term planning of new space will assume increasing urgency.

In the course of its work this fall, the Academic Space Committee studied these issues. As background, the Committee received a space survey prepared by the office of Vice Provost Richard Stanley, a report on land use regulations from Vice President Robert Goldfeld, a report on the space needs of the sciences by Philip Furmanski, and a technology survey prepared by Marilyn MacMillan, chief information technology officer. To become acquainted with the range of academic space in the University and the types of problems encountered by various academic units, the Committee met in a range of schools across the campus including the Tisch School of the Arts, the Stern School of Business, the Medical School, the Main Building complex, and the Wagner Graduate School of Public Service. While far from comprehensive, the tours nonetheless provided
the Committee a sense of the extraordinary variety and specific requirements of instructional spaces ranging from conventional classrooms to laboratories, studios, lecture halls, computer labs and theaters.

Although the Committee identified a number of key issues which are outlined below, two observations emerged as the most pressing. First, the Committee observed that while many individual units such as Stern, the Medical School, and the School of Law had proprietary space that was well planned, well designed and well managed, with adequate public gathering spaces, NYU’s general purpose classrooms seem to have fallen between the cracks. Improved classroom management was immediately identified as a top short-term priority and, in Section III, the topic receives full discussion. The second observation which seemed equally urgent was the need for the establishment of a central academic planning mechanism by which the University’s academic space needs could be determined and strategies developed to meet those needs. Without such a process, not only will the University experience the injudicious use of scarce resources but it will not be able to identify its considerable strengths or build and capitalize on them in a timely fashion, nor will it absorb the exponential increase in demand for new technologies in classrooms. One example of an academic area that is vital to the future of a first-rate University and requires careful long-range planning is science. The report provides a separate section on the space needs of science—in particular, life sciences—in Appendix A.
The report is organized as follows:

Section I provides a brief review of the development of the NYU campus in the past 20 years, establishes the current boundaries, reviews the land use regulations that govern and constrain growth, and identifies possible areas of development. [pages 89-96]

Section II considers some strategies that might yield some productive results in making better use of existing space, as well as acquiring additional space. [pages 96-100]

Section III identifies critical management issues and makes recommendations for their improvement. [pages 100-104]

Section IV makes some baseline recommendations regarding instructional technology. [pages 105-109]

The Conclusion summarizes the Committee’s key findings and offers short-term and long-term recommendations. [pages 116-124]

Appendix A discusses the need for additional space in the area of life science. [pages 125-126]

Appendix B contains models of space management from the Stern School of Business (instructional space) and the Medical Center (operating rooms). [pages 93-94]
SECTION I: THE NEW YORK UNIVERSITY CAMPUS

History and development

Over the course of the last 30 years, the University has concentrated its development in Greenwich Village. Two major moves occurred in support of that. In the early 1970's, driven by fiscal problems, the University sold its undergraduate campus at University Heights in the Bronx and consolidated its arts and science undergraduate programs at Washington Square. This was a major and wrenching move at the time, but it has paid many dividends over time as the University built its strength and ties to the New York City and Village community. In the late 1980's, the then-Graduate School of Business Administration moved its programs from the Wall Street area to a new building at Washington Square. The resulting Stern School of Business allowed greater faculty interaction in undergraduate and graduate programs and has led to a steady strengthening of the quality of the school.

The physical plant that supports NYU's academic enterprise today is focused in two major clusters, but includes properties that are spread around the City from the Upper East Side to the most southern parts of Manhattan. The Greenwich Village campus is roughly bounded by Houston Street to the south, Union Square Park to the north, Sixth Avenue to the west and the Bowery to the east. At the heart of that area, around Washington Square Park, the University owns and occupies the preponderance of the properties. At the edges, it has a very visible, but much less concentrated presence. The Health Campus, encompassing the Medical School, Dental School and Tisch Hospital, is located along First Avenue from 25th Street to 34th Street.
There are other locations of note. SCPS has a major facility on 42nd Street near the NY Public Library. The Institute of Fine Arts is located in three buildings on 78th Street off of Fifth Avenue. There are a number of residence halls in southern Manhattan. TSOA-related acting studios are located throughout the City, as far north as 42nd Street and as far west as 10th Avenue.

While the campus at Washington Square includes a number of new buildings constructed by NYU during the past 30 years (examples include Warren Weaver Hall, Stern's Management Education Center, Bobst Library, and the Coles Sports Center), the space used is predominantly older buildings that were constructed with other uses (or earlier incarnations of higher education) in mind. In particular, many of our programs and offices use loft building spaces that were initially designed for manufacturing. This mix gives NYU its signature eclectic feel and makes it more a part of the city than a traditional campus. But it also means that many of the spaces used have had to be designed with certain compromises between function and the existing architecture. Particular difficulties and costs arise in the use of these kinds of buildings for specialty academic spaces such as science labs, studios, and larger public assembly spaces.

Thirty years ago, the campus was more concentrated in the immediate vicinity of Washington Square Park. The use of space at that time was a mix of academic space, administrative offices, and a limited number of residence halls. Many spaces were owned by NYU but were still being used as manufacturing lofts under limited term
leases. With the improvements in NYU's academic quality and its more national recruitment strategy, the University began to use all of its owned spaces to expand University space. (Contrary to the belief of some, the University does not own any property held strictly for investment purposes.) As the available space was used, the need grew to acquire additional space and to use space at the core of the campus more effectively. The opportunities for adding space were more geographically diverse, partially driven simply by what was available, and the edges of the "campus" moved away from Washington Square.

