**HOW TO ESTIMATE THE BUILDING NEEDS OF A
COLLEGE OR UNIVERSITY**

How to Estimate the Building Needs of a College or University

**A DEMONSTRATION OF
METHODS DEVELOPED AT THE UNIVERSITY OF MINNESOTA**

by William T. Middlebrook

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THIS VOLUME in more ways than one is truly a cooperative undertaking. Many members of the staff have played a part in the planning, the compilation, and the analysis of the materials that are here presented; and in devising the methods that, it is hoped, constitute the major contribution of their effort.

All of the work, at every stage, has had the understanding and stimulating encouragement of President Morrill, who saw from the outset that this study is one more instance in the tradition of self-study and administrative research with which the University of Minnesota has long been identified.

Because of President Morrill's interest, his help, and his encouragement, all of his colleagues who have had a hand in the production of this volume desire that his indispensable part should have proper recognition. Therefore they join in dedicating it to

James Lewis Morrill

PRESIDENT, THE UNIVERSITY OF MINNESOTA

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**HOW TO ESTIMATE THE BUILDING NEEDS OF A
COLLEGE OR UNIVERSITY**

INTRODUCTION

Providing adequate physical plant facilities is one of the greatest problems of higher education today—a problem that can never be definitely and finally solved because education is not a static process. The student population grows, its make-up alters, and its demands on the educational plant change. Equally important, teaching methods alter and improve and subject matter fields expand, requiring new kinds and amounts of space and equipment. Techniques of research—the increasingly vital product of our colleges and universities—are in a constant state of change, and new public services are created, demanding new solutions to space problems.

A long-range plan for any college's physical plant must therefore not only take into account every detail of the present circumstances, but, if it is a good plan, anticipate what will be needed in the future for any given increase in the number of students, staff, and necessary services. Moreover, it must recognize and evaluate the variables so that the methods used in projecting future space needs can be responsive to changing situations. Finally, it must facilitate central administrative understanding and control over what might otherwise be uneconomic and disorganized expansion.

Whatever the method used, it should be both objective and conservative. It should recognize and provide for the great variations among different colleges and teaching units and for differences among the schools and campuses of a university, while at the same time making possible the valid comparisons and cross checks so necessary to efficient administration. It should show present space shortages—in those units where experience indicates that current operations have less space than is desirable—and should set up factors for later adjustment and correction in a continuing study of a best possible accounting and providing for building needs.

For any college, such planning is full of financial implications. A privately endowed or church-supported college must allot its available funds in the manner that will best take care of the needs of its student body. And a state-supported institution must not only do this, but it must also dem-

onstrate cogently to the state legislature—and ultimately to the people of the state—how it can best serve the state in the coming years at least cost.

The final responsibility for planning falls upon the college administrator. He must, particularly in these days of high costs and rapidly changing educational needs and methods, carefully review the space planning done by all the units of his institution in order to see where such planning is leading. He must be convinced that every planned new building fits the institution's long-range program, and that every adjustment of space use is educationally and financially sound and expedient. Haphazard adjustments in response to pressure—disregarding other, unexpressed needs—will make any method ineffectual.

THE ORIGIN OF MINNESOTA'S STUDY

The 1955 Minnesota State Legislature established a Commission to study the state's needs for buildings in the years ahead. This Commission consisted of five state senators: Val Imm, chairman, Walter Burdick, Gerald T. Mullin, Gordon Rosenmeier, and Magnus Wefald; five state representatives, Harold R. Anderson, Carl W. Eck, Herman J. Kording, Arthur H. Ogle, and John P. Skeate; and the Commissioner of Administration, Arthur Naftalin. At the request of the Commission, members of the staff of the University undertook the study here reported, for the purpose of estimating the University's needs for land and buildings up to the year 1970. Among the principal participants were the Physical Plant Department, the Office of Admissions and Records, Advisory Architects, University Services, and the Comptroller's Office.

THE TRADITIONAL METHOD

The problem of relating enrollments and other instructional factors to building utilization and building needs is a difficult one that seems in the past to have had no satisfactory general solution. The method customarily

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used starts by assuming that there should be a given square footage of total building area per student. This can project the present utilization, but does not take into account the improvements in space use that can and should be effected, or the increased demands that may result from new situations, as, for example, the need for increased space for research. In a complex institution like the University of Minnesota, any such figure would be at best an over-all value which completely omitted from consideration the varying demands of students of the several colleges and the diverse demands of different kinds of instruction. For example, teaching in veterinary medicine or hydraulic engineering is known to require possibly five to ten times as much building area per student as instruction in certain liberal arts subjects.

Educators have long measured space needs in direct relation to student enrollment. However, the often-used term "square feet *per student*" is of little value in projecting space needs when it is applied to an institution comprising several colleges, because the amount of space required varies from college to college. Moreover, enrollments do not increase uniformly among colleges of a university, and some colleges normally instruct large numbers of students from colleges other than their own.

If the University of Minnesota staff had chosen to respond to the Commission's request in the traditional manner, it would first have prepared a forecast of enrollments for the whole University, and probably a breakdown of these enrollments by college. It would then have made an estimate of the space needed to accommodate the expected enrollments in one of two ways: it would have submitted a list of buildings—with estimated size and cost of each—prepared by the college and department heads and designated for instruction, research, or other purposes; or it would have presented a comprehensive list for the whole University, consolidated by members of the central administration. In either case, the underlying presupposition would have been that each additional student in each college or department would require the addition of space equivalent to the space available to each student in a particular year chosen as a base. This appears to be a common-sense method: it assumes that each student in the future will need as much space as a student now has. And this is probably the method employed—explicitly or implicitly—in much planning by most colleges in the past. Perhaps in the days of less complex and fewer instructional

techniques and aids, smaller enrollments, less educational diversity, and more readily available funds (particularly for small colleges), such a rough approximation was enough, but modern institutions present far more complex problems.

OBJECTIONS TO THE TRADITIONAL METHOD

The staff of the University of Minnesota rejected this traditional method. For one thing, it had learned during the harrowing years of the enrollment bulge following World War II that its plant was far more flexible than traditional thinking would have suggested. It sought a means of understanding, determining, and controlling this flexibility in the future.

It took into account first of all the fact that lecture and laboratory facilities can often be scheduled for more hours during a day or week than they are at present. Secondly, it recognized that many classroom seats and individual laboratory spaces (called "student stations" in this report) are vacant during class periods—and could be filled. Third, experience had demonstrated that not only is class, lecture, and laboratory space flexible to a degree, but that space used for such auxiliary functions as clerical and administrative, office, library, personnel, and student services is also flexible, that is, capable of assuming a greater load than it may have carried in the past. Fourth, the staff recognized that the anticipation of needs is always open to the danger of projecting existing deficiencies—as well as of specifying too liberally.

Finally, it knew that the traditional method of estimating did not take into account the "cross-over" factor: actually, students enrolled in a particular college seldom take all their work in the facilities of that college. Rather, they use the facilities of other colleges: liberal arts curriculums have science requirements, and science curriculums have liberal arts requirements, to reduce the issue to its simplest manifestations. One cannot fairly allocate service teaching loads among colleges on the basis of numbers of students alone; that is, on this basis loads by colleges cannot be determined and proper credit given the college doing the service teaching. But we have already seen that an institution's over-all enrollment is also an inadequate measure. Obviously, increasing space on the simple basis of enrollment is uneconomic and unwise. A variety of activities cannot be included in a

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single statement of needs. The staff therefore recognized the need for a new method of estimating, one that would avoid the failures and the occasional prodigality of the old one.

UNCERTAINTIES FACED BY ANY METHOD

Certain uncontrollable factors exist in any educational situation and must be faced by any group of planners. Ignoring for the moment the possibility of such catastrophes as war or deep depression—and, in fact, the experience of the past has shown that aberrations in enrollment caused by such events are ultimately evened out—there are other issues that must be resolved annually. What is the population potential for the college in years ahead? Will the same proportion of the young people want college and university training in the future as in the present? Or is it possible that enrollment will increase in an unprecedented manner—beyond anything suggested by past experience? Will the proportionate demand for training in the various fields be about the same in the future as at present and in the past? Will certain absolute limits of demand for education be reached in some fields? What new fields of study will develop that require new and additional facilities? Will other existing colleges and universities continue to train their present share of the total collegiate enrollment?

All these are, by and large, imponderables. They must be met as they arise, and no method of prediction can take them precisely into account. The University of Minnesota has therefore adopted what seemed the only sensible course: it has assumed that the future will, in some respects, follow the pattern of the past. Its needs as stated therefore include no wholly new functions of great magnitude, such as the introduction of a new school or an entirely new curriculum. There is admitted risk in this attitude, for, as a matter of fact, the University has been called upon many times in the past to provide new services and additional schools and experiment stations. Up until now, however, this course has proved fairly valid. For example, the predictions of freshman enrollment made in 1920 (see pages 15–16) have been demonstrated to be generally right—and the period from 1920 until now included a major depression, a world war, and the Korean conflict.

On the other hand, when events suggest that a major change may take place, the University takes this into account. In the state of Minnesota,

there has been a widespread movement in favor of more and better-financed state-supported junior colleges; it is increasingly possible that such institutions will be established within the period under consideration in this report. For this reason, the expected “lower division” enrollment has been separately stated. Furthermore, the University has recognized that “lower division” is not, for this purpose, necessarily equivalent to freshmen and sophomores. In the liberal arts, on the one hand, where students can get adequate training in the outlying junior colleges and private colleges, “lower division” is equivalent to freshmen and sophomores—and this is true also of some other fields. But there are, on the other hand, professional and technical fields where the beginning student must have available the instruction and laboratory facilities of his professional colleges, even during the first or the second year. In such cases, where he cannot get his initial training elsewhere without loss of time, he is classified for purposes of this report as an “upper division” (advanced, professional, and graduate) student.

WHAT THE NEW METHOD CAN DO

The University staff members engaged in making this report believed that any estimate must be made on the basis of precise evaluation of the present use of existing space, and that a judgment ought to be made of whether existing space could provide for additional students. For example, a highly specialized laboratory, necessary for particular instruction but used at present for only three hours of scheduled instruction each week, would not have to be duplicated even if enrollment in the college doubled, because it could be put to use for additional hours during the day or week. Thus, the new method devised at the University determines the optimal space use goals for various categories of space and makes use of these optimal goals for projecting future space needs. These goals can of course be changed as conditions and experience dictate.

Moreover, the staff recognized the necessity for measuring loads on work spaces by means of factors which have a direct bearing on space requirements. For instruction and related activities, this load measurement turned out to be “student station hours” of teaching. But to arrive at this, it was first necessary to determine the extent and kinds of “cross-overs.”

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In this case, knowing only the numbers of students registered in a particular (major) college is of little value, and it is not enough to know how many credits they take in other colleges. What *is* required for space planning is a knowledge of both the amount of time they spend and the kind of instruction they receive in other colleges. Information on the *kind* of instruction should reflect the space used and needed for each student station.

Furthermore, the University needs to inventory and forecast its space needs for research. This research is done in campus buildings, but may or may not be related to academic instruction. It is not necessarily an essential part of the teaching program—research in physics, for example, undertaken for the federal government and paid for by grants from the federal government. In the absence of any other tested index for determining the amount of space to be allotted to such research, we have established this amount to be proportional to the space increase factor for graduate-connected research, which is in turn geared to the number of graduate students enrolled at the University (perhaps thereby to the number of faculty active in research). This proportion can be kept constant or it can be adjusted in the calculations as circumstances dictate: new research will expand at the same rate as graduate instruction—unless the University chooses to give additional emphasis to research not directly related to its program.

The method used in this report bases its estimations of needed research space on the assumption that a fixed relation between related and non-related research is to be maintained, but that the proportionate relations to instruction can be adjusted as the University desires. The amount of space required for all research is thus controlled objectively, and can be determined by reference to the enrollment of graduate students.

HOW THE NEW METHOD WAS CARRIED OUT

The following steps set forth in detail the manner in which the University staff put its new method into operation. The order is roughly chronological, though of course much of the work went on simultaneously in various departments, and many of the data had already been gathered in the course of normal University operations.

Preparation of an inventory of all buildings and land. The alphabetical listing contained in the Appendix to this report provides certain basic

information about each building now being used, such as a general description of its use, date of erection and alterations, book value, type of construction, cubic content, and the gross, usable, and assignable areas. All assignable building space is put into functional use classifications: Instruction, Research, Public Services, Administration, Plant Operation, Student Services, Institutional Services, Auxiliary Enterprises, and Noninstitutional Organizations (see Functional Use Classification Table, pp. 88–89). Certain of these classifications were subdivided, and different bases were used in projecting present and future requirements.

This classification method has proved useful in past studies at the University of Minnesota, and is readily adaptable to the punch-card method of dealing with data. Terms were chosen which the staff had found useful in its day-to-day business of talking and writing about these matters: that is, the terminology proved “operationally useful.” Moreover, these classifications are simple and clear enough to be understood without confusion by clerical employees inexperienced in the complexities of the method—understood to a degree that most employees can make room classifications accurately.

For the purposes of this report, Institutional Services and Auxiliary Enterprises are sometimes grouped together as “Internal Services” and sometimes handled separately. Athletics is also handled separately instead of being included under “Student Services.” The subclassifications with arabic numbers and letters are not a part of the functional use classification, but are included to show the breakdowns used for inventory purposes.

Preparation of population estimates for Minnesota for 1954, 1960, 1965, and 1970. Estimates of the state’s population are used as a basis for projecting space needs for Public Services—correspondence study, special short courses, agricultural and home agent work in the field, exhibits, concerts, lectures, surveys, testing, registry, and laboratory analysis—since the University in such cases serves the whole state. The amount of such space is thereby kept under administrative control, and can be arbitrarily adjusted if necessary. Such service has no close relation with the instructional program.

Preparation of student attendance estimates, campus by campus and college by college, for 1960, 1965, and 1970. The number of students it serves

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and can potentially serve is of great importance to any college, and particularly to a state-supported institution, which must justify the major portion of its expenditures according to the degree to which it supplies higher education for all who are prepared for it and want it.

Its estimates of future attendance are of course based primarily on estimates of population, but an institution must first consider where most of its students come from—a city or a county, as in the case of a junior college or municipal institution; a state; or a region, a nation, or a larger area, as in the case of some religious colleges, graduate schools, and well-known private universities. Once the geographical origin of most of its students is determined, a college can use current population statistics for those geographical areas to predict how many persons there will be in the college-age group (18–24 years) at a particular future time, as far as fifteen to twenty years in advance.

Then, largely on the basis of projections of past data, the particular college, with the full advice of its faculty, can estimate how many persons in this age group are likely to enroll in a particular year. This estimate is subject to many variables, of course: the demand for training in a particular field may increase; persistence of students in college varies by level and kind of work; economic conditions may cause more—or fewer—young people to go to college; admission and curricular requirements may change; new institutions may take care of part of the students. But generally past experience has shown such estimates to be fairly accurate.

At the University of Minnesota, data for the years 1944–1954 show that roughly two thirds of the students on the Twin City Campuses came from the metropolitan areas of Minneapolis and St. Paul (equal, for this purpose, to Hennepin and Ramsey counties), as shown on Table VII. Statistics for many years also show that roughly half of the students attending college in Minnesota are at the University (see Table V). Using these data, the estimated state populations for future years, information on nonresident enrollments, and the data on distribution of students among colleges and campuses, the University can not only predict that the enrollment trend will be upward, but it can estimate the probable amount of the increase, and how that increase will be apportioned among colleges.

Tables I–VI and Figures 1–4 show population and college attendance

data for Minnesota. Table VIII shows actual and forecast attendance data by level, college, and campus. Particular attention is called to the separation of “lower division” and “upper division” students—made because of the possible establishment of state-supported junior colleges, as described above.

Although not shown in Table VI, it was also necessary to determine in what colleges and on what campuses students registered in the Graduate School will do their work, since these figures are necessary in projecting space needs for research.

Determination of distribution of instruction by college (cross-over factor) in terms of average student station hours per week per student. The number of student station hours (hours per week a student spends in a classroom chair or in a laboratory space) of instruction was considered the most useful common denominator for measuring most activity loads, and consequently for projecting space needs. To determine loads as based on that measure, it is first necessary to determine how many hours of instruction a college gives on the average to each student registered in every college of the University.

The student station hour distributions for the University are shown in Table IX. They are derived from a study of the averages of six recent consecutive quarters. The results of that study showed a surprisingly consistent pattern—after deviations arising from curriculum changes, organizational changes, and the like had been accounted for. This pattern will not remain static, however, and the load distribution should probably be reviewed and changed as necessary.

To illustrate, Table IX shows that a student registered in the Institute of Technology spends 5.79 hours each week, out of a total of 21.17 hours, in classes offered by the College of Science, Literature, and the Arts. Therefore, an increase of students in the Institute of Technology will make necessary the provision of additional instructional space in SLA, without regard to whether there is an increase in the enrollment of SLA.

Computation of teaching load for each college, measured in terms of total student station hour load. By using the data on cross-over between colleges as derived above, it is possible to translate expected attendance figures into the probable teaching load that will fall on a particular college.

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The total weekly teaching load for that college is the sum of the student station hours of instruction it gives its own students plus those it gives to students from each of the other colleges.

With this step, all load measurements are completed—attendance, state population, and student station hours of building use. The next step is to find out how much space will be required to accommodate the projected future loads.

Relation of load to existing space. Various terms have been used by educational institutions in describing space, but the terms have seldom been accurately and finally defined. For example, "net area" has been used to mean so many things that the staff felt it wise not to use it at all. This report employs three categories of space: assignable area, usable area, and gross area; they are defined on p. 85.

On the basis of space use studies for 1954, loads for that year were related to the space (assignable square feet only) existing at that time for instruction, student services, and other functions. These loads were expressed as the number of square feet for each unit of load. Depending upon the measure of load used, this means the number of square feet per student station hour of instruction, or per student (or graduate student), or per 1,000 residents of Minnesota. (Student station hours of instruction is the measure most commonly used.) The loads thus expressed are called space use factors. They are also computed for 1951 and 1953 in some of the tables.

Determination of optimal space use factors. Existing space was appraised for the degree of effectiveness with which it was being used, department by department for various usual functions. A judgment of the best possible use—which may indicate an improvement over the present use, may describe the status quo, or may reveal space shortages—was then made. Loads for 1954 were related to the areas actually required to accommodate them reasonably well at that time, on the basis of such judgments. Figures thus arrived at are called optimal space use factors, and are expressed as numbers of square feet per unit of load, the load unit depending upon the kind of activity carried on in the space. These appear in italics in Tables X–XIX following the square feet of space per unit of load measured for the years 1951, 1953, and 1954.

Thus, the new method provides brakes—the optimal space use factors—which are capable of controlling expansion by keeping it in constant relation to the best possible use of space.

In the case of instructional laboratories, research space, administrative areas, and the like, the optimal space use factor was made approximately equal to the existing space use factor in 1954, on the assumption that the University could not carry on the academic program to which it had committed itself at that time, if any space were to be taken away. For classrooms, anticipated improvements in utilization were taken into account so that the optimal use figure is considerably below the actual use figure for 1954. Office areas actually required for 1954 were based on arbitrary areas for positions of various ranks, and the optimal use figures, which are based on areas thus computed in relation to student station hours of instruction, are sometimes higher and sometimes lower than the existing space figures at that time.

Determination of space increase factors. This step produces the all-important means of regulating expansion. Future space needs are based on a computation of how many additional square feet are needed for each additional unit of load. This number is the space increase factor for a particular function. It varies depending upon the function, the efficiency of present use, and possible improvement of space use. The space increase factor may be equal to the optimal use factor, but it cannot exceed it, since the optimal use factor is the brake that halts further expansion. The judgment of individual college deans and department heads and administrators is intimately involved in the process of determining what principles to follow and what degree of room utilization to expect.

For general purpose classrooms, where the unit of load measurement is the student station hour, the space increase factor is equal to the optimal use factor because, as has been noted, the latter figure already makes allowance for improved use of classrooms.

For offices, where optimal space use factors are based on an arbitrary amount of space for persons of each rank, space increase factors also equal the optimal use factor. In our large colleges, it was assumed that variations from department to department would offset each other—an instructor in science may need laboratory facilities in his office; an instructor in English

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would not. Further study should be made of space use, so that other provisions can be made if the variations do not, in practice, offset each other.

For instructional laboratories, the space increase factor bears the same relation to the optimal factor that actual student station hours bear to predetermined optimal student station hours of load. It is unrealistic to expect a college to approach the optimal percentage of utilization before adding to its laboratory areas. In any major college some laboratories are currently being used to capacity and must be expanded at once, in proportion to additional teaching, if there is any increase in teaching load; i.e., the more effectively a college is using its existing laboratory areas the greater will be its space increase need as its teaching load increases.

Stock rooms, maintenance shops, and preparation rooms are essentially related to the laboratory areas they serve. It can be expected, therefore, that the space increase in such areas will be directly related to increase in the related laboratories. The equation used allows a rate of increase for "all other" areas of half the rate of increase for laboratory areas, since University experience indicates that such areas can be used more effectively as the laboratory activity they serve increases.

If the space increase factor is equal to the optimal use factor, this means that space needs are increasing in direct proportion to the increase in load. But when the space increase factor is equal to, say, half the optimal space use factor, then space needs are increasing only half as fast as the load is increasing. Usually, the space increase factor will be less than the load increase ratio, because of better use of facilities made possible by the larger load or by improved planning.

Space increase factors are determined differently for various categories of building space. But the principle is the same regardless of what unit of load measurement is used. College administrators can effect adjustments in their space planning programs by varying the space increase factors. In this way, inequities can be taken care of and emphasis on various aspects of the academic program changed without the administration's losing the opportunity of continuing effective central analysis and control. This method provides flexibility with control.

Computation of space needs for future loads. The final step is to apply the space increase factor to the projected additional future load to find out

how much more space will be needed to handle that increase in load. The result is the net added space required to do the job. The total future area for the particular period to which one is projecting will be the sum of the additionally needed area and the area existing in the base period.

Land needs for academic buildings. Once predictions and estimates of future building needs have been made, an institution must evaluate its present land area to determine the possibility of the land's accommodating the needed additional buildings, and it must also, of course, consider the possibility of acquiring and using additional land.

For example, the existing Minneapolis Campus of the University of Minnesota is located within an urban area of approximately one million population (the cities of Minneapolis and St. Paul). For the most part, instructional buildings are detached structures of not more than four or five floors. The gross building area and the land area for a particular building area are about equal: four- or five-story buildings have a land coverage of 25 or 20 per cent of the gross building area.

The space occupied by the campus is roughly rectangular, a quarter mile by a half mile. The major instructional areas are reasonably well consolidated, and every effort is made to schedule related classes within the same general area. Nevertheless, students are occasionally required to attend consecutive classes at opposite ends of the campus. A ten-minute interval is allowed for circulation between classes. In mild weather a student can cover the distance between opposite ends of the campus within this period; but in winter weather, hampered by bad walking conditions and by heavy wraps and overshoes, he has great difficulty in doing so. If the circulation time were increased to fifteen minutes, the instructional time per hour would have to be reduced from fifty to forty-five minutes, the number of class periods would have to be reduced by one, or the teaching day would have to be lengthened. The second expedient would result in a loss of approximately 10 per cent of classroom utilization, an outcome to be avoided, if possible. The last course would require complete revision of the University's time schedules. The University intends first to make every effort to expand its facilities within the limits of the existing instructional area.

The present land area of the Minneapolis Campus is capable of supplying building sites which could add approximately 458,500 square feet

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of assignable area to the present assignable area (Table XXXVI). On the basis of present estimates, this ultimate theoretical capacity of the present Minneapolis Campus (27,500 students) will be reached between 1960 and 1965. All projected buildings are walk-up buildings—buildings with four stories above grade. The alternative of constructing higher buildings has been rejected because of the initial high expense of elevators, the loss of space in the buildings, the expense of maintaining elevators, the greater material and erection costs, and the increased circulation time required in such buildings which would affect adversely the present class interval.

At present, plans are being considered for another step in expansion of the Minneapolis Campus—the development of an adjoining area where, for example, non-laboratory instruction of lower-division level could be offered and where by means of a suitable class schedule it would not be necessary to duplicate expensive laboratories and such other related facilities as the central library, the main student union, the health service, the shops and central heating plant, and the physical education plant.

THE LIMITATIONS OF THE NEW METHOD

The University's method of calculating academic space requirements is a tool. It can serve as a guide in arriving at decisions regarding space, but cannot, of course, supplant the critical judgments of faculty members and deans and other administrators in evaluating space needs. Each college dean will actually carry a great responsibility, for, within the confines of demonstrated space needs for his college, the more generous he is to some units of his organization, the less generous he can be to others.

Like any method for performing a complex and dynamic operation, this one is subject to constant change and revision. The staff of the University has already found several instances where improvement can be made, and more will doubtless appear. It is new, and it must be tried before it can be judged. But the strengths of the method, and its advantages over the traditional method, are also being proved.

One measure that can be improved involves the relation between gross area and assignable area. The University's records of space use and its projections of future space requirements are expressed as assignable square feet of area. But requests to the legislature must be expressed in terms of

gross square feet of area, and, of course, construction costs are based on gross area. Because recent construction at the University has indicated that, on the average, about one third of the gross area of a building consists of doorways, corridors, toilet rooms, and the like, we have followed in this report the method of multiplying assignable areas by 1.50 to arrive at gross area figures. The needed gross areas shown in Tables XXIII, XXIV, and XXV were arrived at by this method. But this average is not applicable in actuality to every kind of building: the area of a warehouse, for example, will be nearly all assignable area. In order to make the method more accurate, therefore, it would probably be well to determine conversion factors for various kinds of buildings, taking into account the fact that the relation between gross and assignable area varies for different kinds of buildings. Such a refinement would allow a closer prediction of the actually needed gross areas.

Another needed improvement concerns the estimation of the cost of new buildings. The University's most recent building cost approximately \$18 per gross square foot to construct, while landscaping, utility connections, built-in equipment, preparation of the site, and similar expenses cost about \$6 per gross square foot. The total, \$24, has therefore been used in estimating the cost of future construction. Prices and wages vary, so this is not a stable figure or one to be applied without test in different locations. Furthermore, we recognize that this average figure cannot be applied to all kinds of construction. A warehouse will cost less per gross square foot than a classroom building. It would be desirable to classify the various types of construction and to apply appropriate costs per square foot to each, thus making it possible to predict the cost of a particular new building more accurately.

But, by and large, the staff feels it has identified the basic factors and formulated basically sound working definitions and processes for dealing with them. And it hopes that eventually this beginning will result in generally acceptable definitions, criteria, and methods of analysis. The staff recognizes that careful observation and evaluation of the method in operation is necessary, and that constant refinement of techniques will be required. As data accumulate, details of the method will have to be changed. The passage of time itself—with the new methods of programing and the

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changes in curriculums it will bring—will necessitate reevaluations and adaptations.

This method cannot, of course, dictate which units shall have their needs met first, but it does provide an objective index to the needs themselves, and thereby provides a sound basis for deciding which units should be served first.

This report has been presented in a sense prematurely for a good reason: in order that it might be subjected as soon as possible, and as widely as possible, to the constructive criticism that will eventuate from its examination and use by other educational institutions.

RELATED PROBLEMS

Any large educational institution faces other important building and land problems besides those directly related to the academic structure. Important among these are the problems of parking, housing for students, and food service.

Parking. While the parking problem is ubiquitous, it is likely to be most acute at large institutions located in urban areas. At the Minneapolis Campus of the University of Minnesota in 1956 a University family of 24,000 used 11,000 parking spaces (Table XXXIII). About half of these were located on the campus and half on the public streets. Public street parking has serious shortcomings. It is a hazard and a nuisance to the neighborhood, and good will toward the institution is impaired when residents cannot stop in front of their own houses or when they find their driveways blocked by parked cars. Furthermore, the possibility always exists that such parking may be banned by municipal authorities.

Even though the total assignable building area required per student for instructional and related purposes will decline from 169 square feet in 1954 to 119.5 square feet in 1970, a staff member or student will still need approximately 300 square feet to park his car. And study indicates that off-street parking needs to be provided for every $2\frac{1}{2}$ members of the University family, as a minimum. It is probable that sufficient land area for this parking—surface, underground, or ramp—can be found only at removed locations made accessible through shuttle bus service.

Housing. Residence halls for single students at the University of Min-

nesota are four-story buildings housing about 200 students per acre. They are located within walking distance of the Minneapolis and St. Paul Campuses. Their capacity in 1956 was approximately 3,500 students. Housing for married students required considerably greater area per student than does housing for single students living in residence halls, and for this reason is frequently located at a distance from the campus. Off-street parking must be provided for each housing unit, as well as safe and adequate playground space for small children. A density of 12 to 20 families per acre may be assumed for permanent units of two-bedroom size. Temporary or minimal units can be crowded in at much greater density.

The methods of projection employed and the estimated University-owned facilities required, expressed in terms of numbers, kinds, and costs, appear on page 81.

Food Service. Past University experience has shown that food service for the noon meal must be provided for approximately 30 per cent of the student body. In calculating space requirements, a turnover factor of $2\frac{1}{2}$ times is used for each space required. Table XXXIX shows the estimated number of customers for which food service must be provided in the future; Table XL shows the number of customers for bag lunch service and the number for cafeteria service.

THE BIENNIAL BREAKDOWN

Space needs were computed for this report on the basis of five-year intervals as the best unit of time from the standpoint of long-range planning. But since the University of Minnesota's financial arrangements are geared to biennial meetings of the state legislature, Table XXII shows a breakdown by two-year periods, showing the latest thinking on the order and division of improvements for the University.

The biennial breakdown must rely upon the judgment of the administrative staff, because it is usually not possible to operate by straight arithmetical expansion. It is more economical to construct a building as a whole rather than piecemeal. Furthermore, space needs vary from unit to unit within the organization, and likewise the building areas required to satisfy those needs will vary. Those needs which will receive priority must first be distinguished, and then the order of priorities established within an all-

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embracing plan which will include not only academic building expansion, but also expansion for housing, athletics, parking, etc.

The first step involves translation of total building needs into typical buildings without respect to use in order to determine the magnitude of the problem and to ascertain the direction of such expansion in terms of building sites. A scale model of the campus, showing elevations, is helpful in visualizing over-all physical expansion.

After the campus has been defined, the functional interrelationships between the various organizational units must be considered and the ideal location of each in relation to all others determined. Student traffic patterns between class periods assume more and more significance as the campus expands. No less significant are the communities of interest in subject areas, which reflect common research interests and related course work.

