DOCUMENT RESUME

ED 154 752 HE 010 082

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TITLE The Development and Management of Academic and Research Space at the Massachusetts Institute of Technology.
INSTITUTION Massachusetts Inst. of Tech., Cambridge.
PUB DATE Sep 77
NOTE 25p.; Paper presented at a meeting of the Centre for Educational Research and Innovation of the Organization for Economic Cooperation and Development (Paris, September 1977)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Building Design; *Campus Planning; College Planning; *Educational Facilities; Facility Case Studies; *Facility Planning; Facility Requirements; Facility Utilization Research; Financial Policy; Information Systems; *Management Systems; Scheduling; School Space; *Space Utilization
IDENTIFIERS *Research Facilities

ABSTRACT

This case study describes the development and management of academic and research space at the Massachusetts Institute of Technology. It illustrates through historical and current examples the ways in which the institution, with its principle emphasis on science and technology, manages over four million square feet of academic and research space in a highly centralized but flexible manner. Discussed are such matters as the campus history, building design, patterns of building use, the time-frame for change, communications and interaction, territoriality, the human dimension, administration of space, and financial procedures. (Author/MSE)

ORGANIZATION FOR ECONOMIC
CO-OPERATION AND DEVELOPMENT

Paris, 6 September, 1977

Centre for Educational Research
and Innovation

Programme on Institutional Management
in Higher Education

THE DEVELOPMENT AND MANAGEMENT OF ACADEMIC AND RESEARCH SPACE AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

TABLE OF CONTENTS

THE DEVELOPMENT AND MANAGEMENT OF ACADEMIC AND RESEARCH SPACE AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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ABSTRACT

This case study describes the development and management of academic and research space at the Massachusetts Institute of Technology. It will illustrate through historical and current examples the ways in which this institution, with its principal emphasis on science and technology, manages over four million square feet of academic and research space in a highly centralized but flexible manner.

INTRODUCTION

This case study of the development, utilization, and management of academic and research space at the Massachusetts Institute of Technology is presented as an example of the integration of a specific educational philosophy and a physical environment reflecting this philosophy. We shall, in the course of this study, consider the administrative apparatus necessary to manage over four million square feet of academic and research space and discuss the fiscal program designed to support this enterprise.

BACKGROUND

Early History

The Massachusetts Institute of Technology is typical of those institutions of technology or polytechnics created during the middle of the 19th century. MIT was the product of the particular genius of William Barton Rogers, a scientist and naturalist who in the 1840's developed a program of technical

and scientific education which became his life's mission. He labored for 20 years to establish a school which would provide for its students the practical integration of science, and engineering. It was in 1861 that he successfully founded in Boston, the institution which would achieve this synthesis. By 1865, MIT was preparing to occupy its first permanent building which would provide a home for all of the disciplines then being offered by the Institute. It was at that point, an integrated community with active interchange among its various faculties and students. With success came growth, and with growth came the need for additional space in the then rapidly developing new "Back Bay" section of the City of Boston.

As the Institute grew, its facilities became more congested. Each year, new enrollments stretched the capacity of the existing buildings. By 1904, the Institute, operating out of nine separate structures housing distinct academic departments, found itself involved in frequent costly changes, leading to the inefficient operation of its physical plant. It became increasingly clear that a new physical environment was imperative.

The one unusual bonus of the crowded conditions was the close relationship that grew between students and staff. The nature of the curriculum and the general character of a program involving the practical applications of science brought student and teacher together in a way which formed the basis for life time relationships. This in turn provided the foundation for a very strong tradition of alumni support for MIT which was to exert a powerful influence on the development of the plan for the new campus.

Many opportunities for relocating MIT to a more comfortable site were investigated. By 1911, under the leadership of a new president, Richard Maclaurin, research on campus planning options had been completed and the site and goals for a new campus were being established.

New Campus Criteria

Beginning with a restatement of educational goals, the Institute's administration set forth a bold plan to meet the rapidly expanding need for teaching and research in a growing technological society. The turn of the century was a period of extraordinary industrial expansion in the United States and the students trained at MIT took important positions in the development of this rapidly industrializing society almost immediately upon graduating. It was, therefore, vital that the new campus should be the most up-to-date possible.

