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THE METHODOLOGY OF USING OFFICE SPACE
IN A COST-EFFECTIVE MANNER

by

Kathi J. Doerr Mitchell

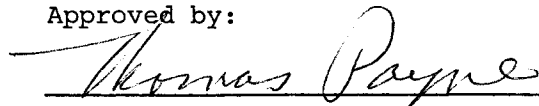
B.A., University of Colorado, 1977

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1982

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Dean, Graduate School

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INTRODUCTION

In the past generation the majority of work performed in the United States has shifted from the production of physical goods to the delivery of services such as education, health care, financial, welfare, and other public services. While two decades ago the majority of employees were in the factories, presently nearly sixty percent of American working people are in offices.¹ This trend will most likely continue and as a result the number of people who work in an office environment will increase enormously.² Since the growth of white collar workers has been at a greater rate than that of factory workers, in the future there will be a greater emphasis placed on marketing, sales, advertising, credit, tax revenue administration, information dissemination, and social services administration. A greater productivity of workers and a more efficient delivery of services will be necessary as the demand for services increases. How these services are carried out within an office setting will affect the delivery of these services to the public. In the past, American private and public organizations have made great strides in the area of productivity. In the area of efficient integration of people, paper and machines within office settings, such strides have not been obvious.³

Presently, too many public organizations and American businesses base their decisions about office space requirements and work flow logistics largely on instinct. Very few public organizations apply any type of systematic method of space utilization and allocation design when considering the expansion of new facilities, even though the need

is there. All too often the decision to expand or move offices is made at the last minute, with minimal information, often with disastrous results.⁴ The final decision is usually made without an objective analysis of both present and future space requirements. In some instances the department with the most influence or power within the organization controls the outcome of such reorganization. In other instances, management only considers the decor or setting when thinking about expanding present office facilities or moving to another location.⁵ Unfortunately, management has often decided to construct a new office building without having a full understanding of what is required and necessary within the interior of the office at present nor in the future.⁶ Instead, management of public organizations should be considering the greater effectiveness of increased work-space efficiency and its relationship to productivity.

The use of obsolete office procedures is a major problem as it impedes the progress towards greater productivity and efficiency of many organizations. Out-dated attitudes toward environmental working conditions result in unnecessary and expensive labor turnover that increases financial waste. Similarly, out-dated attitudes towards space requirements and space utilization wastes millions of dollars every year.⁷ In order to remedy this problem a revolution in office space planning is needed by those interior design professionals who are involved in office space reorganization.⁸

In the future, office planners will not only need to examine the organization's space requirements but will also need to be concerned with serving new technology, conserving energy, and meeting the needs

and preferences of people who work in the offices.⁹ Most importantly office planners will need to focus on the efficiency and economics of new building designs. Not only should their concern be with how office space will be allocated, but more importantly, how it will affect productivity.

Since clerical services have been subject to rapid growth and dramatic changes over the past few years, many people now feel that office designing and planning is in a new era.¹⁰ In this new era of office design a methodology of using office space in a cost-effective manner needs to be examined in order to provide a systematic approach to space allocation. Although each renovation proposal or design for a new building to be constructed will have its own needs or specifications for space assignment, office planners have found that a standard set of procedures can be followed in order to assess space needs.¹¹ The proper use of space is important as it may involve many millions of dollars and seriously affect the efficiency and effectiveness of an organization's office procedures and as an end result, its overall productivity. In addition, the plan and design of offices play an important part in man's environment, since a large part of a working person's life is spent within this domain. As a result, space planning and design are becoming a more important sociological tool for improvement of people's lives. Through the proper use of space, people can be more productive and happier.¹²

This paper will address the problems related to the proper use of space in the most cost-effective manner within public organizations. Part one of the paper will consist of definitions of space allocation,

space utilization, and effective use of space. This section will also address the different methodologies available to make appropriate space design decisions and will describe various feasibility studies used to collect necessary data. The strengths and weaknesses of each feasibility study will also be discussed. The second part of the paper will present a case study as a description of one public organization's utilization of a feasibility study. The case study will demonstrate the appropriateness of the feasibility study for that particular situation and help define conventional procedures which might be used in determining space needs and effective use of space in a similar situation. The case study was drawn from a reorganization space study done for a student services building at a Northwestern university.

CHAPTER I

METHODS OF DEVELOPING A SPACE USE PLAN

Definitions

A space utilization and allocation study is an organized procedure in which objective measures are obtained on how office space is utilized for a particular kind of activity.¹³ The obtained measures will usually result in a data base from which a meaningful interpretation or appropriate space utilization can be made and from which a space allocation design can be developed and implemented.¹⁴ These plans can enable organizations to develop a more effective use of existing office space.¹⁵ A comprehensive study of space utilization is also helpful in identifying specific office space needs within any organization in conjunction with developing a comprehensive program of office space expansion for future needs.¹⁶ Data resulting from space utilization studies can usually be relied upon for the purpose of justifying requests for appropriation of monies and for establishing priorities among competing public-supported institutions for construction or re-allocation of office space.¹⁷

The purposes behind a space utilization study can most easily be identified by asking two questions:¹⁸

1. What are the current space utilization problems?
2. What does the organization expect to do with gathered information about space usage, once it is collected and analyzed?

Measures developed must also be conceived based upon the particular type

of activity for which the office space is to be designed. The reasoning behind a space utilization study depends, to a large extent, on the type of organization to be studied and the nature of the space analysis.¹⁹ All these factors must be considered when developing a space study.

The effective use of space in this paper will be defined as designing an office environment to achieve maximum production at a minimum cost. Offices should be allocated and designed to supply the maximum utilization of interior work space in addition to creating a working environment in which each individual can function with integrity to the fullest of his productive capacity.²⁰ Consideration of work-flow patterns is also important as it may be closely related to the functioning of the offices being studied. The reader may wish to define the effective use of space differently from that presented. It should be noted that such definitions are usually based on the organization's particular space problems and current office situation.²¹

Methodology

A methodology of space utilization is the development of specific plans and procedures to be followed that will assist the organization in assessing its office space needs. The methodology specifically defines and lays out the phases of the space utilization design development process.²² The standard activities within this process that can be included are; initial investigation/information gathering (effective use of space can be defined at this time), design choice (type of feasibility study to be used), collection of data, data analysis, choice of space allocation, design, implementation and evaluation (see Figure 1). These activities should provide a controlled approach to the

development of a space allocation design that will meet the public organization's objectives and goals.²³

Initial Investigation/Information Gathering

One of the first procedures to take when assessing the proper use of space consists of examining the structure and needs of the organization whose office space is to be redesigned. It will also be necessary to discover whether the company currently has any guidelines for allocating space. Only by examining the individual needs of each organization can the space requirements and the criteria for space within the company be assessed, since each organization has different requirements. Various considerations that are usually examined are (a) the products or services the organization offers, (b) its growth pattern over the past decade, along with its anticipated growth pattern over the next decade, (c) office personnel and their specific space needs; (d) the current space usage and (e) work-flow patterns.²⁴ Next, the guidelines for space allocation of the individual organization, if they exist, need to be looked at in order to integrate these preexisting standards within the developing plan. After examining the space utilization requirements, the researcher should derive some guidelines to be followed when determining what information is to be gathered that will be helpful when assessing the company's present and future office space needs. Examples of necessary questions to be answered are:

1. Projected rate of personnel growth and office space needs per department in the next five to ten years.
2. Building locational factors and how that affects the operation of each office if placed in various areas of the building.