The question, then, of which unit shall get the new buildings can be studied on the basis of factors that relegate prestige to the background. One factor will be the specialization of the facility. An office-classroom building, for example, is much less costly than a science building of equal area. Even in such cases, one may decide to build a new building despite its specialized nature, in order to achieve a "community of interest" pattern, or because the existing building is obsolete or in need of major renovation. Possibly the relocation of one unit will permit the logical expansion of other units now sharing the same building. Or a unit may be expanding so rapidly that an addition to its existing building would not provide for it for long. Another factor will be the "home" building of each student who is taking each course. For example, if the chemistry department is serving engineering students to a considerable degree, it should be located, if possible, near the engineering area.

Ultimately, new biennial building programs will be evolved for a number of years ahead, and the required areas translated into dollars. These totals are summarized on the first line of Table XXII, which projects plant needs expressed in dollars for the seven biennial periods beginning in 1957.

New buildings are only part of the story, of course. As existing build-

ing areas are vacated by units moving to new buildings, the areas they leave behind must be remodeled for use of another unit. This may be a unit expanding out from adjacent space, or a unit moved in its entirety from another building. This expense is listed on Table XXII together with rehabilitation needs. Inasmuch as remodeling details cannot be known so far in advance, it is necessary to multiply a fixed average cost by the number of square feet of area likely to be involved. Rehabilitation expense is disproportionately heavy for the first few bienniums because the University has fallen behind in its maintenance program, and must now make up for lost time.

Funds required for land are shown on Table XXII in the biennium preceding the biennium during which construction on that particular land will commence. This allows time for obtaining and clearing the land. The problem here is in determining which particular parcels will be needed. Inasmuch as costs of obtaining developed property may vary considerably from one parcel to another, estimates of total cost of acquiring land cannot be made with any certainty of realism unless the parcels are first identified. And identification must follow over-all long-range planning. This is not to say, of course, that estimates cannot be made to aid in evaluating the most practical as well as the desirable direction of expansion.

Housing and food service costs are determined somewhat in the same way as costs for academic buildings. One must determine whether to have centralized or decentralized food service facilities (on larger campuses), where to locate residence halls with respect to campus traffic and possible academic building expansion, whether to feed residents in the residence hall or in a cafeteria serving the campus, the extent of recreational fields near the residence halls, etc.

The methods developed for projecting space needs can thus be a useful tool only to the extent that they are intelligently used. It is easier to convince a citizen or a legislator of an institution's need when one's assertions are backed up with sound, logical, organized facts rather than supported by personal assurances and enrollment data alone.

**PART 1 • STUDENT ATTENDANCE
AND METHODS OF PROJECTING SPACE NEEDS**

STUDENT ATTENDANCE AND BACKGROUND DATA

Attendance, past and future. It is helpful in forecasting the growth of an educational institution to consider what the growth of that institution has been in the past. For this reason, figures for student attendance* are summarized in the second column of Table II and illustrated by Figure 1. Since these are *attendance* figures, they indicate the numbers of students for whom instruction had to be made available at a particular time. They do not account for the number of *different* individuals who were registered (enrolled) at the University for some period during that year, and they purposely omit Summer Session and evening school students since such students attend at a time when the facilities of the University are presumed to be available for their accommodation.

The most obvious conclusion that can be drawn from these figures is that the student body of the University has been growing at a rapid rate and that great social upheavals, such as depressions and wars, have not seemed to change the general trend of growth materially. These disturbances did cause temporary interference which resulted in the delayed matriculation of students, but the results were much as if persons who temporarily could not attend did go on to college eventually; while apparently those persons who would not have attended, if there had been no wars or depressions, were only moderately influenced by special educational benefits to seek higher education.

The flow of young people to the University, therefore, appears to be governed by deep-seated, inexorable social pressures and drives such as those of the population potential, the habits and aspirations of the people (as reflected in the general level of their educational achievement), and the somewhat slowly changing motivations and needs of those persons who are available, desirous, and able to proceed in higher education. The 1920 report

* *Student attendance* is the net number of persons under instruction at a given time, usually at the close of the second week of the term, as distinguished from *student enrollment*, which is the number of different individuals who were registered at some time in a given term or year.

of the Survey Commission,† which studied the probable growth of the University for the twenty-five years after that time, made the predictions indicated on Figure 2. Although the forecasts for freshmen were remarkably accurate, the actual totals of students at the University exceeded the estimates by nearly 50 per cent, almost from the outset. The effect of the depression in the early 1930s is apparent but there was no major consequence; World War II temporarily depressed enrollments but the losses in numbers of students matriculated through a few war years were almost exactly balanced by the extra numbers of returning veterans who returned to school after the war. Only during two years of the war did the enrollment ever fall to the level of the forecast.

What the University has done and must do in satisfying the demand for education involves, of course, its sharing that responsibility with other collegiate institutions in the state. It should offer the necessary and desired curriculums and coordinate with the programs of the entire state system of schools. The results of effective sharing of students between the University and the various other Minnesota colleges are well illustrated by the two lines for freshmen on Figure 2. It was anticipated in the 1920 survey that whereas the University would be called on to provide for approximately half of all the college students attending in the state at any given time, the number of freshmen for whom it would need to provide would fall to approximately one third of the total coming directly from high school. This has been the case. The estimate for freshmen was almost precisely correct and in recent years those at the University have represented just over one third of the total number of freshmen for all institutions in Minnesota, but the University has continued to provide for half or more than half of the collegiate-level students attending Minnesota colleges.

Since Minnesota college attendance is now reaching new and unprece-

† *Report of the Survey Commission, University of Minnesota, Part I, The Growth of the University in the Next Quarter Century, June 21, 1920.*

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dented heights, and also considering the fiscal and student housing limitations of sister institutions, there is a question whether the University may not be called on to take more than its customary share of freshmen as well as to provide for increasing numbers of advanced students. The assumption is made in this analysis and projection that somehow other colleges will continue to afford accommodations for about the same proportion of the total students as they have provided for in recent years. One fact worthy of mention is that those areas of the state from which the University has customarily drawn most of its students are the ones that now tend to show the greatest increase in student potential, based on numbers of young people who will soon attain college age. Thus, the results derived herein are to a

TABLE I. POPULATION OF MINNESOTA

Calendar Year	Total Population *	Births †	
		Reported Registrations	Percentage of Completeness
1900	1,751,394	...	...
1905	1,979,912 ‡	...	...
1910	2,075,708	...	...
1915	2,214,603 ‡	...	...
1920	2,387,125	55,909	...
1925	2,539,859	53,776	...
1930	2,563,953	47,418	98.8
1935	2,627,360 §	45,962	99.1
1940	2,792,300	52,915	99.3
1945	2,537,000	54,656	99.6
1950	2,982,483	75,310	99.2
1954	3,103,000	80,620	...
1955	3,174,000 **	81,281	...

*Population figures are from data of the U.S. Census or the Statistical Abstracts of the United States, 1955, except where otherwise indicated.

† The reported birth registrations are from the U.S. Bureau of the Census and the Minnesota Department of Health. The percentage of completeness of registration is based on publications of the U.S. Public Health Service and as given in "Enrollment Forecasts and Survey of Dormitory Requirements of Minnesota State Teachers Colleges, 1955 to 1965," a report to the Minnesota State Teachers College Board.

‡ From 1920 Report of the Survey Commission on the Growth of the University.

§ From *Population Trends in Minnesota and What They Mean*, 1938, Minnesota Institute of Government Research.

** From estimates made in the Department of Sociology, University of Minnesota.

TABLE II. COLLEGIATE STUDENT ATTENDANCE

Fall Term of Year	At University of Minnesota	In U.S. Colleges and Universities *	Percentage at University of Minnesota
1920	7,000 (approx.)	597,880	1.17
1921	7,637	...	...
1925	9,502	...	...
1930	11,961	1,100,737	1.09
1935	13,271	1,077,484	1.23
1938	14,436	1,350,905	1.08
1939	15,122	1,364,815	1.11
1940	14,986	1,494,203	1.00
1945	11,505	1,073,629	1.07
1946	27,103	2,078,095	1.30
1947	28,312	2,338,226	1.21
1948	27,243	2,408,249	1.13
1949	25,084	2,456,841	1.02
1950	22,080	2,296,592	0.96
1951	18,682	2,116,440	0.88
1952	18,806	2,148,284	0.88
1953	19,074	2,250,701	0.85
1954	20,399	2,499,750	0.82
1955	23,393	2,721,000	0.87

* Data from reports of the U.S. Office of Education.

large degree minimal and not designed to provide for any extra tasks which, it might be argued, will surely fall to the University.

The recent growth of student population potential in Minnesota and of college attendance in particular is indicated in Tables III, IV, and V, and Figures 3 and 4. Since the high schools of the state are the primary sources of freshmen entering the University, the data of Table III suggest the magnitude of the problem of providing future higher-level education. This table projects secondary school enrollments on the basis of present lower school and other statistics and indicates probable high school graduation rates in future years, according to minimal trends. The forecast based on a normally rising fraction of eighteen-year-olds is more conservative than forecasts which can be drawn from experience of 1955. In that year the number of public high school graduates in Minnesota reached 29,654, and an unusually high percentage of these went on to college.

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Table IV and Figure 3 present projections of the population group 18 through 24 years of age in Minnesota, using three different migration possibilities. These suggest the increasing number of individuals who will be of normal undergraduate college age, or just beyond. In view of the upward trend in the percentage of our young people who go to college, and the lengthening period of training of those who do, these data have an inescapable meaning for the future. The potential number of advanced stu-

FIGURE 1. UNIVERSITY ATTENDANCE TREND

FIGURE 2. FORECAST AND ACTUAL FRESHMAN AND TOTAL ENROLLMENTS, 1920-1954

Forecasts are from the June 21, 1920, report of the University Survey Commission established by action of the Regents of the University on January 15, 1950, to work with the Interim Education Commission of the Legislature. These forecasts have been projected beyond 1945, the approximate date to which they were presumed to have validity. Note that enrollment is shown as the number of *different* students enrolled during an academic year, a higher number than the number attending at any one time.

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TABLE III. STUDENT POTENTIAL FOR COLLEGES AND
UNIVERSITIES OF MINNESOTA

Calendar Year	Public High School Graduates *		Calendar Year	Forecast †	Forecast ‡
	Actual	As Fraction of 18-Yr.-Olds			
1938	25,606	0.46	1956	29,696	30,037
1940	28,791	0.50	1958	31,389	32,278
1948	26,512	0.56	1960	34,862	36,554
1950	26,488	0.57	1962	33,286	35,519
1954	28,224	0.59	1964	39,902	43,319
			1966	43,173	47,670
			1968	44,673	50,156
			1970	46,980	53,617
			1972	48,642	56,416

* Data from Professor Robert J. Keller, University of Minnesota.

† Based on 1954 fraction of 18-year-olds graduated.

‡ Based on normally rising fraction of 18-year-olds graduated and other experience prior to 1955.

TABLE IV. ESTIMATED AND PROJECTED NUMBER OF PERSONS 18-24
YEARS OLD (INCLUSIVE) IN MINNESOTA, 1930-1973

Calendar Year	Estimated No. 18-19-Yr.-Olds *	Estimated No. 20-24-Yr.-Olds †	Total Estimated Number in 18-24-Yr.-Old Group
1930	89,176	214,432 ^a	303,608
1940	97,737	245,592 ^b	343,329
1950	141,945	213,712 ^c	355,657
Projected No. in 18-24-Yr.-Old Group ‡			
		Migration as in 1940-50	Migration as in 1930-50
1958		297,000	302,000
1963		336,000	349,000
1968		404,000	429,000
1973		475,000	521,000

* *College Age Population Trends, 1940-70*, Committee on Special Projects for the American Association of Collegiate Registrars and Admissions Officers, 1954.

† *Statistical Abstracts*, U.S. Department of Commerce, Bureau of the Census. (a) 1939, (b) 1949, (c) 1954.

‡ *Current Population Reports—Population Estimates*, U.S. Department of Commerce, Bureau of the Census, 1956. Projections for intermediate years (1958-1973) may be obtained by linear interpolation.

TABLE V. COLLEGIATE STUDENT ATTENDANCE IN MINNESOTA

Calendar Year	Fall Term Attendance	
	State	University
1921		7,637
1922		8,410
1923		8,725
1924		9,057
1925		9,502
1926		10,334
1927		10,913
1928		11,470
1929		11,676
1930		11,961
1931		11,560
1932		10,700
1933		10,736
1934	22,363	11,712
1935	24,510	13,271
1936	25,862	14,094
1937	26,241	14,040
1938	28,672	14,436
1939	31,232	15,122
1940	30,644	14,986
1941	27,427	13,484
1942	23,690	11,672
1943	14,585	7,205
1944	16,894	8,917
1945	21,229	11,505
1946	48,563	27,103
1947	50,003	28,312
1948	48,949	27,243
1949	46,995	25,084
1950	42,065	22,080
1951	36,160	18,682
1952	37,141	18,806
1953	37,859	19,074
1954	41,090	20,399
1955	47,619	23,393

dents in the state (here used as the 18-24 year age group) has changed little in the past two decades; yet enrollments at Minnesota colleges have more than doubled. The potential number now stands at a recent low but it will, of itself, almost double in two more decades. Even if there is no further increase in the percentage of youth who go to college, the total

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FIGURE 3. NUMBER OF PERSONS 18-24 IN MINNESOTA, 1930-1973

attendance may be expected to double. The compounding of an increase in population potential with any additional increase in per-capita interest in college attendance will be felt in the late 1950s. Beyond that time all major factors will dictate attendance increases.

The special situation of the University. Attendance at no single college or university follows a smooth trend, even in "normal" times. It may be

most meaningful, then, to subject the data of Table V to some measure of central tendency rather than to use just the figures for individual years. This position is substantiated when it is noted that through at least the last twenty-five years, depressions, wars, and the return to school of veterans have caused short-range departures from the trend lines of enrollment,

FIGURE 4. ATTENDANCE AT THE UNIVERSITY COMPARED WITH TOTAL ATTENDANCE AT ALL ACCREDITED MINNESOTA COLLEGES AND UNIVERSITIES

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TABLE VI. COLLEGIATE STUDENT ATTENDANCE DATA NET NUMBER OF STUDENTS IN ATTENDANCE AT END OF SECOND WEEK OF REGULAR TERM

Quarter and Year	College of Registration																Estimated Distribution by Campuses			
	Total for Univ.	Ag., F., & H. E.	Vet. Med.	Bus.	Dent.-Dent. Hyg.	Duluth	Educ.	General	Grad.	Mayo	I. T.	Law	Med. Sci.	Pharm.	S. L. A.	U. Coll.	Duluth	Mayo	Minneapolis	St. Paul
ACTUAL																				
Fall 1948	27,243	1,843	68	1,423	378	1,900	1,878	1,522	2,731	534	4,802	796	1,077 *	407	7,778	106	1,900	534	22,583	2,226
Fall 1951	18,682	1,228	189	597	444	1,210	1,787	1,050	2,574	510	1,923	382	1,245 *	338	5,161	44	1,210	510	15,219	1,743
Fall 1953	19,074	1,170	194	560	428	1,395	1,754	1,364	2,363	578	2,341	374	1,029	240	5,227	57	1,397	578	15,499	1,600
Fall 1954	20,399	1,213	184	614	433	1,657	1,983	1,634	2,416	643	2,577	358	1,052	145	5,428	62	1,670	643	16,449	1,637
Fall 1955	23,393	1,491	179	669	444	1,925	2,227	2,084	2,627	603	3,215	384	1,088	110	6,298	49	1,945	603	18,914	1,931
FORECAST																				
Fall 1960	31,800	1,820	190	1,000	500	2,800	3,300	3,400	3,100	600	4,500	500	1,215	300	8,500	75	2,847	600	26,022	2,331
Fall 1965	38,900	2,200	210	1,300	625	3,500	3,880	4,500	3,800	600	5,800	625	1,350	410	10,000	100	3,576	600	31,904	2,820
Fall 1970	47,000	2,835	240	1,800	750	4,000	4,500	6,000	4,400	600	7,000	775	1,450	500	12,000	150	4,132	600	38,681	3,587

DETAIL FOR CERTAIN COLLEGES

Quarter and Year	Dentistry		Medical Sciences				
	Dent.	Dent. Hyg.	Med.	Med.-X-ray Tech.	P. & O. Ther.	Nursing	Pub. H.-Pub. H. N.
Fall 1948	306	72	508 *	84	39	183	263
Fall 1951	352	92	610 *	73	89	232	241
Fall 1953	357	71	486	74	66	264	139
Fall 1954	354	79	465	59	70	284	174
Fall 1955	352	92	472	48	83	303	182
Fall 1960	400	100	525	65	100	325	200
Fall 1965	500	125	600	75	100	350	225
Fall 1970	600	150	600	100	100	400	250

* Including two classes of interns, not necessarily on campus, the result of acceleration during World War II.

but over periods of, say, five years or more the general trends have appeared to have greater validity than year-to-year changes.

One technique frequently used in expressing various human demands related to population growth, and of reducing trends in those demands to approximately linear form for purposes of projection, is that which involves plotting the Napierian logarithm of the demand against a uniform scale of calendar years. Such a plot for present and prospective University attend-

ance of college-level students is shown as one part of Figure 4. In this chart the trend lines from past experience are projected to suggest state and University attendance figures to the year 1970. It is significant that the results obtained for the University in total are in excellent agreement with individual projections derived separately for the several different colleges of the University (see Table VI).

All the colleges and divisions of the University were canvassed on the

STUDENT ATTENDANCE

matter of past and probable future student attendance and were asked for forecasts in the context of the work they are now doing and of the potential of Minnesota young people who will soon be seeking higher education. The recent University Self-Survey had alerted the units to this type of request, especially to the appraisal of the services which each unit may expect to give. It was assumed that the consistent upward trend of University admission requirements will be maintained so that future students will not only be the equals of those who have succeeded at the University in the past, but will actually be more highly selected under a program of admission growing more restrictive by the year. This has a bearing on prospective numbers.

Student totals are given in the second column of Table VI, both the actual ones for past years and the forecasts for fall terms of 1960, 1965, and 1970. Because facilities are the primary concern of this study, the students have been apportioned to the campuses on which they may be presumed to do their major work at any particular instant. Thus, those registered in the Graduate School at the Minneapolis Campus but taking major work at St. Paul or Duluth are listed as at the latter campuses. The last four columns present the estimated student distributions by campuses.

Two questions which have a bearing on the usefulness of forecasts such as those of Table VI ought to be raised at this point. First, if the state is to provide facilities at the University or elsewhere for any such numbers of students, may these facilities not be more than adequate at some not too distant time when the bulge in college enrollments will have passed? The answer is that during the last ten years demographers have completely reversed their thinking about population prospects. Whereas they formerly suggested that our population might soon reach a plateau, with some actual prospects of decline after the year 2000, they are now anticipating no decline. Estimates for the country as a whole have been raised from some 160 or 180 million to more than 220 million by the early 1970s. For a long time to come, these 40 million to 60 million additional people will consist primarily of young people in the school and college age group. Minnesota's approximate share in such additional population increase, largely at the lower age levels, could easily approach a million persons in about the next generation.

A second pertinent question is this. If the University was able to instruct some 27,000 to 28,000 students, mostly veterans, immediately after World War II, why is it not still in a position to proceed, with the physical facilities now available to it, a long way in providing for the more than 30,000 attendance forecast for the year 1960 and for virtually all of the larger numbers expected to be in attendance later? The fact is that after World War II, when classes at the University were relatively unfilled, there was a sudden inrush of approximately 10,000 freshmen (more than twice the usual number per year). These students entered lower-division, nonprofessional work where large increases could be dealt with—in large classes, by shifting staff assignments, and by utilizing general-purpose classrooms to the fullest. It is significant, too, that the teaching load and the demand for physical facilities at the University rose sharply for several years after the peak enrollments of 1946 and 1947, due to the progression of the wave of veterans into advanced and specialized classes. This was true even though attendance was declining before the Korean War, as the tables show.

Furthermore, the load of veterans' education was dealt with expeditiously, not only because it was recognized as being temporary and short-term, but also because of the patriotic interest of the staff and the special motivation of the student-veterans. This motivation permitted unprecedented shifting of staff assignments and use of classrooms in late afternoon, evening, and late Saturday hours. It took advantage of an unusual willingness on the part of staff and students to accept inconvenient programs that went contrary to the habits of our population.

Scheduling temporarily acceptable to veterans who were drawing government subsistence benefits and highly motivated because of delay in their education was found to be quite different from that which can serve usual students, many of whom work part time. Also, most veterans of World War II had acquired considerable college credit in the service programs often conducted at colleges or universities during the war. Utilization of these credits increased the number of students graduated in the late 1940s without proportionately increasing the class and laboratory work which the students required for their degree programs. Thus, the numbers of students in colleges and universities immediately after World War II provide an uncertain and excessively high indication of the load placed on the facilities

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of the institution. This was particularly so at the University of Minnesota because of its unusual responsiveness to the demand for veterans' education.

Student origin and level. In specific planning for the future needs of the University as an agency of higher education in Minnesota, it is necessary to have information on the geographic origins of students and the distribution of those students among levels of academic work at the University.

While this report does not concern itself with the introduction of any innovations or reorganizations, but views the future needs of the University from the basis of present operations, it may be useful to record information concerning the geographical origin of students from Minnesota. Reorganization in Minnesota's higher education may take place sometime in the future. Thus, for the Minneapolis-St. Paul Campus, Table VII shows that more than 60 per cent of all Minnesotans who regularly attend there are from the metropolitan area, i.e. Hennepin and Ramsey counties. For planning at Minneapolis and St. Paul it can be expected that the number of students from the metropolitan area will continue to exceed one half of the total

number of students from Minnesota attending the University on those campuses.

Table VIII shows, for past and future, the attendance of lower-division students and those in advanced, specialized, professional, and graduate work. Here the classification is made in terms of whether or not the student must be on a particular campus of the University, or at the University at all. To illustrate, lower-division pre-professional work, in such fields as business or engineering, can be taken at any university campus or at any other college which provides this kind of program, including in Minnesota most of the private colleges, the state teachers colleges, and the junior colleges. Freshmen and sophomores in such work are classified as lower-division students regardless of the campus—Duluth, Minneapolis, or St. Paul—at which they are enrolled or may be expected to enroll. While a freshman enrolling in pre-pharmacy or pre-architecture (the five-year curriculum) might attend for one year in another college, he should take work during his sophomore year in the College of Pharmacy or the School of Architecture, respectively, at the Minneapolis Campus if he plans to get a degree from the University. Such a sophomore student is therefore treated as an exception and is counted with the advanced and professional students rather than as a lower-division student. The lower-division totals do not, therefore, represent precisely the totals of freshmen and sophomores, but are presented in a useful way for institutional and campus planning purposes and for further analysis of state needs.

Returning to the last column of Table VII, it is apparent that the lower-division students at Minneapolis-St. Paul (those who might attend at a junior college or other educational institution) are 65 per cent from the commuting area of the Minneapolis and St. Paul Campuses. In other words, of all students using those campuses of the University, a maximum of only about one third of the lower-division students could possibly take advantage of educational facilities away from Minneapolis and St. Paul, and then only in facilities well located, exactly planned, adequate, acceptable, and possibly new. The absolute limit in numbers of persons who might be drained away from Twin City campuses, if all were to acquiesce and if the exactly necessary facilities were provided where needed, is estimated to be 3,000 now and 5,000 to 6,000 in 10 to 15 years.

TABLE VII. GEOGRAPHICAL ORIGIN OF STUDENTS FROM MINNESOTA
ENROLLED AT THE UNIVERSITY (MINNEAPOLIS AND
ST. PAUL CAMPUSES ONLY) *

Academic Year	Place of Origin			Percentage of All Stu- dents from Met. Area	Percentage of Jr. College Students from Met. Area
	Metro- politan Area †	Other Areas	Total		
1944-45	6,165	3,032	9,197	67.0	...
1945-46	13,358	6,230	19,588	68.2	...
1946-47	21,183	10,035	31,218	67.9	...
1947-48	18,588	9,313	27,901	66.6	...
1948-49	15,068	7,748	22,816	66.0	...
1949-50	16,825	9,021	25,846	65.1	...
1950-51	13,226	6,974	20,200	65.5	...
1951-52	10,526	5,701	16,227	64.9	...
1952-53	12,120	6,529	18,649	65.0	66.3
1953-54	11,498	6,471	17,969	64.0	64.7
1954-55	12,295	7,121	19,416	63.3	64.5

* All data are from the *Bulletin of the University of Minnesota, The President's Report*, for the appropriate years. These are based on enrollment figures for each academic year indicated.

† The metropolitan area, as used here, includes Hennepin and Ramsey counties.

TABLE VIII. COLLEGIATE STUDENT ATTENDANCE DATA ACCORDING TO LEVEL, BY COLLEGE AND CAMPUS *

Quarter and Level	College of Registration—Minneapolis Campus †										Totals by Campus of Registration				Grand Total
	Bus.	Dent.- Dent. Hyg.	Educ.	General	I. T.	Law	Med. Sci.	Pharm.	S. L. A.	U. Coll.	Duluth	Mayo	Minne- apolis	St. Paul	
ACTUAL															
Fall 1953															
Lower Division ‡		71	488	1,364	1,326		4		3,693		885		6,946	763	8,594
Adv., Profess., Grad.	678	369	1,715		1,322	374	1,380	252	2,406	57	512	578	8,553	837	10,480
Total	678	440	2,203	1,364	2,648	374	1,384	252	6,099	57	1,397	578	15,499	1,600	19,074
Fall 1954															
Lower Division ‡		79	614	1,634	1,452		26		3,981		1,049		7,786	814	9,649
Adv., Profess., Grad.	734	366	1,826		1,437	358	1,386	157	2,337	62	621	643	8,663	823	10,750
Total	734	445	2,440	1,634	2,889	358	1,412	157	6,318	62	1,670	643	16,449	1,637	20,399
Fall 1955															
Lower Division ‡		92	724	2,084	1,879		34		4,635		1,277		9,448	1,036	11,761
Adv., Profess., Grad.	799	365	1,997		1,675	384	1,445	123	2,629	49	668	603	9,466	895	11,632
Total	799	457	2,721	2,084	3,554	384	1,479	123	7,264	49	1,945	603	18,914	1,931	23,393
FORECAST															
Fall 1960															
Lower Division ‡		100	961	3,400	2,501		38		5,996		1,821		12,996	1,174	15,991
Adv., Profess., Grad.	1,153	415	2,935		2,396	500	1,634	315	3,603	75	1,026	600	13,026	1,157	15,809
Total	1,153	515	3,896	3,400	4,897	500	1,672	315	9,599	75	2,847	600	26,022	2,331	31,800
Fall 1965															
Lower Division ‡		125	1,140	4,500	3,209		44		7,059		2,287		16,077	1,420	19,784
Adv., Profess., Grad.	1,486	519	3,485		3,075	625	1,865	429	4,243	100	1,289	600	15,827	1,400	19,116
Total	1,486	644	4,625	4,500	6,284	625	1,909	429	11,302	100	3,576	600	31,904	2,820	38,900
Fall 1970															
Lower Division ‡		150	1,320	6,000	3,858		48		8,428		2,642		19,804	1,806	24,252
Adv., Profess., Grad.	2,013	621	4,034		3,697	775	2,000	521	5,066	150	1,490	600	18,877	1,781	22,748
Total	2,013	771	5,354	6,000	7,555	775	2,048	521	13,494	150	4,132	600	38,681	3,587	47,000

* Includes graduate students in the colleges where they are working, even though they are registered at Minneapolis and in the Graduate School.

† Agri., For., H. Ec., and Vet. Med., and graduate majors in those fields, are accounted for at the St. Paul Campus.

‡ Generally freshmen and sophomores as opposed to specialized, advanced professional, and graduate students.

INSTRUCTIONAL LOADS, AREA USE FACTORS, AND METHODS OF PROJECTING SPACE NEEDS

Relationship of instruction to building space use. The method derived at the University of Minnesota is based on a detailed analysis of the practices of the various instructional units in bringing students into classes, laboratories, etc., for formal teaching. It has been possible, as a by-product of recent punch-card machine work in scheduling and building space control at the University, to account fully for the number of hours each week that a student registered in any college of the University, or any campus, spends at an instructional station (student station equals classroom chair, laboratory desk, laboratory space, etc.) during each week, whether that instruction is given by his major college of registration or by any other teaching unit. A study of such results showed them to be remarkably consistent term after term and year after year; Table IX shows arithmetic or inspection averages from six recent University quarters.

These student station hour results show, for example, that the hypothetical average student registered in Education (column 8 of Table IX) is 0.08 hours a week occupying instructional stations as provided by the College of Agriculture, Forestry, and Home Economics. He spends 6.75 hours each week with an instructor using facilities in his own College of Education, out of a total of 14.45 student station hours requiring various kinds of space. These determinations provide basic information on the relationship of physical plant use to attendance. It can be observed that the addition of 100 students as majors in the College of Education would increase the student station hour utilization of Agriculture, Forestry, and Home Economics by 8 whole student station hours each week, that of the School of Business Administration by 17, and that of Education by 675. Even Medical Sciences would be called on to contribute 93 student station hours of instruction in such work as hygiene and public health, since the hypothetical student spends 0.93 hours a week using the facilities of that college.

With a table of this kind, therefore, forecasts can be made in terms

of the specific needs in the different instructional units, regardless of where enrollments may fall. Improvements which usually have to be made in terms of particular kinds of building space or specific facilities can be related to all the students who use those facilities.

The next step in applying this method of analysis and projection involves a determination of the detailed operating practices of the teaching units, to be followed by incorporation in the forecasts of (a) any anticipated or necessary improvements and (b) the relationships between increase in attendance and increase in space needs, according to the particular use to which the space is put.

Building space requirements for any year in the future are determined by adding the additional area required for the expected increase in load to the existing area.

Load is expressed in terms of the measurement which is most appropriate to the particular activity being studied. Three types of load measurement are used in this study.

1. *Student station hours.* This is the measurement most used. It is the sum of the hours that each student spends in class every week, in a chair or with a laboratory set-up. The advantages of this measurement are (a) it gives appropriate weight to the full-time and to the part-time student; (b) it makes possible the measurement of service work done by each college for students enrolled in other colleges; and (c) it takes into account the pattern of instruction of each college that contributes teaching.

2. *Number of students enrolled.* This is a measure of the load for those activities where the distinction between kinds of students or between full-time and part-time is not significant for determining space requirements (as for cafeterias).

3. *The population of Minnesota.* This is the measure of load for certain public services which have doubtful correlation with student attendance or student station hours of teaching: extension work, for example.