After the completion of a number of technical studies, it was concluded that the new buildings for MIT should consist of a group of interconnected structures which would provide the housing for the entire academic community under one roof. The physical proximity of different disciplines would encourage internal communication. Practically, the scheme called for generalized buildings which could be easily modified, presenting the fewest possible limitations to the growth and change of the academic enterprises to be housed. The proposed plan anticipated multi-use assignments of the space to be built and was designed with the expectation that integrated services would be provided to all parts of the building system. The overriding aim of the new plan was, of course, to ensure that the educational plant would operate with the maximum of economy in both its original construction and its operations. Particular attention was given to lighting, heating and ventilating and construction techniques. It was a plan that assumed from the outset the capability for extension and expansion in logical and economical fashion.

The criteria for the individual working environments grew out of a comprehensive analysis of all of the activities proposed. These were summarized by activity type; they included laboratories, offices, and teaching spaces.

This analysis led to the evolution of a standard structural bay or module, in which each bay was to be capable of accommodating the most common activities, in contrast to a tailor-made design for a single, specific activity. Each bay was to be capable of further subdivision, and by connection, expansion into larger units of space. Provisions were made for long range flexibility, including future infilling, in some two and three story spaces required for major pieces of engineering equipment in the early years. The assumption of change was fundamental to this plan. In brief, we have here an example of a centralized evaluation of individual user's criteria, and the systematic coordination of these desires into a general building framework providing basic services, or the possibility for services, without major difficulty or cost.

Building Design

The basic building unit consists of a structure approximately 60 feet wide (22 meters) and a structural bay of 15 feet by 20 feet (5.5 x 7.4 meters). The buildings were various lengths and contained no internal bearing partitions. They were equipped with large window units which permitted the penetration of daylight at least to the center of the building, making minimal the need for auxiliary electric lighting during the day. The basic services for these buildings were organized to be distributed at the basement level; utilities were fed horizontally at the basement and first floor level and distributed vertically through a series of corridor chases. The specialized facilities were located either at the periphery of the building system, or as in the case of large community facilities including lecture halls and libraries, were integrated into the design. The specialized facilities whose size, geometry or function did not fit into the general pattern, as for example, large lecture halls, were located at the important crossroads of academic activity so as to offer convenient service to each sector of the buildings,

and to make the walk for faculty and students relatively short.

The first group of buildings at MIT were completed in 1915 and involved the development of three quarters of a million square feet of academic space for engineering, science, and humanities departments. The buildings were occupied in 1916 and during the next several years a number of additional buildings were added to the system as prescribed in the plan. Space was allocated to each department by the central administration and any request for changes in space were channeled through the president or his representative.

PATTERNS OF USE IN THE MIT BUILDINGS

During the sixty years in which the MIT educational plant has been in use a number of trends have emerged:

1. The major schools for engineering and science have remained centered in the original areas assigned, their constituent departments expanding and contracting within the original school areas as predicted;
2. The expansion of these schools has been accommodated principally by filling in or extending new buildings into areas designated for expansion by the plan;
3. Additions for new schools and the inter-departmental laboratories have usually been accomplished by major physical additions or relocations within the plan framework;
4. While the building of "temporary" structures during World War II disrupted the "normal" process for adding academic and research space, it permitted the development of interdepartmental laboratories related to, but not under the control of regular academic departments. It further, housed new, interdisciplinary activities, and experimental ventures, and acted as a surge area for rapidly growing research activities based in

existing departments;

5. The pattern of space requests for expansion have usually been for space adjacent to existing activities where there can be strong horizontal communication;

6. Response to curricular changes has usually required modifications in classrooms and teaching laboratories. The desire for a more intimate educational experience has tended to encourage smaller teaching spaces of the seminar variety while the pressure for more economical use of teaching staff has tended to generate requests for large teaching spaces at the lecture hall scale;