Notable developments in this regard included the purchase of 7 East 12th Street (the Fairchild Building) and the subsequent move of many administrative offices from buildings at the heart of the campus, which freed space for academic needs; and the purchase and construction of a number of residence halls in the vicinity of Union Square Park and Third Avenue. This created a growing concentration of University activity away from Washington Square. When the Fairchild Building was first used in the late 1980's, it was viewed as a campus out-lyer. It is now in the middle of very substantial traffic flow of students, staff, and faculty.

The remarkable strength of the real estate market in New York City has only been magnified in the Village area. During the past 10-15 years, the strength of that market has made it very difficult to acquire new space for NYU through purchases of local properties. The market strength has meant that commercial developers have often been active bidders for available properties and it has also meant that owners have seen more
profitable opportunities in renting space rather than selling. As a result, NYU has increasingly had to turn to the rental market to meet critical space needs. Such rentals have included space at 726 Broadway for student health services, administrative offices, and academic offices; space on Cooper Square for SCPS offices and classrooms, and smaller projects elsewhere in the Village. Rentals have also had to become a part of the strategy of meeting the burgeoning demand for undergraduate housing. Those opportunities have been more far-flung.

*Land Use Regulations*

Development of the academic plant in our neighborhood has been limited and influenced by more than just these market pressures for space in the Village. City land use regulations also play an important role in the shape of the campus and the challenges of future planning. There are four relevant aspects of land use regulations:

- Zoning (residential, manufacturing, commercial)
- Landmarks (historic districts)
- Rent regulations
- Community/politics

For the University to buy, construct, or lease a building, two zoning conditions must be met:

- The use must be permitted under the zoning regulations applied to the location.
• The design must meet size restrictions. (This applies to new construction only.)

University uses are permitted in residential and commercial zones, but not in manufacturing zones (except for offices). The immediate area around Washington Square Park, for example, is zoned for residential use, and so University use is permitted, as long as size restrictions are obeyed. It is possible to enlarge or expand a building in the residential zone “as of right,” up to the limits permitted (the FAR). That is how the University was able to build the Kimmel Center, which is substantially larger than the building it replaced. Building within the zoning regulations, without appealing for variances, is called building “as of right.”

However, other areas adjacent to the campus are less hospitable in their zoning. Much of the area east of Broadway is zoned for manufacturing and many University uses are not permitted—in particular, classrooms.

Complicating the question of use are designated historic districts, in which further restrictions apply. NYU is hemmed in by three historic districts: Greenwich Village (north and west of Washington Square Park), Soho (south of Houston), and Noho (north of Houston, east of Broadway). In historic districts one may not demolish buildings without Landmarks Commission approval and buildings on vacant lots must be “contextual.” Even in circumstances where the zoning use regulations would allow a residential property to be converted for University office or classroom purposes, rent regulations make it difficult to do so if there are existing tenants in the building. Under
the rent regulations, it is virtually impossible to empty a building of tenants without very expensive private arrangements with them.

In recent years NYU has not appealed for variances to zoning regulations but has built only as of right. Several members of the Committee questioned this policy, and it was pointed out that artists in Soho successfully appealed for a zoning variance that permitted them to live in lofts zoned for manufacturing use. While the Committee understands the difficulty in exploring the possibility of obtaining certain wider variances that would allow NYU to do things such as build classrooms east of Broadway, where they are currently prohibited, the fact that proprietary trade schools can operate there illustrates the contradictions of the manufacturing zone, not to mention the fact that very little manufacturing takes place there anymore.

Beyond asking for zoning variances there is the issue of outright zoning changes. In the past, the University has avoided asking for changes in zoning laws because of the considerable community and political opposition to such changes. There may be opportunities, however, for creating academic neighborhoods, or clusters of academic departments whose proximity to one another might generate opportunities for mutual engagement and exchange. In that case, and if the perceived gain to the University's academic excellence is compelling enough, appealing for changes in zoning might be considered. If such neighborhoods were identified through a planning process, the University might also establish some systematic means of acquiring space in a desirable location, even if the space could not be used immediately. Building a real estate portfolio
that is guided by predetermined principles of urban and academic planning should provide the University with the opportunity to grow in a more studied and deliberate manner. Persistent deficiencies such as a lack of flexible space, failure to group together related academic areas, and the need for more viable public spaces could be thought through more carefully as these academic neighborhoods were planned.

**Possible areas of development**

There are a number of locations currently owned by the University that will be available for reallocation and reuse in the next few years. Space used for functions that will move to the Kimmel Center includes 5 Washington Place (23,000 SF), 21 Washington Place (19,000 SF), some space at 31 West 4th Street (7,000 SF), and lounges in three ground floor and basement locations. There is also a significant underutilized property at 12-16 Waverly Place which could, at significant expense, be renovated into a facility of 45,000 SF at the heart of the campus. Somewhat farther in the future—after 2006—the Grand Union site at LaGuardia Place and Bleecker Street will be available for our construction of up to 90,000 SF as of right.

Despite these opportunities for development of new space at the Square, the University's academic aspirations are likely to make it necessary to acquire new space in the next decade. Every effort should be made to do this with as much planning as is economically feasible. There will be few additional opportunities in the core campus space bounded by East 8th Street, West 3rd Street, Sixth Avenue, and Broadway; it is incumbent on the administration, therefore, to put in place a planning process that examines the various
geographic locations adjoining the core to determine the most feasible locations for expansion, and then to develop plans to pursue opportunities systematically. The planning must take into account the zoning restrictions in each area, the nature of the physical plant in place and its suitability for University reuse, the cost of stock in each area, rent regulations, and community issues.