FIGURE I

STEP I

INITIAL INVESTIGATION/
INFORMATION GATHERING
-Meeting with client
organization
-Available alternatives

STEP II

DESIGN CHOICE
-Feasibility study to
be used
-I.D. of evaluative
issues or criteria

STEP III

COLLECTION OF DATA
-Develop survey to be
administered or
activities to be
observed
-Collect criteria
measures

STEP VII

EVALUATION
-Make adjustments
and improvements

STEP VI

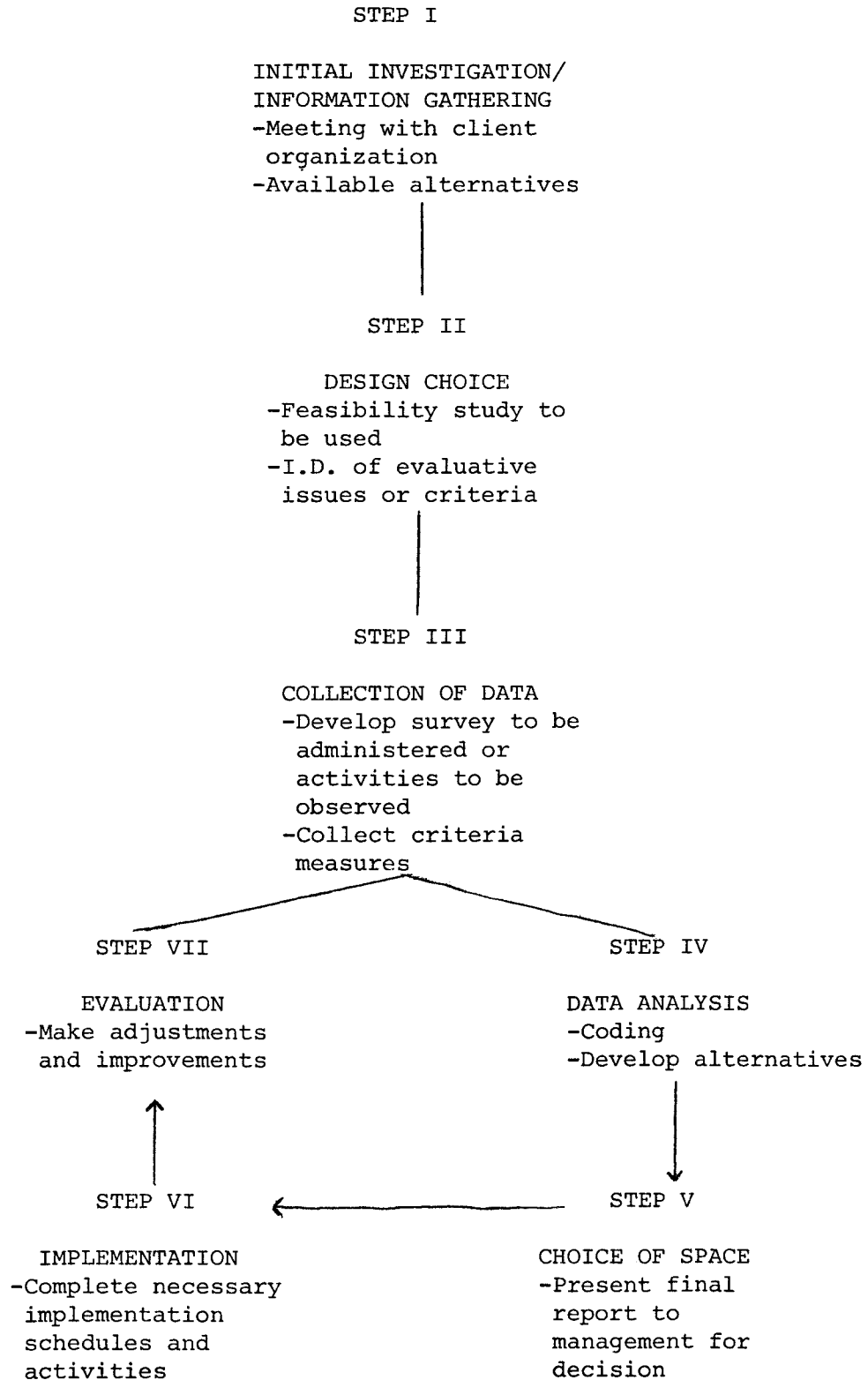
IMPLEMENTATION
-Complete necessary
implementation
schedules and
activities

STEP IV

DATA ANALYSIS
-Coding
-Develop alternatives

STEP V

CHOICE OF SPACE
-Present final
report to
management for
decision



3. Comparison of various alternative renovation proposals available to the organization in particular reference to each office's accessibility to other departments with whom they have the most contact.
4. How many square feet does each office presently use?
5. Will the new office location provide each office with more or less office space?
6. Will the new office space allow the offices to produce more or less services?
7. Will the proposed office allocation make the office functions and services more or less effective?
8. What effects upon public usage and/or possible income will result from the planned office design and location?
9. What advantages, or disadvantages, to office functions will occur as a result of a particular move over time.

The next step is to investigate preliminary space usage alternatives available to the organization, such as whether it can relocate to another building, expand present facilities, or only use currently available space.²⁵ Later on, more specific space usage plans can be generated as the necessary data becomes available. Additionally, the finances available for renovation or planning are important to assess at this time for each of the various preliminary alternatives. The most important criteria when examining space usage alternatives is to choose the location that will enable present and future organizational requirements to be realized most effectively and efficiently. The space usage alternative usually chosen will achieve maximum production at a minimum cost to the organization. In order to objectively study all the important factors in a space utilization project, a feasibility study of each alternative must be completed.

Design Choice/Feasibility Study

The objective of a feasibility study is to report to management of the organization the probable characteristics, costs, and benefits of implementing alternative space designs. A feasibility study will include the collection of data and data analysis from which a space design choice can be made. The feasibility study also provides generalized space project assets and liabilities in the form of a formal report.²⁶

The involvement of employees within the organization is critical at this point in order to gather information necessary to judge the impact of alternative space usage designs. A recent study conducted by Steel Case, Inc., found that both executives and office planners agree that an important issue in office design and planning today is the relationship between employee productivity and their involvement in the planning process. Since sixty percent in both groups feel that this issue will gain in importance over the next ten years it is important that employees become involved in office space planning.²⁷

The Steel Case National Study of Office Environments: Do They Work?, done in 1978, found that significant numbers of office workers felt that their offices would be more comfortable and efficient if they had more of an input in the planning of their office space.²⁸ Many architects and designers interviewed in the same study also discerned that there was not enough communication with the users of the offices they plan.²⁹ Most design professionals also acknowledged that presently they have too little contact with the employees who will ultimately use the facilities they plan.³⁰

The final results from the feasibility study determine the efficiency and effectiveness of each space design alternative and its impact on the maximum utilization of interior work space at a minimum cost. The feasibility study provides a firmer basis from which to choose one best alternative design.³¹

The feasibility study also addresses the technical aspects of the proposed space allocation project and requires the development of conceptual solutions. It provides a set of facts that can be analyzed in terms of the overall organization's needs and objectives, and in terms of the interrelated needs of departments. The resulting communication systems, filing systems and work-flow patterns must be designed to fit the specific requirements of the organization rather than reflect the prejudices of various singular departments or employees.

Considerable space allocation design experience along with technical expertise are required to gather the proper information, analyze it and reach practical conclusions.³² This type of work requires much judgment and is usually conducted by experienced individuals either from inside or outside the organization. The success of the entire space allocation project may depend on the qualities and capabilities of the individuals conducting the feasibility study.³³

The major responsibility of individuals involved in the feasibility study is to determine the operating and technical "workability" of the various space design alternatives. To this end, the researchers must assure that the feasibility study addresses:³⁴

- Specific goals (the operating directives)
- Possible means for attainment (the technical considerations)
- Generate the appropriateness of each alternative space design (maximum utilization of work space to increase productivity)

Once the feasibility study has been completed, the administrators of the organization should be in a sound position to select an appropriate plan. The decision about office design and layout can then be made with assurance that the overlooking of important facts has been minimized and that available alternatives have been fully considered. The feasibility study enables the organization to design a planned program of space allocation for maximum efficiency.³⁵

Feasibility studies can be accomplished in various ways. Four types of feasibility studies will be discussed. These will include the following techniques: surveying department heads involved in the planned reorganization, direct observation of office operations by the researcher, using an office planning and design team, and computer simulation to identify space needs.

When choosing a particular feasibility study, however, the administrators of the organization must first decide which type of feasibility study will most appropriately fit their needs. For example, the organization must examine how much money and time are available to spend on the project. Surveying department heads is probably the most inexpensive and involves the least amount of time. However, this may be one of the least efficient techniques for assessing space needs. On the other hand, the use of a design team is usually more expensive because

of the number of people involved but may prove to be more thorough. Direct observation by the researcher usually results in a more complete study but will also involve more time than the other methods. Computer simulations are capable of taking into account a large number of factors and deriving a highly integrated utilization plan, but are extremely costly and involve highly technically trained personnel.

A feasibility study may take several weeks or months to complete. The length of time is determined by many factors such as:³⁶

- The size and complexity of the firm
- The extent of space usage problems in current operations
- The amount of time needed to collect necessary data
- The complexity of alternative space design solutions

The above considerations need to be examined before a feasibility study choice can be made.³⁷

Surveys

Surveying of various department heads can be used in order to obtain the necessary information of departmental space needs. One or two individuals with space utilization and design experience either from inside or outside the organization can be made responsible for developing the surveys and for their administration. If the institution has only one or two knowledgeable persons to conduct a space utilization study the surveying of department heads method may be the most appropriate one to use because of the minimal amount of personnel necessary to conduct this type of study.