7. The increasing quality of preparation of entering students and the frequency of advanced standing status of entering freshmen has stimulated many reviews of the traditional teaching laboratory function and has resulted in the development of more self-study and self-paced laboratory experiences. This in turn, required physical changes in the organization and equipment of the undergraduate teaching laboratory. Whereas earlier teaching laboratories were characterized by long rows of laboratory stations in which each student would perform the same prescribed experiment, we now find more generalized laboratory settings in which students may pursue a variety of plans to strengthen areas in which they have not yet had exposure;

8. There have been major changes in the use and organization of office space for both administrative and academic purposes. The traditional closed office plan now competes with the open landscape plan in many departments;

9. Engineering research laboratories which have used full scale equipment in the past are using smaller, more complex instrumented experiments requiring more power and greater environmental control;

10. Micro-electronics, and the bio-medical sciences now

require very sophisticated space. Clean rooms, negative pressure, low noise and other requirements are now commonplace.

While as noted, the style of operation is frequently changing the range of activities had remained quite constant. The building system has accommodated: Office uses that range from the traditional closed office plan to the open landscape offices now popular in both academic and commercial buildings; engineering and science laboratories requiring both large spaces to house full-scale machinery, and areas for the complex, small scale instrumented experiments more common in these times; new work in micro-electronics, and the increasingly sophisticated spaces required in the bio-medical sciences. Most of these latter operations have been accommodated by upgrading the services and micro-environments within the basic building system.

Time Frame for Change

Given the elaborate preparations to facilitate change in the needs of the MIT community and the nature of trends noted, it may be useful to look at the actual implementation of the flexibility built into the system so many years ago. In general, this flexibility has been used frequently by the science, engineering and design disciplines and infrequently in the humanities and social science areas. MIT's experience clearly suggests that the nature of the academic enterprises will govern the stability or the instability of the physical environment. In an academic community whose principle intellectual activities are predicated on change, where the emphasis is on discovery, modification, and innovation, the working environment must reflect and be supportive of those activities, or the enterprise will flounder - at the least, it will not reach its full potential.

The tempo of change at MIT can be measured by two indices; first, the actual requests for changes in space which

may include expansion or modification. Currently this involves an average of 70 requests a year involving at least 700 room changes. This has represented about 5% of the academic and research plant annually. Second, in spatial terms, approximately 200,000 square feet of the four million square feet in academic and research space are involved in some form of change or modification each year.

Communication and Interaction

While the quantitative dimensions are important measures of utility, there are others we have found to be equally useful in gauging the effectiveness of the MIT physical plant.

Easy opportunities for informal verbal communication have high value for the MIT community; it is a principal resource in the constant flow of ideas. We have found that the maximum communication impact is achieved within 100 yards where there is a "line of sight" eye contact. Eye contact is maximized in the double loaded corridor system that serves as the street network for MIT. Where an academic or research activity is housed in a separate, free-standing building as close as 100 yards away, there is a feeling of deprivation among the faculty, a feeling of being out of the main stream. This is usually followed by interim efforts to create what we might call, a critical mass in community size, in an attempt to replicate the easy communication patterns in the main academic buildings.

A classic example of the communication ideal is illustrated in a story told about Professor Norbert Weiner, the father of Cybernetics and professor of mathematics at MIT. He was a man of enormous intellect, curiosity and sociability. He would regularly set out from his office and wander down the corridor, stopping to look in on his colleagues in chemistry, physics, metallurgy, and electrical engineering. He would question, interpose ideas, and

generally stimulate conversations with many people during his walks along the corridors of MIT. From these initial contacts there grew evening sessions, which he hosted, and which many suggest, led to the development of major contributions to modern electronics, computer theory and technology. They also contributed to the notion of interdisciplinary laboratories which would deal with problems requiring many skills.

There are less dramatic but equally important communication centers within the building network that have proven useful. The restrooms, coffee vending areas, and department headquarters where students and faculty alike may pick up assignments, mail, and the news of the day, are all simple but powerful devices that assist in encouraging communication between members of the community.