PROJECTION METHODS

TABLE IX. DISTRIBUTION OF INSTRUCTION BY COLLEGES MEASURED IN AVERAGE STUDENT STATION HOURS PER WEEK PER STUDENT

College Giving Instruction	College of Registration																		
	Ag., F., & H. E.	Vet. Med.	Bus.	Dent.	Dent. Hyg.	Duluth	Educ.	General	Grad.	I. T.	Law	Med.	Med. T.	P. & O. Ther.	Nurs.	P. H.	Pharm.	S. L. A.	U. Coll.
Ag., For., & H. Ec.	12.20	32.00					0.08		0.91	0.06						0.16		0.06	1.54
Vet. Medicine																			
Business Admin.	0.23		11.80		0.27		0.17	0.36	0.40	0.59	0.10						0.64	1.31	3.98
Dent. & Dent. Hyg.				10.45 *	10.92 *			0.17 *											
Duluth Branch						18.03													
Education	0.80						6.75	0.13	0.80					0.24		0.30		0.09	0.29
General College	0.55						0.53	13.61							0.58			0.03	
Inst. of Tech.	1.91		0.69	0.19			0.10	0.39	1.34	14.73				0.55		0.27	1.95	1.41	0.69
Law School											15.46								
Medical Sciences	0.65			9.09	4.73		0.93		0.57			14.54 *	10.55 *	12.06 *	8.88 *	9.50 *	3.00	0.35	0.32
Pharmacy																	15.40		
S. L. A.	3.67		1.77		5.64		5.89	1.30	3.08	5.79	0.19		1.58	1.59	0.63	2.76	2.50	12.75	8.22
Total	20.01	32.00	14.26	19.73	21.56	18.03	14.45	15.96	7.10	21.17	15.75	14.54	12.68	13.89	10.09	12.99	23.49	16.00	15.04

* Clinical courses are excluded.

EXPLANATION OF SPACE INCREASE FACTORS USED IN TABLES X-XIX

The manner in which the increase in load is translated into additional square feet of space needed is explained in the Introduction (pp. 7-9). The following are explanations of the space increase factors used in Tables X-XIX. These factors reflect improvement which can be achieved in scheduling use of space. The optimal space use factors (square feet of space actually required per unit of load) are also explained, unless they bear an obvious relationship to the space factors for 1951, 1953, or 1954.

It should be noted that existing areas have been increased over those of the base period for purposes of computation in the few instances where they are far below that area which would be obtained by application of the optimal space use factor to the base period (1954) load. These are situations in which experience has indicated a severe space shortage.

Provision for such overcrowding results in the higher rate of space increase in 1960, as compared with 1965 and 1970, for the Duluth and Minneapolis Campuses (column 6 of Table XX). In other cases, existing areas of the base period have been decreased, for purposes of computation, as in two

instances of general purpose classrooms and some reading room areas. Student station hours were taken from classroom utilization reports for the winter quarters 1952, 1954, and 1955 and projected to the preceding fall quarters in the proportion that the winter quarter enrollment bears on an average to the earlier fall quarter enrollment for the years in question. This was necessary because classroom utilization reports were not prepared for fall quarters.

In approaching the matter of space needs for the future, an underlying assumption has been adhered to: namely, that space now occupied is essentially required, even if not fully utilized. However, base period areas have been adjusted for purposes of calculating future space needs for general purpose classrooms and laboratories. Many of the laboratories serve a highly specialized purpose, if only during a few hours of each week. But to relinquish them would mean that a field of instruction or research would have to be discontinued. Nevertheless, laboratory utilization will increase as attendance climbs, and this improvement in utilization is taken into account in estimating future areas. The expected improvement in utilization by 1970 is shown in the accompanying tabulation.

PROJECTION METHODS

<i>College or Division</i>	<i>Percentage of Increase in Laboratory Utilization</i>
Vet. Med.	18.7
Ag., For., and H. Ec.	53.7
Bus.	26.1
Dent.	6.9
Educ.	20.6
General	44.2
Med. Sci. (excl. Mayo-Powell)	36.4
Pharm.	60.7
S.L.A.	21.5
I.T.	27.5
R.O.T.C.	75.5
Duluth Branch	39.1

Student station hours of teaching used for purposes of calculating future space requirements, as shown in Tables X through XIX, are those for the college concerned, or for the appropriate campus in case of central services and activities. When a central activity serves more than one campus, the station hours used in the calculation were the sum of the student station hours of teaching for the campuses involved.

Calculations for building areas needed by 1970 are shown only for those units which will require added space. Some units, for which space increases between 1954 and 1970 are not anticipated, generally use only small areas now, excepting some noninstitutional organizations, such as the state Department of Agriculture. Tables XX and XXI include all areas, whether or not they are expected to increase between 1954 and 1970, except as noted in the footnotes to those tables.

TABLE X. COLLEGE SPACE NEEDS FOR INSTRUCTION AND STUDENT PERSONNEL SERVICE RELATED TO STUDENT STATION HOURS OF TEACHING

Offices. The space increase factors for offices are equal to 100 per cent of the optimal space use factor derived for the particular unit. These rounded optimal factors approximate 75 square feet of office area for each teaching assistant and 120 square feet for each instructor and each assistant, associate, and full professor during the base period (1954). They vary somewhat from the square feet per student station hour existing in the

TABLE X. COLLEGE SPACE NEEDS FOR INSTRUCTION AND STUDENT PERSONNEL SERVICE RELATED TO STUDENT STATION HOURS OF TEACHING
(All areas shown in assignable square feet)

Fall Quarter of Year	Student Service Areas	Instructional Space Areas According to Use				Student Station Hours of Scheduled Teaching		Area Use Factor per Student Station Hour of Scheduled Teaching Based on			
								Total Hours		Laboratory Hours	
		Office	Laboratory	All Other	Total	Total Hours	Laboratory Hours Only	Student Service	Office	Labora- tory	All Other
SCHOOL OF VETERINARY MEDICINE *											
1951	301		25,983	18,375 †	44,358	5,179					
1953	301		30,105	26,461 †	56,566	6,016					
1954	301	6,691	29,432	23,383	59,506	5,768	2,082				
								Optimal	0.05	1.16	14.14
									0.05	0.90	14.14
Estimated for											
1960	317	6,972	29,979	23,607	60,558	6,080	2,194		0.05	0.90	4.88
1965	349	7,548	31,146	24,099	62,793	6,720	2,425		0.05	0.90	5.05
1970	397	8,412	33,004	24,891	66,307	7,680	2,771		0.05	0.90	5.37
COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS *											
1951	1,217		109,329	79,642 †	188,971	23,516					
1953	1,217		112,577	81,402 †	193,979	20,493					
1954	2,942	32,670	106,329	48,976	187,975	19,901	9,833		0.15	1.64	10.81
								Optimal	0.15	1.00	9.40
										4.98	4.98

TABLE X—Continued

Fall Quarter of Year	Student Service Areas	Instructional Space Areas According to Use				Student Station Hours of Scheduled Teaching		Area Use Factor per Student Station Hour of Scheduled Teaching Based on			
		Office	Laboratory	All Other	Total	Total Hours	Laboratory Hours Only	Total Hours		Laboratory Hours	
								Student Service	Office	Labora- tory	All Other
Estimated for											
1960	3,885	38,954	115,178	51,833	205,965	26,185	12,938	0.15	1.00	2.85	0.92
1965	4,713	44,479	124,651	54,645	223,775	31,710	15,668	0.15	1.00	3.47	1.03
1970	6,005	53,091	141,203	59,581	253,875	40,322	19,923	0.15	1.00	3.89	1.16
SCHOOL OF BUSINESS ADMINISTRATION											
1951	1,080		2,837	8,410 †	11,247	15,668					
1953	1,080		2,837	8,385 †	11,222	16,926					
1954	1,080	7,161	2,837	1,919	11,917	18,221	782				
								Optimal	0.06	0.39	3.63
									0.06	0.50	2.45
Estimated for											
1960	1,763	12,852	3,876	2,339	19,067	29,602	1,270	0.06	0.50	2.13	0.86
1965	2,202	16,513	4,674	2,615	23,802	36,925	1,584	0.06	0.50	2.54	0.88
1970	2,835	21,782	5,858	3,022	30,662	47,463	2,036	0.06	0.50	2.62	0.90
SCHOOL OF DENTISTRY											
1951			21,418	11,645 †	33,063	5,002					
1953			20,700	12,827 †	33,527	4,795					
1954		3,432	19,123	11,022	33,577	4,894	2,666				
								Optimal	0.0	0.70	7.17
									0.80	7.17	4.13
Estimated for											
1960		3,640	19,940	11,260	34,840	5,154	2,807		0.80	5.80	1.69
1965		4,705	24,189	12,529	41,423	6,485	3,532		0.80	5.86	1.75
1970		5,824	28,821	13,885	48,530	7,884	4,294		0.80	6.08	1.78
COLLEGE OF EDUCATION (including Child Welfare)											
1951	1,191		9,650	14,503 †	24,153	16,201					
1953	1,515		10,246	19,082 †	29,328	13,347					
1954	1,806	12,876	12,831	7,159	32,866	17,135	3,646				
								Optimal	0.11	0.75	3.52
									0.11	0.60	1.96
Estimated for											
1960	2,940	19,059	17,721	8,738	45,518	27,440	5,839	0.11	0.60	2.23	0.72
1965	3,497	22,097	20,513	9,525	52,135	32,504	6,917	0.11	0.60	2.59	0.73
1970	4,109	25,435	23,651	10,413	59,499	38,067	8,101	0.11	0.60	2.65	0.75
GENERAL COLLEGE											
1951	450		4,419	7,691 †	12,110	16,103					
1953	450		4,419	8,030 †	12,449	20,098					
1954	450	6,037 (9,659) ‡	5,292	1,147	12,476	24,250	1,028				
								Optimal	0.02	0.25	5.15
									0.02	0.40	1.12
Estimated for											
1960	954	19,746	7,847	1,532	29,125	49,467	2,097	0.02	0.40	2.39	0.36
1965	1,265	25,965	10,012	1,776	37,753	65,014	2,757	0.02	0.40	3.28	0.37
1970	1,689	34,437	13,047	2,108	49,592	86,196	3,655	0.02	0.40	3.38	0.37

TABLE X—Continued

Fall Quarter of Year	Student Service Areas	Instructional Space Areas According to Use				Student Station Hours of Scheduled Teaching		Area Use Factor per Student Station Hour of Scheduled Teaching Based on			
								Total Hours		Laboratory Hours	
		Office	Laboratory	All Other	Total	Total Hours	Laboratory Hours Only	Student Service	Office	Labora- tory	All Other
SCHOOL OF LAW											
1951	993			5,109 †	5,109	5,540					
1953	993			5,811 †	5,811	6,204					
1954	993	2,581		3,129	5,710	5,963					
								Optimal	0.17	0.43	0.52
Estimated for									0.17	0.40	0.52
1960	1,293	3,288		3,359	6,647	7,730					
1965	1,622	4,061		3,649	7,710	9,663					0.13
1970	2,016	4,989		4,043	9,032	11,982					0.15
									0.17	0.40	0.17
COLLEGE OF MEDICAL SCIENCES (excluding Mayo and Powell Hall Buildings)											
1951			30,855	35,414 †	66,269	27,119					
1953			30,706	37,242 †	67,948	19,027					
1954		14,267	26,908	13,422	54,597	15,823	5,908				
								Optimal		0.90	4.55
Estimated for									0.80	3.41	2.27
1960		24,280	37,004	17,816	79,100	28,339	10,582				
1965		28,064	41,966	19,511	89,541	33,069	12,348			0.80	2.16
1970		31,497	46,596	21,081	99,174	37,360	13,950			0.80	0.94
										0.80	0.96
COLLEGE OF MEDICAL SCIENCES (Mayo and Powell Hall Buildings)											
1954				83,947	83,947	15,823					
(excluding Mayo and Powell Hall Buildings)											5.31
								Optimal			5.31
Estimated for											
1960				90,580	90,580	28,339					
1965				93,087	93,087	33,069					0.53
1970				95,362	95,362	37,360					0.53
											0.53
COLLEGE OF PHARMACY (excluding University Avenue Greenhouse, 1,676 sq. ft.)											
1951	211		12,248	4,351 †	16,599	4,124					
1953	211		12,790	2,799 †	15,589	2,814					
1954	211	1,332	13,707	1,410	16,449	2,739	1,192				
								Optimal	0.08	0.49	11.50
Estimated for									0.08	0.70	11.50
1960	361	2,649	16,762	1,623	21,034	4,620	2,011				
1965	497	3,835	20,557	1,836	26,228	6,314	2,748			3.73	0.26
1970	608	4,805	24,018	2,023	30,846	7,700	3,352			5.15	0.29
									0.08	0.70	5.73
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS											
1951	11,883		103,100	116,604 †	219,704	101,650					
1953	10,341		104,126	126,456 †	230,582	106,898					
1954	11,153	75,610	100,057	61,345	237,012	118,227	21,352				
								Optimal	0.09	0.64	4.69
									0.09	0.60	4.69
											2.87

TABLE X—Continued

Fall Quarter of Year	Student Service Areas	Instructional Space Areas According to Use				Student Station Hours of Scheduled Teaching		Area Use Factor per Student Station Hours of Scheduled Teaching Based on			
		Office	Laboratory	All Other	Total	Total Hours	Laboratory Hours Only	Total Hours		Laboratory Hours	
								Student Service	Office	Labora- tory	All Other
Estimated for											
1960	16,648	112,241	131,812	72,591	316,644	179,279	32,378	0.09	0.60	2.88	1.02
1965	19,922	134,067	153,555	79,488	367,110	215,655	38,947	0.09	0.60	3.31	1.05
1970	23,887	160,501	180,848	88,002	429,351	259,712	46,904	0.09	0.60	3.43	1.07
INSTITUTE OF TECHNOLOGY											
1951	2,997		199,788	99,528 †	299,316	46,653					
1953	3,172		193,789	109,986 †	303,775	45,857					
1954	2,767	50,064	185,288	66,492	301,844	51,795	20,298	0.05	0.97	9.13	3.28
								Optimal	0.05	0.80	9.13
Estimated for											
1960	4,630	79,867	262,230	83,282	425,379	89,049	34,898	0.05	0.80	5.27	1.15
1965	5,824	98,975	322,234	94,421	515,630	112,934	44,259	0.05	0.80	6.41	1.19
1970	7,012	117,979	383,766	105,685	607,430	136,689	53,568	0.05	0.80	6.61	1.21
R.O.T.C. DEPARTMENTS §											
1951	5,762		14,266	16,449 †	30,715	8,281					
1953	5,296		14,266	16,336 †	30,602	6,789					
1954	4,398	7,170	14,536	9,407	31,113	4,522	3,831	0.97	1.59	3.79	2.46
								Optimal	0.97	0.40	2.05
Estimated for											
1960	4,398	8,298	16,495	11,103	35,896	7,343	6,220	0.0	0.40	0.82	0.71
1965	4,398	8,982	18,204	12,247	39,433	9,052	7,668	0.0	0.40	1.18	0.79
1970	4,398	9,782	20,439	13,703	43,924	11,051	9,361	0.0	0.40	1.32	0.86
DULUTH BRANCH											
1954	3,524	14,828	33,226	14,713	62,767	30,100	8,103	0.12	0.49	4.10	1.82
								Optimal	0.12	0.50	4.10
Estimated for											
1960	5,970	25,020	43,267	17,566	85,853	50,484	13,590	0.12	0.50	1.83	0.52
1965	7,485	31,331	51,252	19,435	102,018	63,105	16,988	0.12	0.50	2.35	0.55
1970	8,566	35,838	57,270	20,794	113,902	72,120	19,415	0.12	0.50	2.48	0.56
GENERAL EXTENSION DIVISION **											
1954					1,083						
Estimated for											
1960					1,444						
1965					1,805						
1970					2,166						

* Excludes farm field buildings.

† Includes office area.

‡ Figure in parentheses is adjusted base (see page 25).

§ Excludes drill area of 7,714 sq. ft. existing, 25,000 sq. ft. required.

** The space increase factor is equal to one third of the base area for each of the three future periods.

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College or Division	Square Feet per Student Station Hour	
	Base Period Actual	Optimal Use Factor
Vet. Med.	1.16	0.90
Ag., For., and H. Ec.	1.64	1.00
Bus.	0.39	0.50
Dent.	0.70	0.80
Educ.	0.75	0.60
General	0.25	0.40
Law	0.43	0.40
Med. Sci. (excl. Mayo-Powell)	0.90	0.80
Pharm.	0.49	0.70
S.L.A.	0.64	0.60
I.T.	0.97	0.80
R.O.T.C.	1.59	0.40
Duluth Branch	0.49	0.50

College or Division	Maximum Hour Use Expected Per Week	Maximum Filling Expected Per Week	Optimal Stud. Sta. Utilization *
Vet. Med.	50%	80%	40%
Ag., For., and H. Ec.	50	60	30
Bus.	60	70	42
Dent.	60	80	48
Educ.	60	80	48
General	60	80	48
Med. Sci. (excl. Mayo-Powell)	50	60	30
Pharm.	40	80	32
S.L.A.	50	70	35
I.T.	40	80	32
R.O.T.C.	60	80	48
Duluth Branch	50	70	35

* Maximum hour use per week $\times$ maximum filling per week.

base period, because they were computed from standards which may exceed or be less than the areas actually used by the individual faculty person.

Student services attached to colleges. The space increase factors for student personnel services in the colleges are each 100 per cent of the optimal space requirement. The optimal requirements are equal to those of the base period, since the areas were more fully used that year than earlier.

Laboratories. The space increase factor for laboratory areas for each period (1960, 1965, and 1970) bears the same percentage relationship to the optimal space use factor for laboratories as existing utilization of possible student station hours in those laboratories bears to the optimal student station hour utilization. This is appropriate because of the composite nature of the laboratory groups dealt with in each college.

The optimal utilization is conditioned by both the number of hours one can reasonably expect the laboratory to be in use and the proportion of stations (or seats) expected to be occupied when the room is in use.

Existing utilization must relate to the year to which one is projecting utilization. It varies from one period to another with variations in student attendance and in available space. Existing laboratory utilization is computed for each college for the years 1954, 1960, 1965, and 1970. It was assumed for purposes of this computation that available student station hours varied in the same proportion as available laboratory areas, and that

the ratio of laboratory to total student station hours was the same in 1960, 1965, and 1970 as in the base period (1954).

As an example, assume that college X had 3.6 square feet of space in 1954 for each student station hour of laboratory work taught. Further, assume that laboratory student station utilization in 1954 was 10 per cent of the possible utilization, and optimal utilization was determined to be 40 per cent. Existing utilization is thus 10/40 or 25 per cent of optimal utilization. So for 1960 we will add only 25 per cent of 3.6 square feet for each student station hour of laboratory teaching added between 1954 and 1960. Since laboratory area increases at a slower rate than student station hours of laboratory teaching, the laboratory utilization in 1960 will be greater than that in 1954. And the space increase factor for 1965 will be correspondingly greater than that for 1960, and so for 1970 over 1965.

Other areas for instruction. Instructional spaces referred to as "All Other" areas assigned to the colleges are essentially related to laboratory areas, comprising primarily stock rooms, maintenance shops, laboratory preparation rooms, and laboratory service rooms. It can be expected, therefore, that space increase factors for them will relate to those for the laboratory areas they serve. The computations assume a rate of increase which is half as fast as for the corresponding laboratory areas, since experience indicates that greater use of service areas is achieved as work areas expand.

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TABLE XI. GENERAL PURPOSE CLASSROOM AND CONFERENCE ROOM SPACE NEEDS RELATED TO STUDENT STATION HOURS OF TEACHING

Space increase factors for general purpose classrooms and conference rooms are all equal to the optimal space use factors because the base area used in the computations has been adjusted to reflect the improved utilization anticipated in classrooms through improved scheduling. It is expected that 50 per cent more hours of use each week can be obtained ultimately from these rooms, and that 25 per cent more seats will be occupied every hour the room is in use. When we average the space use factors for 1951,

1953, and 1954 on the Minneapolis Campus (0.87, 0.90, and 0.85 square feet per student station hour of teaching) and adjust this average to reflect the 87.5 per cent expected improvement in use, we obtain a figure of 0.47 square feet per student station hour. This is what would have been required on the average had the improvements been in effect in those years. This figure was rounded off to 0.50, the optimal use factor applied at the Minneapolis Campus.

The optimal space use factor for the Duluth and St. Paul Campuses is chosen to be 0.75 square feet per student station hour of teaching instead

TABLE XI. GENERAL PURPOSE CLASSROOM AND CONFERENCE ROOM SPACE NEEDS RELATED TO STUDENT STATION HOURS OF TEACHING
(All areas shown in assignable square feet)

Fall Quarter of Year	General Space Areas According to Use		Total Student Station Hours of Scheduled Teaching	Area Use Factor per Student Station Hour of Scheduled Teaching	
	Classrooms	Conference Rooms		Classrooms	Conference Rooms
DULUTH					
1954	23,625 (22,575) *		30,100	0.784	
				Optimal	0.75
Estimated for					
1960	37,863		50,484	0.75	
1965	47,329		63,105	0.75	
1970	54,090		72,120	0.75	
MINNEAPOLIS					
1951	213,236		246,341	0.866	
1953	218,554		242,755	0.900	
1954	223,449 (131,785) *	5,654	263,569	0.848	0.02
				Optimal	0.50
Estimated for					
1960	223,449 (214,012) *	8,943	428,023	0.50	0.02
1965	263,808	10,935	527,615	0.50	0.02
1970	322,053	13,265	644,104	0.50	0.02
ST. PAUL					
1951	48,091		28,695	1.676	
1953	46,486		26,509	1.754	
1954	47,592 (19,252) *		25,669	1.854	
				Optimal	0.75
Estimated for					
1960	36,002 (24,199) *		32,265	0.75	
1965	36,002 (28,823) *		38,430	0.75	
1970	36,002		48,002	0.75	

* Figure in parentheses is adjusted base (see page 25).

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of 0.50. This means that utilization is expected to be half as effective as for the Minneapolis Campus. The reasons for this are (a) the long distances between many buildings on the St. Paul Campus, (b) the present poor correlation between room design and class needs at St. Paul, and (c) the great distance between the old and new campuses at Duluth. The consolidation of campuses at Duluth is not expected to be completed before 1970.

For purposes of calculating future space needs, the base area, that of 1954, has been adjusted for each campus as if the improved use had been in effect at that time. This figure, whenever required, appears in parentheses beside the actual area. When areas calculated for the future period are less than the existing general classroom areas, they appear in parentheses to the right of the existing area.

It will take several years to reach the point of efficiency anticipated by the optimal space use figures. This will occur before 1960 at Duluth and between 1960 and 1965 at Minneapolis. The general purpose classroom area at St. Paul will be reduced to 36,002 square feet shortly, but full utilization of that remaining area will not be reached until near 1970.

TABLE XII. LIBRARY SPACE NEEDS RELATED TO STUDENT STATION HOURS OF TEACHING AND OTHER FACTORS

Reading rooms. The space increase factor for reading room areas is equal to the optimal space use factor. Thus, reading areas increase in direct proportion to the increase in student station hours of teaching on the particular campus.

In 1954, the University Library on the Minneapolis Campus had 0.30 square feet of reading room space for each student station hour of instruction given on that campus. It has been determined by library officials that this represented the capacity use of such facilities during the morning hours, when the load was heaviest. This figure of 0.30 square feet has therefore been used as the optimal space use factor for reading rooms on all three campuses.

There was thought to be little difference in the reading area per individual from one campus to another because of the composite nature of the subjects studied. An exception was made in the case of the Law Library on the Minneapolis Campus. There, a single field of study is involved and the

materials constitute numerous sources which require large table areas. The optimal space use factor used for the Law Library is 1.00 square feet for each student station hour of teaching by the Law School.

All other areas. Library areas included under "All Other" are primarily stack areas, and also circulation desks, cataloguing rooms, and other work areas.

Studies reported in the Harvard Library Bulletin for 1947 and 1948 suggest that collections in a "mature" library (one having all basic collections) will increase by about 3.60 per cent each year. This increase holds true irrespective of variations in student attendance. The University Library on the Minneapolis Campus can be considered a mature library; therefore, the increase factor of 3.60 per cent per year has been used. However, the Duluth and St. Paul libraries have not built up their basic collections, and thus cannot be considered mature libraries in computing future needs. It was concluded that the increases for "All Other" areas for the Duluth and St. Paul Campuses would be 6.00 per cent and 5.00 per cent per year respectively, and that these percentages will decrease by 0.01 per cent each year until they stabilize at 3.60 per cent.

The increase factors shown in Table XII are the sums of the annual increases, expressed in percentages for the periods noted.

	Duluth	St. Paul
1955	6.00%	5.00%
1956	5.94	4.95
1957	5.88	4.90
1958	5.82	4.85
1959	5.74	4.80
1960	5.68	4.75
	35.06%	29.25%
1961	5.62	4.70
1962	5.56	4.65
1963	5.50	4.50
1964	5.44	4.45
1965	5.39	4.41
	27.51%	22.71%
1966	5.34	4.37
1967	5.29	4.33
1968	5.24	4.29
1969	5.19	4.25
1970	5.11	4.21
	26.17%	21.45%

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TABLE XII. LIBRARY SPACE NEEDS RELATED TO STUDENT STATION HOURS OF TEACHING AND OTHER FACTORS

(All areas shown in assignable square feet)

Fall Quarter of Year	Library Space Areas According to Use			Total Student Station Hours of Scheduled Teaching	Area Use Factor per Student Station Hour of Scheduled Teaching (Reading Rooms)	Per Cent Increase Factor Applied to 1954 Base Period (All Other)
	Reading Rooms	All Other	Total			
UNIVERSITY LIBRARY						
Minneapolis Campus						
1954	78,695	102,668	181,363	263,569	0.30	
Estimated for					Optimal	0.30
1960	128,031	124,844	252,875	428,023	0.30	21.60
1965	157,909	143,324	301,233	527,615	0.30	18.00
1970	192,856	161,804	354,660	644,104	0.30	18.00
St. Paul Campus						
1954	17,475 (7,701)	11,544	29,019 (19,245)	25,669	0.68	
Estimated for					Optimal	0.30
1960	17,475 (9,680)	14,921	32,396	32,265	0.30	29.25
1965	17,475 (11,530)	17,543	35,018	38,430	0.30	22.71
1970	17,475 (14,402)	20,019	37,494	48,002	0.30	21.45
LAW LIBRARY (Minneapolis Campus)						
1954	6,658	15,446	22,104	5,963	1.12	
Estimated for					Optimal	1.00
1960	8,425	18,782	27,207	7,730	1.00	21.60
1965	10,358	21,562	31,920	9,663	1.00	18.00
1970	12,677	24,342	37,019	11,982	1.00	18.00
DULUTH LIBRARY						
1954	5,157 (9,030)	5,061 (13,396)	10,218 (22,426)	30,100	0.17	
Estimated for					Optimal	0.30
1960	15,145	18,093	33,238	50,484	0.30	35.06
1965	18,932	21,778	40,710	63,105	0.30	27.51
1970	21,636	25,284	46,920	72,120	0.30	26.17

TABLE XIII. SPACE NEEDS FOR RESEARCH AND ADMINISTRATION
RELATED TO STUDENT ATTENDANCE

Research. Space increase factors are equal to the optimal space use figures on the assumption that research space needs will increase in proportion to the increase in the number of graduate students.

The number of graduate students was selected as the unit of measure-

ment for research space needs for these reasons: (1) There is an obligation to provide research facilities for students pursuing graduate work at the University. (2) There is suggestion of a good correlation between the number of graduate students and the number of faculty of the rank of assistant professor or above to teach such students (this is not true in the case of lower-level undergraduate students). This is even more likely as the quality

PROJECTION METHODS

of the graduate faculty increases; a good faculty attracts graduate students and this faculty and the graduate students do research. (3) This measurement permits recognition of the changing needs for research space by the colleges, over the years. These space needs will vary according to the number of graduate students doing work in the respective colleges. It is logical to assume that if the number of graduate students and faculty increases more rapidly in college A than in college B, then college A's additional space requirements for research will be greater than college B's. (4) The final results obtained from totally different methods of calculation agreed with the results obtained by our method.

The area required for each graduate student (and his associated faculty person) will not be less in the future than at present; this is a basic assumption.

Academic programing. The term "Academic Programing" refers primarily to the offices of the Deans and their administrative staffs and the college general offices, including student registration areas at colleges. It does not include counseling and student placement areas, nor offices of the teaching department heads (the latter are included under "Instruction").

The optimal use factor applied here is based on numbers of students rather than student station hours of scheduled teaching because for purposes of academic programing the space need for part-time students can be expected to equal approximately that for full-time students.

Space increase factors for academic programing are chosen as 20 per cent of the optimal space use factor. It can be anticipated that the number of college administrative officials will not increase appreciably with the enrollment increases to 1970. The size of the clerical staffs in the respective colleges will show more direct relationship to the college enrollment. Registration areas can be utilized more effectively, or at different times, for the most part.

Business management and related administrative services. The term "Business Management and Administrative Services" covers such activities as keeping central financial records, preparing payroll checks, hiring and training new staff, directing physical plant operations, and providing for protection and safety of students and staff. It also includes the academic services of admitting students and maintaining statistics and central student records (Admissions and Records work). Here again, the optimal use factor is based on the number of students, for the reasons given under "Academic Programing."

The space increase factors used for these areas (except for the General Extension Division) are equal to one half the optimal space use factor for the respective units. Top supervisory staff will not, of course, increase as fast as enrollment increases. Much of the work is now mechanized. More mechanization can be anticipated, as well as more effective use of machines and improvement of procedures.