Particular requirements are usually kept in mind when using this approach. The survey usually takes into account the type of information

the organization needs to have gathered from the department heads as suggested by the developed space usage criteria. As a result the survey adds to the overall knowledge of the client's space problems. The survey needs to be designed in a manner that is specific to the organization's needs while minimizing possible biases.³⁸ The survey can include questions such as the following which may assist the researcher in gathering the necessary information.

- 1) What are the department functions and what office procedures are used to meet these functions?³⁹
- 2) What contact does each department have with the outside public and is there a need for the department to be located where it is usually more accessible to the public?⁴⁰
- 3) What is the relationship of each particular department with other offices? Which departments are in frequent or regular communication with other departments and what is the nature of the communication? (i.e. telephone, personal and paper communication all pose different problems, as personnel traffic denotes a need for physical proximity, whereas paper and telephone communications can be handled in various mechanical and electronic methods).⁴¹
- 4) How many employees does each department have?⁴²
- 5) What are the office functions of the personnel in each job category?⁴³

- 6) Will there be an increase in personnel in the various departments? Why? If possible, can the anticipated growth be specified in the various job categories?
(Future personnel needs should be accounted for in office space planning.)⁴⁷
- 7) Is there an anticipated increase of equipment in each department? What equipment has been purchased but not yet installed? In addition what equipment is contemplated to be purchased in the future? (additional equipment may require more office space)⁴⁵
- 8) What types of records does each office store? Does the volume of stored material increase each year? If so what is the approximate yearly increase? Is there a policy of record retirement into dead storage or of destroying records? (accumulation of records, depending upon storage policy, may require future increases in space needs)⁴⁶
- 9) From the personnel lists indicate what kind of office space each person in each department needs to occupy. (this will help identify the need for private office, semi-private office, or desk in open area)⁴⁷
- 10) Are there any group conference needs which require separate office space within the department?⁴⁸
- 11) Does each department have any special needs for waiting areas, or for similar purposes?⁴⁹
- 12) Does the present office location make each department's office functions and services more or less effective? (so

as to eliminate possible future space problems)

- 13) Where would each department head prefer their offices to be located?

Answers to the above questions will usually provide the necessary information needed to assess the various departments' space needs as they address such variables as; current and future space needs, possible future personnel growth, possible increases in office hardware, anticipated record storage needs, departmental accessibility requirements, and public usage numbers. These categories of information tend to be ones of primary concern and additional areas may necessarily have to be developed according to individual organizational needs. The obtained data can be tabulated, and a summary of findings and suggestions presented to the client.

The method of surveying each department head is effective since the researcher is able to obtain necessary information from each department. This method helps determine how they use office space and how much space each department needs in order for the office to maximize usage of interior work space as indicated earlier. The use of surveys can also be advantageous because it allows the organization's staff members to be directly involved in the space study.⁵⁰ This type of involvement can encourage the organization to develop space utilization studies on a regular basis as a part of its internal program analysis. By directly involving its employees the organization faces a good probability that there will always be a few staff members who are able and conscious of the need to develop an efficient use of office space, thereby maximizing productivity and the effectiveness of the organization.⁵¹ Another

important asset of surveying department heads is that the organization can accomplish the task of allocating space at a lesser cost by using its own personnel rather than by bringing in outside experts.⁵² In addition, if the staff members are involved in the space utilization study they are more likely to put into practice the resultant findings and recommendations due to the amount of time and effort they have invested in the study.⁵³

One weakness of using surveys is that they usually take the department head's opinion as fact and may not consider the opinions of other office personnel, unless the researcher consults them in preparing their responses. Hence, the department head may be put in the position of being the most knowledgeable in assessing what types of office space are most effective and productive for his department. It may instead be the case that an architect or the researcher of the project could be more knowledgeable in assessing individual office space needs. Additionally, the director may only be looking at the project from his perspective, not at the whole project and how it will affect each individual office. However, surveys of individual personnel within each office usually results in cumbersome data collection and analysis. Before deciding to use the surveying of department heads method the above considerations need to be examined.

Office Planning and Design Team

An office planning and design team approach has the ability to undertake an in depth study of the entire organization's operation. The design team is usually composed of individuals from inside or outside the organization who are knowledgeable in space assessment and planning.

The use of exterior personnel may be required to minimize particular departmental power domination of the planning process and to provide an expertise in space planning. By using outside experts, however, it should be kept in mind that individuals directly connected with the organization may lose interest in the findings and recommendations for space usage change unless they are directly involved in the study. A team process is also recommended as a greater range of data, deeper analysis, more alternative plans, and minimal bias are likely to be resultant in outcomes. The team usually divides into groups of two or three, and observes the various departmental activities and functions along with interviewing personnel to obtain necessary information. A thorough analysis can be made of the existing facilities to determine work-flow procedures, space needs, and the day-to-day work relationships between the company's various departments and divisions and other operations.⁵⁴ The information gathered by the design team should enable the researchers to identify which space usage alternatives will allow maximum utilization of interior work space creating the greatest productivity at a minimum cost.

The design team can study the offices involved in the space allocation study and determine their specific needs. Top and middle management personnel are usually interviewed by the design team in regard to their specific concerns and office requirements. The office planning and design teams can also study the flow of traffic in and out of the offices to learn which offices have the most contact with each other. Other areas that the design team can observe are file and storage procedures, work stations and specific personnel work tasks. In

addition, personnel should be interviewed as to their present problems and future work needs, perhaps based on a similar format to that of the survey cited previously.⁵⁵

If the method of using an office planning and design team approach is chosen it should be remembered that a good dialogue is essential in order for the team to obtain the information and data necessary to determine the final space proposals. This cannot be done unless direct communication has been established from the outset of the project between the office planning and design team and the client office personnel.⁵⁶ As noted earlier, unless staff members directly connected with the public organization are involved in the study they may lose interest in the findings and recommendations made by the design team. Direct involvement can be achieved by either asking knowledgeable staff members to be part of the design team or by establishing a good dialogue between the consulting design team and client office personnel.⁵⁷ Each organization will have to weigh the benefits and liabilities of placing staff members on the design team based on the above information and their organizational situation.

Using this type of methodology is beneficial in that it is more inclusive than other designs because of the manpower involved along with their additional expertise. The additional manpower provides the opportunity to collect a wider range of data and conduct a more in depth analysis, which usually results in identifying space usage alternatives that will usually provide the maximum utilization of interior work space at a minimum cost. Through the use of a design team researchers can personally observe and interview personnel involved in the space

allocation which usually minimizes bias from within the organization. However, one major weakness of this method is that the study team may be expensive due to the number of people involved. In addition the use of a design team may result in a duplication of efforts along with inconsistencies in the tasks to be performed and criteria to be followed. These considerations need to be evaluated before choosing this particular method.

Direct Observation

An additional type of feasibility study is direct observation of the organization's operations. Direct observation is similar to using a design team except that the principal researcher would be involved in observing office personnel and procedures. Through the use of direct observation the researcher can determine each department's space needs and eliminate departmental biases. Instead of distributing surveys to all the departments involved the researcher of the project personally observes and interviews personnel in order to obtain the necessary information. The researcher of the project, through direct observation, is usually able to do a more complete space usage study by personally assessing the client's needs. From the information gathered the expert is able to draw up alternative space plans that will maximize the utilization of work space and in turn increase productivity at a minimum cost.

Direct observation is similar to using an office planning and design team in that the principle researcher has the opportunity to do an in-depth study of the entire company's operation. The researcher performs a complete analysis of the existing facilities to determine

work-flow procedures, the day-to-day work relationships between the company's various departments and divisions, individual personnel work tasks, the necessary space requirements for specific work stations, and public usage numbers. From the above gathered information the researcher is usually able to determine the client's space needs and make recommendations about space plans that will maximize the utilization of work space.

Through the use of direct observation the researcher is usually more aware of each individual's office space needs and develops the ability to establish communication lines with all personnel involved in the study through interviews. As stated previously such involvement is highly important to effect later implementation of any developed plan.

With direct observation the researcher has the opportunity to establish a better rapport with the organizational personnel involved in the study. As noted earlier, it is important when doing a feasibility study that the researcher establish a good rapport with the management and employees of the client organization who are involved in the space allocation project. Establishing a rapport among the employees is important since one of the primary reasons for a decrease in satisfaction with the office environment over the past five years is due to a lack of appropriate input from staff members about work space requirements.⁵⁸ By utilizing the direct observation method the researcher may be able to solve the problem of not enough employee participation in office planning.

An additional advantage of direct observation is that the researcher is usually more objectively involved in assessing individual

office needs and will be able to minimize departmental bias due to his objectivity and background in space assessment and utilization. One weakness of this method, however, is that it is extremely time-consuming to observe and understand the workings of each office, especially in a highly complex organization. Furthermore, this method does not minimize individual researcher bias. Investigators usually take into consideration the above variables before instituting this method.