Beyond the fairly direct value of communication between faculty members that is facilitated by the strong, horizontal orientation and clear sight lines provided in MIT buildings, there are physical arrangements which have important symbolic value. The location of the MIT President's and Chancellor's offices is at the center of the Institute, on a major circulation path, and close to a principal lecture hall. This location is highly visible and suggests a psychologically accessible administration. Even the door to these offices is, by design, transparent. In the same way, faculty offices are interspersed with research laboratories and teaching spaces, lending them greater visibility and accessibility to students than they might have if the faculty were tucked in a tower.

In fact, one tower building we have at MIT, built, in part, to accommodate weather and radar equipment, is a classic example of the failure of such a building to meet the communication needs of this academic community. Twenty-three stories tall, with 3200 square feet of assignable floor

area per floor, it provides for quiet isolated work areas. To mitigate the isolation in this building, the faculty has had to create a social surrogate for communication and interaction: Coffee and tea are served in the faculty/student lounge from 2:00 p.m. on each day to encourage faculty and students from the various floors to come together. It is difficult, however, to encourage people from outside the discipline to enter into these daily unstructured encounters. The faculties housed in this building must go back into the main corridors and ways of the Institute to interact more naturally with their colleagues.

Territoriality

With all of this emphasis on communication and interaction, with all the provisions for change and flexibility, one might ask what has happened to the primal need for one's own place, one's own "turf" - space that one can control as one would one's cave or castle. At MIT, this urge is recognized and met by a sharing arrangement which attempts to acknowledge and respect the need for territorial control without, however, implying ownership.

While the responsibility for the assignment and financing of space for academic and administrative units is exercised by a central committee, the MIT space management system involves a number of shared responsibilities. The central administration must delegate certain rights and responsibilities, as any owner would to leaseholders. Furthermore, if an academic unit can make a case for additional space needs, it is the task of the central administration to find it, finance it and prepare it for academic use. Conversely, if space is no longer needed by a particular Institute organization, it may be retrieved to be held in reserve, or it may be reassigned to another needy academic activity. The most dramatic of these situations occurs when an academic department, having grown out of its available space, or anticipating a major growth

spurt, makes a case for a new building. The space it vacates then becomes an Institute resource to be allocated on the basis of the presentations of the various schools and departments. This is also true when an academic program's enrollment or a research group's support, falls to a point where it cannot effectively use the space it previously had been assigned.

The deans of the schools and their departmental heads are given considerable leeway in the use of the space assigned. An annual audit of all space is conducted to provide them and the central administration with an account of the volume and type of space that has been placed under their control. Inventory data on all of the 7.3 million square feet of usable and assignable academic, residential and service space is maintained in a computer program called INSITE.

Some space is, of course, shared. The principal teaching spaces, classrooms, lecture halls, etc., are assigned to the Institute Registrar for use on a scheduled basis to academic classes from all departments. Although there are inevitable complaints about scheduling, this system is far preferable to having individual departments control small blocks of classroom space, since except in extraordinary cases, this generally leads to gross inefficiency in the use of classroom space. There are, of course, some situations where departmental seminar rooms prove to be a valuable, mult-purpose resource, and a number of these do exist on the MIT campus. The sharing of teaching space, however, should be seen in context: Less than 5% of the total net assignable area at MIT is devoted to classrooms or lecture hall space.

Lest we suggest that the space management procedures at MIT are so well accepted that no one suffers from "turf" syndrome, I would be less than candid if I did not report

that; academic and administrative units do vie for space. For the availability of space is often the key ingredient in negotiations for program support. The allocation of space can encourage program growth, and denial will just as effectively discourage an academic enterprise. Space is one of the principal "seed capital" resources that is employed to support new programs, maintain existing activities and revive faltering but important academic and research ventures.

The Human Dimension

Ultimately, the utility of spatial arrangements is measured by the ability to satisfy human needs. At MIT, the 900 faculty members, the supporting research and administrative staffs, plus the student body of 8,000 have had to find some significant level of satisfaction in the environment in order for them to perform effectively.