TABLE XIII. SPACE NEEDS FOR RESEARCH AND ADMINISTRATIVE SERVICES RELATED TO STUDENT ATTENDANCE

(All areas shown in assignable square feet)

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. of Research per Grad. Student (Factor)	Sq. Ft. per Total Student (Factor)	
		Academic Programing	Business Management & Admin. Service	Total				Academic Programing	Business Management & Admin. Service
SCHOOL OF VETERINARY MEDICINE *									
1951	7,528								
1953	10,576	1,558		1,558	15	209	705.1	7.45	
1954	6,643	1,558		1,558	15	199	442.9	7.83	
							Optimal 500.0	7.75	
Estimated for									
1960	6,643	1,567		1,567	15	205	500.0	1.55	
1965	7,143	1,600		1,600	16	226	500.0	1.55	
1970	9,143	1,653		1,653	20	260	500.0	1.55	

TABLE XIII—Continued

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. of Research per Grad. Student (Factor)	Sq. Ft. per Total Student (Factor)	
		Academic Programing	Business Management & Admin. Service	Total				Academic Programing	Business Management & Admin. Service
COLLEGE OF AGRICULTURE, FORESTRY, AND HOME ECONOMICS *									
1951	115,903	603		603					
1953	118,029	603	346	949	221	1,391	534.1	0.43	0.25
1954	151,057	902	346	1,248	225	1,438	671.4	0.63	0.24
							Optimal 675.0	0.60	0.24
Estimated for									
1960	205,732	985	429	1,414	306	2,126	675.0	0.12	0.12
1965	265,132	1,041	485	1,526	394	2,594	675.0	0.12	0.12
1970	331,282	1,129	573	1,702	492	3,327	675.0	0.12	0.12
INSTITUTE OF AGRICULTURE *									
1951		1,297	2,085	3,382		1,743		0.74	1.20
1953		1,297	2,085	3,382		1,600		0.81	1.30
1954		1,708	2,085	3,793		1,637		1.04	1.27
							Optimal	1.00	1.20
Estimated for									
1960		1,847	2,501	4,348		2,331		0.20	0.60
1965		1,945	2,794	4,739		2,820		0.20	0.60
1970		2,098	3,254	5,352		3,587		0.20	0.60
SCHOOL OF BUSINESS ADMINISTRATION									
1951	2,564	2,293		2,293					
1953	5,175	2,236		2,236	118	678	43.9	3.30	
1954	4,447	2,336		2,336	120	734	37.1	3.18	
							Optimal 40.0	3.25	
Estimated for									
1960	5,767	2,608		2,608	153	1,153	40.0	0.65	
1965	7,087	2,824		2,824	186	1,486	40.0	0.65	
1970	8,167	3,167		3,167	213	2,013	40.0	0.65	
SCHOOL OF DENTISTRY									
1951	1,431	1,011		1,011					
1953	2,076	1,011		1,011	12	440	173.0	2.30	
1954	4,083	2,464		2,464	12	445	340.3	5.54	
							Optimal 345.0	5.50	
Estimated for									
1960	5,118	2,541		2,541	15	515	345.0	1.10	
1965	6,498	2,683		2,683	19	644	345.0	1.10	
1970	7,188	2,823		2,823	21	771	345.0	1.10	

TABLE XIII—Continued

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. per Total Student (Factor)			
		Academic Programing	Business Management & Admin. Service	Total			Sq. Ft. of Research per Grad. Student (Factor)	Academic Programing	Business Management & Admin. Service	
DULUTH BRANCH										
1954	407	1,023	3,235	4,258	13	1,670	Optimal	31.3	0.61	1.94
								35.0	0.60	1.94
Estimated for										
1960	1,597	1,164	4,377	5,541	47	2,847		35.0	0.12	0.97
1965	2,612	1,251	5,084	6,335	76	3,576		35.0	0.12	0.97
1970	4,572	1,318	5,623	6,941	132	4,132		35.0	0.12	0.97
COLLEGE OF EDUCATION (including Child Welfare)										
1951	4,094	3,365		3,365			Optimal			
1953	6,013	3,365		3,365	449	2,203		13.4	1.53	
1954	5,763	3,347		3,347	457	2,440		12.6	1.37	
								15.0	1.50	
Estimated for										
1960	7,848	3,784		3,784	596	3,896		15.0	0.30	
1965	10,083	4,003		4,003	745	4,625		15.0	0.30	
1970	11,718	4,221		4,221	854	5,354		15.0	0.30	
GENERAL COLLEGE										
1951		2,379		2,379			Optimal			
1953		2,379		2,379		1,364			1.74	
1954		2,211		2,211		1,634			1.35	
									1.50	
Estimated for										
1960		2,741		2,741		3,400			0.30	
1965		3,071		3,071		4,500			0.30	
1970		3,521		3,521		6,000			0.30	
GRADUATE SCHOOL										
1951	507	5,637		5,637			Optimal			
1953	224	5,637		5,637	2,363	2,363		0.09	2.39	
1954	718	5,637		5,637	2,416	2,416		0.30	2.33	
								0.30	2.35	
Estimated for										
1960	923	5,958		5,958	3,100	3,100		0.30	0.47	
1965	1,133	6,287		6,287	3,800	3,800		0.30	0.47	
1970	1,313	6,569		6,569	4,400	4,400		0.30	0.47	
SCHOOL OF LAW										
1951	1,106	1,043		1,043			Optimal			
1953	1,106	811		811		374			2.17	
1954	1,106	811		811		358			2.27	
									2.25	

TABLE XIII—Continued

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. of Research per Grad. Student (Factor)	Sq. Ft. per Total Student (Factor)	
		Academic Programing	Business Management & Admin. Service	Total				Academic Programing	Business Management & Admin. Service
Estimated for									
1960	1,106	875		875		500		0.45	
1965	1,106	931		931		625		0.45	
1970	1,106	999		999		775		0.45	
COLLEGE OF MEDICAL SCIENCES (excluding Mayo and Powell Hall Buildings)									
1951	58,198	3,786		3,786					
1953	71,111	2,103		2,103	355	1,384	200.3	1.52	
1954	71,799	1,694		1,694	360	1,412	199.4	1.20	
							Optimal 205.0	1.35	
Estimated for									
1960	91,684	1,764		1,764	457	1,672	205.0	0.27	
1965	112,594	1,828		1,828	559	1,909	205.0	0.27	
1970	120,589	1,866		1,866	598	2,048	205.0	0.27	
COLLEGE OF MEDICAL SCIENCES (Mayo and Powell Hall Buildings)									
1954	43,374				360		120.5		
							Optimal 125.0		
Estimated for									
1960	55,499				457		125.0		
1965	68,249				559		125.0		
1970	73,124				598		125.0		
COLLEGE OF PHARMACY									
1951	740	580		580					
1953	1,523	807		807	12	252	126.9	3.20	
1954	740	807		807	12	157	61.7	5.14	
							Optimal 75.0	3.25	
Estimated for									
1960	965	910		910	15	315	75.0	0.65	
1965	1,265	984		984	19	429	75.0	0.65	
1970	1,415	1,109		1,109	21	621	75.0	0.65	
COLLEGE OF SCIENCE, LITERATURE, AND THE ARTS									
1951	63,881	3,806		3,806					
1953	64,516	3,806		3,806	872	6,099	74.0	0.62	
1954	59,844	3,806		3,806	890	6,318	67.2	0.60	
							Optimal 70.0	0.60	
Estimated for									
1960	74,474	4,200		4,200	1,099	9,599	70.0	0.12	
1965	88,684	4,404		4,404	1,302	11,302	70.0	0.12	
1970	102,124	4,667		4,667	1,494	13,494	70.0	0.12	

TABLE XIII—Continued

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. of Research per Grad. Student (Factor)	Sq. Ft. per Total Student (Factor)	
		Academic Programing	Business Management & Admin. Service	Total				Academic Programing	Business Management & Admin. Service
INSTITUTE OF TECHNOLOGY									
1951	180,486	9,125		9,125					
1953	107,505	5,342		5,342	307	2,648	350.2	2.02	
1954	139,459	5,518		5,518	312	2,889	447.0	1.91	
Estimated for							Optimal 450.0	1.90	
1960	177,709	6,281		6,281	397	4,897	450.0	0.38	
1965	216,859	6,808		6,808	484	6,284	450.0	0.38	
1970	248,809	7,291		7,291	555	7,555	450.0	0.38	
ACADEMIC VICE-PRESIDENT									
1951	1,634	548	24,557	25,105		18,172		0.03	1.35
1953	4,261	548	21,012	21,560		18,496		0.03	1.14
1954	4,029	548	21,125	21,673		19,956		0.03	1.06
Estimated for							Optimal	0.03	1.14
1960	4,029	615	27,534	28,149		31,200		0.006	0.57
1965	4,029	658	31,581	32,239		38,300		0.006	0.57
1970	4,029	707	36,198	36,905		46,400		0.006	0.57
BUSINESS VICE-PRESIDENT									
1951			32,926	32,926		18,172			1.81
1953			35,542	35,542		18,496			1.92
1954			38,971	38,971		19,956			1.95
Estimated for							Optimal		1.90
1960			49,653	49,653		31,200			0.95
1965			56,398	56,398		38,300			0.95
1970			64,093	64,093		46,400			0.95
PRESIDENT									
1951		3,771		3,771		18,172		0.21	
1953		3,515		3,515		18,496		0.19	
1954		3,515		3,515		19,956		0.18	
Estimated for							Optimal	0.20	
1960		3,965		3,965		31,200		0.04	
1965		4,249		4,249		38,300		0.04	
1970		4,573		4,573		46,400		0.04	
ALUMNI RELATIONS									
1951			3,977	3,977		18,172			0.22
1953			3,964	3,964		18,496			0.21
1954			3,866	3,866		19,956			0.19
							Optimal		0.20

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TABLE XIII—Continued

Fall Quarter of Year	Research Space Area	Administrative Space Area According to Use			Graduate Students Instructed	Total No. Students Registered	Sq. Ft. of Research per Grad. Student (Factor)	Sq. Ft. per Total Student (Factor)	
		Academic Programing	Business Management & Admin. Service	Total				Academic Programing	Business Management & Admin. Service
Estimated for									
1960			4,990	4,990		31,200			0.10
1965			5,700	5,700		38,300			0.10
1970			6,510	6,510		46,400			0.10
GENERAL EXTENSION DIVISION									
1954		3,132 †	237 ‡	3,369					
Estimated for									
1960		3,654	316	3,970					
1965		4,176	395	4,571					
1970		4,698	474	5,172					

* Excludes farm field buildings.

† The space increase factor for Academic Programing is one sixth of the base area for each of the three future periods.

‡ The space increase factor for Business Management is one third of the base area for each of the three future periods.

TABLE XIV. SPACE NEEDS FOR PUBLIC SERVICE RELATED TO
POPULATION OF MINNESOTA

Space needs for public services have little or no direct relationship to student attendance at the University. (Space used for evening extension classes is classified as "Instructional.") These service needs will increase as the emphasis on public service extension classes, agricultural extension work in the field, short course programs, public lectures and concerts, museum and gallery exhibits, laboratory analysis, testing service, and the like increases.

This report applies to the University's existing program. It has been assumed that the program of public service will increase, at least in some aspects, as the population of the state increases.

Extension work. Optimal space use factors for extension work are equivalent to the existing space use factor for the year 1954. Space increase factors for Agricultural extension work are made equal to one half that unit's optimal space use factor. Most of this work is in the field. However, the space increase factor for the General Extension Division equals

twice the optimal space use factor. Much of this is due to the fact that correspondence study will increase more rapidly than the state population because the number of persons likely to participate in that program is increasing faster than the population.

Professional services. Space increase factors for professional services are equal to the optimal space use factors with which they are associated. The latter are equal to the space use factors existing in 1954. Some professional services, such as those of the Mines Tax Commission and the Geological Survey, are carried on for the State of Minnesota. No increase in space needs was calculated for those units.

Cultural services. No increase in space is calculated for departmental museums or for the main auditoriums on the campuses.

The space increase factor for the Office of the Academic Vice-President is 3.6 per cent per year. This increase relates specifically to the Museum of Natural History, and the increase factor is assumed to be identical to that for collections areas in a mature library (see Table XII).

In the case of the General Extension Division, the space increase factors

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are equal to the optimal space use factor, which is equal in turn to that of the base period (1954).

Source of state population data. The population of Minnesota was projected for the years 1960, 1965, and 1970 on the assumption that it would bear much the same proportion to the population of the United States in those years as it did in 1955. Population estimates for the United States for 1960, 1965, and 1970 are found in *Current Population Reports, Population Estimates*, U.S. Department of Commerce, Bureau of the Census, October 20, 1955. The population figures for Minnesota are from the *Statistical Abstracts* for the United States, and the Department of Sociology, University of Minnesota. The Minnesota population datum for 1955 is an alternate and a slightly more conservative figure than that shown in Table II. With the exception of the calculations for Academic Vice-President and General

Extension Division, in which the base period used was 1954, the computations were based upon data for 1955.

Year	Population		Percentage Minnesota Is of United States
	United States	Minnesota	
1939	131,028,000 *	2,775,000	2.12
1940	131,669,275	2,792,300	2.11
1947	144,126,000 *	2,930,000	2.03
1950	150,697,361	2,982,483	1.98
1953	159,696,000 *	3,044,000	1.91
1955	165,248,000 *	3,169,000	1.92
1960	177,840,000 *	3,409,000	1.92
1965	190,296,000 *	3,648,000	1.92
1970	202,984,000 *	3,890,000	1.92

* Estimated.

TABLE XIV. SPACE NEEDS FOR PUBLIC SERVICE RELATED TO POPULATION OF MINNESOTA (All areas shown in assignable square feet)

Fall Quarter of Year	Public Service Areas According to Use				Population of Minnesota	Area Use Factor per 1,000 Population		Per Cent Increase Factor
	Extension Work	Professional Services	Cultural Services	Total		Extension Work	Professional Services	Applied to Base Period (1954)
								Cultural Services
AGRICULTURAL SHORT COURSES								
1955	1,034			1,034	3,169,000	0.33		
						Optimal	0.33	
Estimated for								
1960	1,075			1,075	3,409,000	0.17		
1965	1,115			1,115	3,648,000	0.17		
1970	1,157			1,157	3,890,000	0.17		
AGRICULTURAL EXTENSION SERVICE								
1955	14,760			14,760	3,169,000	4.66		
						Optimal	4.66	
Estimated for								
1960	15,319			15,319	3,409,000	2.33		
1965	15,876			15,876	3,648,000	2.33		
1970	16,440			16,440	3,890,000	2.33		
VETERINARY MEDICINE								
1955		3,982		3,982	3,169,000		1.26	
						Optimal	1.26	
Estimated for								
1960		4,284		4,284	3,409,000		1.26	
1965		4,586		4,586	3,648,000		1.26	
1970		4,890		4,890	3,890,000		1.26	

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TABLE XIV—Continued

Fall Quarter of Year	Public Service Areas According to Use				Population of Minnesota	Area Use Factor per 1,000 Population		Per Cent Increase Factor
	Extension Work	Professional Services	Cultural Services	Total		Extension Work	Professional Services	Applied to Base Period (1954)
								Cultural Services
ACADEMIC VICE-PRESIDENT								
1955		1,204	23,984	25,188	3,169,000	Optimal	0.38	
Estimated for							0.38	
1960		1,295	29,165	30,460	3,409,000		0.38	21.6
1965		1,386	33,482	34,868	3,648,000		0.38	18.0
1970		1,478	37,799	39,277	3,890,000		0.38	18.0
GENERAL EXTENSION DIVISION								
1955	8,807	4,551	9,172	22,530	3,169,000	Optimal	2.78	
Estimated for							1.44	
1960	10,141	4,897	10,163	25,201	3,409,000		5.56	10.8
1965	11,470	5,241	10,988	27,699	3,648,000		5.56	9.0
1970	12,816	5,589	11,813	30,218	3,890,000		5.56	9.0

TABLE XV. SPACE NEEDS FOR INTERNAL SERVICES RELATED TO
STUDENT STATION HOURS OF TEACHING

The workload for internal service units listed in Table XV will be greater as the number of courses taken by each student increases. It is therefore measured in terms of student station hours of teaching so that appropriate weight can be given to course loads carried by individual students.

Storerooms. The space increase factors for storerooms are one half the respective optimal use factors for these storerooms, which in turn have been determined to be equal to those of the base period (1954) space use factor. This reflects the improved use which can be expected of storage areas as activities increase, through more rapid turnover of stock and otherwise.

Salesrooms. Activity in salesrooms, comprising bookstores only, is heaviest near the beginning of each period of instruction. The stores operate on a self-service basis, so the greater the volume of business the more stock must be made available and the more customer space is required. It is believed, from experience, that the salesroom area will need to increase

approximately 80 per cent as rapidly as student station hours of teaching. Space use factors for salesrooms are thus equal to 80 per cent of the optimal use factors to which they relate.

The base period area for the bookstore on the St. Paul Campus was increased from 1,008 to 1,500 square feet for purposes of calculating space needs in order to reflect the present inadequacy of that salesroom.

All other such service areas. Space increase factors for internal service areas classified "All Other" bear no consistent relationship to the optimal use factors. Each unit operates independently and has space requirements peculiar to its functions. These needs were determined by officials responsible for the operations and are based on long experience. (Experience is more definitive in the case of internal services than of instruction or research; instructional work is decentralized and methods and fields are in a constant state of flux.) The base period area of one unit (Mimeographing, Minneapolis Campus) was increased for purposes of calculating space needs because of the serious lack of working space to carry on present operations in a satisfactory manner.

TABLE XV. SPACE NEEDS FOR INTERNAL SERVICES RELATED TO STUDENT STATION HOURS OF TEACHING
(All areas shown in assignable square feet)

Fall Quarter of Year	Internal Service Space Areas According to Use				Student Station Hours of Scheduled Teaching	Area Use Factor per Scheduled Student Station Hour			
	Salesrooms	Storerooms	All Other	Total		Salesrooms	Storerooms	All Other	
UNIVERSITY BOOKSTORES									
Minneapolis Campus									
1954	9,527	4,125	1,891	15,543	263,569	Optimal	0.04	0.02	0.01
Estimated for							0.04	0.02	0.01
1960	14,461	5,770	1,891	22,122	428,023		0.03	0.01	0.00
1965	17,448	6,765	1,891	26,104	527,615		0.03	0.01	0.00
1970	20,943	7,930	1,891	30,764	644,104	0.03	0.01	0.00	
St. Paul Campus									
1954	1,008 (1,500) *	545	196	1,749	25,669	Optimal	0.04	0.02	0.01
Estimated for							0.06	0.02	0.01
1960	1,830	611	196	2,637	32,265		0.05	0.01	0.00
1965	2,138	673	196	3,007	38,430		0.05	0.01	0.00
1970	2,617	768	196	3,581	48,002	0.05	0.01	0.00	
DULUTH BRANCH BOOKSTORE									
1954	1,470	578	248	2,296	30,100	Optimal	0.05	0.02	0.01
Estimated for							0.05	0.02	0.01
1960	2,285	782	248	3,315	50,484		0.04	0.01	0.00
1965	2,790	908	248	3,946	63,105		0.04	0.01	0.00
1970	3,151	998	248	4,397	72,120	0.04	0.01	0.00	
AUDIO-VISUAL EDUCATION SERVICE									
1954		5,461	5,286	10,747	289,238	Optimal		0.02	0.02
Estimated for								0.02	0.02
1960		5,461	8,707	14,168	460,288			0.00	0.02
1965		5,461	10,822	16,283	566,045			0.00	0.02
1970		5,461	11,543	17,004	602,106		0.00	0.02	
BINDERY									
1954			2,384	2,384	289,238	Optimal			0.008
Estimated for									0.008
1960			2,897	2,897	460,288				0.003
1965			3,214	3,214	566,045				0.003
1970			3,593	3,593	692,106			0.003	
MIMEOGRAPHING (Minneapolis Campus)									
1954			1,101 (1,651) *	1,101	263,569	Optimal			0.004
Estimated for									0.006
1960			2,309	2,309	428,023				0.004
1965			2,707	2,707	527,615				0.004
1970			3,173	3,173	644,104			0.004	

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TABLE XV—Continued

Fall Quarter of Year	Internal Service Space Areas According to Use				Student Station Hours of Scheduled Teaching	Area Use Factor per Scheduled Student Station Hour		
	Salesrooms	Storerooms	All Other	Total		Salesrooms	Storerooms	All Other
MIMEOGRAPH AND BULLETIN (St. Paul Campus)								
1954		2,699	1,387	4,086	25,669	Optimal	0.11	0.05
Estimated for							0.11	0.05
1960		3,095	1,519	4,614	32,265		0.06	0.02
1965		3,465	1,642	5,107	38,430		0.06	0.02
1970		4,039	1,834	5,873	48,002		0.06	0.02
POST OFFICE, CAMPUS MAIL (Minneapolis Campus)								
1954			2,017	2,017	263,569	Optimal		0.008
Estimated for							0.008	
1960			2,181	2,181	428,023			0.001
1965			2,281	2,281	527,615			0.001
1970			2,398	2,398	644,104			0.001
TRUCK SERVICE								
1954			22,562	22,562	263,569	Optimal		0.09
Estimated for							0.09	
1960			30,785	30,785	428,023			0.05
1965			35,764	35,764	527,615			0.05
1970			41,589	41,589	644,104			0.05

* Figure in parentheses is adjusted base (see page 25).

TABLE XVI. SPACE NEEDS FOR INTERNAL SERVICES RELATED TO
STUDENT ATTENDANCE

In determining space requirements of internal services for Table XVI, there appeared to be, insofar as load is concerned, no significant variation between those for full-time as against those for part-time students. The workload is therefore measured in terms of simple student attendance.

Storerooms. Space increase factors approximate one half the optimal space use factors for most units. This reflects the improved use expected of storage areas as the workload rises.

The space increase factor for the Army-Air Corps storeroom is equal to the optimal space use factor, since it involves primarily space for clothing issued to R.O.T.C. students and expands as their number expands.

On the other hand, the space increase factor for the Printing Department is only one third the optimal space use figure. Paper is purchased in

carload quantities, for reasons of economy, and the unit expects a faster turnover of paper stocks as its volume of operations expands.

Chemical Storehouse, Cold Storage Plant, Milk and Cream Department, and Printing Department storage areas for the base period (1954) were increased as shown in parentheses. These areas are now inadequate for economical purchasing and handling of stock.

Shops and workrooms. Shops and workrooms have space increase factors that vary from unit to unit. For some units it is expected that facilities can be used more advantageously through careful scheduling as the workload increases. In other areas, however, the space requirements are expected to vary more closely with the variance in student attendance.

All other such service areas. Areas classified "All Other" include office areas primarily. The space increase factors vary here also, ranging from one third of the optimal use factor up to 100 per cent of it.

TABLE XVI. SPACE NEEDS FOR INTERNAL SERVICES RELATED TO STUDENT ATTENDANCE (All areas shown in assignable square feet)

Fall Quarter of Year	Internal Service Space Areas According to Use				Total No. Students Instructed	Area Use Factor per Student		
	Storerooms	Shops and Workrooms	All Other	Total		Storerooms	Shops and Workrooms	All Other
COMPTROLLER								
Inventory Supervisor								
1954	14,726			14,726	18,086	Optimal 0.81		
Estimated for								
1960	18,825			18,825	28,333	0.40		
1965	21,381			21,381	34,724	0.40		
1970	24,399			24,399	42,268	0.40		
Army-Air Corps Stores								
1954	5,029		171	5,200	18,086	Optimal 0.28		0.01
Estimated for								0.01
1960	7,898		273	8,171	28,333	0.28		0.01
1965	9,687		337	10,024	34,724	0.28		0.01
1970	11,799		412	12,211	42,268	0.28		0.01
General Storehouse								
1954	28,151		1,989	30,140	18,086	Optimal 1.56		0.11
Estimated for								0.11
1960	36,144		2,399	38,543	28,333	0.78		0.04
1965	41,129		2,655	43,784	34,724	0.78		0.04
1970	47,013		2,957	49,970	42,268	0.78		0.04
Chemical Storehouse								
1954	11,919 (14,899) *	2,554	1,062	15,535	18,086	Optimal 0.66	0.14	0.06
Estimated for							0.14	0.06
1960	18,998	3,271	1,267	23,536	28,333	0.40	0.07	0.02
1965	21,554	3,718	1,395	26,667	34,724	0.40	0.07	0.02
1970	24,572	4,246	1,546	30,364	42,268	0.40	0.07	0.02
COLD STORAGE PLANT								
1954	7,303 (14,606) *			7,303	18,086	Optimal 0.40		
Estimated for								
1960	17,065			17,065	28,333			0.24
1965	18,854			18,854	34,724			0.28
1970	21,268			21,268	42,268			0.32
MEDICAL ILLUSTRATION								
1954		1,074		1,074	465	Optimal	2.31	
Estimated for							2.31	
1960		1,213		1,213	525		2.31	
1965		1,386		1,386	600		2.31	
1970		1,386		1,386	600		2.31	

TABLE XVI—Continued

Fall Quarter of Year	Internal Service Space Areas According to Use				Total No. Students Instructed	Area Use Factor per Student		
	Storerooms	Shops and Workrooms	All Other	Total		Storerooms	Shops and Workrooms	All Other
MILK AND CREAM DEPARTMENT								
1954	864 (1,728) *	2,157		3,021	18,086	0.05	0.12	
						Optimal	0.10	0.12
Estimated for								
1960	2,240	3,387		5,627	28,333	0.05	0.12	
1965	2,560	4,154		6,714	34,724	0.05	0.12	
1970	2,937	5,059		7,996	42,268	0.05	0.12	
PHOTOGRAPHY LABORATORY (Minneapolis Campus)								
1954		918		918	465		1.97	
						Optimal	1.97	
Estimated for								
1960		1,036		1,036	525		1.97	
1965		1,184		1,184	600		1.97	
1970		1,184		1,184	600		1.97	
PHYSIOLOGY								
1954		415		415	465		0.89	
						Optimal	0.89	
Estimated for								
1960		468		468	525		0.89	
1965		535		535	600		0.89	
1970		535		535	600		0.89	
PRINTING DEPARTMENT								
1954	2,550 (3,825) *	10,548		13,098	18,086	0.14	0.59	
						Optimal	0.21	0.59
Estimated for								
1960	4,542	13,622		18,164	28,333	0.07	0.30	
1965	4,990	15,539		20,529	34,724	0.07	0.30	
1970	5,518	17,803		23,321	42,268	0.07	0.30	
TABULATING MACHINE DEPARTMENT								
1954		721		721	16,449		0.04	
						Optimal	0.04	
Estimated for								
1960		1,104		1,104	26,022		0.04	
1965		1,339		1,339	31,904		0.04	
1970		1,610		1,610	38,681		0.04	
UNIVERSITY FARM SERVICE								
1954		279	990	1,269	1,637		0.17	0.60
						Optimal	0.17	0.60
Estimated for								
1960		341	1,406	1,747	2,331		0.09	0.60
1965		385	1,700	2,085	2,820		0.09	0.60
1970		455	2,160	2,615	3,587		0.09	0.60

PROJECTION METHODS

TABLE XVI—Continued

Fall Quarter of Year	Internal Service Space Areas According to Use				Total No. Students Instructed	Area Use Factor per Student		
	Storerooms	Shops and Workrooms	All Other	Total		Storerooms	Shops and Workrooms	All Other
DULUTH CAMPUS								
1954	110		2,438	2,548	1,670			1.46
Estimated for						Optimal	0.07	1.46
1960	157		3,733	3,890	2,847		0.04	1.10
1965	186		4,535	4,721	3,576		0.04	1.10
1970	208		5,146	5,354	4,132		0.04	1.10
SCIENTIFIC APPARATUS SHOP †								
1954				4,963				
Estimated for								
1960				6,154				
1965				7,384				
1970				8,861				
UNIVERSITY PRESS ‡								
1954				9,114				
Estimated for								
1960				10,633				
1965				12,152				
1970				13,671				

* Figure in parentheses is adjusted base (see page 25).

† The space increase factor is 4 per cent per year applied to the previous period.

‡ The space increase factor is equal to one sixth of the base area for each of the three future periods.

TABLE XVII. SPACE NEEDS FOR INTERNAL SERVICES (CENTRAL
SHOPS AND PLANT OPERATION) BASED ON
TOTAL PLANT AREA

Those internal services related to central shops and plant operation are expected to require in 1960, 1965, and 1970 the same proportion of space they now bear to the total plant area of the Duluth, Minneapolis, and St. Paul Campuses of the University. It was thus necessary to determine the total of the respective future space needs of all units of the University, exclusive of central shops and plant operation areas, before computing future space needs for central shops and plant operation.

The space increase factor will equal the optimal space use factor in all instances.

Two adjustments were made in base areas (1954) for purposes of calculating future space needs. The Duluth Campus had no central shop area as such in 1954, but did require 2,500 square feet for shop work at that time. And the plant operation area at Duluth was short by 2,500 square feet of the actual area needed. It should be noted that the plant operation space use factors are higher for Duluth and St. Paul than for Minneapolis because the larger campus at Minneapolis permits more effective use of facilities.

PROJECTION METHODS

TABLE XVII. SPACE NEEDS FOR INTERNAL SERVICES (CENTRAL SHOPS) AND PLANT OPERATION BASED ON TOTAL PLANT AREA

(All areas shown in assignable square feet)

Fall Quarter of Year	Central Shops	Plant Operation	Total Plant Area		Area Use Factor per 1,000 sq. ft. of Area Based on		
			Without Central Shops	Including Central Shops	Total Plant Area Without Central Shops	Total Plant Area Including Central Shops	
DULUTH CAMPUS							
1954	none (2,500) *	9,919 (12,419) *	183,208	183,208	Optimal	none 13.66	54.20 67.86
Estimated for							
1960	3,930	19,789	287,885	291,815		13.66	67.86
1965	4,703	23,679	344,438	349,141		13.66	67.86
1970	5,293	26,648	387,600	392,893		13.66	67.86
MINNEAPOLIS CAMPUS							
1954	24,775	67,626	2,732,291	2,757,066	Optimal	9.07 9.07	24.53 24.53
Estimated for							
1960	30,771	83,990	3,393,409	3,424,180		9.07	24.53
1965	35,518	96,945	3,916,788	3,952,306		9.07	24.53
1970	40,545	110,664	4,471,021	4,511,566		9.07	24.53
ST. PAUL CAMPUS							
1954	4,755	39,400	652,061	656,816	Optimal	7.29 7.29	60.06 60.06
Estimated for							
1960	5,417	44,896	742,912	748,329		7.29	60.06
1965	6,144	50,929	842,629	848,773		7.29	60.06
1970	7,117	59,007	976,162	983,279		7.29	60.06

* Figure in parentheses is adjusted base (see page 25).

TABLE XVIII. SPACE NEEDS FOR STUDENT SERVICES RELATED TO
STUDENT ATTENDANCE

The load for some student services can be just as heavy for part-time as for full-time students. For these units the load is measured in terms of student attendance.

Storerooms. The space increase factors for storerooms are set at one half the optimal space use factor, except for the Student Union on the St. Paul Campus where the figure is only one fourth the optimal space use factor. More effective use of its storerooms is anticipated.

Clinical workrooms. Clinical workrooms include the examination rooms and offices of the health service units. On the Minneapolis Campus some

clinical areas reached capacity use by 1954, while a few can handle a considerably greater load. Over-all facilities are not adequate for the enrollment for which their buildings were designed because students are using the facilities to a much greater extent than formerly.