SECTION II: STRATEGIES

Opportunities for moving back-office functions from the center to the periphery

About fifteen years ago, the University began a concerted effort to create more space for academic and student needs at Washington Square by moving administrative offices to more peripheral locations or to locations where academic uses were not permitted under zoning regulations. An example of this activity is the move of most of the Registrar and Bursar offices from Main Building to 7 East 12th Street, creating space for MAP classrooms, lecture halls, and lounges. The move of the Controller's Office to 726 Broadway and the Human Resources Office to 7 East 12th Street permitted the renovation of space for School of Education projects and for lounge space. Other administrative moves created space for multimedia research, Gallatin academic programs, and Tisch academic offices.

Other opportunities of this sort in the heart of the campus should be explored. There are administrative offices in parts of 269 Mercer Street (Purchasing and Planing and Construction), 25 West 4th Street (Development, Advertising and Publications, Government and Community Relations, and Public Affairs), 285 Mercer Street
(Maintenance and Operations), and computer machine rooms in 715-719 Broadway and Warren Weaver Hall. The radio station in 725 Broadway could also be relocated. Careful analysis of each possible opportunity will be needed to examine the cost implications of acquiring space for the administrative function and then renovating both that space and the space vacated versus the alternative of identifying new space to meet the academic need directly. Analysis will also be needed to assure that administrative and support functions can be effectively carried out from a peripheral location. An example of concern is maintenance and operations support services.

In light of the expansion of the campus in the last decade, particularly in the Union Square area, it would be prudent to examine the possibility of looking at space use in locations that had once been viewed as on the periphery and suitable only for administrative uses. Office functions at 7 East 12th Street and 726 Broadway are examples that might be examined. 7 East 12th Street, in particular, presents an intriguing possibility. Located halfway between Union Square and Washington Square, it might now be viewed as well located for a number of academic functions. It contains 70,000 SF of space with a good infrastructure of HVAC and elevators. Again, cost issues would need to be closely studied.

*Buying versus leasing property*

Overall, the University has rented approximately 500 thousand square feet in the immediate area (not including residential space). Ten years ago leasing space was relatively cheap and leases with rents of $11-12 per SF were completed. More recently,
rental space became far more expensive and leases with rents of $30-33 per SF were required. Currently, rates between those two levels seem to be more common.

All things being equal, there are benefits to occupying space owned by the University. There is a greater degree of control over the quality of services and the costs of services than is possible in a rental property. There is also a greater degree in flexibility of uses. For example, even when permitted by zoning, many landlords will not permit uses with substantial student traffic. In addition, in rental properties there is the problem of being exposed to major cost increase at the time of renewal. However, there are costs issues involved in looking at rental space and purchased space.

There are two aspects to this issue. The first relates to existing rented space. Almost all of the current spaces under lease have expiration dates that are many years in the future—many over ten years away. In the current environment, it would be very difficult to negotiate an early termination, and so an analysis of the cost differences in buying space to accommodate these uses is not immediately relevant. However, in general, there are cost advantages to staying in current leased space due to the sunk costs in the renovations in the space (unless the rent increase upon renewal is many multiples of the current rent).

The other aspect of this question is the need to analyze the costs of leasing versus buying when considering space planning for specific needs and for the long term. Because the market for rents and for purchase prices can vary so widely in a relatively short time (witness the fact that similar spaces in the same building were obtained for prices ranging
from $11 per SF to $27 per SF over three years), analysis must be done each time acquisition decisions are made. The factors that will need to be considered in the analysis include:

- **The condition of the space being obtained.** Space in good condition in a rental property may turn out over time to be less expensive, despite annual rent obligations than space in poor condition in a purchased property, due to the large possible differences in renovation expense.

- **The relative market costs of space available for lease and space available for purchase.** Trends in pricing of rents and purchase prices tend to move in tandem, but not always at the same rate. There will be times when rents may seem relatively cheap as compared to the prices asked for the purchase of space, and vice versa. This seems to be related to the cost basis of space being offered for rent—landlords with properties obtained many years ago may be able to make money with rents that do not fully reflect current market prices for new space. Careful and constant evaluation of market trends is critical.

- **Financial factors.** These would include the relative availability of capital funds to support purchases and the interest rate used to determine the costs of a purchase (market rate or opportunity cost rate related to endowment return).
• The nature of the space need. Some of the University’s space needs demand very specific types of space (large floor layouts, locations in proximity to the campus, space without zoning use limits). In some cases that specific need may only be met by a single space. In that circumstance, the relative economics may not be relevant.

• Programmatic Factors. Some programs may be temporary and thus not require permanent space; in such cases renting would be the preferred option.

SECTION III: MANAGEMENT

While most of the solution to New York University’s need for additional instructional space will come through the acquisition of new properties and the redesignation of spaces already owned or leased by the University, some symbolically significant improvements can be realized quickly through better management of existing spaces.

Academic Week Schedule

The Committee suggests that the entire University adopt a five-day academic week. Many schools are already operating on such a basis; some, such as Stern and Wagner, hold classes on Saturday. Within the Faculty of Arts and Science, however, the four-day academic week has become the norm. This puts enormous pressure on already limited instructional space Monday through Thursday; on Fridays, many classrooms lie empty. The pressure on Monday to Thursday also results in maintenance and cleaning problems;
rooms are schedule so tightly that cleaning cannot be accomplished during the day leaving very messy classrooms by mid-afternoon. Scheduling FAS courses on Fridays should make scheduling classrooms throughout the week substantially easier.

**Classroom Management**

The Committee recommends that a single office be identified as the office responsible for the scheduling, operation and management of general instructional space throughout the University. We recommend that all of the operations and management of general instructional spaces, including scheduling, oversight of maintenance services, and instructional technology, be integrated within this single office. Whatever office assumes responsibility, the current disaggregated system of managing academic space cannot continue. Currently, the Registrar only schedules space; other departments within the University are responsible for the condition of the classroom, whether it is locked or unlocked at appropriate times, and whether it contains the necessary functioning instructional technology. This can lead to confusion and frustration on the part of faculty members and students alike. Classrooms can also be dirty and key instructional technology can be found to be non-functional. Conditions such as these can create a sense that the actual education of students does not have a high priority within the University.