This can be no small feat when individual satisfaction and desirable patterns of relationship can vary from discipline to discipline: Chemists who do not want, for technical reasons, the direct rays of the sunlight to shine in the laboratories but who, for quite understandable reasons want to know if the sun is shining; the mathematician who cherishes quiet, but who does not want to be isolated; the humanists and social scientists who relish a room with a view; the engineers and scientists for whom the ability to grow crystals, maintain laboratory animals within limited tolerances and install and operate sophisticated laboratory equipment without fear of shutdown is essential; and everyone for whom a motor emitting a 60 cycle hum can be devastating.

Tenured faculty members will spend an average of thirty years at MIT teaching students, conducting research and carrying out other institutional responsibilities. They will be highly dependent on the physical environment to support their efforts and will rely on a management process that

will provide for the equitable allocation of space resources when required.

ADMINISTRATION OF SPACE RESOURCES

Space Management, Organization and Procedures

The organization devices that attempt to meet the range of needs that are generated by the MIT community have been evolving for over half a century. They are currently embodied in an administrative committee called the Committee for Research and Space Planning, (CRSP), chaired by the senior academic officer of the Institute, the Provost, and consisting of representatives from research, administration, planning, operations, finance, and personnel. In addition, there is a staff which provides technical support to the committee.

The committee meets weekly throughout the year and is available to any member of the MIT community. The staff ensures that each request is logged in and by virtue of its frequent meetings the committee is encouraged to reach decisions promptly.

This committee is a central source of policy with respect to space allocation and the financing of space change. At the beginning of each fiscal year, all of the Institute's departments and organizations are notified that space related matters should be submitted to the committee before January 1.(1) These proposed changes are then analyzed and evaluated with respect to need, cost and planning implications. The requests are then evaluated by priority against the resources available for the support of space changes in that particular year. Priorities are established, reviewed with the deans of the various schools, and with their agreement, these priorities will form the basis of the space change program for the coming fiscal year.

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(1) See Appendix 1

The success of the CRSP, however, is measured by its ability to maintain a balance between short, medium and long range space needs. Its chairman, the Provost, who also has oversight responsibility for academic programs at MIT plays a central role in the success of the management of academic space. The Provost's ability to convey a sense of equity in space matters is a vital element in the development of mutual trust between the central administration, deans, department heads and faculty. Without this confidence in an even handed resolution of space demands, it would be impossible for such a system to operate in as open and effective a manner as it presently does.

Financial Procedures

Funding responsibility for space allocation and space changes is also placed under the control of the Committee on Research and Space Planning. The committee is allocated a block of funds each year to assign to the various projects that it approves. This sum can range from $200,000 to two million dollars. In addition, special funds for unusual space change projects may be released by the central administration. In some cases a department may be asked to contribute to part of the cost of a project.

Since a large proportion of MIT's activities involve sponsored research, a significant proportion of the space change requests are in connection with research projects. The space used for these projects becomes in turn, the basis for the calculation of overhead recovery, some portion of which is allocated by the central administration to help finance the space change projects required by these research activities.

Projections for space change needs and the related budgetary requirements are prepared each year by the planning and fiscal staff and are based on estimates of changes that are expected and levels of activity in each of the

academic and research areas.

Depending on the size and nature of the project, the fiscal officers will recommend financing a space change from either operating funds or from capital funds. Such decisions can have a significant effect on the overall fiscal condition of the Institute and as a result, a careful analysis is usually made of the financing options for each project and the financial and planning implications for each alternative.

CONCLUDING REMARKS

In conclusion, we have at MIT a physical plant organized to facilitate change conveniently, efficiently and economically. Initiative for space requests are decentralized, and once submitted are reviewed for fiscal and other planning considerations and then acted upon promptly. The allocation of this space is highly centralized. Space inventory and accounting systems provide up-to-date information to ensure reasonably effective use of the academic plant.

The style and procedures for the management of space resources at MIT reflects the MIT institutional style and organization. It is one where there is central allocation of all of the principal resources, but substantial delegation of responsibility in the use of resources once assigned. It is a relationship where the central administration can encourage creative academic entrepreneurs by its ability to control the allocation of space and dollars. The committee as an instrument of central policy can adjudicate conflict, respond to new needs, maintain oversight on central and common areas and take initiatives in meeting future needs.