The space increase factors are equal to 50, 75, and 87½ per cent of the optimal space use factor for the years 1960, 1965, and 1970, respectively. Thus, the space increase factor for 1960 is four eighths, and for 1970 seven eighths of the optimal space use factor. In other words, the increase diminishes by one half from one period to the next. This is logical in a situation where the areas reach capacity use at different rates.

All other such service areas. The space increase factors for areas classi-

PROJECTION METHODS

fied "All Other" vary from unit to unit. For the Dean of Students they are equal to one half the optimal space use factor, meaning that the space needs for that unit will increase, over-all, half as much as student attendance. On the other hand, there will be no increase for the Business Vice-President for student services related to student attendance, since no space increases are anticipated for student employment services.

Space increase factors for the health service units are half as great for "All Other" areas as those for related clinical workrooms (see above). Thus, for 1960, 1965, and 1970 they will be 25, 37½, and 43¾ per cent, respectively, of the optimal space use factor. This pertains to waiting rooms, reception desks, etc., which are not expected to increase in the same proportion as clinical workrooms.

In the case of student unions, virtually all facilities were used to capacity during the most heavily scheduled part of the day in 1954. As enroll-

ment climbs, facilities for games, lounging, and other recreation are planned to be increased in the same proportion; otherwise, the recreational program cannot be continued at the present level. Space increase factors for unions are thus equal to the optimal space use factors. These, in turn, equal the space use factor for the base period (1954), except for the Duluth Campus.

Student union facilities on the Duluth Campus were very inadequate in 1954 as compared to those on the other campuses. The base area was therefore increased from 3,084 to 9,870 square feet for the purposes of calculating future space needs. The latter figure amounts to 5.91 square feet per student and is equivalent to the comparable figure for the St. Paul Campus. That figure was selected because the two campuses are comparable with respect to student attendance. It is somewhat higher than that for the Minneapolis Campus, because the load, being smaller, does not permit the same degree of efficiency in use.

TABLE XVIII. SPACE NEEDS FOR STUDENT SERVICES RELATED TO STUDENT ATTENDANCE (All areas shown in assignable square feet)

Fall Quarter of Year	Student Service Space Areas According to Use				Total No. Students Instructed	Area Use Factor per Student		
	Storerooms	Clinical Workrooms	All Other	Total		Storerooms	Clinical Workrooms	All Other
DEAN OF STUDENTS								
1954			24,310	24,310	18,086	Optimal		1.34
Estimated for								1.34
1960			31,189	31,189	28,353			0.67
1965			35,457	35,457	34,724			0.67
1970			40,512	40,512	42,268			0.67
BUSINESS VICE-PRESIDENT								
1954			1,242	1,242	19,956	Optimal		0.06
Estimated for								0.06
1960			1,242	1,242	31,200			0.0
1965			1,242	1,242	38,300			0.0
1970			1,242	1,242	46,400			0.0
STUDENT HEALTH SERVICE *								
Minneapolis Campus								
1954		18,481	9,743	28,224	18,086	Optimal	1.02	0.54
Estimated for							1.02	0.54
1960		23,717	11,180	34,897	28,353		0.51	0.14
1965		28,623	12,454	41,077	34,724		0.77	0.20
1970		35,413	14,265	49,678	42,268		0.90	0.24

TABLE XVIII—Continued

Fall Quarter of Year	Student Service Space Areas According to Use				Total No. Students Instructed	Area Use Factor per Student		
	Storerooms	Clinical Workrooms	All Other	Total		Storerooms	Clinical Workrooms	All Other
HEALTH SERVICE								
Duluth Branch								
1954		767 (875) *	253 (467) *	1,020	1,670	Optimal	0.46	0.15
Estimated for							0.52	0.28
1960		1,181	549	1,730	2,847		0.26	0.07
1965		1,465	629	2,094	3,576		0.39	0.11
1970		1,721	696	2,417	4,132		0.46	0.12
UNIVERSITY OF MINNESOTA UNIONS								
Minneapolis Campus								
1954	4,284		68,088	72,372	16,449	Optimal	0.26	4.12
Estimated for							0.26	4.12
1960	5,528		107,529	113,057	26,022		0.13	4.12
1965	6,293		131,763	138,056	31,904		0.13	4.12
1970	7,174		159,684	166,858	38,681		0.13	4.12
St. Paul Campus								
1954	800		9,678	10,478	1,637	Optimal	0.49	5.91
Estimated for							0.49	5.91
1960	883		13,780	14,663	2,331		0.12	5.91
1965	942		16,670	17,612	2,820		0.12	5.91
1970	1,034		21,203	22,237	3,587		0.12	5.91
Duluth Branch Student Center								
1954	19		3,084 (9,870) †	3,103	1,670	Optimal	0.01	1.85
Estimated for							0.30	5.91
1960	196		16,826	17,022	2,847		0.15	5.91
1965	305		21,134	21,439	3,576		0.15	5.91
1970	388		24,420	24,808	4,132		0.15	5.91
GENERAL EXTENSION DIVISION ‡								
1954				194				
Estimated for								
1960				259				
1965				324				
1970				388				

* No additional space required for St. Paul Campus Health Service by 1970.

† Figure in parentheses is the adjusted base (see page 25).

‡ The space increase factor is equal to one third of the base area for each of the three future periods.

PROJECTION METHODS

TABLE XIX. SPACE NEEDS FOR STUDENT SERVICES RELATED TO
STUDENT STATION HOURS OF TEACHING

Space areas shown in Table XIX are used for teaching, intramural sports, and recreation. Areas provided primarily for intercollegiate athletics (Williams Arena and the Field House) do not appear in these calculations because of the assumption that no increase will be provided for intercollegiate sports on the basis of the existing program.

Student station hours of teaching are used here to measure the load because (1) some physical education facilities are used for instructional purposes, and (2) students taking fewer than a certain number of credits in their quarter's program are ineligible to use most intramural facilities.

Offices. The space increase factor for these offices is equal to the optimal space use figure, except for units conducting intramural sports programs, in which cases it is equal to only three fourths of the optimal space use factor.

TABLE XIX. SPACE NEEDS FOR STUDENT SERVICES RELATED TO STUDENT STATION HOURS OF TEACHING
(All areas shown in assignable square feet)

Fall Quarter of Year	Student Service Space Areas According to Use					Student Station Hours of Scheduled Teaching	Area Use Factor per Student Station Hour				
	Offices	Activity Area	Equipment Rooms	Service Rooms	Total		Offices	Activity Area	Equipment Rooms	Service Rooms	
PHYSICAL EDUCATION FOR MEN (Minneapolis Campus) *											
1954	9,942	45,670	13,939	42,378	111,929	263,569	Optimal	0.04	0.23	0.05	0.15
								0.04	0.23	0.05	0.15
Estimated for											
1960	14,876	83,494	18,050	58,823	175,243	428,023		0.03	0.23	0.025	0.10
1965	17,863	106,401	20,540	68,782	213,586	527,615		0.03	0.23	0.025	0.10
1970	21,358	133,193	23,452	80,432	258,435	644,104		0.03	0.23	0.025	0.10
PHYSICAL EDUCATION FOR WOMEN (Minneapolis Campus)											
1954	2,191	29,904		10,475	42,570	263,569	Optimal	0.01	0.12		0.04
								0.01	0.12		0.04
Estimated for											
1960	3,836	49,638		13,764	67,238	428,023		0.01	0.12		0.02
1965	4,831	61,590		15,756	82,177	527,615		0.01	0.12		0.02
1970	5,996	75,568		18,086	99,650	644,104		0.01	0.12		0.02
PHYSICAL TRAINING (St. Paul Campus)											
1954	527	21,059	1,221	3,966	26,773	25,669	Optimal	0.02	0.82	0.05	0.15
								0.02	0.82	0.05	0.15
Estimated for											
1960	659	26,468	1,386	4,626	33,139	32,265		0.02	0.82	0.025	0.10
1965	782	31,523	1,540	5,242	39,087	38,430		0.02	0.82	0.025	0.10
1970	974	39,372	1,779	6,199	48,324	48,002		0.02	0.82	0.025	0.10
PHYSICAL EDUCATION (Duluth Branch)											
1954	1,137	20,934	1,817	15,228	39,116	30,100	Optimal	0.04	0.70	0.06	0.51
								0.04	0.70	0.06	0.51
Estimated for											
1960	1,749	35,203	2,429	22,159	61,540	50,484		0.03	0.70	0.03	0.34
1965	2,128	44,038	2,807	26,450	75,423	63,105		0.03	0.70	0.03	0.34
1970	2,398	50,349	3,078	29,515	85,340	72,120		0.03	0.70	0.03	0.34

* Excluding Williams Arena and Field House.

PROJECTION RESULTS

This is because office needs for intramural sports are not expected to increase in proportion to student station hours of teaching.

Activity areas. Activity areas are the playing floors and pools. The space increase factor is equal to the optimal space use factor, meaning that gymnasium needs will increase in proportion to student station hours of teaching. Gymnasiums are now used to capacity for teaching, intramural sports, and recreation, extending into evening and Sunday use. Thus the space increase factor used is considered appropriate if the existing balance among those three phases of the physical education program is to be maintained.

Equipment rooms. The space increase factor for equipment rooms is

equal to one half the optimal space use factor. This factor may be too conservative, but it was believed that fuller use can probably be had from areas used for storage of athletic equipment.

Service rooms. Service rooms comprise two kinds of areas which are expected to increase at different rates. Locker facilities must expand approximately in ratio to the number of students who will use them. On the other hand, showers, dressing rooms, and toilets connected with those facilities are expected to increase only about one third as fast as enrollment. After giving due consideration to the proportionate extent of each of the two kinds of areas involved, space increase factors were determined to approximate two thirds of the optimal space use factors.

PROJECTION RESULTS AND COMPARISONS

TABLE XX. COMPARISONS BETWEEN ANTICIPATED INCREASES IN ATTENDANCE AND IN SPACE NEEDS FROM 1954 TO 1970
(All areas shown in assignable square feet)

Campus and Year	Number of Students in Attendance	% Additional Students	Assignable Area Needed *	% Additional Area	Ratio: % Additional Area to % Additional Attendance
DULUTH					
1954	1,670		186,708		
1960	2,847	70.5	289,537	55.1	0.78
1965	3,576	25.6	345,341	19.3	0.75
1970	4,132	15.5	387,952	12.3	0.79
MINNEAPOLIS					
1954	16,449		2,376,565		
1960	26,022	58.2	2,939,427	23.7	0.41
1965	31,904	22.6	3,406,577	15.9	0.70
1970	38,681	21.2	3,897,629	14.4	0.68
ST. PAUL					
1954	1,637		659,816		
1960	2,331	42.4	745,013	12.9	0.30
1965	2,820	21.0	848,548	13.9	0.66
1970	3,587	27.2	981,719	15.7	0.58

* Excludes health services, student unions, residence halls, bookstores, food services, physical education for men (Minneapolis), flight facilities at Anoka, and hospitals.

TABLE XXI. COMPARISON OF PRESENT AND ANTICIPATED BUILDING SPACE, BY CAMPUS, ACCORDING TO FUNCTIONS FROM 1954 TO 1970
(All areas shown in assignable square feet)

Function	Duluth			Minneapolis			St. Paul		
	Building Areas, Sq. Ft.		Increase	Building Areas, Sq. Ft.		Increase	Building Areas, Sq. Ft.		Increase
	1954	1970		1954	1970		1954	1970	
INSTRUCTION *									
Offices	15,965	38,236	139.5%	188,601	436,616	131.5%	46,178	68,320	47.9%
Laboratories	54,160	107,619	98.7	415,626	802,612	93.1	135,761	174,207	28.3
Classrooms	23,625	54,090	129.0	223,449	322,053	44.1	47,592	36,002	-24.4
Libraries	10,218	46,920	359.2	203,467	391,679	92.5	29,019	34,420	18.6
All Other	21,439	33,463	56.1	211,459	310,642	46.9	76,739	84,472	10.1
Total	(125,407)	(280,328)	(123.5%)	(1,242,602)	(2,263,602)	(82.2%)	(335,289)	(397,421)	(18.5%)
RESEARCH †	407	4,572	1023.3	331,356	578,250	74.5	154,026	342,915	122.6
PUBLIC SERVICE	9,402	9,402	0.0	112,990	134,767	19.3	29,846	32,557	9.1
ADMINISTRATION	4,258	6,941	63.0	100,704	151,901	50.8	9,870	14,242	44.3
PLANT OPERATION	9,919	26,648	168.7	67,626	110,664	63.6	39,400	59,007	49.8
STUDENT SERVICE ‡	3,524	8,566	143.1	52,984	92,536	74.6	3,243	6,402	97.4
NONINSTITUTIONAL ORGANIZATIONS	1,500	1,500	0.0	95,949	95,949	0.0	22,311	22,311	0.0
INTERNAL SERVICES §	25,057	30,071	20.0	302,518	355,642	17.6	27,569	45,961	66.7
Total Students	1,670	4,132	147.4	16,449	38,681	135.2	1,637	3,587	119.1
Graduate Students	13	132	915.4	2,163	3,756	73.6	240	512	113.3

* Including physical education areas used for instruction; excluding instructional areas of Mayo, Powell Hall, hospital buildings, and flight facilities at Anoka.

† Excluding flight facilities at Anoka devoted to research.

‡ Excluding Health Services, Student Unions, and areas for organized sports, and School of Agriculture.

§ Excluding hospitals, residence halls, food service areas, and bookstores.

TABLE XXII. SUMMARY OF PLANT NEEDS BY BIENNIUMS

Category	Biennium							Total
	1957	1959	1961	1963	1965	1967	1969	
ADDITIONAL BUILDINGS (Instruction, Research, and General Use *)	\$10,400,000	\$12,504,000	\$13,204,000	\$12,593,000	\$10,902,000	\$10,520,000	\$8,976,000	\$79,099,000
MAJOR REHABILITATION AND REMODELING OF BUILDINGS (Minneapolis, St. Paul, and Duluth)	3,015,500	2,221,000	2,274,500	927,000	770,000			9,208,000
BRANCH STATION BUILDING NEEDS (Rehabilitation and new buildings)	1,727,500	999,000	542,400	440,000	757,000	200,000		4,465,900
LAND NEEDS	3,585,979		3,316,820	392,040	2,571,690	557,040		10,423,569
HOUSING AND FOOD SERVICE NEEDS	2,551,000	2,251,652	5,426,265	5,400,374	2,613,900	3,111,130	3,303,818	24,658,139
TOTAL	\$21,279,979	\$17,975,652	\$24,763,985	\$19,752,414	\$17,614,590	\$14,388,170	\$12,279,818	\$128,054,608

* Does not include future need for farm field buildings.

BUILDING NEEDS

Tables XXIII, XXIV, and XXV summarized building space needs for 1960, 1965, and 1970. On Table XXIII the assignable area needed by 1960 is carried forward from Table XX. The area in use in 1954 is derived from the Inventory totals of assignable area with the following exclusions. The areas excluded are those which at the present time are more or less self-supporting and do not need legislative appropriations. (These same exclusions apply to Tables XXIV and XXV.)

On Tables XXIII, XXIV, and XXV the terms "Area under construction," "Area for which funds are available," and "Net additional area required for expansion by 1960" are self-explanatory. The term "Additional area required for consolidation of campus" refers to the first step in abandonment of the old campus at Duluth. Specific buildings are listed on Table XXVIII. The term "Additional area required for replacement of buildings by 1960" is self-explanatory. Specific buildings are listed on Tables XXVI, XXVII, and XXVIII. "Net total additional assignable area required by 1960" is self-explanatory. "Total additional gross area required by 1960" is derived from the Assignable Area by adding 50 per cent. This provides a higher proportion of assignable space than exists in most of our present buildings. The term "Estimated cost of total additional area" is explained by footnotes.

Tables XXVI, XXVII, and XXVIII list buildings to be removed or abandoned.

Table XXIX outlines the major rehabilitation work required on the Minneapolis, St. Paul, and Duluth Campuses. This includes only those major jobs that cannot be undertaken with normal operating funds.

Total Minneapolis Campus assignable area		3,794,592
Less:		
Schedule D	645,263	
Schedule F	6,465	
Hospital	299,790	
Health Service	28,224	
Student Union	72,372	
Physical Education, Men	331,988	
Bookstores	15,543	
In process of remodeling	18,382	1,418,027
Area in use (1954) on Table XXIII		2,376,565
 Total St. Paul Campus assignable area		956,809
Less:		
Schedule D	126,486	
Schedule F	139,372	
Health Service	12,359	
Student Union	10,478	
Bookstore	1,749	
Golf Club House	6,549	296,993
Area in use (1954) on Table XXIII		659,816
 Total Duluth Campus assignable area		220,267
Less:		
Schedule D	26,351	
Bookstore	2,296	
Health Service	1,020	
Student Union	3,103	
In process of remodeling	789	33,559
Area in use (1954) on Table XXIII		186,708

TABLE XXIII. ADDITIONAL BUILDING AREAS REQUIRED BETWEEN 1954 AND 1960

(All areas shown in square feet) *

	Minneapolis	St. Paul	Duluth
Assignable areas required by 1960	2,939,427	745,013	289,537
Less area in use in 1954	2,376,565	659,816	186,708
Less area under construction	27,342		48,915
Less area for which funds are available	29,627	59,107	43,556
	2,433,534	718,923	279,179
Net additional area required for expansion	505,893	26,090	10,358
Additional area required for consolidation of campus			23,196
Additional area required for replacement of building		22,727	
Net total additional assignable area required	505,893	48,817	33,554
Total additional gross area required	758,838	73,225	50,331
Estimated cost of total additional area †	\$18,212,112	\$1,757,400	\$1,207,944

* All area figures exclude areas for health service, student unions, organized sports, hospitals, residence halls, food service, and bookstores, since these functions are income-producing and legislative appropriations are not required for them at the present time.

† This estimate, based on most recent experience, allows \$18 per gross square foot for building costs and \$6 per gross square foot for non-building costs. These figures are subject to adjustment as the building cost index varies.

TABLE XXIV. ADDITIONAL BUILDING AREAS REQUIRED BETWEEN 1961 AND 1965

(All areas shown in square feet) *

	Minneapolis	St. Paul	Duluth
Assignable areas required by 1965	3,406,577	848,548	345,341
Less area available by 1961	2,939,427	745,013	289,537
Net additional area required for expansion	467,150	103,535	55,804
Additional area required for replacement of buildings	32,573	57,509	
Total additional assignable area required	499,723	161,044	55,804
Total additional gross area required	749,584	241,566	83,706
Estimated cost of total additional area †	\$17,990,016	\$5,797,584	\$2,008,944

* All area figures exclude areas for health service, student unions, organized sports, hospitals, residence halls, food service, and bookstores, since these functions are income-producing and legislative appropriations are not required for them at the present time.

† This estimate, based on most recent experience, allows \$18 per gross square foot for building costs and \$6 per gross square foot for non-building costs. These figures are subject to adjustment as the building cost index varies.

TABLE XXV. ADDITIONAL BUILDING AREAS REQUIRED BETWEEN 1966 AND 1970
(All areas shown in square feet) *

	Minneapolis	St. Paul	Duluth
Assignable area required by 1970	3,897,629	981,719	387,952
Less area available by 1966	3,406,577	848,548	345,341
Net additional area required for expansion	491,052	133,171	42,611
Additional area required for consolidation of campus			53,020
Additional area required for replacement of buildings	46,291	72,732	
Total additional assignable area required	537,343	205,903	95,631
Total additional gross area required	806,014	308,855	143,446
Estimated cost of total additional area †	\$19,344,336	\$7,412,520	\$3,442,704

* All area figures exclude areas for health service, student unions, organized sports, hospitals, residence halls, food service, and bookstores, since these functions are income-producing and legislative appropriations are not required for them at the present time.

† This estimate, based on most recent experience, allows \$18 per gross square foot for building costs and \$6 per gross square foot for non-building costs. These figures are subject to adjustment as the building cost index varies.

TABLE XXVI. OBSOLETE AND TEMPORARY BUILDINGS TO BE REMOVED FROM MINNEAPOLIS CAMPUS

Building Name	Building Number	General Description of Building Use	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
<i>To be removed by 1965</i>						
Temporary North Court of Engineering	84	Drawing Rooms and Offices	104,200	7,200	6,824	5,490
Temporary North of Health Service	86	Offices	97,000	6,696	5,964	4,158
Temporary South Court of Engineering	85	Drawing Rooms and Offices	104,200	7,200	6,649	5,424
Temporary South of Folwell	80	Student Employment Bureau, English Offices, Art	270,000	17,360	15,197	11,003
Temporary West of Hospital	88	School of Medicine, Veteran Vocational Advisement	127,000	9,726	8,834	6,498
SUBTOTAL			702,400	48,182	43,468	32,573
<i>To be removed by 1970</i>						
Temporary North of Child Welfare	89	Industrial Education Classrooms, Offices	173,000	14,400	13,569	11,292
Temporary North of Mines	91	General Studies Classrooms, Offices	146,875	13,320	11,665	8,465
Temporary South of Mines A	92	Student Activities Bureau	146,875	13,320	11,858	8,813
Temporary South of Mines B	93	Scientific Apparatus Repair Shop, Industrial Relations Institute	146,875	13,320	11,974	9,108
Temporary South of Mines C	94	Alumni Offices, State Organization Service	146,875	13,320	11,815	8,613
SUBTOTAL			760,500	67,680	60,881	46,291
GRAND TOTAL			1,462,900	115,862	104,349	78,864

TABLE XXVII. OBSOLETE AND TEMPORARY BUILDINGS TO BE REMOVED FROM ST. PAUL CAMPUS

Building Name	Building Number	General Description of Building Use	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
<i>To be removed by 1960</i>						
Cold Storage	333	Cold Storage Plant	115,900	12,780	8,161	7,303
Insectary Spray Laboratory	359A	Entomology	23,274	1,293	1,012	1,012
Old Dairy Building	306	Rural Sociology, Union	344,000	30,337	25,440	15,000
Pendergast Hall	304	Men's Residence Hall	232,000	21,760	18,150	14,584
Powerhouse *	312	Powerhouse, Physical Plant Offices	85,000	5,758	5,314	2,100
Soils Building	317	Soils Department	319,000	23,342	19,212	12,312
SUBTOTAL			1,119,174	95,270	77,289	52,311
<i>To be removed by 1965</i>						
Botany Head House	308	Plant Pathology	55,632	6,954	6,228	6,188
Carpenter and Paint Shop	325	Physical Plant Shops	65,100	6,058	4,817	4,679
Dining Hall and Dormitory	311	Dining Hall, Dormitory, Cafeteria	297,000	54,791	45,779	40,597
Greenhouse (rear of Botany)	339	Plant Pathology	182,500	14,634	7,173	6,915
Meat House	315	Animal Husbandry	57,400	7,379	6,447	6,072
Music Building	305	School of Agriculture, Classrooms, Offices	110,500	11,648	9,056	7,459
Powerhouse *	312	Powerhouse, Physical Plant Offices	125,960	20,612	8,329	4,081
Temporary South of Coffey	367	Rhetoric	105,300	7,272	6,797	4,819
Temporary South of Haecker	368	School of Agriculture, Extension Division	105,300	7,272	6,702	5,037
Veterinary Anatomy	316	Veterinary Medicine Offices, Classrooms	225,000	16,724	13,767	12,259
SUBTOTAL			1,329,692	153,344	115,095	98,106
<i>To be removed by 1970</i>						
Agricultural Botany	307	State Department of Agriculture, Plant Pathology	321,500	25,317	20,237	15,980
Brewster Hall	313	Women's Residence Hall	380,000	30,165	25,320	19,280
Dexter Hall	319	Men's Residence Hall	201,134	21,172	19,128	14,874
Greenhouse (East of Horticulture)	340	Horticulture Greenhouse	126,900	13,597	8,955	8,867
Horticulture	314	Horticulture, Agricultural Education	321,000	21,200	17,808	14,672
Livestock Pavilion	321	Animal Husbandry, Entomology	314,500	26,775	21,749	20,138
Temporary East of Haecker	369	School of Veterinary Medicine	209,528	19,048	17,219	13,075
SUBTOTAL			1,874,562	157,274	130,416	106,886
GRAND TOTAL			4,323,428	405,888	322,800	257,303

* Part of building to be removed in 1960 and part in 1965.

TABLE XXVIII. BUILDINGS TO BE RAZED OR ABANDONED FOR CONSOLIDATION OF THE DULUTH BRANCH CAMPUS

Building Name	Building Number	General Description of Building Use	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
<i>To be removed by 1960</i>						
Darling Observatory	511	Astronomy	13,023	1,447	1,143	1,081
SUBTOTAL			13,023	1,447	1,143	1,081
<i>To be abandoned by 1960</i>						
Lakeshore Studio	517	Studios, Art Exhibitions	62,738	6,604	5,317	2,656
Olcott Garage	507	Garage, Caretaker's Apartment	19,467	3,108	2,215	1,691
Olcott Hall	506	Music Department	147,872	12,464	11,556	6,638
Tweed Annex	509	Art	35,750	3,575	3,293	2,639
Tweed Hall	508	Classrooms, Sculpturing and Painting Studios, Music and Recital Room	232,000	17,949	13,738	10,182
SUBTOTAL			497,827	43,700	36,119	23,806
<i>To be abandoned by 1965</i>						
Washburn Hall	504	Health Service, Post Office, Bookstore, Lounge, Offices	220,080	18,340	13,350	10,628
SUBTOTAL			220,080	18,340	13,350	10,628
<i>To be abandoned by 1970</i>						
Main Building	501	Administration Offices, Library, Laboratories, Classrooms, Auditorium	1,297,920	83,038	73,323	53,020
Torrance Hall	505	Girls' Dormitory, Cafeteria	282,942	25,722	21,433	14,317
SUBTOTAL			1,580,862	108,760	94,756	67,337
GRAND TOTAL			2,311,792	172,247	145,368	102,852

TABLE XXIX. MAJOR REHABILITATION AND REMODELING OF BUILDINGS

MINNEAPOLIS CAMPUS

Needed by 1960

Lyon Laboratories	
Completion of basement	\$90,000
Library	
General rehabilitation	160,000
Completion of sub-basement and fourth floor	193,000
Chemistry Building	
General rehabilitation, Phase II	200,000
General rehabilitation, Phase III	400,000
Millard Hall	
To complete general rehabilitation	526,000
To expand fourth floor and remodel for use	360,000
Jackson Hall	
General rehabilitation	183,000
Remodeling for new use	215,000
Wulling Hall	
General rehabilitation	95,000
Remodeling for new use	125,000
Burton Hall	
General rehabilitation	235,000
Appleby Hall	
General rehabilitation of building for use by Pharmacy Department	208,000 *
Shopping News Building	
Remodeling of building for new use	135,000
Pillsbury Hall	
General rehabilitation	243,000
Zoology Building	
General rehabilitation	189,000
Owre Hall	
General rehabilitation	137,500
SUBTOTAL	\$3,694,500

Needed by 1965

Nicholson Hall	
General rehabilitation	\$85,000
Wesbrook Hall	
General rehabilitation	95,000
Psychology Building	
General rehabilitation	104,000
Folwell Hall	
General rehabilitation	200,000

* In addition to funds provided by 1955 Legislature (\$167,000).

Fraser Hall

General rehabilitation	155,000
Norris Gymnasium	
General rehabilitation	156,000
Main Engineering Building	
General rehabilitation	123,000
Physics Building	
General rehabilitation	176,000
Electrical Engineering	
General rehabilitation	165,000
Installation of new secondary main heating tunnel	350,000
Heating Plant	
Installation of one new boiler and rebuilding present boilers	1,105,000
Campus Street improvements	150,000
Mines Experiment Station	
General rehabilitation	98,500
Northrop Auditorium	
General rehabilitation	100,000
Armory	
General rehabilitation	200,000
SUBTOTAL	\$3,262,500
TOTAL	\$6,957,000

ST. PAUL CAMPUS

Needed by 1960

Install new heating tunnels including piping	\$330,000
Coffey Hall	
General rehabilitation	210,000
Haecker Hall	
General rehabilitation	91,000
Green Hall	
General rehabilitation	63,000
Remodel top floor as Forests Products Laboratory	102,500
SUBTOTAL	\$796,500

Needed by 1965

Gymnasium	
General rehabilitation	\$60,000
Snyder Hall	
General rehabilitation	121,500

LAND NEEDS

TABLE XXIX—Continued

Agricultural Engineering and Agricultural Engineering Shops	
General rehabilitation	250,000
Home Economics Building	
General rehabilitation of old portion	138,000
Rehabilitate complete campus electric distribution service	100,000
SUBTOTAL	\$669,500
TOTAL	\$1,466,000

DULUTH CAMPUS

<i>Needed by 1960</i>	
Move Darling Observatory to Rock Hill	\$50,000
Revisions to campus electric service	30,000
General development of lawns and landscaping	30,000
SUBTOTAL	\$110,000
TOTAL	\$110,000

LAND NEEDS OF THE MINNEAPOLIS AND ST. PAUL CAMPUSES

This estimate of land needs is based on the Inventory of building and building uses contained in the Appendix, and on student enrollment data contained in Part 1.

It is assumed that existing buildings will be utilized to full capacity and that all available building sites will be developed as indicated on the General Plan and the Advisory Architect's studies of future building sites. When this limit is reached, any subsequent building requirements will also involve requirements for additional land.

In order to determine the capacity of existing buildings, the assignable areas per student have been computed for 1954 and 1970. The results are shown in Table XXX. In order to calculate the capacity of existing and proposed buildings, the 1970 figure has been used.

The total assignable area of Minneapolis Campus buildings in use in 1954 was 2,824,692 square feet. The capacity of these buildings at 119.5 square feet per student is 23,645 students. The net assignable area available through the development of the remaining building sites is 458,500 square feet. This will provide an additional capacity of 3,837 students, making a total capacity of 27,482 students. This figure is expected between 1960 and 1965. By 1965 the predicted attendance is 31,904, and by 1970, 38,681.

TABLE XXX. ASSIGNABLE AREAS PER STUDENT FOR 1954 AND 1970

Function	1954 *	1970
Instruction	79.3 sq. ft.	61.0 sq. ft.
Research	20.2	14.9
Public Service	6.6	3.3
Administration	6.2	3.9
Student Service	29.2	20.0
Plant Operation	4.2	2.9
Internal Services †	17.6	11.0
Noninstitutional Organizations	5.7	2.5
Total	169.0	119.5

* Excludes areas in the process of construction or remodeling.

† Excludes residence halls and hospitals.

In order to achieve the 27,482 ultimate capacity of the Minneapolis Campus it is necessary to replace all temporary buildings with permanent structures. But many of these temporary buildings cannot be razed until their activities are housed in permanent buildings. The tabulation of additional land needs below allows for a gradual replacement of the temporary buildings.