Such a central office would also be able to recapture unused space during the course of a semester. It is not uncommon to find spaces originally scheduled for particular classes or discussion sections empty by mid-semester; classes move, discussion sections break
down, etc. In the current administrative structure there is no mechanism for auditing space usage on a continuing basis. A central office could find ways to monitor space usage during the year and return unused space to the general purpose pool in a timely manner.

**Proprietary v. General Use Space**

The issue that generated the most spirited debate within the Committee was the question of so-called proprietary space versus general-usage space. As the tours of various schools illustrated, many schools—the Medical School, Stern, Tisch—have highly specialized, well maintained and well managed proprietary space which principally serves the student bodies of those schools. In general these proprietary spaces have not been made available to the general-purpose pool of instructional spaces; as reasons, most of these schools would cite the constant demand of their own populations, the need for classrooms equipped with particular technologies, and the fear that “outsiders” might not be as respectful of the classrooms as the schools’ own citizens. The evidence cited for this discriminatory behavior is the exceedingly poor performance of general-purpose classrooms. (Hard experience teaches the typical NYU faculty member that general-purpose classrooms are unreliably maintained and equipped.) From that experience a culture of hoarding has emerged, inhibiting any sense of collegiality that would encourage sharing.

Many on the Committee felt strongly that the University should move to a system in which all instructional space goes into a general pool; schools with proprietary space
would get first call on those spaces, but not sole call. Others on the Committee favored a modified version of this plan in which blocks of space would be made available to the general pool after all proprietary classroom obligations had been met. All agreed that if the University were to investigate this approach it would represent a sea-change in the management of academic space, yet would yield significant additional space for general use. For this to work, there would have to be absolute assurance that the central management of these general-use spaces would be as effective and efficient as the current management of proprietary spaces. This is a point that cannot be emphasized enough. Also, because adopting such a system as described above would represent a major cultural shift, the University may want to consider additional incentives. For example, if a school released 10% of its proprietary instructional space to general use, it might be rewarded with a commensurate reduction in its overhead payments to the University.

**Management of Public Space**

In addition to classroom space, the Committee considered the central management of public space. By public space the Committee meant the kind of space that would be available for conferences, meetings, seminars, symposia, public lectures and departmental events. Currently, when faculty members plan a public event they are faced with several problems. First, public space is costly and must be rented according to fee structures that vary widely from space to space. Second, the few public spaces that are available for general use frequently cannot be booked well enough in advance to allow adequate planning time. Third, a faculty member hoping to book a space must approach each academic unit individually, since there is no central office for booking public space.
The new Kimmel Center, with its spaces of various sizes, might be a partial solution to the problem; but a central classroom management system could also assume responsibility for scheduling public space throughout the University.

**Instructional Zones**

Assuming a central classroom management authority located in the Office of the Registrar or some other office, the Committee recommends that NYU general purpose classrooms be divided into instructional zones based on geography and that each zone have a manager with an office within the zone who would be accountable to the Registrar and who would function as the “classroom concierge” for that zone. The managers of instructional zones would be responsible for ensuring that the instructional spaces within their zones are unlocked for scheduled classes; are clean and in good repair; and that the classrooms are equipped with appropriate technology in good working order. There should be a clear posting inside and outside every instructional space of the name of the zone manager and the number to call for assistance with any aspect of that space’s use. Those numbers should be considered “hotlines” which, when called, result in prompt attention from the zone manager. This is essentially the way instructional spaces managed by individual schools function; the sense of “ownership” the schools have of these spaces usually translates into effective management. We are suggesting a similar system for general University classrooms.
SECTION IV: INSTRUCTIONAL TECHNOLOGY

Technology in Academic Facilities

Across all the disciplines at NYU, faculty and students are intensifying their uses of information technology resources for instruction and learning. No longer solely the province of computer scientists, facility with information technology and familiarity with discipline-related electronic resources have become essential for success in public administration, social services teaching, healthcare, the humanities, the arts, business, the sciences, and even law. Recent advances in instructional technologies enable students and faculty who meet regularly for many courses to make more effective use of their time both inside and outside the classroom, by sharing materials, conducting discussions, and preparing individual and team assignments electronically and asynchronously.

At NYU, demand is high for more, and more sophisticated, technologies in more academic facilities.

- Delivery data from the Libraries' Campus Media Services indicate the extent of this demand. Despite the fact that basic analog media devices, such as slide projectors, VCRs, and monitors, are installed in 152 (98%) of the General Purpose Classrooms, Campus Media services delivered an additional 130,000 pieces of equipment in FY99-00. Of that number, nearly 5,500 devices were for high-end projectors that display computer-based content. TVs, VCRs, overhead projectors, and slide projectors, once the instructional technologies of choice, no longer satisfy all instructional needs.
• Few General Purpose Classrooms connect to NYU-NET for access to electronic resources, even at the podium. No General Purpose Classroom is equipped for students to use networked computers provided by NYU. Nevertheless, demand for such hands-on use is high and growing. For example, the Libraries’ Electronic Resource Classrooms, booked by special arrangement, supported 67 courses in FY 99-00. In the same year, over 150 class meetings were held in the ITS student computer labs, occupying scarce lab seats intended for individuals to do research and to complete assignments.