Computer Simulation

Computer simulation is helpful for an organization that has office layout problems as it simplifies planning with multiple objectives. Computer simulation also requires a minimum amount of staffing. The simulation is used as a tool to help the decision makers identify tradeoffs, overall strategies and compromises. The evaluation process of the computer simulation can determine the specific space needs of each department which should make the planning process more open and direct.⁵⁹ An evaluation process will help the organization identify how offices are usually allocated and designed, to supply the maximum utilization of interior work space to increase productivity, at a minimum cost to the organization. Perhaps one of the more successful elements of this method lies with the ability of the client to be in command of the solution process. New runs can be made quickly and easily in order to respond to the many changes in goal emphasis and partial space plan acceptance until a solution is found that is satisfactory to all parties involved in the space study.⁶⁰

The number of variables involved in a space study can be weighted in importance and the weighting can be changed in order to devise a

solution that is fair to all. By using a computer simulation the researcher is usually able to combine all of the conflicting objectives involved in a space study and is able to cope with the large dimensionality of the problem. A computer simulation devises a layout procedure that organizes and displays the collected information in a systematic manner. It is also helpful in that it does much to facilitate decisions that are inherently political in nature.⁶²

In the future, most likely there will be a variety of computer space planning systems that will effectively solve space problems now treated only by office designers and architects.⁶³ By using a computer simulation the search phase of the layout design process can be improved since it is able to handle large amounts of data in a systematic, unified, and rapid fashion. When such large amounts of data are involved this approach may prove to be the most cost-effective. In addition, computerized solutions can assist the researcher in generating new and innovative designs.⁶⁴

Even with the benefits the computer adds to a space allocation project, it cannot perform many of the functions that people seem to think it can. For instance, the computer cannot perceive relationships among the data bits since a computer cannot think.⁶⁵ Another deficiency in the use of computers is that they have not yet been programmed to utilize a human language. As a result, the gathered information must be translated into the appropriate computer system language.⁶⁶ This requires a particular expertise and mathematical sophistication which may be beyond the grasp of a space design researcher. This fact may incur an added expense to employ individuals with such knowledge.

An additional liability is that the researchers must still collect all the data. A computer cannot eliminate this task. Such collection of data involves many of the difficulties already mentioned which are associated with surveys and similar feasibility studies.

Computer simulation could be beneficial due to the amount of time it would save a researcher in tabulating the final data. However, the expenses incurred could be high due to the rental fee for usage and the technical staff needed. The researcher needs to weigh the expenses of the use of such a simulation in comparison to the savings generated. Projects involving large numbers of variables and massive amounts of data might find such a simulation to be cost-effective.

Feasibility Study/Summarization

After one of the above methods is chosen and performed, the researcher can prepare preliminary space plans, citing the benefits and weaknesses of each plan. Comparative costs must also be examined in order to determine the effectiveness of each alternative space plan. Once this is completed, finalized recommendations can be made to the director of the organization along with a discussion of the benefits and weaknesses of each space plan. The completed information concerning space utilization plans and layouts usually provides the management of the client organization with a clearer understanding of its specific space needs. Administrators will then be in a better position to choose a specific space layout design that utilizes interior work space to its maximum advantage or ask the researcher to gather additional information if needed before a final decision is made.⁶⁷

Implementation/Evaluation

The feasibility study will assist the management of the organization in choosing the space allocation design to be implemented. Once management has made a final choice, the researchers can aid the organization in implementing the project. A step-by-step project plan is now required to finalize the chosen space design plan. This will involve the attainment of commitments from all affected persons and offices as to their required effort and schedules for implementation. This procedure gives everyone involved the opportunity to understand their responsibilities during implementation and time to complete all of the required preparation activities before implementation takes place.⁶⁸ It is critical, at this time, to ensure that all persons involved in the space allocation have been contacted and all schedules are coordinated.⁶⁹

After the space design has been in effect for approximately six months to one year it should be evaluated as to its strengths and weaknesses. Evaluation time spans, however, should be flexible enough to take into account the time necessary for the system to produce measurable results. The evaluation phase is a critical step in the space allocation process because it provides a means by which further adjustments and improvements can be made, if necessary, and a means of assessing the overall effectiveness of the implemented plan, as related to the initial criteria established at the project's start.⁷⁰ As the employees within the organization become familiar with the new design, they should identify areas that need to be improved upon within their domain.⁷¹ The evaluation phase should meet performance and requirements

criteria originally established by the organization.⁷² In this way feedback is developed, which insures an on-going process of evaluation which assists the organization in meeting the space needs of everyone in the most cost-effective manner.

CHAPTER II

CASE STUDY

Introduction

The following case study was a project done for a director of a university student services building at a Northwestern university during the summer of 1981. A renovation proposal for the student services building had previously been drawn up for the director. A graduate student was asked to determine whether that plan was cost effective. Due to the fact that criteria had been previously set for allocating space in the student services building by the student government, the set criteria had to be taken into consideration. However, additional criteria were introduced which were helpful in determining the cost-effectiveness of the proposed space utilization plan. Some of the additional criteria used in the study were: the projected rate of personnel growth and office space needs per department within the next five years; effects upon functioning for each department if placed in certain vicinities within the building; rating of each student services department by building department directors in order to assess the importance of each department to the student body and other building services; and the overall effectiveness of departmental functions following the application of the proposed renovation plan for each department. Data for examination by criterion was gathered by the surveying of department heads method. These data and criteria were used

to rate and prioritize each department's space needs at present and in the future.

The above methodology was appropriate to this study as the renovation proposal had previously been drawn up and an assessment of the proposal's advantages and disadvantages was needed. Because of a short amount of time in which to do the assessment, the method of surveying department heads was used to determine departmental space needs (see appendix). The survey helped identify the space needs of each department and the benefits and weaknesses the present renovation plan presented to each office.

The data from the surveys was coded according to the set criteria in order to demonstrate how the plan would be beneficial to some and disadvantageous to others. A scoring system was devised to measure the overall efficiency and the cost effectiveness of the student services building renovation proposal.

After the mathematical computations of the data were charted out according to departments, answers were then assigned points on the basis of the question's importance to the study. Weightings of each question were decided upon based on the criteria for space utilization that the student services building administration and the researcher had adopted. The researcher then interpreted the data and evaluated how the plan would be advantageous or disadvantageous to each department.

From these final results the researcher was able to assess whether the space utilization proposal was indeed space and cost-effective and was able to make final recommendations to the student services building director. Other alternative plans were developed and presented which

would be more space and cost-effective for the building departments concerned. The researcher also discussed the limitations of the evaluation. The conclusion suggested from the investigation was that there was reasonable doubt that the present renovation proposal would be unsatisfactory and that other alternatives should be examined.

Methodology Used

The following case study utilized the surveying of department heads technique described earlier in the feasibility study section of the paper. It should be noted, however, that this particular case study differs somewhat from typical space utilization studies described in the first section of the paper. The differences lies in the fact that the renovation proposal to be discussed had previously been drawn up by the student government and the department directors involved in the space allocation. The researcher was asked to determine whether the renovation proposal was cost effective along with the proposals advantages or disadvantages. Due to a short amount of time in which to do the assessment, coupled with the fact that there was only one researcher to conduct the study, the technique of surveying department heads was utilized. By surveying the various department heads, necessary data and information was collected in order to assess whether the space utilization proposal was indeed space and cost-effective. Recommendations were then made to the student services building director based on the above analysis.

As indicated earlier in the paper, there are liabilities to using the surveying department head's technique. One problem with this method is that the researcher must assume that the department head's opinions

about his department's use of space is reliable. In addition, it must be assumed that the directors involved in the study usually took into consideration the whole perspective of the project and how it would affect each individual office, instead of looking at the project only from their departmental viewpoint. It should be noted that in this particular study the information collected from the surveys that seemed to have obvious bias build into them (i.e. inflated usage numbers) were reexamined. This was accomplished through follow-up interviews with the individuals involved in filling out the survey to determine whether the information they provided was valid.

The above considerations were taken into account and it was decided that the surveying department head's technique was the most appropriate feasibility study to use.

Case Study

The case study to be presented is an example of the surveying of department head's technique. Contained within this case study is a description of the steps taken in utilizing this method. The first section of the case study consists of a description of the basic criteria utilized in assessing the student services building allocation. The following section discusses the sources of information and actual criteria utilized within the study. This is followed by a description and rationalization for dividing the study into two parts; the overall effectiveness of the renovation proposal per department and cost effectiveness of the renovation proposal per department. The next section provides a description of the basic model of how data was to be utilized. The results are presented next followed by an interpretation

of those results. The last section attempts to discuss an evaluation of the study through a description of its' limitation.