MINNEAPOLIS CAMPUS

LAND NEEDS

The student capacity and estimated cost of buildings have been based on a continuation of the present pattern of walk-up buildings, generally not more than four stories above grade. High-rise buildings such as the Mayo Tower are workable when they are essentially self-contained units. However, campus distances are such that any delay occasioned by vertical circulation would make the present time schedule unworkable. The high-rise building has a much lower ratio of assignable area to the gross area than can be achieved in walk-up buildings, because of the additional area required for elevator shafts and lobby. Thus, in addition to the initial and maintenance costs of the elevators, the building cost is also greater for the same assignable area.

The ratio of gross building area to land area in the classroom portion of the Minneapolis Campus is approximately 1 to 1. These buildings generally have 4 to 5 usable floors. Thus, the land coverage is between 20 per cent and 25 per cent. If this same pattern is continued the net land area requirement for future instructional and related uses will be as shown in Table XXXI.

TABLE XXXI. NET AREA REQUIRED FOR INSTRUCTIONAL AND RELATED USES, 1960, 1965, AND 1970

	1960	1965	1970
Additional assignable area needed	623,144	540,654	577,964
Less area available through development of present campus land	342,382	69,827	46,291
Assignable area requiring new land	280,762	470,827	531,673
Equivalent gross area	421,143	706,241	797,510
Additional land needed	10 acres	16 acres	18.5 acres

The additional assignable areas required, as shown in Table XXXI, are larger than the net total assignable areas required shown in Tables XXIII, XXIV, and XXV because they include requirements for health service, student union, and bookstores.

Medical School. The Medical School has land use requirements not directly related to instruction, namely for the expansion of facilities related

to hospital needs. Prior to 1960 sites will be needed for the Medical-Biological Library, Department of Pathology, and the two Cancer Research Hospital units sponsored by the Masonic Lodge and the Veterans of Foreign Wars. Because of the need of proximity of these units, the two blocks south of Washington Avenue between Union and Harvard Streets should be allocated to Medical and Dental School use. There are now five apartment buildings in the area, in reasonably good condition and usable for many years. The balance of the two blocks should be acquired as soon as practicable.

Housing. The projected needs for student housing units are covered on page 81 of this report.

Land area requirements for single students are based on a continuation of the four-story residence halls such as Centennial and Pioneer. In these buildings the housing density is approximately 200 students per acre. University land is available for housing approximately 1,000 single students on the St. Paul Campus, and 500 single students on the Minneapolis Campus. Additional needs must be provided for on land not now owned by the University.

Land area requests for married students are based on a housing density of 12 families per acre. Plans are now being prepared for 100 units on the Como-Cleveland site. The present Como Village and Grove East sites would accommodate about 500 permanent units. The St. Paul Campus and Como areas are desirable for married student housing because of the present character of land use and the availability of inter-campus transportation. As

TABLE XXXII. LAND NEEDS FOR HOUSING, MINNEAPOLIS AND ST. PAUL CAMPUSES *

	No. of Units Needed		No. of Acres Needed		Acres of Land Now Available		Additional Acres Needed	
	S	M	S	M	S	M	S	M
1960	966	242	5	20	2.5	20.0	2.5	...
1965	1,416	1,265	7	105	3.5	105.0	3.5	...
1970	1,871	801	9	66	2.0	30.0	7.0	36.0
Total	4,253	2,308	21	191	8.0	155.0	13.0	36.0

* S refers to housing for single students, M to housing for married students.

LAND NEEDS

land holdings on the St. Paul Campus are consolidated, and as certain research activities are transferred to Rosemount, it is assumed that 1,000 additional units could be provided for on University land.

Parking. Land needs for parking have been in a different category from land needs for instructional purposes because the former have been financed through earnings. This may not be possible in the future as parking lots are lost to building sites. In any case, the land needs for parking are interrelated with other land needs.

In the academic year 1955-1956 the Minneapolis Campus had a total population of approximately 24,000 students and staff. They used about 11,000 parking spaces. Roughly half of these were provided on campus, and half on the public streets. Since the area of the Minneapolis Campus is just short of 200 acres, this meant that 25 parking spaces were available per acre.

The present ratio of campus population to parking spaces is 2.2 to 1. However, part of the street parking is due to commercial and industrial activities unrelated to the University. In projecting future needs, the ratio

of University population to parking spaces is assumed to be 2.5 to 1. This assumption may be too optimistic. At the new North Campus of the University of Michigan, parking is being provided at a ratio of 2 to 1. Recent surveys at another university show that 95 per cent of students and staff come to the campus by car, with an average of 1.3 persons per car.

The parking capacity of the Minneapolis Campus cannot be increased to any appreciable extent. Street parking is limited to walking distances within one mile. The development of multi-level parking facilities will be offset by the loss of existing parking areas on future building sites. In any case, the capacity of adjacent streets will limit further concentration of cars in the campus area. During rush hours, these streets are now inadequate for the loads they must carry.

On open land it is possible to provide 150 parking spaces per acre. If the present ratio of student population to total campus population continues, the land needs for parking will be as shown in Table XXXIII.

ADJACENT LAND AREAS

Minneapolis Campus. There are three definite areas of interest adjacent to the Minneapolis Campus which could be utilized for expansion of instruction, research, and housing facilities.

The first area, to the north of the campus, is bounded by the Great Northern right-of-way and Tenth Avenue S.E. It contains approximately 138 acres. It is now used intensively for student and faculty housing. A neighborhood shopping center and Delta Field are included in this area. Classroom expansion into this area would disperse housing and add further to the traffic problems. It would appear that the best use of this land would be for more intensive housing and expansion of athletic fields.

The second area is the one to the southeast bounded by Oak Street, the Milwaukee right-of-way, and the East River Road, which contains approximately 86 acres. This is now used intensively for student and faculty housing, and because of its convenience to the central instructional area of the campus, this is probably its best use for the future—perhaps with more intensive development at a later date.

The third area of interest is the Riverside area located to the southwest of the campus and across the Mississippi River. It contains approxi-

TABLE XXXIII. LAND NEEDS FOR PARKING, MINNEAPOLIS CAMPUS

Year	Total Campus Population	Total Park- ing Spaces Needed	Available in Campus Area	No. Re- quired Elsewhere	Additional Land (Acres) Required
1955	24,000	...	11,000	...	...
1960	33,000	13,200	11,250	1,950	13.0
1965	40,000	16,000	11,650	4,350	16.0
1970	49,000	19,600	12,115	7,485	21.0
Total acreage needed by 1970					50.0

TABLE XXXIV. SUMMARY OF ESTIMATED LAND NEEDS, IN ACRES

Function	1960	1965	1970	Total
Instructional buildings and related uses	10.0	16.0	18.5	44.5
Medical School	1.0	2.0	2.0	5.0
Housing	2.5	3.5	43.0	49.0
Parking	13.0	16.0	21.0	50.0
Total	26.5	37.5	84.5	148.5 *

* This figure does not include additional land required for athletics and physical education.

LAND NEEDS

mately 60 acres. In general, it is a blighted area consisting of housing, commerce, and industry. Only a small portion of students are housed in this area and its location is near enough to the center of the campus so that many of the existing common facilities would not have to be duplicated. This seems by far the best area for expansion of instructional facilities.

The three areas contain approximately 284 acres including streets, shopping centers, schools, and other civic buildings. The map of the Minneapolis Campus shows the relation of these areas to the present campus.

St. Paul Campus. The land acquisitions recommended for the St. Paul Campus are primarily for the purpose of consolidating present holdings so as to minimize encroachment by conflicting activities.

Duluth Campus. The land acquisitions recommended for the Duluth Campus consist of minor residential encroachments, and expansion of the Rock Hill area against possible conflicting uses.

A typical translation of these figures into tangible planning is shown in the map "Proposed St. Paul Campus Plan for 1970" (page 69).

TABLE XXXV. BRANCH STATION BUILDING NEEDS, 1956-1970 *

NORTHWEST SCHOOL AND EXPERIMENT STATION (CROOKSTON)			
<i>Rehabilitation of present facilities</i>		<i>Additional minor buildings</i>	
Stabilization of building structures, Phase II	\$150,000	Agricultural Engineering addition	100,000
Hill Building	145,000	Turkey Pole Barn	4,000
Robertson Hall	145,000	Horticulture Field Workroom and Storage	5,000
Selvig Hall	130,000	Addition to Kiehle Building (Library)	30,000
Kiehle Building	70,000		
Dining Hall	75,000	SUBTOTAL	\$267,400
Stephens Hall	260,000	TOTAL	\$1,537,400
Owen Hall	60,000		
Replacement of Old Greenhouse	35,000	NORTH CENTRAL SCHOOL AND EXPERIMENT STATION (GRAND RAPIDS)	
Health Service Building	20,000	<i>Rehabilitation of present facilities</i>	
Physical Education Building	20,000	Sanitary sewers	\$15,000
Lighting system	15,000	Sewage disposal plant	40,000
Rehabilitate five staff homes, one duplex, one fourplex, and one farm laborer's house	60,000	Main Building	15,000
Surfacing of roads on campus	20,000	Road surfacing	32,000
Install new water main from city of Crookston to the campus	25,000	Connect main heating plant in Main Building to Classroom Building and Creamery	25,000
Storm sewer installation	40,000		
SUBTOTAL	\$1,270,000	SUBTOTAL	\$127,000
<i>Replacement of minor buildings</i>		<i>Replacement of existing inadequate facilities</i>	
Dairy Barn (pole barn, 36' x 60')	\$10,000	Recreational Building	\$200,000
Pole Barn for beef cattle	6,000	Science Building	200,000
Hog House	20,000		
Seed Storage	12,000	<i>Additional minor buildings</i>	
Poultry Brooder House (70' x 40')	19,600	Three single-family residences	30,000
Poultry Laying House (160' x 40')	44,800	Dairy Barn addition	5,500
Machinery Storage Shed and Repair Shop	16,000		
		SUBTOTAL	\$435,500
		TOTAL	\$562,500

* Average enrollment for some branch stations for the past six years is as follows: Northwest School and Experiment Station, 400; North Central School and Experiment Station, 76; West Central School and Experiment Station, 345; Southern School of Agriculture and Experiment Station, 143.

No significant increase is expected, except at the Southern School of Agriculture and Experiment Station, which is not yet fully developed. The highest enrollment expected there is 450.

TABLE XXXV—Continued

WEST CENTRAL SCHOOL AND EXPERIMENT STATION (MORRIS)		FRUIT BREEDING FARM (EXCELSIOR)	
<i>Rehabilitation of present facilities</i>		<i>Rehabilitation of present facilities</i>	
Music	\$10,000	Oil roads	\$5,000
Health Service	45,000		
Spooner Hall	120,000	SUBTOTAL	\$5,000
Senior Hall	75,000		
Girls' Dormitory Building	55,000	<i>Additional minor buildings</i>	
Dining Hall	100,000	Propagating House (60' x 30')	\$1,000
Junior Hall	90,000	Farm Shop (30' x 40')	10,500
Agricultural Engineering Shops	50,000	Machine Shed (30' x 100')	5,000
Agricultural Hall	40,000		
Gymnasium	20,000	SUBTOTAL	\$16,500
Tunnels	60,000		
Electric service for the campus	20,000	TOTAL	\$21,500
SUBTOTAL	\$685,000		
<i>Replacement of major buildings</i>		NORTHEAST EXPERIMENT STATION (DULUTH)	
Administration, Library, and Auditorium	\$300,000	<i>Rehabilitation of present facilities</i>	
Girls' Dormitory	350,000	Storm sewers, sidewalks, curbs, and paving	\$30,000
Home Management House	40,000		
		SUBTOTAL	\$30,000
<i>Additional minor buildings</i>			
Machine Shed and Repair Shop	16,000	<i>Replacement of minor buildings</i>	
		Herdsmen's Cottage	\$15,000
SUBTOTAL	\$706,000		
TOTAL	\$1,391,000	<i>Additional minor buildings</i>	
		Hog House	20,000
		Hen House	5,000
		SUBTOTAL	\$40,000
		TOTAL	\$70,000
SOUTHERN SCHOOL OF AGRICULTURE AND EXPERIMENT STATION (WASECA)		AGRICULTURAL STATION (ROSEMOUNT)	
<i>Additional major buildings, Southern School of Agriculture</i>		<i>Rehabilitation of present facilities</i>	
Residence hall space		Road improvement	\$5,000
Phase III	\$350,000	Electric service	10,000
Phase IV	240,000	Fire protection and water supply system	72,000
Physical Education Building	450,000		
Shop wing	90,000	SUBTOTAL	\$87,000
Health Service	55,000		
<i>Additional minor buildings, Southern Experiment Station</i>		<i>Replacement of minor buildings</i>	
Feed Grinding and Storage	20,000	Dairy Barn and Laboratory	35,000
Machine Shed	10,000	Farm Shop and Machine Storage	12,000
Sheep Shelter and paved yard	7,000		
Steer Shed and paved yard	9,000	<i>Additional minor buildings required</i>	
Cottage, West Farm	12,000	Office and Auditorium	20,000
		Three single-family cottages	36,000
SUBTOTAL	\$1,243,000		
TOTAL	\$1,243,000		

TABLE XXXV—Continued

Beef Cattle Barn and Feed Storage	10,000
Beef Cattle Barn	5,000
Poultry Laying House	20,000
SUBTOTAL	\$138,000
TOTAL	\$225,000
CLOQUET EXPERIMENTAL FOREST	
<i>Rehabilitation of present facilities</i>	
Surface roads	\$5,000
SUBTOTAL	\$5,000
<i>Replacement of minor buildings</i>	
Shop	5,000
<i>Additional minor buildings</i>	
Garage	4,000
Two student cabins	4,000
Camp director's residence	8,000
<i>Additional facilities</i>	
Outdoor lighting system	2,500
Bridge across Otter Creek	2,000
SUBTOTAL	\$25,500
TOTAL	\$30,500
FORESTRY AND BIOLOGICAL STATION (ITASCA STATE PARK)	
<i>Additional minor buildings</i>	
Married student housing	\$20,000
SUBTOTAL	\$20,000
TOTAL	\$20,000

TABLE XXXVI. PROJECTED BUILDINGS ON THE MINNEAPOLIS CAMPUS
AND THEIR APPROXIMATE AREAS

Description	Approx. Gross Area (sq. ft.)	Approx. Assignable Area (sq. ft.)
<i>New Buildings</i>		
South of Chemistry Building	75,000	50,000
West of Coffman Memorial Union	93,000	62,000
North of Mechanical-Aeronautical Engineering Building	91,200	60,800
South of Armory	72,000	48,000
Northeast of Mechanical-Aeronautical Engineering Building (lecture auditorium)	33,600	28,600 *
South of Folwell Hall (little theater)	49,400	42,000 *
<i>Additions</i>		
Vincent-Murphy Hall	36,000	29,700
Zoology Building	21,600	14,400
Physics Building	42,000	28,000
Chemical Engineering Building (east wing)	36,000	24,000
Main Engineering Building (north wing)	45,300	30,200
Main Engineering Building (south wing)	45,300	30,200
Jones Hall	75,000	50,000
Eddy Hall	59,400	39,600
Total area of projected buildings	782,400	537,500
Less area of replaced temporary buildings †	116,000	79,000
Total added area	666,400	458,500

* It is assumed that the ratio of assignable to gross area will be greater for special-purpose buildings such as auditoriums and little theaters.

† See Table XXVI for an itemized list of the temporary buildings to be removed.

PROPOSED ST. PAUL CAMPUS PLAN FOR 1970

0 500

INSTRUCTION

Plant Sciences	
Animal Sciences	
General	

RELATED FACILITIES

Single Student Housing	
Married Student Housing	
Student Services	
Field Buildings	
Power Plant	

OPEN SPACE

A	Parking
B	Play Areas
C	Fields
D	Service Yard

LAND NEEDS OF THE BRANCH STATIONS

Crookston. The area of the Crookston Campus on January 2, 1956, was 915.89 acres. There is a need at this campus for an additional 160 acres for the production of feed grains (oats, barley, and some corn) for livestock, at costs lower than market prices.

The available land, in order of desirability, is as follows:

(1) the SW $\frac{1}{4}$, Sec. 17, T150N, R46W, 160 acres costing approximately \$110 an acre, a total cost of \$17,600; (2) the NW $\frac{1}{4}$, Sec. 20, T150N, R46W, 160 acres costing approximately \$120 an acre, a total cost of \$19,200; (3) the SE $\frac{1}{4}$, Sec. 18, T150N, R46W, 160 acres costing approximately \$120 an acre, a total cost of \$19,200.

Grand Rapids. The area of the Grand Rapids Campus on January 2, 1956, was 454.6 acres. The following acquisitions are recommended: (a) the W $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Sec. 10, T55N, R25W, containing 80 acres more or less, less the county road right-of-way, owned by the State of Minnesota; transfer to the University for use as an experimental forest area would be negotiated with the state at a cost of \$100; (b) the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Sec. 15, T55N, R25W, containing 40 acres ("McGuire 40" on the map) at an approximate price of \$30 an acre, a total cost of \$1,200. Total cost of acquisitions for this campus is \$1,300.

Morris. The area of the Morris Campus on January 2, 1956, was 823.82 acres. The following acquisitions are recommended:

(a) Purchase of a 35.46 acre tract now owned by Leo Kane, partly in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Sec. 36, T125N, R42W, would solve problems of fencing close to the river, routing cattle to pasture, and crossing the Morris Cyrus road with cattle; the existence at present of private herds in the area is a potential source of contamination to the University's herd. At an estimated cost of \$100 an acre, the cost of this tract would be \$3,546.

(b) Purchase of the 39.49 acres south of the railroad right-of-way in the NE $\frac{1}{4}$ of Sec. 31 would increase pasture area. At an estimated cost of \$175 per acre, the cost would be \$6,911.

(c) Purchase of 13.5 acres north of the railroad right-of-way in the

NE $\frac{1}{4}$ of Sec. 31 would increase crop acreage. At an estimated cost of \$175 an acre, the cost would be \$2,362.

Total cost of acquisitions for this campus is \$12,819.

Northeast Experiment Station, Duluth. The area of the Northeast Experiment Station on January 2, 1956, was 282.74 acres. Acquisition of the area indicated on the map as the "Goldfine Farm" (approximately 360 acres) is recommended. The cost of this tract is about \$25,000.

Excelsior Fruit Breeding Farm (Zumbra Heights). The area of the Excelsior Fruit Breeding Farm on January 2, 1956, was 223.06 acres. The following acquisitions are recommended: (a) 3 acres at \$350 an acre, \$1,050; (b) 40 acres at \$250 an acre, \$10,000; (c) 40 acres at \$250 an acre, \$10,000. Total cost of acquisitions for this campus is \$21,050.

Cloquet Forest. The area of the Cloquet Forest on January 2, 1956, was 3,840 acres. The following acquisitions are recommended: (a) Sec. 25, T49N, R18W, containing approximately 640 acres; cost at approximately \$30 an acre is \$19,200; (b) Sec. 26, T49N, R18W, containing approximately 320 acres and the complete meander of a forest stream from its source; cost at approximately \$30 an acre is \$9,600. Total cost of acquisitions for this campus is \$28,800.

TABLE XXXVII. SUMMARY OF ESTIMATED ACREAGES AND COSTS OF LAND NEEDS FOR BRANCH STATIONS

Station	Acreage Needed	Estimated Cost
Crookston	160.00	\$17,600
Grand Rapids	120.00	1,300
Morris	88.45	12,819
Northeast Experiment Station, Duluth	360.00	25,000
Excelsior Fruit Breeding Farm	83.00	21,050
Cloquet Experimental Forest	960.00	28,800
Total	1,771.45	\$106,569

CROOKSTON, NORTHWEST SCHOOL AND EXPERIMENT STATION

GRAND RAPIDS

NORTH CENTRAL SCHOOL AND EXPERIMENT STATION

All in T55N, R25W, 4th P.M.
ITASCA COUNTY

MORRIS, WEST CENTRAL SCHOOL AND EXPERIMENT STATION

EXCELSIOR FRUIT BREEDING FARM, ZUMBRA HEIGHTS, CARVER COUNTY

All in T116 N, R23 W, 5th P. M.

LEGEND

- Property of the University
- Acquisition Recommended

CLOQUET EXPERIMENTAL FOREST

ROSEMOUNT

WASECA

SOUTHERN SCHOOL AND
EXPERIMENT STATION

R 23 W

R 22 W, 5th P. M.

ITASCA

FORESTRY AND BIOLOGICAL
STATION

92

Mississippi River
Headwaters

PARK

BOUNDARY

UNIVERSITY
BUILDINGS

ITASCA

LAKE

ITASCA

STATE

CLEARWATER COUNTY
HUBBARD COUNTY

1000 0 1 2 3 4 5
SCALE - THOUSANDS OF FEET

PARK

BOUNDARY

ELK
LAKE

71

71

To Bemidji
31 Miles

CEDAR CREEK FOREST LABORATORY

HOUSING NEEDS

Minneapolis and St. Paul Campuses. At the present time, there is a dire need for additional University-owned housing facilities on the Minneapolis and St. Paul Campuses. The tremendous increases in enrollments that will take place in a few years will make the problem even more acute. Table XXXVIII shows housing of various kinds, available and needed.

On the basis of the increased student attendance, our estimates indicate that by 1960 we will have to provide housing for 1,208 students, by 1965 for an additional 2,681, and by 1970 for 2,672 additional students, or a total need of 6,561 units of housing.

Although the housing facilities for the School of Agriculture on the St. Paul Campus are not up to our standards, the number of available units is adequate at the present time. It has been estimated that by 1965 the school enrollment will be 300 students and by then we will have to provide 100 additional units of housing. The present buildings of Dexter, Meredith, and the Dining Hall, which house approximately 200 students, will need replacement or extensive renovation by 1970. Table XXXIX indicates the estimated cost of constructing these housing units.

TABLE XXXVIII. ANTICIPATED STUDENT HOUSING, AVAILABLE AND NEEDED, FOR MINNEAPOLIS AND ST. PAUL CAMPUSES

	1955	1960	1965	1970
Estimated attendance	20,845	28,353	34,724	42,268
Housing available				
Parents' homes	9,851	14,177	17,362	21,134
Fraternities and sororities	1,058	1,100	1,100	1,100
University-owned facilities	3,439	4,468	3,873 *	3,873
Owned or rented house	843	900	1,000	1,100
Apartments and rooming houses	5,654 †	6,500	7,500	8,500
Total available capacity	20,845	27,145	30,835	35,707
Estimated housing needs		1,208	3,889	6,561

* University village temporary housing units omitted because it is expected that they will be beyond rehabilitation by this time.

† This figure is 27.1 per cent of the student attendance in 1955. There will not be facilities to accommodate 27.1 per cent of the students in 1960, 1965, and 1970 in the Twin Cities area that will meet University housing standards. The number of apartment and rooming house facilities, therefore, has been increased approximately 1,000 every five years.

TABLE XXXIX. ESTIMATED NUMBER AND COST OF HOUSING UNITS FOR MINNEAPOLIS AND ST. PAUL CAMPUSES

	No. of Units Needed	Cost per Student	Construction Cost
1960			
Single	966	\$4,500	\$4,347,000
Married	242	10,000	2,420,000
1965			
Single	1,516 *	5,000	7,480,000 *
Married	1,265	10,000	12,650,000
1970			
Single	1,871	5,000	9,355,000
Married	801	10,000	8,010,000
Total			\$44,262,000

* Includes 100 units for School of Agriculture.

It has been estimated that in 1960, at least 20 per cent of the students needing housing will be married. In 1965 the proportion will be 25 per cent and in addition present temporary facilities will need replacement. In 1970 the provision for married student housing is based on 30 per cent of the anticipated total student need.

Duluth Campus. On the new Duluth Campus we are currently completing residence hall units to house 64 students and plan on adding another 56 units this next year. The original plans are so designed that additional units accommodating eight students each can be added as demand increases. On the present site, 48 such units are planned which will house 384 students. It is felt that these plans are adequate for housing needs by 1970.

Waseca. Presently there is under construction a residence hall for 110 students at this station, which added to the 132 units they already have will give them total housing for 242 students. There will be a need for approximately 200 additional accommodations that will have to be provided. Most of the recreational space has been provided in the present building. Therefore, the estimated cost per student housed will approximate \$3,200 for a total construction cost of \$640,000.

FOOD SERVICE NEEDS

Minneapolis Campus. Food service facilities now available to students and staff on the Minneapolis Campus are in Coffman Memorial Union and Shevlin Cafeteria. By the fall term of 1956 the present facilities will be used at capacity during the lunch period. As the enrollment increases, it will be necessary to provide more cafeteria and bag lunchroom space for students and staff. Past experience indicates that we will need food service facilities for approximately 30 per cent of the student body. Table XL indicates this experience and the future needs.

Estimates are that by 1960 we will have to serve 1,707 additional customers during a lunch period, by 1965 an additional 1,764, and that by 1970 space for 2,033 additional customers or total facilities to feed 5,504 people will have to be provided, which approximately doubles the present load on the Minneapolis Campus (see Table XLI).

The needs for food service facilities on the Minneapolis Campus by 1970 will total 70,872 square feet of gross area at an estimated construction cost of \$803,279. In calculating the space requirements, a turnover factor of two and one half times is used for each space required. For example, in order to serve 569 additional cafeteria customers during a lunch period in 1960, we must provide seating space for only 228.

St. Paul Campus. The present food service facilities on this campus are quite inadequate for current needs and the situation will become even

more critical when new residence halls are constructed as the enrollment increases. A new food service facilities building, adjacent to the new union building, to service all of the St. Paul Campus will be necessary. Total campus food service needs include regular students, residence hall occupants (college and school), average short course registrants, faculty, and visiting groups, such as regional and national agricultural and home economics research groups, and professional organizations for all departments.

The needs of the St. Paul Campus are quite unique and to adequately provide for these needs will require a building costing about \$700,000.

Duluth. The new union building now nearing completion on the Duluth Campus will have a cafeteria to feed residence hall students as well as regular students and staff. This cafeteria has seating space for approximately 390 customers which means that during a lunch period approximately 975 individuals can be accommodated. This should provide adequate food service facilities if enrollment does not go beyond the estimated 4,132 students by 1970. Bag lunch facilities will have to be increased as necessary.

TABLE XL. PRESENT EXPERIENCE AND FUTURE NEEDS FOR UNION FOOD SERVICES AND SHEVLIN CAFETERIA DURING 11:00-1:30 LUNCH PERIOD

Year	Total Attendance	Capacity	No. Served	% of Total Attendance	Additional No. of Customers to be Served
1953	15,499	5,100	4,700	30	
1954	16,449	6,100	5,100	31	
1955	18,914	6,100	5,600	30	
1956	21,120	6,100	6,336	30	236
1960	26,022	6,100	7,807	30	1,707
1965	31,904	6,100	9,571	30	3,471
1970	38,681	6,100	11,604	30	5,504

TABLE XLI. ESTIMATED AREA AND COSTS FOR FUTURE FOOD SERVICE NEEDS, MINNEAPOLIS CAMPUS

Year and Kind of Service	Estimated Additional Number of Customers to be Served During a Lunch Period	Gross Area Required (Sq. Ft.)	Estimated Construction Cost
1960			
Cafeteria	569	8,390	\$113,265
Bag lunch	1,138	13,604	136,040
1965			
Cafeteria	588	8,648	116,748
Bag lunch	1,176	14,053	140,530
1970			
Cafeteria	678	9,973	134,636
Bag lunch	1,355	16,206	162,060
Total		70,872	\$803,279

INTRODUCTION

This inventory includes all land and buildings used by the University to carry out its responsibilities of Instruction, Research, and Service to the State, as of July 1955. Property not in active use by students or staff is excluded.

Each campus of the University is reported separately with a map and various schedules showing the use of space within buildings. The campus map locates buildings by number. Use of building space is reported on the following schedules for each campus. (Where no space is used for a particular category, the schedule is omitted.)

SCHEDULE A: Alphabetical listing of buildings (Provides certain basic information about each building such as type of construction, general description of use, cubic content, total areas, etc. Reference is made to the schedule where further analysis of space use will be found.)

SCHEDULE B: Instruction, Research, and General Use

SCHEDULE C: Internal Services

SCHEDULE D: Housing and Feeding

SCHEDULE E: Intramural and Intercollegiate Athletics

SCHEDULE F: Auxiliary Buildings (Includes such buildings as barns, sheds, brooder houses, storage buildings, etc.)

Space has been classified by the Department of Admissions and Records, Room Scheduling Office, according to the Functional Use Classification Table in this report. Certain categories have been further broken down into type of room. Included on the Functional Use Classification Table is a reference to the campus, schedule, and column number where each category will be found.

A summary of totals by campus is provided in the front part of the inventory for quick reference.

DEFINITION OF TERMS

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *Space Use.* This indicates the schedule (or schedules) on which the use of assignable area in this building is explained.
4. *General Description of Building Use.* This is a general description only. A detailed explanation of use is found in other schedules.
5. *Date of Erection.* The first date is the date the building was erected. The date in parentheses is the date of major addition.
6. *Book Value.* This is the value as indicated in the Financial Report.
7. *Type of Construction.* The number in this column indicates the general type of construction as taken from the following classes:
 1. Reinforced concrete or fire-protected structural steel framed, with reinforced concrete floor slabs.
 2. Load-bearing masonry wall construction with reinforced concrete floor slabs.
 3. Load-bearing masonry walls with interior wood floors.
 4. Heavy timbered frame, solid or laminated.
 5. Wood frame construction.
 6. Steel frame with fireproof covering.
8. *Cubic Content.* This is the gross cube calculated in accordance with the American Institute of Architects definition.
9. *Gross Area.* The gross floor area of a building is the sum of the areas at each floor level included within the principal outside faces of exterior walls, neglecting minor architectural set-backs and projections. Included are all stories or areas which have floor surfaces with clear standing head room (6'6" minimum), regardless of their use. Where a ground level or intermediate story, or part thereof, is left unenclosed, the gross floor area of the unenclosed story is considered to be the projected area of the story above. Excluded are all unroofed areas and unenclosed roofed spaces.
10. *Usable Area.* Total floor area of all rooms within a building. This includes such public spaces as corridors, toilet rooms, elevator space, and stairways. Also included are mechanical equipment rooms, accessible pipe spaces, and floored areas in attics or basements (6'6" head room minimum).
11. *Assignable Area.* The sum of the floor areas of the individual rooms assignable to the agencies housed in the building. Excluding the floor space devoted to activities such as the circulation of general traffic within the building, mechanical equipment rooms, accessible pipe spaces, and public toilets. This figure also, of course, excludes the "floor area" of the building's structural elements (except as they exist to a negligible degree within the rooms).