• NYU is experiencing a noticeable upsurge in the use of instructional technologies, including those that are computer-based, such as PowerPoint, and those that are network-delivered, using Web sites and instructional management tools such as Blackboard. Up from 10 classes in Spring 2000, for example, nearly 400 classes used Blackboard in Fall 2000 and even more in Fall 2001. Though this upsurge is dramatic, now involving some 8,000 students, the number of classes still represents only a small fraction of NYU’s class offerings in a term. At this rate NYU’s classroom space crunch and congestion in the computer labs will soon be untenable.

• The Stern School’s recent renovations of academic facilities in Shimkin Hall included network connections, laptops, and digital projectors at the podiums, standardized for all rooms and supported by technical staff stationed in the building, as well as electric outlets and wireless network connections at student classroom seats and in student study areas and team work rooms for student use. These resources are widely used by and get high
marks from faculty and students. The timely availability of technical support is especially valued.

It is thus essential to upgrade connectivity and equipment for at least a modest number of NYU’s existing academic facilities and to incorporate appropriate instructional technologies in future renovations and expansions of NYU’s academic spaces. However, success with technology in academic facilities depends not simply on having the right stuff in the right place. More than ever before, the usefulness of the University’s academic facilities depends upon successful planning, management, and support for the equipment and connections.

The serious downside of instructional technologies, even analog devices such as overhead projectors, becoming more pervasively used both inside and outside the classroom is that the levels of productivity and satisfaction of both faculty and students drop dramatically when the technology doesn’t work, which, unfortunately, is a common occurrence. The loss is especially keen when a scheduled class session is disrupted, in part or entirely, due to technical difficulties. Today NYU’s processes and organization structures for supporting the technologies in, scheduling the use of, and maintaining the General Purpose Classroom facilities are problematic. For example:

- In planning their courses, faculty cannot conveniently request to be scheduled into spaces with particular technical capabilities and cannot easily look up the configuration of a space.
• In preparing for class sessions, faculty cannot be sure equipment in a room was recently checked.

• If technical problems arise, faculty often cannot easily find help or count on it arriving in time.

Thus, NYU must improve its methods and structures for scheduling, managing, and supporting academic facilities as an integral element of making today’s technology more usable, and as part of making increasingly sophisticated technology resources more widely available in them. An improvement initiative should consider experiences at Stern and other Schools with School-based technical resources, as well as provisions for geographic distribution of technical staff nearer academic facilities and for simple steps, such as installing phones and posting help numbers in classrooms.

Even if appropriate technology is made available in NYU’s academic facilities and if effective methods and structures are devised for planning, managing and supporting it all, three other foundational factors are essential to moving NYU’s academic facilities near the forefront in the years ahead.

• Increased use of electronic resources in academic facilities will increase reliance on NYU’s network for the capacity, performance, reliability, and robustness across NYU
sites in Manhattan and around the world. NYU-NET today cannot handle this demand. It is essential to modernize the network.

- Increasing interest of faculty and graduate students in the continuing evolution of technology in instruction and research across the disciplines will increase their demand for services from academic technology specialists and electronic resource experts. Current resources are stretched to handle today’s level of demand. We must prepare to support more, more effectively.

- NYU’s longtime fiscal practice with managing classroom technologies has relied on raising one-time funding. The practice is not sustainable into the future where investment in technology renewal will be an ongoing imperative. NYU must accommodate the total and continuing cost of technology operations, support and renewal in planning for academic facilities.

Students now in the Class of 2003 were born the same year PCs became available. All of higher education is experiencing the impact of this generation’s expectations about IT, along with the broad diffusion of technologies across the disciplines and professions. Scholars and professionals making great contributions in their fields increasingly rely on strong technology underpinnings for their instructional and research endeavors. It is vital to ensure that NYU’s academic facilities have technology underpinnings strong enough to sustain our aspirations for success and leadership in the world ahead.
CONCLUSION

Twenty-five years ago, New York University decided to invest heavily in building student residence halls. That decision was transformational. Virtually overnight, NYU was able to alter dramatically the demographics of its student body, deepen its pool of applicants, and move from being primarily a commuter school for local students to being a school with a national and international student population. That shift in the make-up of the student body was the cornerstone for what became “the NYU miracle,” an achievement that included strengthening the faculty, focusing on the College of Arts and Science, and enhancing student life to an extent which catapulted NYU into the ranks of the country’s most exciting places to study.

Now, 25 years later, NYU faces a challenge every bit as daunting and every bit as critical to the University’s future: the development of its instructional space. As students’ academic profiles have become more competitive, with increasingly higher SATs and GPAs; as the University grows more selective in its choice of students; and as students arrive better prepared academically, their academic expectations, like the University’s academic profile, have risen as well. Today’s NYU students are used to well-equipped, well-maintained high school classrooms; and NYU’s stellar reputation rightly leads them to have exceedingly high expectations of every aspect of their college life, not the least of which are the classrooms in which they will spend a good portion of their academic lives.
The most serious obstacle that NYU faces in upgrading its instructional facilities is the absence of a process for long-range strategic planning which would identify the University’s academic priorities. Without the identification of academic priorities, the decision-making about academic space lacks academic focus, suffers from a haphazard and *ad hoc* process, and fails to capitalize on the University’s strengths in a timely and efficient manner. Currently, the decision to acquire, renovate or build new space is made on almost a purely opportunistic basis. Schools or other academic units with access to funds gain access to better space. When space becomes available on campus, which will occur when several sites are vacated as a result of programmatic relocations to the Kimmel Center, there is no established process by which to allocate the vacated space. The absence of planning often results in extremely important academic priorities receiving short shrift, while abundant resources go to areas that may be less important to NYU’s academic excellence.