Introduction

1. Criteria for Space Allocation

A. CRITERIA FOR SPACE IN THE STUDENT SERVICES BUILDING AS DESIGNATED BY THE STUDENT GOVERNMENT ON 6 MARCH 1977.

- (1) Greatest benefit for the greatest number of students.
- (2) Users of the space should require accessibility and convenience.
- (3) Student government should get priority whenever practicable in use of student services building.
- (4) When considering the use of the student services building space, the cost of converting the space should be considered.
- (5) Revenue generating groups who can provide service to students of the university should be allowed space on the basis of; (1) The amount of revenue they can generate. (2) The number of students they can serve.

B. ADDITIONAL CRITERIA USED IN DETERMINING SPACE NEEDS.

- (1) Projected rate of personnel growth and office space needs per department within the next five years.
- (2) Effects upon functioning for each department if placed on the student services building mall.
- (3) Rating of each department by student services building directors based on importance to the student body and other student services building services.
- (4) Over all effectiveness of the application of the renovation proposal for each department.
- (5) Does the renovation proposal make each office more accessible to other student services building departments with whom they have the most contact with?

2. Sources of Data and Criteria

The criteria used for the space effectiveness study for the student services building renovation proposal are listed above in section A. The criteria used for the study were the criteria for space in the building as designated by the student government on 6 March 1977 and other criteria established by the researcher. The additional criteria were found to be relevant to the analysis of the renovation proposal, after a survey of the literature on office space utilization and cost effectiveness was completed and the current building space situation.

The student government criteria for space in the building was used because the student government has been delegated the authority, in conjunction with the student services building director, to allocate space in the student services building as they see fit (Section I. A.). In addition, other important criteria were also used in analyzing the student services building renovation proposal (Section I. B.). The additional criteria were developed in order to rate and prioritize each department's space needs. These criteria were formulated based on information stemming from the situation along with information presented in the literature researched for the project.

The majority of the data tabulated was collected from answers to surveys given by directors of the departments involved in the renovation proposal. The departments surveyed were the Bookstore, The Copy Shop, Legal Aid Services, Leisure Activities Office, Reprographics, Student Awareness Center, Wilderness Program and the Women's Place.

The information collected from the directors was important to the study because the directors were able to specify their department's

space needs by identifying how the proposed office location would affect the ability of their offices to function. The specific office needs were determined by usage numbers, future changes in office personnel, office equipment, and other space needs, the type of office space needed, how important placement of the office on the mall is to each department, the accessibility of each department when moved to their allocated office space, etc.⁷³

The researcher judged that the directors have the greatest ability to identify their future office needs and for this reason the following study was based largely on their opinions. Other data used to assess the student services building renovation proposal were budget folios in the 1978-1979, 1979-1980, and 1980-1981 school years along with projected budget folios for the 1981-1982 school year of the revenue generating departments within the student services building, to determine their past and future ability to generate revenue. The amount of revenue generated per department was important data to gather since one of the criteria set by the student government for the allocation of space, was the amount of revenue each department can generate.

3. Division of Study into Overall Effectiveness of Renovation Proposal per Department and Cost Effectiveness of Renovation Proposal.

The study is divided into two sections. One section evaluated the cost effectiveness of the student services building renovation proposal and the other an evaluation of the renovation proposal as it affects each department. The cost effectiveness study was based on criteria A., B.1., B.2., and B.3. listed below. The criteria set by the student government were used because the student government body is authorized

to govern how the building is used and has set criteria for allocating space in the student services building. The projected rate of personnel growth and office space needs per department within the next five years was used because it is important that the space within an office be sufficient for at least five to ten years when spending a set amount of money to convert said office space.⁷⁴ Such an assessment is essential in order for the organization to be sure that the money invested to redesign the office space has been used efficiently and economically and will not have to be redesigned in the near future. The effects upon functioning of each department if placed on the student services building mall was used because of the importance many department directors placed on their office being situated on the mall due to the publicity and accessibility the mall provides. The rating by directors was also included in the cost effectiveness section since the directors were able to rate the importance of the various student services building departments to the students and other student services building services based on their experience and knowledge derived from working within the student services building system.

The second section on the overall effectiveness of the renovation proposal per department included two criteria which apply to this section, which are criteria numbers II.B.4. and II.B.5. listed below. These two criteria are the overall effectiveness of the application of the renovation proposal for each department and if the renovation proposal makes each office more accessible to other student services building departments with which they have the most contact with. The overall effectiveness of the application of the renovation proposal for

each department is important because of the amount of money being spent on the student services building renovation proposal. When spending a set amount of money it is important that the space renovations are done in the most effective manner possible. From the answers on the survey an assessment of the renovation proposal for each department was determined. The criterion which analyzes if the renovation proposal makes each office more accessible to other student services building departments was used due to the fact that when assigning office space it is important to minimize the distance between offices who have the most contact with each other in order to increase accessibility and in turn increase working time.⁷⁵

4. Basic Model

Each department within the majority of the categories of criteria listed above was rated with either advantage, neutral, or disadvantage points, defined as +1, 0, and -1 based on answers given by the directors to questions on the survey. In the case of other categories, which could be ranked on an ordinal scale, i.e., usage numbers, amount of revenue, rating of departments by the directors, projected increase of office personnel and needed office space and equipment, a ranking of one to nine was used. A rating of nine being given to the department with the highest ranking since that was also the total number of departments involved.

The +1, 0, and -1 score was used because it flattens the data and only picks up extreme important differences. This type of scale picks up significant information located at extreme ends of the scale and makes it obvious which department is advantaged or disadvantaged by the

renovation proposal. Although this type of scale may eliminate the information located between the two extremes it was my intention, by using the scale, to identify the departments most disadvantaged or advantaged by the move. A rank order system of one to nine was utilized for assessing those categories that could be systematically ordered because it provided a method by which priorities could be assigned and valued by department.

The various categories were also weighted depending on their level of importance to the study. All of the criteria were given a weighting of two times the original score, except the rating by department directors of individual departments, which were given a weighting of one. The rating by department directors was given this weighting because the researcher felt that the ratings provided by the directors may not be totally representative of student needs and opinions and may inappropriately overpower other factors which are more representative and assessed in this study. The reduced rating provided a means by which this information could be included, yet minimized. A direct assessment of student needs and opinions would have been more desirable, but this option was not readily available due to the time of year within which the study was made, since students, who traditionally use the student services building, were absent.

Results

A. OVERALL EFFECTIVENESS OF THE RENOVATION PROPOSAL PER DEPARTMENT

1. OVERALL EFFECTIVENESS OF THE APPLICATION OF THE RENOVATION PROPOSAL FOR EACH DEPARTMENT (I.B.4)

Bookstore = 6
 Copy Shop = 10
 Legal Aid Service = 16
 Leisure Activities Office = 16
 Programming Activities Box Office = 8
 Reprographics = 12
 Student Awareness Center = -6
 Wilderness Program = 2
 Women's Place = -8

2. DOES THE RENOVATION PROPOSAL MAKE EACH OFFICE MORE ACCESSIBLE TO TO OTHER STUDENT SERVICES BUILDING DEPARTMENTS WITH WHOM THEY HAVE THE MOST CONTACT WITH (I.B.5)

Bookstore = 0
 Copy Shop = 8
 Legal Aid Service = 8
 Leisure Activities Office = 8
 Programming Activities Box Office = 0
 Reprographics = 8
 Student Awareness Center = 0
 Wilderness Program = 0
 Women's Place = 0

3. TOTALS

**Bookstore = 6
 Copy Shop = 18
 Legal Aid Service = 24
 Leisure Activities Office = 24
 **Programming Activities Box Office = 8
 Reprographics = 20
 Student Awareness Center = -6
 Wilderness Program = 2
 Women's Place = -8

**Combined cost in renovation proposal

B. COST EFFECTIVENESS OF THE STUDENT SERVICES BUILDING RENOVATION PROPOSAL

1. CRITERIA SET BY STUDENT GOVERNMENT (I.A.)

Bookstore = 34
 Copy Shop = 28
 Legal Aid Services = 8
 Leisure Activities Office = 40
 Programming Activities Box Office = 34
 Reprographics = 4
 Student Awareness Center = 4
 Wilderness Program = 6
 Women's Place = 10

2. PROJECTED RATE OF PERSONNEL GROWTH AND OFFICE SPACE NEEDS PER DEPARTMENT WITHIN THE NEXT FIVE YEARS (I.B.1)

Bookstore = 0
 Copy Shop = 0
 Legal Aid Service = 8
 Leisure Activities Office = 8
 Programming Activities Box Office = 4
 Reprographics = 0
 Student Awareness Center = 28
 Wilderness Program = 0
 Women's Place = 24