The effectiveness of these procedures is largely a function of the importance the central administration places on this activity, and the general consensus that it is an effective tool for the allocation of space. By placing responsibility for this activity in the senior academic officer, the administration has demonstrated the importance it places on this aspect of the Institute's affairs. By maintaining a simple, visible, dependable space management process that encourages use, MIT has tried to reinforce the partnership of users and managers that has provided for the effective use of space over the years. A partnership that has been a significant resource in ensuring maximum feasible utilization of space during periods of growth as well as periods of economic constraint.

APPENDIX I

PROCEDURE FOR REQUESTING SPACE CHANGES

Background

Previous submissions of requests for Space Changes have frequently been made verbally or as part of other correspondence with such requests subject to possible misunderstanding by those who must investigate, evaluate or take other action. All but the most simple requests must be examined for impact on plans and resources of the Institute and, together with related information, prepared for review by the Committee for Space Planning. The following is submitted for information and guidance regarding planning, preparation, liaison and procedures for space changes.

Space Change Request

The attached space change forms are intended to provide a simple and direct method for representation of anticipated requirements for new space or changes in assigned spaces. The form is designed to accommodate all types of space changes and certain items of the form may therefore not be applicable to a given request. It is desired however, that as much information be provided as conveniently available. Seemingly unimportant information to the originator may be essential in gaining approval of the project.

The form should be routed via those who need-to-know to the Planning Office where administrative processing will be immediately commenced. All requests for space change work expected to commence on or after the beginning of the fiscal year should be received by the Planning Office at least by the end of the preceding calendar year. A project, for example, which should be started on July 1, should be forwarded to the Planning Office prior to the preceding January.

Space Change Definition

A Space Change is a renovation or major alteration of a room where, in most cases, the occupant or use of the room is changed. The term frequently applies when an area is transferred from one department or activity to another. Repair and maintenance, such as painting or replacing a broken fixture are not considered space changes in themselves although painting, plumbing repair, increase in electrical service, improvement in ventilation capacity or an air conditioning installation may, for example, be part of a regular space change.

Funds

A yearly appropriation of General Funds is made for space changes. This amount is declared in about January of the year preceding the fiscal year for which it is to be expended. The total estimated cost of the requested space change projects is then, by deliberation, reduced to the amount of funds available. Special funds from a great variety of sources may also be made available during the year. They are less predictable, however, and are frequently obtained by the activities for which the space changes are implemented.

Repair and Maintenance

Repair and maintenance consist of upkeep or renovation of the structure of a building or its fixtures where work is necessary to insure satisfactory functioning or appearance. As previously stated, repair and maintenance are not, in themselves, space changes.

Utilities Changes

Utilities changes consist of new or modified installations of power, lights, water, telephone or mechanical services. Examples of this work might be the installation of a new 220 volt outlet for a machine, providing an additional laboratory sink or moving a telephone. Such changes are usually requested by submitting a requisition form to the Physical Plant Department and money for this work is ordinarily provided by the Department concerned. Utilities changes are not, in themselves, space changes.

Furnishings

Furnishings, exclusive of those for new buildings and for certain major space change projects, are normally procured by issuing a requisition directly to the General Purchasing Office using the expense account number of the office or department concerned.

Basic standards for furnishings are in compliance with approved policies of the Institute. Such standards are formulated to ensure a balance between environment, design and realistic budgetary limitations.

Selection of furnishings may be made by the Office or department concerned in consultation with the General Purchasing Office. If design coordination is warranted, assistance is available.

As previously stated, each department or office will provide for anticipated furniture needs in their departmental expense budget for the ensuing year. The General Purchasing Office is available for assistance in preparing this budget. In the case of unexpected furniture demands, application can be made to the appropriate Dean, Vice-President or other Institute officer to whom the activity reports.

A very limited amount of funds for new furniture associated with a space change have been available in past years to allow for those few cases where the above normal and emergency procedures for furnishings procurement are not possible. These funds are controlled by the Committee for Space Planning.