SCHEDULE B. ASSIGNABLE AREAS FOR INSTRUCTION, RESEARCH, AND GENERAL USE

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *Instruction.* Use of space as defined in Category I, Instruction, in the Functional Use Classification Table.
4. *Research.* Use of space as defined in Category II, Research, in the Functional Use Classification Table.
5. *Public Services.* Use of space as defined in Category III, Public Services, in the Functional Use Classification Table.
6. *Administration.* Use of space as defined in Category IV, Administration, in the Functional Use Classification Table.
7. *Plant Operations.* Use of space as defined in Category V, Plant Operation, in the Functional Use Classification Table.
8. *Student Services.* Use of space as defined in Category VI a, b, and d, Student Services, in the Functional Use Classification Table. Please note this does not include Category VI c—Athletics.
9. *Noninstitutional Organizations.* Use as defined in Category IX, Noninstitutional Organizations, in the Functional Use Classification Table.
10. *Total Assignable Area This Schedule.* This is the total assignable area included on all other columns on this schedule only. If a particular building appears on other schedules, all must be added together to equal the assignable area shown on Schedule A.

SCHEDULE C. AREAS FOR INTERNAL SERVICES

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *Type of Service.* This is a general description of the service activities in the particular building.
4. *Hospitals and Related Activities.* This hospital area includes examining rooms, operating rooms, wards, offices, storerooms, and kitchens as well as all activities directly related to hospital operation as reported in Category VIII e, Auxiliary Enterprises, in the Functional Use Classification Table.
5. *Laboratory Schools.* This includes all areas, classrooms, offices, laboratories, gymnasiums, etc. that are used for laboratory school activities as defined in Category VIII d, Auxiliary Enterprises, in the Functional Use Classification Table.

6. *Shop or Workroom.* This includes all shop areas and workroom areas used by service activities included under Category VII, Institutional Services, and Category VIII c and f, Auxiliary Enterprises, in the Functional Use Classification Table.
7. *Office.* This includes all office areas as defined in Category VII, Institutional Services, and Category VIII c and f, Auxiliary Enterprises, in the Functional Use Classification Table.
8. *Storage and Service.* This included all storerooms and service areas as defined in Category VII—Institutional Services, and Category VIII c and f, Auxiliary Enterprises, in the Functional Use Classification Table.
9. *In Process of Remodeling.* This is area in process of remodeling as of July 1, 1955.
10. *Total Assignable Area This Schedule.* This is the total assignable area included on all other columns on this schedule only. If a particular building appears on other schedules, all must be added together to equal assignable area reported on Schedule A.

SCHEDULE D. AREAS FOR HOUSING AND FEEDING

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *How Used.* General description of use.
4. *Capacity.* Number of students that can be accommodated. This is included for Residence Halls only.
5. *Usable Residence Hall Area.* This is usable areas as defined in Schedule A that is devoted to residence use. This includes pipe spaces, stair space, and public spaces.
6. *Usable Residence Hall Area Per Student.* This is a total usable area devoted to residence use divided by capacity in number of students.
7. *Residence.* This is assignable area used for residence purposes as defined in Category VIII, Auxiliary Enterprises, in the Functional Use Classification Table. Please note that this is assignable area and conforms with the definition of assignable area on Schedule A.
8. *Food Preparation and Serving.* This is area as defined in Category VIII b, Auxiliary Enterprises, in the Functional Use Classification Table. This includes kitchens, dining rooms, storerooms, and incinerators that are directly related to food preparation and serving.
9. *Recreation.* This area is devoted entirely to recreation such as ping-pong tables, pool tables.
10. *Office.* This lists office areas as defined in Category VIII a and b, Auxiliary Enterprises, in the Functional Use Classification Table. These are offices directly related to the operation of either residence halls or food service.
11. *Storage and Service.* This lists areas as defined in Category VIII a and b, Auxiliary Enterprises, in the Functional Use Classification Table, which are used entirely for central storage, handling, loading docks, etc., directly relating to housing and feeding.

12. *Total Assignable Area This Schedule.* This is the total assignable area of this schedule only. If a particular building appears on other schedules, all must be added together to equal assignable area shown on Schedule A.

SCHEDULE E. ASSIGNABLE AREAS FOR INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *Gymnasium.* Use of space as defined in Category VI c, Student Athletics, in the Functional Use Classification Table. This includes gymnasiums and swimming pool areas.
4. *Seating.* Use as defined in Category VI c, Student Athletics, in the Functional Use Classification Table.
5. *Office.* Office area directly related to student athletics as defined in Category VI c, Athletics, in the Functional Use Classification Table.
6. *Service.* This includes storerooms, handling areas, locker rooms, etc. within areas which are defined in Category VI c, Athletics, in the Functional Use Classification Table.
7. *Total Assignable Area This Schedule.* This is the total assignable area included on all other columns on this schedule only. If a particular building appears on other schedules, all must be added together to equal the assignable area shown on Schedule A.

SCHEDULE F. ASSIGNABLE AREAS FOR AUXILIARY BUILDINGS

1. *Building Name.* Self-explanatory and arranged in alphabetical order.
2. *Building Number.* This is the official number assigned to the building and will identify it on all maps and schedules.
3. *Instruction.* Use of space as defined in Category I, Instruction, in the Functional Use Classification Table.
4. *Research.* Use of space as defined in Category II, Research, in the Functional Use Classification Table.
5. *Plant Operation.* Use of space as defined in Category V, Plant Operations, in the Functional Use Classification Table.
6. *Institutional Services.* Use of space as defined in Category VII, Institutional Services, in the Functional Use Classification Table.
7. *Total Assignable Area This Schedule.* This is the total assignable area included on all other columns on this Schedule only. If a particular building appears on other schedules, all must be added together to total the assignable area shown on Schedule A.

SUMMARY OF TOTALS BY CAMPUS

MINNEAPOLIS, ST. PAUL, AND DULUTH

Schedule	Minneapolis Campus	St. Paul Campus	Duluth Campus
SCHEDULE A: Alphabetical List			
Cubic Content	93,241,198	17,546,826	8,237,373
Gross Area	6,245,606	1,434,394	422,460
Usable Area	5,148,048	1,177,687	349,320
Assignable Area	3,794,592	956,809	220,267
SCHEDULE B: Instruction, Research, and General Use			
Instruction	1,306,911	344,915	110,053
Research	331,356	154,449	407
Public Services	112,990	29,846	9,402
Administration	100,705	9,870	4,258
Plant Operations	67,626	39,400	9,919
Student Services	153,580	29,269	7,647
Noninstitutional Services	95,949	22,311	1,500
	<hr/>	<hr/>	<hr/>
	2,169,117	630,060	143,186
SCHEDULE C: Internal Services	617,851	27,569	25,057
SCHEDULE D: Housing and Feeding	645,263	126,486	26,351
SCHEDULE E: Athletics	355,896	33,322	25,673
SCHEDULE F: Auxiliary Buildings	6,465	139,372	

BRANCH STATIONS

Schedule	Morris	Castle Danger	Crookston	Zumbra Heights	Cloquet	Waseca	Itasca	Grand Rapids	Rosemount Agriculture	Rosemount Research	Northeast Experiment (Duluth)
SCHEDULE A: Alphabetical List											
Cubic Content	2,945,300	14,016	3,160,849	553,078	350,912	2,329,235	235,136	1,407,549	1,348,370	9,871,859	622,021
Gross Area	263,646	1,872	290,785	46,822	40,743	189,146	31,041	110,247	114,749	861,372	57,894
Usable Area	229,738	1,540	254,944	41,294	37,842	164,496	28,686	100,900	102,315	830,323	51,964
Assignable Area	202,691	1,540	222,241	40,471	37,842	139,643	28,686	92,672	102,315	830,323	50,812
SCHEDULE B: Instruction, Research, and General Use	64,845	728	55,045	2,425	4,170	43,062	5,339	24,112	480	128,699	12,698
SCHEDULE C: Internal Services	3,624		3,498				529				
SCHEDULE D: Housing and Feeding	76,593	812	91,691	12,490	18,538	40,393	17,273	25,309	6,235	72,173	9,538
SCHEDULE E: Athletics	13,134		14,257								
SCHEDULE F: Auxiliary Buildings	44,495		57,750	25,556	15,134	56,188	5,545	43,251	95,600	629,451	28,576

FUNCTIONAL USE CLASSIFICATION TABLE

Functional Use Category	For Assignable Area by Building See Campus, Schedule, and Column No.
I. Instruction	
a. Direct Teaching: Teaching of scheduled classes (except gymnasiums)	All Campuses: B, 3; F, 3
b. Study: Study rooms such as reading rooms, library stacks, circulation desks	
c. Indirect Teaching: Preparation for direct teaching such as offices, preparation rooms, storerooms, workrooms	
II. Research (Including Graduate Student Research)	
a. Contractual Research: Supported by special contracts such as those with A.E.C. and Navy Department	Minneapolis, St. Paul: B, 4; F, 4; Du-
b. Noncontractual Research: Supported by endowments, gifts, grants-in-aid, and special legislation	luth: B, 4; and All Branch Stations:
c. Incidental Research: Supported by general University funds and performed by regular staff members	B, 3-4; F, 3-4
III. Public Services	
a. Extension Work: Correspondence study, special short courses, agricultural and home agent work in the field, etc. (Scheduled night classes are included under Category I)	All Campuses: B, 5
b. Cultural Services: Exhibits, concerts, lectures, etc. that are open to the public	
c. Special Professional Services: Surveys, testing, registry, laboratory analysis available to the public	
IV. Administration	
a. Academic Programing: Organizing and administering programs of instruction, research, and public service (Academic department heads are included in Category I)	All Campuses: B, 6
b. Business Management: Budgeting and accounting for funds, property and personnel	
c. Administrative Service: Keeping academic records, training staff, public information, etc.	
V. Plant Operation	
a. Custodial Service: Cleaning and other housekeeping services	Minneapolis, St. Paul, and All Branch
b. Building Operation: Repair and operation of buildings	Stations: B, 7; F, 5; Duluth: B, 7
c. Grounds and Farm Maintenance: Lawn maintenance, field work, road maintenance, snowplowing, etc.	
VI. Student Services	
a. Personnel: Counseling, testing, job placement, etc.	All Campuses: B, 8
b. Activities: Organized social, political, and professional student activities	
c. Athletics: Organized student sports	
1. Gymnasiums	All Campuses: E, 3
2. Seating	All Campuses: E, 3
3. Office	Minneapolis, St. Paul, and All Branch
4. Service	Stations: E, 5
d. Health Service: Medical and dental	All Campuses: B, 8; E, 6
VII. Institutional Services	
a. Central Production Shops: Fabrication and repair of articles and equipment for general use	
1. Shops or Workrooms	All Campuses: C, 6
2. Offices	All Campuses: C, 7
3. Storage and Service	All Campuses: C, 8
b. Central Stores: Storage of materials and property for general use	
1. Shops or Workrooms	All Campuses: C, 6
2. Offices	All Campuses: C, 7
3. Storage and Service	All Campuses: C, 8

FUNCTIONAL USE CLASSIFICATION TABLE—Continued

Functional Use Category	For Assignable Area by Building See Campus, Schedule, and Column No.
c. Central Communication: Central communication such as printing, photography, recording, etc. 1. Shops or Workrooms 2. Offices 3. Storage and Service	All Campuses: C, 6 All Campuses: C, 7 All Campuses: C, 8
VIII. <i>Auxiliary Enterprises</i>	
a. Residence Halls: Living accommodations * 1. Bedrooms, closets, parlor, etc. 2. Recreation 3. Offices 4. Storage and Service	All Campuses: D, 7 All Campuses: D, 9 All Campuses: D, 10 All Campuses: D, 11
b. Food Services: Preparing, serving, and consuming food 1. Kitchens, dining rooms, serving rooms, etc. 2. Offices 3. Storage and Service	All Campuses: D, 8 All Campuses: D, 10 All Campuses: D, 11
c. Merchandising Services: Retail trade activities 1. Shops or Workrooms (including salesrooms) 2. Office 3. Storage and Service	All Campuses: C, 6 All Campuses: C, 7 All Campuses: C, 8
d. Laboratory Schools: Separate schools operated by the University such as University High School and Elementary School	All Campuses: C, 5
e. Hospital Services: University Hospitals	All Campuses: C, 4
IX. <i>Noninstitutional Organizations</i>	
a. Government Agency Activities: Federal and State operations	All Campuses: B, 9
b. Professional Activities: Nonprofit, public, and professional organizations	
c. Private Enterprise: Rental	

* For family residences such as superintendents' residences, farm cottages, etc., the entire area within inside surface of walls is considered assignable. Therefore, in these cases the usable and assignable areas will be equal.

MINNEAPOLIS CAMPUS.

BUILDINGS NOT SHOWN ON MAP:

- 39 - President's Residence
- 58 - Hydraulics Laboratory
- 98 - Chemical Storehouse
- 99 - Como Yard

LEGEND

- Buildings
- Underground Garages

100 0 1 2 3 4 500 6 7 8 900
SCALE IN FEET

MINNEAPOLIS CAMPUS

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Administration	46	B, C	Administration Offices	1925	\$540,951.05	1	1,100,823	82,388	66,726	49,665
Aeronautical Engineering	65A	B	Aeronautical Engineering	1948	793,123.27 *	1	980,658	62,460	55,743	44,210
Appleby Hall	37	B	School of Mines and Metallurgy	1915	146,487.60	1	721,074	50,096	43,157	36,337
Armory	11	B, C, E	Military, Naval, and Air Science	1896 (1939)	125,361.73	3	1,421,549	66,800	59,703	52,455
Botany	48	B	Botany Department	1927 (1935)	233,743.07	1	523,231	47,217	35,489	27,216
Botany Greenhouse	47	B	Greenhouse	1926 (1953)	36,160.68	5	124,302	9,592	7,930	7,677
Burton Hall	8	B	College of Education	1894 (1898)	181,791.38	3	875,171	42,368	31,797	28,521
Centennial Hall	68	B, D	Men's Residence Hall	1949 (1955)	3,698,265.27	1	2,808,747	230,057	219,484	189,846
Center for Continuation Study	57	B, D	Center for Continuation Study	1936	312,754.37	1	947,823	87,161	75,700	22,029
Chemical Engineering	66	B	Chemical Engineering	1949	1,117,064.72	1	827,700	70,444	62,323	43,582
Chemical Storehouse	98	B, C	Chemical Storehouse	1954	196,012.52	1	241,758	17,908	16,691	15,555
Chemistry	35	B	Chemistry	1914 (1920)	841,631.96	1	2,831,785	188,226	150,235	121,131
Child Welfare	19	B, C	Child Welfare	1903 (1922)	249,152.14	3	619,996	31,737	25,376	17,339
Coffman Memorial Union	64	B, C, D	Student Union, Campus Club	1939 (1954)	1,679,962.59	1	4,038,226	386,607	225,875	154,511
Comstock Hall	63	D	Women's Residence Hall	1940	655,545.72	1	1,302,720	114,603	100,966	80,046
Como Yard	99	B	Handling of Salvaged Materials	1915	40,062.05	5	297,090	25,206	16,748	16,748
Cooke Hall	56	B, E	Athletic Department	1934 (1936)	358,503.43	1	2,229,678	137,654	90,554	71,941
Delta Field Athletic Building	72A	E	Showers, Lockers	1949	18,155.86	5	21,020	1,834	1,492	1,309
Delta Field Storage Shed	72B	E	Storage	1948	1,250.00	5	1,124	128	116	116
Delta Field Tool House	72C	E	Tool Storage	1949	1,000.00	5	640	80	73	73
Eddy Hall	1	B	Dean of Students, KUOM Studio, University Testing Bureau	1881 (1903)	77,740.73	3	385,544	32,644	21,730	18,099
Electrical Engineering	43	B	Electrical Engineering Department	1924	344,647.89	1	956,770	64,196	51,280	39,422
Experimental Engineering	30	B	Institute of Technology State Highway Laboratory	1911 (1925)	369,392.51	1	912,772	68,952	58,916	50,023
Folwell Hall	22	B	Mathematics, Languages, Speech, Classrooms	1907	379,793.24	1	1,451,808	116,260	89,121	58,952
Ford Hall	71	B	Social Work, History, Political Science, Geography	1950	920,503.54	1	1,038,144	82,884	73,818	50,246

MINNEAPOLIS CAMPUS

SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Fraser Hall	51	B, C	Law School	1927	\$258,471.18	1	736,186	64,322	52,058	39,558
Health Service	70	B	Students' Health Service	1949	818,649.22	1	489,984	49,369	40,969	28,728
Heating Plant	34	B	Heating Plant	1912 (1952)	2,767,646.02	1	877,665	35,166	30,360	3,624
Holman Building	101	C	University Garage and Storage	1915	22,305.42	2	998,457	50,719	48,489	44,031
Hydraulics Laboratory	58	B	Hydraulics Laboratory	1937	495,750.21	1	517,712	35,014	29,346	26,185
Incinerator at Heating Plant	78	B	Incinerator	1951	13,098.77	1	34,910	974	845	845
Jackson Hall	32	B, C	Anatomy and Pathology	1912	262,873.91	1	947,531	72,887	53,947	40,491
Johnston Hall	73	B, C	Library, Classrooms, Offices	1950	1,145,674.77	1	1,100,823	79,930	66,641	51,624
Jones Hall	17	B	Art, Art Education	1901	72,634.48	4	361,158	24,018	18,158	15,254
Library	42	B, C	General Library, Bindery	1923	1,401,738.32	1	3,104,321	232,407	204,234	154,071
Linac Laboratory	76	B	Laboratory	1950	83,708.99	5	82,395	8,262	3,970	3,261
Linear Accelerator Building	75	B	Laboratory	1949	161,947.61	5	238,920	10,860	7,790	7,485
Lyon Laboratories	79	B	Medical Science Research	1952	864,973.34	1	496,100	45,100	39,689	24,106
Main Engineering	31	B, C	Engineering, Architecture, Bookstore	1912	320,422.26	1	1,223,978	88,894	74,095	59,531
Mayo Memorial Medical Center	74	B, C	Hospital, Medical School	1954	11,511,777.88	1	5,241,030	436,753	375,906	250,930
Mechanical Engineering	65M	B	Mechanical Engineering	1948	1,586,245.23 *	1	2,400,922	169,925	124,606	92,793
Millard Hall	33	B, C	Physiological Chemistry, Pharmacology, Nursing	1912	307,459.54	2	1,140,981	85,142	67,973	52,671
Mines Experiment Station	41	B	U.S. Bureau of Mines and Mines Experiment Station	1922 (1925)	330,283.65	1	1,045,694	57,699	50,617	44,007
Murphy Hall	62	B	Journalism	1939	235,169.00	1	854,100	40,516	33,021	24,355
Museum of Natural History	61	B	Museum of Natural History	1939	268,331.36	1	718,731	55,287	39,274	27,685
Music Education	24	B, C	Music Education	1888 (1947)	56,036.83	3	89,232	7,436	5,865	4,033
Nicholson Hall	5	B, C	General College, Bookstore, University Press	1890 (1946)	421,733.56	3	1,317,170	86,958	72,336	52,715
Norris Gymnasium and Field House for Women	36	B, E	Women's Gymnasium	1914 (1935)	240,269.11	1	762,444	64,315	51,563	43,846
Northrop Memorial Auditorium	53	B, C	Auditorium, Offices	1929	1,238,133.05	1	5,681,128	193,080	159,683	58,100
Owre Hall	54	B	Dentistry, Nursing	1930	522,354.95	1	1,196,546	92,042	68,778	55,149
Pattee Hall	3	B, C	Elementary School	1889 (1904)	142,595.88	3	464,763	29,269	25,178	19,549
Peik Gymnasium	77G	C	High School Gymnasium	1951	559,479.60 *	1	431,900	20,192	19,578	15,978
Peik Hall	77	B, C	University High School, College of Education	1951	1,118,959.21 *	1	769,728	64,144	56,088	40,090

SCHEDULE A—Continued

MINNEAPOLIS CAMPUS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Pharmacognosy Plant Laboratory	16	B	Pharmacognosy Plant Laboratory	1900	\$10,117.85	5	72,090	4,806	3,916	3,684
Physics and Observatory	49	B, C	Physics, Astronomy	1927 (1950)	1,003,427.19	1	1,774,935	136,207	101,421	72,808
Pillsbury Hall	2	B	Geology, Mineralogy	1889	145,343.63	3	847,450	45,314	35,842	28,623
Pioneer Hall	52	D	Men's Residence Hall	1928 (1932)	634,830.92	1	1,661,328	184,592	153,946	138,012
Poucher Building	100	C	Laundry	1955	387,335.04	1	546,060	36,404	33,751	30,587
Powell Hall	55	B, D	Nurses' Home	1933 (1943)	326,741.77	1	1,604,550	147,859	107,504	95,027
Psychology	20	B	Psychology	1906 (1938)	102,172.35	1	602,196	50,183	45,716	28,242
Sanford Hall	28	D	Women's Residence Hall	1910 (1920)	314,927.38	1	981,772	89,252	82,298	68,860
Scott Hall	40	B	Music, University Theater	1923	275,455.04	1	493,815	37,421	28,093	19,410
Shevlin Hall	21	B, C, D	Speech Clinic, College of Education, Cafeteria	1906 (1919)	135,627.60	3	447,424	30,251	23,979	18,711
Shops Annex	96	B	Physical Plant Shops	1940	33,578.64	3	118,620	12,021	9,403	8,677
Stadium	45	B, C, E	Physiological Hygiene Laboratories, Athletics	1925	1,196,610.98	3	971,964	157,740	148,953	58,522
State Board of Health	20A	B	State Board of Health	1938	324,149.97	1	451,797	44,291	41,174	31,888
Storage (2030 University Ave. S.E.)	90	C	Storage	1947	7,703.71	5	132,200	12,272	10,359	9,031
Storage (Heating Plant)	34B	F	Storage	1948	4,769.22	4	39,211	2,400	2,204	2,204
Storage (Hydraulics Laboratory)	58B	F	Storage	1945	3,991.01	4	60,000	4,000	3,724	3,724
Storehouse and Shops	44	B, C	Storehouse, Shops, Printing Department	1924 (1940)	242,044.54	1	1,094,770	84,740	78,941	74,184
Temporary North of Child Welfare	89	B	Industrial Education Classrooms, Offices	1947	20,263.74	5	173,000	14,400	13,569	11,292
Temporary North Court of Engineering	84	B	Drawing Rooms, Offices	1947	6,109.56	5	104,200	7,200	6,824	5,490
Temporary North of Health Service	86	B, C	Offices	1947	6,892.86	5	97,000	6,696	5,964	4,158
Temporary North of Mines	91	B	Classrooms, Offices	1947	186.10	5	146,875	13,320	11,665	8,465
Temporary South Court of Engineering	85	B	Drawing Rooms, Offices	1947	4,432.42	5	104,200	7,200	6,649	5,424
Temporary South of Folwell	80	B, C	Student Employment Bureau, English Offices, Art	1947	9,372.11	5	270,000	17,360	15,197	11,003
Temporary South of Mines A	92	B	Student Activities Bureau	1947	1.00	5	146,875	13,320	11,858	8,813
Temporary South of Mines B	93	B, C	Scientific Apparatus Repair Shop, Industrial Relations Center	1947	535.55	5	146,875	13,320	11,974	9,108

MINNEAPOLIS CAMPUS
SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Temporary South of Mines C	94	B, C	Alumni Offices, State Organization Service	1947	\$2,429.13	5	146,875	13,320	11,815	8,613
Temporary West of Hospital	88	B, C	School of Medicine, Veteran Vocational Advisement	1947	10,372.20	5	127,000	9,726	8,834	6,498
Tractor Shed (at Heating Plant)	97	F	Storage	1953	3,000.00	3	9,920	638	537	537
University Avenue Greenhouse	23	B	Pharmacy Tool House	1906 (1910)	2,500.00	3	19,960	2,837	1,694	1,676
University of Minnesota Field House	67	E	Indoor Practice Field	1949	681,339.96	2	4,030,000	81,432	80,257	79,628
University Hospitals	29	C	Hospital	1911	1,896,369.59	1	3,169,428	264,119	238,790	154,788
Variety Club Heart Hospital	69	C	Heart Hospital	1949	1,330,728.15	1	569,669	55,147	45,644	30,858
Vincent Hall	60	B, C	School of Business Administration	1938	325,448.96	1	774,264	44,047	35,712	24,295
Wesbrook Hall	10	B, C	Audio-Visual Education, Philosophy, University Services	1896	109,526.09	3	504,372	39,360	31,652	26,853
Williams Arena	50	B, C, E	Athletics	1927 (1949)	1,669,820.35	3	9,225,583	221,274	198,061	144,958
Winchell Cottages		D	Women's Co-op Cottages		99,863.55	5	312,000	24,544	20,187	20,187
Wulling Hall	6	B	College of Pharmacy	1892 (1913)	104,371.60	1	384,236	27,250	22,489	19,733
Zoology	38	B	Zoology	1916 (1936)	236,755.47	1	894,013	71,156	55,352	42,277
TOTAL							93,241,198	6,245,606	5,148,048	3,794,592
UNIVERSITY VILLAGES										
Prefabricated Barracks		D	Faculty and Student Housing	1945	170,446.13		270,720	33,840	31,255	
University Village (Including Union)		D	Veteran Student Housing, Union	1945	118,394.82	5, 6	2,750,950	342,529	318,342	
							3,021,670	376,369	349,597	
UNDERGROUND GARAGES										
Center for Continuation Study	57	C	Garage						50,036	
Coffman	64	C	Garage						62,485	
Mayo	74	C	Garage						102,133	
Northrop	53	C	Garage						32,011	
									246,665	

* Book value has been prorated on a cubic foot basis.

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

MINNEAPOLIS CAMPUS

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Administration	46				47,022	1,227			48,249
Aeronautical	65A	34,515	9,390			64	241		44,210
Appleby Hall	37	31,102	2,609	1,624	384	50	568		36,337
Armory	11	35,110				370	4,398		39,878
Botany	48	24,551	2,531			134			27,216
Botany Greenhouse	47	7,677							7,677
Burton Hall	8	19,256	3,222	1,082	3,347	297	1,317		28,521
Centennial Hall	68							4,947	4,947
Center for Continuation Study	57			6,640	116	50			6,806
Chemical Engineering	66	33,610	9,594			129	249		43,582
Chemical Storehouse	98					20			20
Chemistry	35	100,641	19,235	512		421	322		121,131
Child Welfare	19	6,190	3,766			37			9,993
Coffman Memorial Union	64				3,213	582	72,108	26,934	102,837
Como Yard	99					16,748			16,748
Cooke Hall	56	5,545			1,869	46			7,460
Eddy Hall	1		1,124	4,408	1,207	164	11,196		18,099
Electrical Engineering	43	30,689	8,289			269	175		39,422
Experimental Engineering	30	33,527	8,781			530		7,185	50,023
Folwell Hall	22	57,000	455			695	802		58,952
Ford Hall	71	42,103	4,231	1,842		1,840	230		50,246
Fraser Hall	51	36,182	1,106		811	147	993		39,239
Health Service	70		126			378	28,224		28,728
Heating Plant	34					3,624			3,624
Hydraulics Laboratory	58	1,665	24,520						26,185
Incinerator at Heating Plant	78					845			845
Jackson Hall	32	29,007	9,313			179			38,499
Johnston Hall	73	24,809	780		19,518	330	3,994	305	49,736
Jones Hall	17	14,971	171			112			15,254
Library	42	143,479	1,175	1,037	1,383	695		1,037	148,806
Linac Laboratory	76		3,261						3,261
Linear Accelerator Building	75		7,485						7,485
Lyon Laboratories	79	480	22,990			636			24,106
Main Engineering	31	45,336		212	5,134	378			51,060
Mayo Memorial Medical Center	74	67,194	33,408	4,539	1,695	8,141			114,977

MINNEAPOLIS CAMPUS
SCHEDULE B—Continued

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Mechanical Engineering	65M	77,954	13,245			355	1,239		92,793
Millard Hall	33	26,334	25,370			192		360	52,256
Mines Experiment Station	41		40,072			76		3,859	44,007
Murphy Hall	62	17,178	1,966			193	3,602	1,416	24,355
Museum of Natural History	61	1,184		26,501					27,685
Music Education	24	2,179				57			2,236
Nicholson Hall	5	27,465		2,167	5,580	997	5,684		41,893
Norris Gymnasium and Field House for Women	36	18,449	721			555			19,725
Northrop Memorial Auditorium	53	7,228	416	45,657	138	978		3,126	57,543
Owre Hall	54	42,431	9,136	356	2,464	762			55,149
Pattee Hall	3	3,755				255	3,654		7,664
Peik Hall	77					476			476
Pharmacognosy Plant Laboratory	16	3,684							3,684
Physics and Observatory	49	44,330	26,871			135			71,336
Pillsbury Hall	2	21,138	3,436	3,693		356			28,623
Powell Hall	55	14,496							14,496
Psychology	20	14,074	3,808			113		10,247	28,242
Scott Hall	40	11,592		6,047		291	1,480		19,410
Shevlin Hall	21	2,869		415		578	4,238		8,100
Shops Annex	96					8,677			8,677
Stadium	45	3,049	6,679			44			9,772
State Board of Health	20A							31,888	31,888
Storehouse and Shops	44					10,327			10,327
Temporary North of Child Welfare	89	11,052				75	165		11,292
Temporary North Court of Engineering	84	5,378				50	62		5,490
Temporary North of Health Service	86	2,798	1,087			67			3,952
Temporary North of Mines	91	7,527		626		123		189	8,465
Temporary South Court of Engineering	85	4,674				50	700		5,424
Temporary South of Folwell	80	7,932	611	578		80	1,139		10,340
Temporary South of Mines A	92	3,859				123	4,733	98	8,813
Temporary South of Mines B	93	789	4,447			380			5,616
Temporary South of Mines C	94	528	361	2,590	2,609	301	264	1,784	8,437
Temporary West of Hospital	88	2,080	1,637			46		2,574	6,337
University Avenue Greenhouse	23	1,676							1,676

SCHEDULE B—Continued

MINNEAPOLIS CAMPUS

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
University Hospitals	29	1,975	5,169			273			7,417
Variety Club Heart Hospital	69	581	4,797						5,378
Vincent Hall	60	19,930			2,336	228	1,080		23,574
Wesbrook Hall	10	14,903		2,464	1,072	302	512		19,253
Williams Arena	50		437			710			1,147
Wulling Hall	6	17,945	740		807	30	211		19,733
Zoology	38	39,256	2,788			233			42,277
TOTAL		1,306,911	331,356	112,990	100,705	67,626	153,580	95,949	2,169,117