3. EFFECTS UPON FUNCTIONING FOR EACH DEPARTMENT IF PLACED ON STUDENT SERVICES BUILDING MALL (I.B.2)

Bookstore = 2
 Copy Shop = 4
 Legal Aid Service = 0
 Leisure Activities Office = 4
 Programming Activities Box Office = 4
 Reprographics = 6
 Student Awareness Center = 4
 Wilderness Program = 2
 Women's Place = 4

4. RATING BY DEPARTMENT DIRECTORS (I.B.3)

Bookstore = 8
 Copy Shop = 4
 Legal Aid Service = 7
 Leisure Activities Office = 7
 Programming Activities Box Office = 9
 Reprographics = 3
 Student Awareness Center = 4
 Wilderness Program = 6
 Women's Place = 5

5. TOTALS

In the cost effectiveness section the four criteria were added up within each department and given a total. Next all nine department totals were added up. That total number was divided into the total dollar amount cost of the renovation proposal. This equation provided a value which was multiplied by the total number of points assigned to each department based on the above four criteria. This equation provided a dollar amount for each department based on priorities set by the criteria utilized. The results are listed below (Table 1) in three columns. The first column delineates the total number of points accumulated per department, the second column being the dollar amount appropriated to each department by the student services building renovation proposal and the third column being the dollar amount assigned by the cost effectiveness study.

TABLE 1
COST EFFECTIVENESS CRITERIA

	TOTAL # POINTS	SSB PROPOSAL \$ AMOUNT	COST EFFECTIVENESS \$ AMOUNT
Bookstore	44	\$79,200	\$84,504.42
**P.A. Box Office	51		
Copy Shop	36	\$24,600	\$31,573.08
Legal Aid Services	23	\$30,200	\$19,501.02
Leisure Activities	51	\$81,300	\$45,502.34
Reprographics	13	\$35,100	\$10,214.82
Student Awareness Center	40	\$ 0	\$35,287.56
Wilderness Program	14	\$27,000	\$11,143.44
Women's Place	43	\$ 0	\$38,073.42

**P.A. = Programming Activities

Interpretation of Data

The results from the cost effectiveness study based on the student government and the researchers criteria found that the money granted to the Bookstore and the Programming Activities Box Office, and the Copy Shop are justified. However, Reprographics, Legal Aid Services, Leisure Activities Office, and the Wilderness Program did not meet the cost amounts appropriated to them. In addition, the Student Awareness Center and the Women's Place were assigned money from this study which they were not allocated at the outset of the renovation proposal.

The results from the overall effectiveness of the application of the renovation proposal per department indicate that the renovation proposal for the Bookstore and Programming Activities Box Office, the Copy Shop, Reprographics, Legal Aid Services, and Leisure Activities Office seem to be highly beneficial to each individual department. On the other hand, the proposed office space for the Wilderness Program, the Student Awareness Center, and the Women's Place may not be the most practical utilization of space at this time. Following is a discussion of the effects that the renovation proposal will have on the various departments involved and their special office needs.

1. Bookstore

The Bookstore is an essential service needed in order for the University to function. The main reason that the offices within the Bookstore are being remodelled is due to the relocation of the Programming Activities Box Office on the mall. When it was decided that the Programming Activities Box Office would be relocated on the mall the Manager of the Bookstore was delegated the authority, by the student

services building director, to redesign the office space as he deemed necessary. The offices that will be redesigned provide essential administrative services to the Bookstore. In addition, the renovation of the Bookstore offices will keep postage and ticket sales traffic outside on the mall and will also allow more privacy for the manager and other Bookstore administrators. The privacy provided will allow the manager more confidentiality when dealing with customers and office personnel. The present administrative offices are entirely open to the public and the traffic into those office cannot be regulated. It is also hoped that shoplifting may be curtailed in the greeting card section of the Bookstore because the administrative offices will be able to watch the area more closely when situated in their new location. It should also be noted that the Bookstore rents a finite amount of space from the student services building and uses those offices as effectively and efficiently as possible. The amount of space rented provides financial support to the student services building.

2. Copy Shop

The Copy Shop is also benefited by the overall application of the renovation proposal and was additionally found to be cost effective. By being placed on the mall the Copy Shop should have increased usage due to its visibility to the public. The Copy Shop is also an essential service to the majority of student services building departments and its convenience within the student services building is beneficial to both students and other building services. Although other directors felt that the Copy Center was not as important a service, when compared with other departments, they do have the most potential for a profit

increase. It should also be noted that the Copy Shop also rents a finite amount of space from the student services building which in turn provides financial support to the building.

3. Legal Aid Services

Legal Aid Services did rank lower than the other departments in the cost effectiveness section. However, it should be noted that they do have strong support from the student body due to the vital legal services they provide. This factor was emphasized by thirty-eight letters that were written by students during the period of time when the renovation proposal was being decided on by the student government in the 1979-1980 school year. All of the letters unanimously call for Legal Services to be granted more space in order to provide increased confidential services. The overall application of the renovation proposal was highly rated because the new space will provide more room, efficiency, improved services, better working conditions and more privacy by being placed off the mall. The proposed location places Legal Aid Services in a more accessible area close to the Programming Activities Office and the student government offices with whom they have the most contact with in the student services building. Legal Aid Services also projects an increase in personnel which will in turn require more office space which the designated office space should provide.

4. Leisure Activities Office

The Leisure Activities Office did not fare as well as other departments on the cost effectiveness section of the study. However, they are one of the highest revenue generating departments in the

student services building and also have a high usage number. Hence, they deserve space in the student services building as set by the student government criteria. Analysis of the proposed office space to be used by the Leisure Activities Office shows that it will be beneficial to them as the overall application of the renovation proposal demonstrates. The director of the Leisure Activities Office felt that placement on the mall will provide an increase in usage of their services and in turn should increase their profits, which provides financial support to the student services building. The move will also place the Leisure Activities Office in closer proximity with the student services building director, student services building administrative offices, student government offices and the Copy Shop with whom they are in constant contact. At this time the director does not predict an increase in office personnel or a need for more office space in the future, so the office space designated in the student services building for them should be sufficient. Leisure Services also feels that placement of their office on the student services building mall will provide greater visibility to the students and will also bring a greater traffic pattern to the student services building.

5. Programming Activities

The Programming Activities office was one of the higher ranked departments in the cost effectiveness section and was also medially benefited by the overall application of the renovation proposal. By moving the Programming Activities Box Office the ticket and postage sales will be more convenient for customers by being placed on the mall. It is also hoped that eventually the class notes will be distributed

from the Box Office decreasing the traffic in both the Programming Activities Office and the student services building information desk/lounge area. In addition, the Box Office hours can be extended during the days of concerts and other events which will decrease traffic on the third floor ballroom area the night of a Programming event. However, one aspect that should be considered before relocating the Box Office is the energy cost of heating and cooling the Box Office when it is located on the mall. By being located on the mall the temperature within the Box Office will have to be effectively regulated especially in the winter months when the mall gets quite cold. The Programming Activities Office was highly rated on the criteria scale and also by the directors in importance to students and other student services building services. The study found that the Programming Activities Box Office would benefit from being on the mall and the renovation proposal provides them that opportunity. Programming Activities does project an increase in personnel due to longer hours and it seems that the new office space will provide them with adequate space for that increase.

6. Reprographics

Although Reprographics did rank lower than the other departments in the cost effectiveness section it should be taken into consideration that they do have a strong possibility of becoming a revenue generating department when placed on the mall, which is evident from the results in the overall application of the student services building renovation proposal. Reprographics also does a considerable amount of work for the Programming Activities Office which is considered one of the highest priority groups by the study. Their score in the overall application of

the renovation proposal indicates that the move will benefit the department, and by being placed on the mall they have the highest probability of increased usage and profit if designated that space. However, it should be noted that in the past three years, Reprographics has lost money and has recently been reduced to one staff member. It is recommended that, before spending set amount of money on the office renovation of Reprographics on the mall, the feasibility of Reprographics becoming a profit-making enterprise, along with obtaining the needed personnel to support the office, be investigated by the various groups involved. Perhaps at this time it would be best if Reprographics was incorporated with the Programming Activities Office due to the fact that the majority of the work done by Reprographics is for Programming. As indicated by the cost effectiveness study it is not advisable that said amount of money allocated to Reprographics be spent on them at this time because of their current situation. It should also be noted that a better sign or advertising as to where they are or will be located would be helpful now and in the future in order to increase usage and profit. In addition, Reprographics has special office needs such as the use of a dark room, the placement of various kinds and sizes of equipment and good ventilation, which the majority of other offices do not have, which should be kept in mind when converting new office space for them.