Typical examples of furnishings procurement could be represented in steps as follows: (Information submitted by the Purchasing Office)

A. In the case of a routine furniture request:

1. The office or department selects furnishings with assistance provided by the General Purchasing Office. Office of Laboratory Supplies maintains an inventory of many basic items of office furniture which are readily available. These are listed in the Catalogue of Office Supplies and Furniture.

2. The departmental expense account number is used on the requisition. Other accounts of the department may be authorized for this use.

B. In the case of a furniture request where professional advice is warranted and where funds are available within the department:

1. The department or office requests assistance from the General Purchasing Office, for selection of furnishings.

2. A preliminary design sufficient to establish a budget for departmental approval is provided.

3. Following departmental approval of the preliminary design and budget, a detailed design and furniture schedule are prepared for final approval by the department.

4. A requisition is issued to the General Purchasing Office by the Department or Office.

C. In the case where professional advice in furniture selection is warranted and departmental or office funds are not available:

1. The department or office requests assistance in the preliminary selection of needed furnishings from the General Purchasing Office. Required items are determined and a budget is prepared.

2. Application for funding is made by the department or office to the appropriate Dean, Vice-President or other Institute Officer.

3. Upon receipt of an account number, a detailed design and furniture schedule is then prepared for final approval by the department.

4. The final approved schedule of furnishings is submitted to the General Purchasing Office for procurement.

Moving

Moving of furniture or equipment may be part of a space change or it may be requisitioned separately by the Department or other activity. It is most frequently done by the Physical Plant Department. Moving expenses, other than those which are part of a Space Change, are normally defrayed by the benefitting activity.

Cleaning

Cleaning of rooms may be part of the space change project. Daily cleaning is provided at no expense to the Department concerned by the Physical Plant. Heavy cleaning, not part of a space change, is normally requested by Purchase Requisition to the Physical Plant Department and costs are defrayed by the activity concerned.

Space Change Approvals Procedure

As previously mentioned, requests for Space Changes should be made prior to January 1. Endorsement of the Dean or appropriate Institute Officer is necessary as provided on the request forms. Such endorsement may be negative, positive

or qualified. Requests are reviewed, roughly estimated for cost and compiled in an all-Institute Space Change Program and Budget in January preceding the fiscal year of action. The Committee for Space Planning, which meets regularly, is then briefed on the details of the Program and budget.

In each case of a Space Change, pertinent information will be gathered and a recommendation made to the Committee by the Planning Office and/or the requesting activity which will most nearly meet the needs of the Institute. A decision or further recommendation will then be made by the Committee after careful evaluation of requirements and available resources.

Although a rough estimate of cost may be prepared initially for planning purposes, it is normally later refined by the Physical Plant Department which is generally best qualified and charged with the task of providing accurate estimates for space changes.

It is intended that space changes be reviewed by the Committee for Space Planning prior to March 1 and a decision as to the Institute's ability to fund the projects communicated to the requesting Department if possible by March 15. Such transmittal is normally made via the appropriate Dean or other Institute officer.

If a space change request is submitted later than January 1, the foregoing procedure will be followed although, in a realistic sense, late requests may not receive primary consideration since the initial budget meetings can only deliberate on known projects.

If it is not possible for the Committee to fund a space change, and the need persists, requests should be submitted again for the following year. Space Change requests are normally valid for the fiscal year of application and should be resubmitted if necessary. For good reasons, they are not automatically carried forward.

APPENDIX II

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

SPACE CHANGE REQUEST

Date _____

Department _____

Room Number (s) _____

Person having primary supervision over room (s) _____

Equipment required _____

Furnishings required (Please see instructions for funding of furnishings purchases) _____

If known funds are available for renovations and furnishings please state _____

Completion date desired _____

Latest acceptable completion date _____

Date space can be made available for renovation _____

Approximate number of persons who will be using the room at one time _____

Descriptions of and reasons for desired space change:

Submitted by: _____ Date _____

Approvals: _____ Date _____
Director or Office Head

_____ Date _____
Institute Officer