Lack of planning has also resulted in *ad hoc*, unintentional and inefficient combinations of academic units. Opportunities to plan and create synergies among related departments are missed, as are opportunities to create inspired spaces with amenities such as lounges, robust public spaces, and other areas which enhance and encourage engagement among faculty and between students and faculty. Increased planning could result in more flexible spaces with movable walls and flexible seating, which could be downsized or expanded as needed, resulting in greater efficiencies.
Given these deficiencies in planning, the Committee strongly urges the new administration to form a central academic planning council. As a prelude to their work, an inventory of existing space may yield possibilities for greater flexibility in space usage. In addition, each school would submit a detailed report of critical space needs for the next five years. Just as the University as a whole would be required to establish academic priorities, so would each individual school. These school-based planning texts would become the working documents for the central planning group. Even with these planning documents, however, the central planning group would need to identify a process by which the University can articulate its academic priorities, beginning with a statement of “first principles”—a statement of the University’s fundamental academic aspirations, starting with the identification of existing “pinnacles of excellence.”

While the Committee does not have a specific recommendation for the composition of the planning group, it, like the transition team, should be reflective of core academic constituencies and should develop an appropriate relationship with the Board of Trustees so that Board discussions are informed by the University’s articulated academic priorities.

In addition to an academic planning council, the Committee recommends the creation of an academic space committee to monitor the implementation of recommendations adopted from this report, advise whatever central office is put in charge of overall academic space management, and serve as an appeals panel to resolve disputes over the assignment of academic and public spaces.
**Recommendations**

Here, now, are specific short-term and long-term recommendations of the Academic Space Committee:

I. **Short-term recommendations**

   a.) Establish an office of classroom management, either as an extension of the Registrar’s Office or as a separate University office, in which all aspects of classroom management—scheduling, maintenance, instructional technology, etc.—would be integrated.

   b.) Divide the University’s general-purpose classrooms into instructional zones with individual managers or “concierges” who would report to the central space management office and insure that classrooms are well maintained and well equipped and who would respond to complaints and requests in a timely manner.

   c.) Reexamine proprietary use of space in all schools and consider either placing all classrooms in a general-purpose pool, with the owners of proprietary space getting first call those classrooms, or devising incentives for schools to donate proprietary space to a general pool.
d.) Establish a central booking office for public space, at the core of which would be the Kimmel Center, but which would also include major lecture halls located in individual schools.

e.) Identify back-office functions that could be relocated to remote locations, freeing space at the center of campus for academic use.

f.) Expand the FAS academic week to 5 days to utilize unused space on Fridays.

g.) Establish a University-wide committee to oversee classroom management.

II. Long-term recommendations

a.) Eliminate *ad hoc* or opportunistic acquisition of space by establishing a central planning council to work with the president to articulate first principles of academic excellence for NYU, identify targets of opportunity for the University as a whole, and establish academic priorities to guide the long-term development of academic space.

b.) Identify areas of future development and begin the systematic assembly of a real estate portfolio.
c.) Consider zoning changes, if the pay-off is the opportunity to create viable academic neighborhoods where related academic units might be clustered.

d.) Establish reasonable baselines for classroom technologies and network systems that can be well maintained within the core functions of classroom management.

e.) Assuming that science is at the core of the University’s academic excellence, establish a process to plan a major presence for NYU in the life sciences while identifying critical improvements in instructional space for science in the short term.

Finally, although this subject did not come up in the Committee’s discussions, the President-designate may want to consider visiting the campuses of other elite institutions such as Harvard, Columbia and Johns Hopkins to see how they have approached the development of academic space.
Without benefit of formal evaluation of academic priorities within the University, the Committee nonetheless wanted to provide at least one prominent example of how glaring deficiencies in space have had an adverse impact on academic excellence. Since life sciences were identified as a priority in FAS's Capital Plan, we decided to focus on this area. The particular case of the life sciences also illustrates the challenges posed by such additional complicating factors as the absence of long range planning in the past, the complexity of many space needs, and the large investments that will be required to meet them.

Many of the greatest opportunities and most significant challenges that face the University are in the sciences. Science and the fruits of scientific discovery will dominate the 21st century to an even greater extent than they did the previous 100 years. Science, especially the biological sciences, will continue to influence every aspect of our lives and will increasingly impact nearly every human endeavor. Genomics, the latest disciplinary breakthrough in biology, promises to revolutionize our understanding of fundamental biological processes and will profoundly alter medicine, agriculture, industrial production, and our ability to sustain our environment. Investment in scientific research will continue to grow -- indeed, even in the current strained and uncertain economic climate, the federal government's pledge to double the NIH budget within 5 years is being held nearly sacrosanct. As a result, top universities are being measured by
their science enterprise and students and resources will be drawn to these institutions by the prominence and contributions of their science faculties and the attractiveness of their laboratories and facilities. Universities are responding by making major commitments to science; nearly every top-tier university has announced a broad new initiative in the life sciences, some in the range of several hundred million dollars for building and recruitment.

NYU has traditionally been neglectful of its sciences. Although its early history contains moments of scientific excellence and claims several internationally renowned science faculty and alumni, the University was not a participant in the major scientific revolutions of recent times, particularly in the essential laboratory sciences: biology, chemistry and physics. There has never been a sustained and systematic plan for science development, certainly none at a level required to move to the front rank. Modern life sciences, especially the core disciplines of molecular biology and genetics, whose astonishing discoveries are now highlighted almost daily in the media, were not even effectively represented in our departments until relatively recently.