7. Student Awareness Center

The Student Awareness Center did score low on the criteria bracket set by the student government. However, it should be noted that they are one of the two groups disadvantaged by the renovation proposal. In

addition, it is important to the Student Awareness Center that they be placed on the mall and they also predict that their personnel will grow over the next five year period. It may be feasible in the future to place the Student Awareness Center and other affiliated groups in the office space to be built for Reprographics or by building additional office space on the west end of the mall where the rock garden used to be. Before doing so, however, it is important to find out if the Student Awareness Center needs to stay near the student government offices. By moving the Student Awareness Center also provides Legal Aid Services, which predicts an increase in office personnel, and the student government offices with additional office space, if needed, in the future. It should be noted that the Student Awareness Center was assigned a monetary value in the cost effectiveness section of the study which was not assigned by the current renovation proposal which suggests that consideration be given to providing them with adequate space and a location that fits their needs.

8. Wilderness Program

The Wilderness Program was ranked quite low in the cost effectiveness section, in addition to not being very advantaged by the renovation proposal. Due to these findings it seems inappropriate at this time to spend money on a new space for them specifically. Due to the fact that the Wilderness Program has no desire to be placed on the mall, space off the mall may be more appropriate. The Wilderness program has not projected an increase in either personnel or office space growth in the future so the amount of space they have been allocated should be sufficient. It may be best if they were placed off

the mall, perhaps in Room 130 since it is not important to the Wilderness Program, like it is to the Student Awareness Center and The Women's Place Offices, to be located on the mall.

9. Women's Place

The Women's Place was assigned a monetary value in the cost effectiveness section which was not commensurate with that allocated by the current renovation proposal. The amount assigned suggests that the Women's Place should be allocated space and location better fitting their needs than is currently provided by the renovation proposal. The subsets within this category which brought their rating up was the usage number and the projected increase in personnel and office space for their particular department. The overall application of the renovation proposal for the Women's Place leaves them in the most disadvantaged position. Due to the fact that they would benefit from space on the mall and do expect an increase in office space and personnel in the future it may be advisable that they be allocated more space. They may be able to use the space assigned to the Wilderness Program to a better advantage than the Wilderness Program can at this particular time. Another recommendation would be to build office space for them on the west end of the mall on the main floor where the rock garden is. That space could be divided by the Student Awareness Center and the Women's Place personnel. The additional space would provide them with easy access and also provide them with the visibility they need by being located on the mall, hence, making their drop-ins higher. However, this may add additional costs to the renovation proposal. If none of the above alternatives are feasible a larger sign or some type of

advertising is important so that students and the public can locate the Women's Place office more readily.

It should also be pointed out that when the student government decided to move the Women's Place office into Room 130 in the 1978-1979 school year it was with the intention that they could use the University Rooms, located on the 3rd floor of the student services building, for their programming events for free. However, policies within the student services building have recently changed, adding a fee for student groups when using the University Rooms. The premise on which the Women's Place office was moved and granted the right to use the University Rooms without charge should still stand. This premise is due to the fact that they have no other space for their programming events in their present office and the additional charge for each usage of a University Room adds to the cost of running their programming events, the use of free space in the University Rooms is important to them.

The Women's Place office is the only office that has already moved to its allocated space. They have had to juggle work hours because not enough quiet space for their staff is available as it was in their original office space. However, they have adjusted and have been able to provide past levels of service to students and the community, which demonstrates an efficient administrative use of space and time. Due to projected increases in usage and personnel the current placement and space allocation appears to be extremely inappropriate.

Limitations of Study

Although various alternatives have been suggested in the above discussion it should be noted that a more adequate study could have been

done if more accurate information was available. Many of the answers given to various questions on the survey were rough estimates which are subject to error. If the study had been taken more seriously the final results would have been more definitive. Some of the answers to the questions on the survey were inconsistent and not well thought out. One example being that one of the department directors surveyed stated that the office space allocated to his/her department was sufficient but when answering the question as to how many square feet his/her department needed the answer was 1500 more square feet than assigned to that particular department. The budget sheets were used because many of the profit estimates were grossly incorrect. When spending such a large amount of money, as is being done on the student services building renovation proposal, it is of utmost important that the information and data collected for the project be as accurate as possible. Although deficiencies in the survey affected the outcome of the study the majority of the information was assumed valid and the above assessments were made.

It is also very difficult in a cost effectiveness study to measure leisure time and educational services in dollar amounts to the students and community, which many of the student services building provide, which this study did not take into account directly. Future studies should attempt to provide some assessment techniques which will take these factors into consideration. It may also be worthwhile to survey other university student service buildings to see how they allocate space, if it has not already been done by the student government. A

more sophisticated computerized approach may also be necessary to provide adequate assessment of space and costs. However, it is evident from this study that greater consideration needs to be given to the current student services renovation proposal before it is implemented.

CONCLUSION TO PAPER

The expenditures made in effort, time and money for construction or redesign of an office building is an important management decision for any organization. Office design can strongly affect the efficiency and productivity of an organization. If the new design does not contribute to the maximum utilization of interior work space at a minimum cost and does not objectively take into consideration all of the organizational needs past, present, and future, the new facility may prove to be a liability to the organization's growth and provision of services. It is therefore important that management make use of all of the various information that may be needed in allocating office space. In too many organizations some departments will often try to influence this allocation so as to gain more office space than other departments and therefore insure that department's increase of influence. It is hoped that by using a space utilization assessment process the organization's space needs will be met and as much bias as possible will be eliminated.⁷⁶

Furthermore, by using one of the feasibility studies discussed a framework for evaluating a space arrangement can be designed which may help management to think more objectively when evaluating projects. However, a feasibility study is no more than a tool. Collected data can only form a basis from which possible corrective courses of action may be taken.⁷⁷ It does not provide ready answers to any of the space

problems. In the end, solutions are all matters of judgment.⁷⁸ The final solution to any problem rests with an alert and intelligent administration. Feasibility studies, however, do force the criteria used to be explicitly defined so that the designers can analyze them and choose the alternative that they feel will be most effective.⁷⁹ Through the use of feasibility studies possible wastes in expenditures and efficiency can hopefully be kept to a minimum, since many of the available alternatives to the organization will be presented, examined, and the best alternative hopefully chosen.

Today, many organizations experience decreases in productivity and waste money. This is due to the fact that management often fails to plan sufficiently in advance for the proper coordination of people, paper, and machines within the office setting. Advanced office planning is necessary in order to keep up with growth of the organization and the ever-changing new technologies. However, management in many public organizations conveniently tries to overcome space problems by ignoring them. As a result, the problem still remains, and soon overcrowding and work flow pressures are felt in the organization. The total impact of these pressures can hurt the productivity, and efficiency of the organization. As a result, the organization has a space design crisis.

Presently it appears that there is an office crisis developing in many public organizations across the country. In order to solve this dilemma management of public organizations needs to head off this crisis. By using a space planning design, such crises can be avoided, increasing efficiency, and making people more productive and happier in their jobs. The skills, experience, and technology exist to implement

adequate space planning studies. At this time, it appears that what is needed to head off these crises is a greater awareness by management that such problems do exist, that techniques are readily available to deal with these crises, and that their usage be made a regular practice.

ENDNOTES

- ¹ Maurice Mogulescu, Profit Through Design (U.S.A.: American Management Association, 1970), p. 10.
- ² Steelcase, Inc., "The Steelcase Study." The Interiors Newsletter, 1978 (U.S.A.: Billboard Publications, Inc., 1978).
- ³ Maurice Mogulescu, Profit Through Design, p. 10.
- ⁴ Ibid., p. 11.
- ⁵ Ibid., p. 11.
- ⁶ Ibid., p. 11.
- ⁷ Ibid., p. 11.
- ⁸ Ibid., p. 11.
- ⁹ "The Steelcase Study".
- ¹⁰ Louis Harris & Associates, Inc., The Steelcase National Study of Office Environments: Do They Work? (Grand Rapids, Michigan; Steelcase, Inc., 1978), p. 98.
- ¹¹ Michael Saphier, Office Planning and Design (U.S.A.: McGraw-Hill, Inc., 1968). p. 3.
- ¹² Mogulescu, p. 15.
- ¹³ John Dale Russell and James G. Doi, Manual for Studies of Space Utilization in Colleges and Universities (Athens, Ohio: Ohio University, 1957.) p. 1.
- ¹⁴ Ibid., p. 4.
- ¹⁵ Ibid., p. 4.
- ¹⁶ Ibid., p. 4.
- ¹⁷ Ibid., p. 5.
- ¹⁸ Ibid., p. 6.
- ¹⁹ Ibid., p. 6.
- ²⁰ Saphier, p. 3.

²¹Russell et al., p. 1.

²²Charles L. Briggs, Evans G. Birks, and William Atkins, Managing the Systems Development Process (Englewood Cliffs, N.J.: Touche, Ross and Co., 1980), p. 15.

²³Ibid., p. 15.

²⁴Mogulescu, p. 18.

²⁵Ibid., p. 17.

²⁶Biggs, et al., p. 13.

²⁷Harris, et al., p. 95.

²⁸Ibid.

²⁹Ibid.

³⁰Ibid.

³¹Biggs, et al., p. 13.

³²Ibid., p. 61.

³³Ibid., p. 61.

³⁴Ibid., p. 62.

³⁵Mogulescu, p. 18.

³⁶Biggs, et al., p. 62.

³⁷Mogulescu, p. 45.

³⁸Saphier, p. 33.

³⁹Ibid.

⁴⁰Ibid.

⁴¹Ibid.

⁴²Ibid.

⁴³Ibid.

⁴⁴Ibid.

⁴⁵Ibid.

⁴⁶Ibid., p. 34.

⁴⁷Ibid.

⁴⁸Ibid.

⁴⁹Ibid.

⁵⁰Russell, et al., p. 9.

⁵¹Ibid.

⁵²Ibid.

⁵³Ibid.

⁵⁴Ibid.

⁵⁵Mogulescu, p. 25.

⁵⁶Ibid.

⁵⁷Ibid. p. 32.

⁵⁸Harris, et al., p. 95.

⁵⁹Larry Ritzman, John Bradford, and Robert Jacobs, "A Multiple Objective Approach to Space Planning for Academic Facilities," Management Science Journal, v. 25, n. 7-12 (1979) p. 906.

⁶⁰Ibid.

⁶¹Ibid., p. 897.

⁶²Ibid., p. 906.

⁶³Charles M. Eastman, "Preliminary Report on a System for General Space Planning," Communication of the ACM, v. 15, n. 2 (Feb., 1972), p. 86.

⁶⁴Richard L. Francis and John A. White, Facility Layout and Location (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1974), p. 94.

⁶⁵Nicholas Henry, Public Administration and Public Affairs (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1974), p. 170.

⁶⁶Ibid.

⁶⁷Mogulescu, p. 63.

⁶⁸Ibid.

- ⁶⁹Biggs, et al., p. 188.
- ⁷⁰Ibid., p. 189.
- ⁷¹Ibid., p. 229
- ⁷²Ibid.
- ⁷³Ibid.
- ⁷⁴Aaron Cohen and Elaine Cohen, Designing and Space Planning for Libraries, A Behavioral Guide (N.Y., N.Y.: R.R. Bowker, 1979), p. 63.
- ⁷⁵Ritzman, et al., p. 897.
- ⁷⁶Mogulescu, p. 64.
- ⁷⁷Russell, et al., p. 6.
- ⁷⁸Ibid.
- ⁷⁹Edith Stokey and Richard Zeckhauser, A Primer for Policy Analysis (N.Y.: W.W. Norton and Co., 1978), p. 158.

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APPENDIX A

APPENDIX A
STUDY GIVEN TO STUDENT SERVICES BUILDING DIRECTORS
July 1981

The following survey is designed to help assess the Student Services Building Renovation Proposal being studied by a graduate student for a student project. How each individual assesses priorities of services and their office needs in the Student Services Building will be beneficial to this project. This project is being conducted under the auspices of the Student Services Building Director. Your answers to the following questions are appreciated and will be kept confidential.

PLEASE ANSWER THE FOLLOWING QUESTIONS ON A SCALE OF 1-5.
PLEASE CIRCLE THE APPROPRIATE NUMBER.

1. How much of a disadvantage is it for your office to be where it is presently?

Extremely disadvantageous				Not disadvantageous
/5/	/4/	/3/	/2/	/1/

2. How would you describe the present renovation proposal for the Student Services Building?

Favor in all respects	Favor in most respects	Neutral	Favor in a few respects	Do not favor at all
/5/	/4/	/3/	/2/	/1/

3. How would you rate your proposed office location as indicated in the present renovation proposal?

Like very much	Like somewhat	Neutral	Dislike somewhat	Dislike very much
/5/	/4/	/3/	/2/	/1/

4. Will the move to the proposed location make your office functions and services more or less effective?

Much more effective	Same	Much less effective
/5/	/4/	/3/
	/2/	/1/

5. If your office is moved to the proposed location, how much more or less accessible will it be to other Student Services Building services and students?

Much more accessible		Same		Much less accessible
/5/	/4/	/3/	/2/	/1/

6. How do you think the office move to the proposed location will affect the ability of your employees to do their work?

Much more effective		Same		Much less effective
/5/	/4/	/3/	/2/	/1/

7. Will the move provide you with more or less office space allowing you to provide more or less services?

Large increase in services		Same		Large decrease in services
/5/	/4/	/3/	/2/	/1/

8. What effects upon usage and/or profit will result if your office was placed on mall?

	Large increase		Same	Large decrease	
<u>USAGE</u>	/5/	/4/	/3/	/2/	/1/
<u>PROFIT</u>	/5/	/4/	/3/	/2/	/1/

9. How would you rate the benefits to students as a result of placing all student services within the same building?

Extremely advantageous		Same		Extremely disadvantageous
/5/	/4/	/3/	/2/	/1/

10. Which has a higher priority, profit-making or non-profit-making services in the Student Services Building?

Profit-making		Neutral		Non-profit-making
/5/	/4/	/3/	/2/	/1/

11. How important is advertising to your department?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

12. How would you rate the services provided by the Book Store in importance to the student body and other Student Services Building services?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

13. How would you rate the services provided by the Copy Shop in importance to the student body and other Student Services Building services?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

14. How would you rate the services provided by Reprographics in importance to the student body and other Student Services Building services?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

15. How would you rate the services provided by Legal Aid Services in importance to the student body and other Student Services Building services?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

16. How would you rate the services provided by Leisure Activities Services in importance to the student body and other Student Services Building services?

Extremely important			Less important	
/5/	/4/	/3/	/2/	/1/

17. How would you rate the services provided by the Wilderness Program in importance to the student body and other Student Services Building services?

Extremely important				Less important
/5/	/4/	/3/	/2/	/1/

18. How would you rate the services provided by the Programming Activities Office in importance to the student body and other Student Services Building services?

Extremely important				Less important
/5/	/4/	/3/	/2/	/1/

19. How would you rate the services provided by the Student Awareness Center in importance to the student body and other Student Services Building services?

Extremely important				Less important
/5/	/4/	/3/	/2/	/1/

20. How would you rate the services provided by the Women's Place Center in importance to the student body and other Student Services Building services?

Extremely important				Less important
/5/	/4/	/3/	/2/	/1/

PLEASE ANSWER THE FOLLOWING QUESTIONS IN THE SPACE PROVIDED.

21. How much space does your office presently need in approximate square feet?
22. Where would you prefer your office to be located?

1st Choice _____

2nd Choice _____

3rd Choice _____

23. (a) How many people used your office services for the following school years? Please include only those people who came into the office.

1978/1979 _____ 1979/1980 _____ 1980/1981 _____

(b) How did you arrive at these figures? _____

24. What do you project will be the percentage of usage change by students and the public once the office is moved? Please indicate if it is an increase or decrease.

In 1 year In 2 years In 5 years
from the move _____ from the move _____ from the move _____

25. How much profit (if applicable) did you make in the following school years?

1978/1979 _____ 1979/1980 _____ 1980/1981 _____

26. Do you project that your profits (if applicable) will increase or decrease after the move?

PLEASE CIRCLE ONE: Increase By how much? _____
Decrease (in percentage)

Please indicate percentage for the following years and if it is an increase or decrease.

In 1 year In 2 years In 5 years
from the move _____ from the move _____ from the move _____

27. What is your projected rate of percentage growth in office personnel within the following years?

In 1 year In 2 years In 5 years
from the from the from the
present _____ present _____ present _____

28. What is your proposed estimate of how much office space you will need in the following years? Please indicate in percentage of actual space as compared to what you have presently. Please show if it is an increase or decrease.

In 1 year In 2 years In 5 years
from the from the from the
present _____ present _____ present _____

29. Please describe the type of space you need for your office to function in reference to office flexibility. In particular, which

would suit your needs best, a rectangle or square? If neither of these fit your particular needs, please describe what will.

30. Which services in the Student Services Building do you have the most contact with?

31. What disadvantages to your office functions will occur as a result of the move?

32. What advantages to your office functions will occur as a result of the move?

33. Please use the following space and the back of this page (if needed) for any additional comments.