Nevertheless, NYU has demonstrated the capacity to achieve true excellence and widespread recognition when it has undertaken targeted development of particular areas of science. The Courant Institute and the Center for Neural Science are prime examples. The ongoing reinvigoration of the Biology Department illustrates our capacity to successfully embrace new fields in rapidly advancing areas. Physics, long a weak department, has been placed on a trajectory to reclaim excellence through a series of new
hires in astrophysics. New NYU initiatives in genomics and computational biology are
taking advantage of existing scientific strengths, special interdisciplinary opportunities,
and unique local and regional resources to establish a world-class program occupying a
prominent and identifiable niche. Even these relatively modest investments in recruitment
and facilities have already been leveraged into enormous returns in status, esteem and
external funding; as one indicator, the University’s investment of $42M in capital
funding over the past 14 years has yielded over $223M in external research and
infrastructure support.

Thus, achieving our mandate of moving NYU to the front rank of world universities
requires that science development be raised to the highest priority. We have had pockets
of success in science and are now poised for major initiatives that will raise our science
enterprise to the highest levels, particularly in the life sciences. Our fledgling programs
in genomics and computational biology, which have been widely accepted within the
University as the most important thrust for future development, have the real potential to
become international leaders. A vigorous science program has the potential to draw
substantial external support for its research and teaching activities, if (and only when) we
make investments of our own in infrastructure. A major limitation to moving forward in
this program of science development, and institutional progression, is space.

Space Needs for Science

Although space is the most precious and limiting commodity across the University, the
problem is intensely magnified in the sciences, both in terms of quantity and quality.
Research-active, laboratory science faculty members typically require 10 times as much space (or more, depending on field) as equivalent non-science faculty members. Their laboratories need an extensive and technically sophisticated infrastructure, including complex and sensitive HVAC systems, high capacity and stable electrical supplies and specialized plumbing systems. The systems are further complicated by requirements for uninterruptibility or redundancy, safety, security and environmental sensitivity.

Laboratories are usually in use from early morning until well into the night, seven days a week; occupants range from senior faculty to fellows to graduate and undergraduate students, and frequently include high school students, teachers and visitors, in a close, intense and competitive environment. As a result, comfort and an attractive ambience are significant considerations. Central facilities are required for cooperative use of major equipment, support services ranging from machine shops to gene sequencing operations to animal facilities, as well as secure storage and chemical disposal.

Science also is a collective activity. Related disciplines must be housed in proximity to one another. This not only achieves economies of scale and permits sharing of equipment, resources and facilities, but also reflects the nature of the successful scientific process, which involves constant interaction, communication, questioning and testing.

As science move towards further interdisciplinarity, especially the coalition of molecular biology and genomics with the computational sciences that will almost certainly dominate the life sciences in the coming generation, proximity and open access become increasingly important factors in achieving success.
Teaching laboratories similarly require attractive, functional and well-equipped spaces. Laboratory sections are components of many classes, ranging from Saturday workshops for high school students and teachers to advanced courses for graduate students. The infrastructure needs, while somewhat less than those of research labs, are still substantially greater than for other units of the University. Since a substantial proportion of our undergraduates are science or pre-health majors, teaching laboratories are important student recruiting and retention tools.

*Status of Science Space at NYU*

Although all our science departments at the Square face space problems, the most serious limitations are presently in Biology and Chemistry. These departments currently are housed within the Main Block complex. The space available is straining for the current profiles of these core departments and totally inadequate for the ambitions we have for them. It is located within buildings that are as much as 100 years old, constructed for very different uses and simultaneously serving as the principal classroom facility for the entire University. Infrastructure is patchwork, below standard and constantly in need of repair or upgrade. Relatively simple tasks such as tracing an unstable electrical line or a leaking pipe can take days because of unreliable plans and multiple layers of jury-rigged solutions to previous problems. Much of this the Committee witnessed first-hand on its tour of science facilities in Main Block. Safety and security are perennial issues, magnified by the large traffic volume and open environment that the buildings must bear in servicing classroom needs; the buildings often have several thousand occupants,
movement through the elevators, stairwells and corridors during regular class change periods is difficult and slow, and much more so during any emergency. Costs for any laboratory repairs or renovations are often several-fold greater than they would be in a more modern dedicated facility, due to the age of the buildings and their structure. Asbestos (nearly everywhere), ventilation problems, fume hood exhaust difficulties and inadequate hazardous waste storage and disposal capacity, are constant obstacles to building or rebuilding efforts. There is little to no flexibility in space management and no consistency in space assignment or distribution.

Besides the inadequacies and very high costs involved in using Main Block as a science facility, the layout of the buildings and the interlacing of teaching and research space severely restricts any development of community, interaction or sharing of common facilities. Faculty with related interests often must be housed separately from one another; even though they share a common building, traffic and circuitous routes are such that the perceived distances are huge. Safety and security require that all doors always be locked, presenting additional barriers to interaction and communication; even so, unauthorized entry and theft are regular occurrences.

Teaching laboratories are of mixed quality. The chemistry teaching labs (general, organic and physical) were renovated over the past several years and are modern, well equipped, attractive and efficient, and also were very costly because of their required location. The biology teaching laboratories have not been renovated in recent memory; certainly, there has been no significant structural work for over 20 years. They are
dismal looking, inefficient, badly designed, inadequately serviced and poorly equipped. They have no provision for modern computer or web-based work. They do not reflect either the recent redevelopment of the department or the needs of our students, and clearly fail to represent the status of the discipline.

Much has been accomplished over the past several years in faculty development and student recruitment within our Biology Department, and to a certain extent in Chemistry. However, this has occurred in spite of space difficulties and not because our facilities are an attraction to the best scientists and their students. Space limitations have been key factors in failed faculty recruitments and losses to other institutions, including several young scientists who were among the most prominent in their fields and who, if not for the space problems, would have joined or remained on our faculty. Lack of space has hindered program development, particularly in genomics and in bioorganic chemistry, fields that must be aggressively pursued if we are to achieve any recognition in our Biology and Chemistry departments. Space problems have precluded important curricular reforms designed to modernize course offerings and improve student recruitment and retention. Lack of space and improper design have prevented development of shared resources and the necessary environment of interaction and communication.

Proposal for Science Space Development

The chief priority for science space development is a new Life Sciences Center. This would include facilities for both Biology and related units of Chemistry (which is
increasingly focusing on biological chemistry, structural biology and bioorganic chemistry). The Center would provide the space needed for establishment of the interdisciplinary genomics and bioinformatics program, including facilities for computational scientists involved in this work, which are the highest priorities for science development at the University. Additional space would provide for necessary, planned growth in the other areas of Biology and Chemistry. A new facility would permit construction of dedicated space based on modern design criteria, with far greater efficiencies of net area utilization, increased safety and security, more effective and efficient infrastructure, and flexibility of assignment. Additional areas could be devoted to communal activities including joint seminar and meeting/function rooms. A new teaching facility, particularly for Biology, would serve as an important student recruiting tool, and also greatly enhance the value of the educational experience we offer.

These aims cannot be achieved through incremental renovation of current space in Main Block. Aside from the cost, which could be substantially greater than for a new facility, there is insufficient flexibility in space available to permit the necessary work to be carried out without shutting down crucial, ongoing research and teaching activities. Moreover, we could never achieve the programmatic cohesiveness and interactive environment required for a successful science program because of the present configuration of available space in Main. Finally, releasing at least some of the space in Main Block now occupied by Biology and Chemistry for conversion into classrooms has the virtue of helping to solve another institutional problem: lack of adequate, centrally
located, general-purpose teaching areas. Life sciences, therefore, is an excellent candidate for long-range planning to consider an entirely new structure.

A detailed analysis of need made by FAS administration has concluded that a facility of 165,000 to 200,000 gross square feet will be required to accommodate the two departments and move them to a top tier. Specifics of this proposal, including calculations of space needs, costs and timetables, are included in the FAS Capital Plan.

In order to maintain and further promote interactions between Biology and Chemistry and the other sciences, notably Neural Science, Physics, Computer Science and Mathematics, a new Life Sciences Facility must be in close proximity to the Washington Square Campus. If the facility is located within the central academic core area (bounded by Washington Square East, Broadway, West 3rd Street and West 8th Street), some functions, including some offices, new research laboratories on the uppermost floors, and teaching laboratories, could conceivably remain in the Main Block. Beyond this central core, the entire complement of space dedicated to these departments would need to be accommodated in the new building. If the Center must be in close proximity to the central campus area, then other units of the sciences, especially Neural Science and Courant, would need to be included, considerably enlarging the scope of the project.

Other science needs also should not be neglected, including renovations for experimental physics in Meyer, and expansion of computer science, both of which add to our overall science community.
APPENDIX B

Classrooms and Media/Computer Support at the Stern School

Stern School classes are scheduled by the Stern School registrar, and are held in the Stern complex (comprising 40 West 4th, 44 West 4th, and portions of Shimkin Hall). Some rooms in the subterranean concourses of Tisch Hall (40 West 4th Street) are "university rooms" and are scheduled by the university registrar and not used for Stern classes. The Schimmel Auditorium, on the upper concourse, is scheduled by the Stern Registrar, but a number of non-Stern classes are held there in coordination with the university registrar.

Classrooms within the Stern complex are equipped with a basic podium (telephone, VCR, and PC with screen projection). Podiums themselves are maintained by the Stern Media Services but I believe the software on the PC's is run through the Stern computer network, which is maintained by Stern Computing. Instructors who encounter problems with the podiums can call media services directly using the telephone on the podiums, and someone will be sent down from Media Services, which is in the building.

This arrangement seems to work reasonably well. Because all Stern classrooms have the same podium, instructors are assured of certain media capabilities regardless of the room they are assigned to. And because Media Services is right in the building, response times are quite good.

-- Bruce Buchanan

Time Allocation for Operating Rooms at the Medical Center

We use a Block Time scheduling system. Each surgical service is given a block of operating room time, both in the main operating room and in the ambulatory operating room areas. The amount of time given has an historical basis tied into the actual need of each service. The Block of time allocated is a finite number of hours on certain days of the week.

Certain services, like Ophthalmology, have a lot of outpatient hours, and a small amount of main operating room time. Cardiovascular surgery has no ambulatory hours, but is given 3 rooms, 5 days per week in the main operating room. Within each service, the chairman determines the method of allocating the time to each individual surgeon. For large services, like General Surgery, the time is broken down into divisions; i.e. minimally invasive, oncology, transplant, general, etc. It is sometimes
distributed to groups of surgeons who are affiliated by practice plans, or resident coverage groupings. Within each group or division, the time is ultimately given out by either seniority or on a first come first serve basis by booking date. Smaller services simply assign a portion of their block time to an individual surgeon.

The utilization of the operating room time is reviewed 2 - 3 times per year. A computer system in the operating room keeps data on time blocked for a service or surgeon, and actual time used. If a service or surgeon requests additional time, then we look at services that are under 80% utilization, and shift the time appropriately. Block re-allocation is based on: (1) productivity data; (2) financial impact to the institution; (3) and teaching and research mission.

This system is fairly standard for most large operating rooms in academic institutions. When the new, expanded, 10-room Ambulatory Surgery suite opened a few years ago, the above procedure was followed to distribute the new time and space. A survey was sent to all chairmen, surgeons, and services with requests for additional time. The requests were validated by comparing the perceived need with actual performance data gathered from our older 4-room space. The new time and space was distributed by a multi-disciplinary committee; and fine tuning of the schedule took place over the next 6 - 12 months.

-- Steven R. Hofstetter, MD  
Chief, Surgical Services  
NYU Hospitals Center