SCHEDULE C. INTERNAL SERVICES

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	In Process of Remodeling	Total Assignable Area This Schedule (sq. ft.)
Administration	46	All-University Rooms, Post Office, Campus Mail			476	598	342		1,416
Armory	11	Army-Navy Stores, Audio-Visual Education			509	140	6,785		7,434
Chemical Storehouse	98	Chemical Storehouse			2,554	1,062	11,919		15,535
Child Welfare	19	Laboratory School		7,346					7,346
Coffman Memorial Union	64	Bookstore, Post Office			3,110	241	982		4,333
Fraser Hall	51	Law School Bookstore			229		90		319
Holman Building	101	Garage, Storage			25,328		6,505	12,198	44,031
Jackson Hall	32	Photo Laboratory, Medical Illustrations			1,585	407			1,992
Johnston Hall	73	Central Conference Room				1,888			1,888
Library	42	Bindery			2,193	108	2,964		5,265
Main Engineering	31	Bookstore			3,987	1,543	2,941		8,471
Mayo Memorial Medical Center	74	Hospital and Related Activities	126,572		8,681	76	624		135,953
Millard Hall	33	Physiology Room			415				415

MINNEAPOLIS CAMPUS
SCHEDULE C—Continued

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	In Process of Remodeling	Total Assignable Area This Schedule (sq. ft.)
Music Education	24	Laboratory School		1,797					1,797
Nicholson Hall	5	Bookstore, Central Conference Room			3,818	3,217	3,787		10,822
Northrop Memorial Auditorium	53	Audio-Visual Education, All-University Room			405		152		557
Pattee Hall	3	Laboratory School		11,885					11,885
Peik Gymnasium	77G	Laboratory School		15,978					15,978
Peik Hall	77	Laboratory School		39,614					39,614
Physics and Observatory	49	Scientific Apparatus Shop			1,060	101	311		1,472
Poucher Building	100	Laundry			14,981	197	5,553	9,856	30,587
Shevlin Hall	21	Central Conference Room				447			447
Stadium	45	Food Concessions					8,156		8,156
Storage (2030 University Avenue S.E.)	90	Office of Comptroller					9,031		9,031
Storehouse and Shops	44	Printing, General Storehouse, Shops			32,943	2,196	28,718		63,857
Temporary North of Health Service	86	Hospital and Related Activities	206						206
Temporary South of Folwell	80	All-University Room				663			663
Temporary South of Mines B	93	Scientific Apparatus Shop			3,313		179		3,492
Temporary South of Mines C	94	Audio-Visual Education				176			176
Temporary West of Hospital	88	Hospital and Related Activities	161						161
University Hospitals	29	Hospital and Related Activities	147,371						147,371
Variety Club Heart Hospital	69	Hospital and Related Activities	25,480						25,480
Vincent Hall	60	Tabulating Machine Room			493	228			721
Wesbrook Hall	10	Audio-Visual Education			2,049	2,171	3,380		7,600
Williams Arena	50	Food Concessions and Checking					3,380		3,380
TOTAL			299,790	76,620	108,129	15,459	95,799	22,054	617,651

UNDERGROUND GARAGES

									Total Usable Area This Schedule
Center for Continuation Study	57	Garage							50,036
Coffman	64	Garage							62,485
Mayo	74	Garage							102,133
Northrop	53	Garage							32,011
TOTAL									246,665

SCHEDULE D. HOUSING AND FEEDING

MINNEAPOLIS CAMPUS

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Centennial Hall	68	Men's Residence Hall	708	214,024	303	138,515	22,947	9,299	1,442	12,696	184,899
Center for Continuation Study	57	Adult Education Residence Hall	76	18,858	248	9,911	3,490		210	1,612	15,223
Coffman Memorial Union	64	Food Service					40,221		1,135	5,985	47,341
Comstock Hall	63	Women's Residence Hall	368 *	100,966	276	50,008	14,171	9,465	584	5,818	80,046
Pioneer Hall	52	Men's Residence Hall	539	153,946	286	107,042	16,149	4,662	1,376	8,783	138,012
Powell Hall	55	Nurses' Home	500	92,008	184	63,228	1,275	5,160	2,208	8,660	80,531
Sanford Hall	28	Women's Residence Hall	286	82,296	288	53,712	9,004	1,900	956	3,288	68,860
Shevlin Hall	21	Food Service					10,064		100		10,164
Winchell Cottages		Women's Residences	135	20,187	150	20,187					20,187
TOTAL				682,285		442,603	117,321	30,486	8,011	46,842	645,263
TEMPORARY HOUSING											
University Village (Including Union)		Veteran Student Housing	589	318,342	540						
Prefabricated Barracks		Faculty and Student Housing	94	31,255	333						
TOTAL				349,597							

* Normal capacity is 275; 93 single rooms are being used as doubles.

SCHEDULE E. INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

1	2	3	4	5	6	7
Building Name	Building Number	Gymnasium	Seating (sq. ft.)	Office	Service	Total Assignable Area This Schedule (sq. ft.)
Armory	11	5,143				5,143
Cooke Hall	56	35,112	3,103	4,146	22,120	64,481
Delta Field Athletic Building	72A				1,309	1,309
Delta Field Storage Shed	72B				116	116
Delta Field Tool House	72C				73	73

MINNEAPOLIS CAMPUS
SCHEDULE E—Continued

1	2	3	4	5	6	7
Building Name	Building Number	Gymnasium	Seating (sq. ft.)	Office	Service	Total Assignable Area This Schedule (sq. ft.)
Norris Gymnasium and Field House for Women	36	24,121				24,121
Stadium	45	25,189		224	15,181	40,594
University of Minnesota Field House	67	79,628				79,628
Williams Arena	50	23,972	100,704	275	15,480	140,431
TOTAL		193,165	103,807	4,645	54,279	355,896

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3	4	5	6	7
Building Name	Building Number	Instruction	Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Storage (Heating Plant)	34B			2,204		2,204
Storage (Hydraulics Laboratory)	58B		3,724			3,724
Tractor Shed (at Heating Plant)	97			537		537
TOTAL			3,724	2,741		6,465

SAINT PAUL CAMPUS

BUILDINGS NOT SHOWN ON MAP:

- 24 - Fisher Barn (NW of intersection of
Larpentour and Cleveland Aves.)
- 43 - Botany Field House (500 feet north
of Gymnasium, Bldg. No. 42)
- 53 - Radio Station KUOM Transmitter
(on U of M Golf Course)
- 54 - Golf Club House (on U of M Golf Course)

100 0 1 2 3 4 5 600
SCALE IN FEET

ST. PAUL CAMPUS

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Agricultural Botany	7	B	State Department of Agriculture and Plant Pathology	1893 (1920)	\$67,488.98	3	321,500	25,317	20,237	15,980
Agricultural Engineering	34	B	Agricultural Engineering, Rhetoric	1913 (1933)	111,485.92 *	1	431,680	33,387	30,409	29,802
Agricultural Engineering Shops	35	B	Agriculture Engineering Shops	1913	167,228.90 *	1	648,485	60,955	41,156	31,678
Agronomy	64	B	Agronomy	1942	188,900.05	1	439,050	29,429	24,516	17,179
Agronomy Seed House	45	F	Agronomy	1917	16,466.72	5	132,500	11,505	7,272	5,829
Agronomy Seed Stocks	66	B	Agronomy, Plant Genetics	1945	57,082.75	1	102,730	8,408	7,077	6,693
Beef Cattle Barn	2	F	Animal Husbandry	1917	31,057.08	5	380,880	23,040	21,745	21,643
Berry House	23	B	Home Management House	1924	15,891.57	5	70,157	4,210	3,329	2,884
Botany Field House	43	F	Plant Pathology	1923	1,483.40	5	14,810	1,598	1,340	887
Botany Head House	8	B	Plant Pathology	1914 (1930)	3,000.00	5	55,632	6,954	6,228	6,188
Brewster Hall	13	D	Women's Residence Hall	1897	42,379.75	3	380,000	30,165	25,320	19,280
Bull Barn	28	F	Dairy Husbandry	1920	4,981.22	5	20,650	2,700	2,510	2,510
Carpenter and Paint Shop	25	B, C	Physical Plant Shops	1907	9,947.96	5	65,100	6,058	4,817	4,679
Cattle Feeding Shed	32	F	Animal Husbandry	1920	4,500.00	5	44,880	4,488	4,119	4,119
Coffey Hall	22	B, C	Administration Offices, Entomology, Short Courses	1906 (1917)	297,566.41	1	1,137,240	94,770	79,336	63,246
Cold Storage	33	C	Cold Storage Plant	1915	23,806.50	3	115,900	12,780	8,161	7,303
Crane Repair Shed	79	F	Crane Repair	1953	10,000.00	5	12,100	1,100	954	954
Crop Improvement	66C	B	Minnesota Crop Improvement Association	1949	51,207.84	1	88,800	4,440	3,944	3,252
Dairy Experimental Barn	44	F	Dairy Department	1917	7,176.88 *	5	43,615	3,355	3,082	3,082
Dairy Nutrition Barn	26	F	Dairy Department	1907	35,884.40 *	5	283,400	16,721	15,012	13,511
Dexter Hall	19	D	Men's Residence Hall	1902	35,969.40	3	201,134	21,172	19,128	14,874
Dining Hall and Dormitory	11	B, D	Dining Hall, Dormitory, Cafeteria	1895 (1911)	145,329.80	3	297,000	54,791	45,779	40,597
Farm Crops Field House	55	F	Agronomy	1932	27,751.47	5	106,000	7,248	6,656	6,315
Fisher Barn	24	F	Storage	1914		5	29,568	2,464	2,252	2,252
Flight Facilities Administration Building	475	B	Classroom, Control Tower	1943	16,862.90	5	47,808	5,312	4,704	3,749

SCHEDULE A—Continued

ST. PAUL CAMPUS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Flight Facilities Hangar	476	B	Hangar and Shops	1952	\$49,176.93	4	104,448	6,528	6,528	6,300
Golf Clubhouse	54	E	Golf Clubhouse	1931	29,626.07	5	129,550	9,512	6,945	6,549
Green Hall	57	B	Forestry, U.S. Department of Agriculture Lake States Forest Experiment Station	1938	257,643.53	1	660,060	48,710	40,476	29,788
Greenhouse (East of Horticulture)	40	B	Horticulture Greenhouse	1914	12,497.55	5	126,900	13,597	8,955	8,867
Greenhouse (North of Garage)	70	B	Agronomy Greenhouse	1947 (1954)	29,162.20	1	131,476	16,522	14,333	14,333
Greenhouse (Rear of Botany)	39	B	Plant Pathology	1914	10,629.40	5	182,500	14,634	7,173	6,915
Gymnasium	42	B, E	School of Agriculture Gymnasium	1915	103,966.78	1	983,000	39,648	31,272	26,813
Haecker Hall	50	B, C	Dairy Husbandry, Agricultural Economics, Milk and Cream Department	1924	260,675.49	1	667,000	47,834	38,565	30,304
Health Service	61	B	Health Service	1939	119,137.39	1	268,995	22,736	19,560	12,492
Hog Barn No. 1	9A	F	Animal Husbandry	1912	3,006.54	5	55,300	7,900	7,346	7,346
Hog Barn No. 2	9B	F	Animal Husbandry	1912	5,810.45	5	6,380	810	711	711
Hog Barn No. 3	51	F	Animal Husbandry	1927	5,810.45	5	74,336	9,718	9,072	8,913
Home Economics	38, 38A	B	Home Economics	1914, 1952	800,894.56	1	1,225,258	102,215	77,329	53,097
Horse Barn	30	F	Animal Husbandry	1912	8,800.00	5	198,200	14,086	13,270	12,907
Horticulture	14	B	Horticulture, Agricultural Education	1899 (1920)	79,701.66	3	321,000	21,200	17,808	14,672
Implement Shed	59E	B	Implement Shed Farm Maintenance	1921	1,860.00	5	28,080	3,120	2,916	2,916
Insectary Spray Laboratory	59A	F	Entomology	1908	2,300.00	5	23,274	1,293	1,012	1,012
Library	73	B	General Library	1951	665,363.95	1	420,320	35,493	30,623	24,150
Livestock Pavilion	21	B, C	Animal Husbandry and Entomology	1904	32,631.93	3	314,500	26,775	21,749	20,138
Main Poultry House	36	F	Poultry Practice House	1913	3,561.17	5	45,392	5,674	5,337	5,193
Machinery and Auto Garage	20	B	Farm Maintenance Service	1904 (1953)	22,952.32	5	253,954	26,732	23,131	22,592
Meat House	15	B	Animal Husbandry	1901	10,303.05	5	57,400	7,379	6,447	6,072
Meredith Hall	29	D	Women's Residence Hall	1908	46,226.78	3	227,500	15,768	14,178	11,712
Music Building	5	B	School of Agriculture, Classrooms, Offices	1890	8,021.80	5	110,500	11,648	9,056	7,459
Old Dairy Building	6	B, C	Rural Sociology, Union	1891 (1939)	74,490.53	3	344,000	30,337	25,440	15,000
Pendergast Hall	4	D	Men's Residence Hall	1889	37,941.92	3	232,000	21,760	18,150	14,584
Peters Hall	72	B	Animal and Poultry Husbandry	1950	604,197.56	1	423,000	43,966	38,891	25,213

ST. PAUL CAMPUS

SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Plant Pathology	65	B	Plant Pathology, Greenhouse	1942	\$189,125.06	1	439,050	28,840	24,017	18,130
Post Mortem	31C	F	Veterinary Medicine	1916	4,314.41	3	31,968	3,552	2,131	2,031
Poultry Brooder House	37	B	Poultry Brooder House	1927	2,400.00	1	24,000	2,107	1,936	1,924
Poultry Brooder House 37C (D)	37C	F	Poultry House	1933	275.00	1	6,400	800	684	684
Poultry Brooder House 37C (F)	37C	F	Poultry House	1933	5,354.61	1	8,640	1,080	928	928
Poultry Brooder House 37C (G)	37C	F	Poultry House	1933	389.00	1	7,200	900	768	768
Poultry Buildings	75A, B	F	Poultry Husbandry	1951	108,926.24	3	171,008	21,376	18,908	18,760
Powerhouse	12	B	Powerhouse, Physical Plant Offices	1897 (1940)	508,737.95	1	210,960	26,370	13,643	6,181
Pump House at Well 2	27	B	Pump House	1917		5	978	115	95	95
Pump House at Well 3	78	B	Pump House	1953		1	2,688	336	239	239
Quarantine Barn	48	F	Animal Husbandry	1928	2,996.73	1	24,000	960	807	807
Seed Storage (North)	66B	F	Agronomy	1949	20,640.59	1	21,134	1,818	1,432	1,366
Seed Storage (South)	66A	F	Agronomy	1942	7,358.71	1	18,268	1,056	1,009	943
Sheep Barn	10	F	Animal Husbandry	1895	4,486.36	5	12,960	1,728	1,614	1,614
Small Animal House	31	F	Veterinary Medicine	1912	3,000.00	3	20,944	2,464	2,148	1,944
Snyder Hall	52	B	Biochemistry	1927	22,081.69	1	669,500	39,242	32,633	24,555
Soils Building	17	B	Soils Department	1902	42,292.47	3	319,000	23,342	19,212	12,312
Soils Greenhouse and Horticulture Root Cellar	41	B	Greenhouse, Root Cellar	1914 (1930)	8,817.28	5	62,415	6,570	5,684	5,551
Station KUOM Transmitter	53	B	Radio Broadcasting	1930 (1938)	17,877.01	3	15,030	1,670	1,517	1,459
Storehouse	59B	B, C	Storehouse	1921	1,000.00	5	19,220	1,922	1,686	1,686
Temporary East of Haecker	69	B	School of Veterinary Medicine	1947	1.00	5	209,528	19,048	17,219	13,075
Temporary South of Coffey	67	B	Rhetoric	1947	4,499.36	5	105,300	7,272	6,797	4,819
Temporary South of Haecker	68	B	School of Agriculture, Extension Division	1947	3,381.53	5	105,300	7,272	6,702	5,037
Thatcher Hall	60	D	Residence for Married Students	1939	204,345.53	1	304,189	33,064	30,368	28,702
Veterinary Anatomy	16	B	Veterinary Medicine Offices, Classrooms	1901	38,003.01	1	225,000	16,724	13,767	12,259
Veterinary Animal No. 1	31D	F	Veterinary Medicine	1916	1,800.00	3	16,640	1,040	918	918
Veterinary Animal No. 2	31E	F	Veterinary Medicine	1916	1,800.00	3	16,640	1,040	933	909
Veterinary Barn	46	F	Veterinary Medicine	1920	27,486.43	3	111,000	6,183	5,268	5,218
Veterinary Clinic	71	B	Veterinary Clinic	1950	708,060.99	1	719,500	52,013	45,009	33,328

SCHEDULE A—Continued

ST. PAUL CAMPUS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Veterinary General Animal House	31B	F	Veterinary Medicine	1916	\$3,110.00	5	50,987	5,367	4,957	4,839
Veterinary Poultry House	31A	F	Veterinary Medicine	1910	450.00	5	3,780	504	459	459
Veterinary Science	74	B	Veterinary Medicine Offices, Classrooms	1952	580,016.30	1	438,500	36,447	25,514	17,821
Weigley House	23	B	Home Management House	1924	15,891.57	5	70,157	4,210	3,329	2,884
TOTAL							17,546,826	1,434,394	1,177,687	956,809

* Book value has been prorated on a cubic foot basis.

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Agricultural Botany	7	6,058	3,224			66		6,632	15,980
Agricultural Engineering	34	25,552	5,114			1,012			31,678
Agricultural Engineering Shops	35	24,316	5,486						29,802
Agronomy	64	8,452	7,108	320		409		890	17,179
Agronomy Seed Stocks	66		6,693						6,693
Berry House (Home Management House)	23	2,884							2,884
Botany Head House	8		6,188						6,188
Carpenter and Paint Shop	25					1,106			1,106
Coffey Hall	22	14,466	8,694	21,241	8,244	614	613	1,626	55,498
Crop Improvement	66C							3,252	3,252
Dining Hall and Dormitory	11					887	2,376		3,263
Flight Facilities Administration Building	475	3,326	423						3,749
Flight Facilities Hangar	476	6,300							6,300
Green Hall	57	20,458	646			254	632	7,798	29,788
Greenhouse (East of Horticulture)	40	761	8,106						8,867
Greenhouse (North of Garage)	70		14,333						14,333

ST. PAUL CAMPUS

SCHEDULE B—Continued

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Greenhouse (Rear of Botany)	39		6,915						6,915
Gymnasium	42					70			70
Haecker Hall	50	17,155	10,099			29			27,283
Health Service	61					133	12,359		12,492
Home Economics	38	43,176	6,832			779	2,310		53,097
Horticulture	14	9,914	3,640	206		133		779	14,672
Implement Shed	59E		293			2,623			2,916
Library	73	24,030				120			24,150
Livestock Pavilion	21	13,905	2,918	301		332		437	17,893
Machinery and Auto Garage	20		1,994			20,598			22,592
Meat House	15	3,312	2,760						6,072
Music Building	5	5,156	316			1,987			7,459
Old Dairy Building	6		1,325			549	10,478		12,352
Peters Hall	72	14,147	11,035			31			25,213
Plant Pathology	65	6,432	10,916	153		170		459	18,130
Poultry Brooder House	37	1,924							1,924
Powerhouse	12				68	6,113			6,181
Pump House at Well 2	27					95			95
Pump House at Well 3	78					239			239
Snyder Hall	52	12,284	11,727			210		334	24,555
Soils Building	17	6,139	5,256	747		66		104	12,312
Soils Greenhouse and Horticulture Root Cellar	41		5,551						5,551
Station KUOM Transmitter	53			1,459					1,459
Storehouse	59B		214			441			655
Temporary East of Haecker	69	7,603	1,233	3,982		127	130		13,075
Temporary South of Coffey	67	4,590				29	200		4,819
Temporary South of Haecker	68	3,570		1,437		30			5,037
Veterinary Anatomy	16	9,818	2,352			89			12,259
Veterinary Clinic	71	32,651	464			42	171		33,328
Veterinary Science	74	13,652	2,594		1,558	17			17,821
Weigley House (Home Management House)	23	2,884							2,884
TOTAL		344,915	154,449	29,846	9,870	39,400	29,269	22,311	630,060

SCHEDULE C. INTERNAL SERVICES

ST. PAUL CAMPUS

1	2	3	4	5	6	7	8	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Carpenter and Paint Shop	25	Construction and Repair of Equipment			2,792	80	701	3,573
Coffey Hall	22	Mimeograph, Bookstore, University Farm General Service			2,674	196	4,878	7,748
Cold Storage	33	Cold Storage Plant			912	250	6,141	7,303
Haecker Hall	50	Milk and Cream Department			1,773	144	1,104	3,021
Livestock Pavilion	21	Central Stores					2,245	2,245
Old Dairy Building	6	Union, Photography Laboratory			1,811	480	357	2,648
Storehouse	59B	Central Stores					1,031	1,031
TOTAL					9,962	1,150	16,457	27,569

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Brewster Hall	13	Women's Residence Hall	104	25,320	243	16,802		1,716	330	432	19,280
Dexter Hall	19	Men's Residence Hall	80	19,128	139	10,632		1,633	247	2,362	14,874
Dining Hall and Dormitory	11	Dining Hall, Men's Residence Hall	73	42,411	588	11,140	17,310	3,394	616	4,874	37,334
Meredith Hall	29	Women's Residence Hall	47	14,178	202	8,802		864		2,046	11,712
Pendergast Hall	4	Men's Residence Hall	74	18,150	245	9,743		1,215	872	2,754	14,584
Thatcher Hall	60	Residence for Married Students	38	30,368	798	22,454				6,248	28,702
TOTAL				149,555		83,013	17,310	8,822	2,065	18,716	126,486

ST. PAUL CAMPUS

SCHEDULE E. INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

1	2	3	4	5	6	7
Building Name	Building Number	Gymnasium	Seating (sq. ft.)	Office	Service	Total Assignable Area This Schedule (sq. ft.)
Golf Clubhouse	54				6,549	6,549
Gymnasium	42	20,016		527	6,230	26,773
TOTAL		20,016		527	12,779	33,322

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3	4	5	6	7
Building Name	Building Number	Instruction	Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Agronomy Seed House	45		5,829			5,829
Beef Cattle Barn	2		21,643			21,643
Botany Field House	43		887			887
Bull Barn	28		2,510			2,510
Cattle Feeding Shed	32		4,119			4,119
Crane Repair Shed	79			954		954
Dairy Experimental Barn	44		3,082			3,082
Dairy Nutrition Barn	26	1,879	11,632			13,511
Farm Crops Field House	55		6,237		78	6,315
Fisher Barn	24			2,252		2,252
Hog Barn No. 1	9A		7,346			7,346
Hog Barn No. 2	9B		711			711
Hog Barn No. 3	51		8,755	158		8,913
Horse Barn	30		12,907			12,907
Insectary Spray Laboratory	59A		1,012			1,012
Main Poultry House	36		5,193			5,193
Post Mortem	31C	181	1,850			2,031
Poultry Building	75		18,760			18,760
Poultry Brooder House 37C (D)	37C	684				684
Poultry Brooder House 37C (F)	37C		928			928

SCHEDULE F—Continued

ST. PAUL CAMPUS

1	2	3	4	5	6	7
Building Name	Building Number	Instruction	Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Poultry Brooder House 37C (G)	37C		768			768
Quarantine Barn	48		807			807
Seed Storage (North)	66B		1,366			1,366
Seed Storage (South)	66A		943			943
Sheep Barn	10		1,614			1,614
Small Animal House	31	1,485	104	270	85	1,944
Veterinary Animal No. 1	31D	918				918
Veterinary Animal No. 2	31E	909				909
Veterinary Barn	46	4,728	490			5,218
Veterinary General Animal House	31B	4,839				4,839
Veterinary Poultry House	31A	459				459
TOTAL		16,082	119,493	3,634	163	139,372

DULUTH BRANCH

DULUTH CAMPUS

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Alworth Garage, East	13	B	Storage	1929	Gift	3	24,014	2,287	1,932	1,932
Alworth Garage, West	14	D	Residence, Storage	1912	Gift	3	26,999	2,842	2,538	2,538
Alworth Head House	12	B	Storage	1929	Gift	3	4,370	460	242	242
Darling Observatory	11	B	Astronomy	1916	\$3,400.00	5	13,023	1,447	1,143	1,081
East Alworth Residence	15	B, C	Home Management	1917	80.08	3	99,528	9,518	7,706	6,051
Heating Plant	3	B	Heating Plant	1926	59,107.60 *	3	118,272	7,996	7,522	1,574
Laboratory School	2	B, C	Children's Training School, Manual Training Shop, Offices	1926 (1930)	236,430.40 *	3	574,948	29,160	23,941	17,841
Lakeshore Studio †	17	B	Studios, Art Exhibitions	1888 (1952)		5	62,738	6,604	5,317	2,656
Lester Park Cottage A †	18	D	Staff Housing	1948		5	14,336	1,792	1,560	1,560
Lester Park Cottage B †	19	D	Staff Housing	1948		5	16,320	2,040	1,792	1,792
Main Building	1	B, C	Administration Offices, Library, Laboratories, Classrooms, Auditorium	1901 (1950)	216,871.55	3	1,297,920	83,038	73,323	53,020
Olcott Garage	7	B	Garage, Caretaker's Apartment	1904	4,192.00	3	19,467	3,108	2,215	1,691
Olcott Hall	6	B	Music Department	1904 (1940)	22,050.00	3	147,872	12,464	11,556	6,638
Physical Education	21	B, C, E	Physical Education	1953	1,480,096.97	1	3,976,035	113,601	99,144	39,597
R.O.T.C. Building	25	B	R.O.T.C. Headquarters	1953	46,874.26	3	64,400	4,600	4,349	3,949
Science Building	20	B	Laboratories, Office, Classroom	1950 (1952)	791,451.82	1	864,000	58,269	41,149	30,811
Seismograph	26	B	Research	1953	5,146.51	1	1,200	160	126	126
Torrance Hall	5	C, D	Girls' Dormitory, Cafeteria	1906 (1948)	111,117.21	3	282,942	25,722	21,433	14,317
Tweed Annex	9	B	Art	1910 (1946)	6,720.00	3	35,750	3,575	3,293	2,639
Tweed Gallery	10	B	Art	1914 (1953)	5,790.80	3	77,061	9,066	4,631	3,193
Tweed Hall	8	B, C	Classrooms, Sculpturing and Painting Studios, Music and Recital Room	1908 (1952)	48,337.07	1	232,000	17,949	13,738	10,182
Washburn Hall	4	B, C	Health Service, Post Office, Bookstore, Lounge, Offices	1910 (1948)	49,332.29	3	220,080	18,340	13,350	10,628

DULUTH CAMPUS
SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
West Alworth Residence	16	D	Staff Apartments	1917	\$32,552.55	3	64,098	8,422	7,320	6,209
TOTAL							8,237,373	422,460	349,320	220,267

* Book value has been prorated on a cubic foot basis.

† Value included in land value.

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3	4	5	6	7	8	9	10
Building Name	Building Number	Instruction	Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Alworth Garage East	13					1,932			1,932
Alworth Head House	12					242			242
Darling Observatory	11	283		254		544			1,081
Heating Plant	3					1,574			1,574
Home Management House	15	5,702				239			5,941
Laboratory School	2	2,838			161,023	50			3,911
Lakeshore Studio	17	1,915				16		725	2,656
Main Building	1	33,073		4,744	3,072	2,547	2,538		45,974
Olcott Garage	7					916		775	1,691
Olcott Hall	6	5,955				289	394		6,638
Physical Education	21	13,443				289			13,732
R.O.T.C. Building	25	3,583				60	306		3,949
Science Building	20	29,655	281			875			30,811
Seismograph	26		126						126
Tweed Annex	9	2,437					202		2,639
Tweed Gallery	10			3,193					3,193
Tweed Hall	8	7,765		1,211		269			9,245
Washburn Hall	4	3,404			163	77	4,207		7,851
TOTAL		110,053	407	9,402	4,258	9,919	7,647	1,500	143,186

SCHEDULE C. INTERNAL SERVICES

DULUTH CAMPUS

1	2	3	4	5	6	7	8	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Home Management House	15	Physical Plant Equipment Room					110	110
Laboratory School	2	Laboratory School		13,930				13,930
Main Building	1	Garage, Auditorium Service, Laboratory School		5,302			1,744	7,046
Physical Education	21	Refreshment Stands			192			192
Torrance Hall	5	Cafeteria, Office				65		65
Tweed Hall	8	Student Services					937	937
Washburn Hall	4	Student Services			1,470	198	1,109	2,777
TOTAL				19,232	1,662	263	3,900	25,057

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Alworth Garage West	14	Staff Residence		1,269		1,269				1,269	2,538
Lester Park Cottage A	18	Staff Residence		1,560		1,560					1,560
Lester Park Cottage B	19	Staff Residence		1,792		1,792					1,792
Torrance Hall	5	Women's Residence	90	21,306	237	9,234	4,206			812	14,252
West Alworth Residence	16	Staff Apartments		5,926		4,815				1,394	6,209
TOTAL				31,853		18,670	4,206			3,475	26,351

CROOKSTON, NORTHWEST SCHOOL AND EXPERIMENT STATION

CROOKSTON CAMPUS, NORTHWEST SCHOOL AND EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Animal Products Building	44	B	Dairy Department	1923	\$22,000.00	2	29,680	2,800	2,584	2,021
Barn (West)	57	F	Hay Storage	1912	1,600.00	5	39,926	1,543	1,394	1,394
Bee Storage House	49	F	Bee Storage House	1934	460.00	5	1,728	216	189	189
Beef Barn	45	F	Beef Cattle Barn	1923	10,477.00	5	71,280	6,480	5,984	5,984
Beef Feeding Shed	43	F	Feed Storage	1922	1,460.00	5	26,792	1,664	1,408	1,408
Brooder House	15	F	Poultry Department	1910	2,000.00	5	1,872	288	268	268
Cottage No. 3	17	D	Faculty Residence	1911	2,800.00	5	12,864	1,608	1,332	1,332
Cottage No. 4	18	D	Faculty Residence	1911	2,800.00	5	12,864	1,608	1,332	1,332
Cottage No. 5	19	D	Faculty Residence	1911	2,800.00	5	12,864	1,608	1,332	1,332
Cottage No. 6	20	D	Faculty Residence	1911	2,800.00	5	12,864	1,608	1,332	1,332
Cottage No. 7	33	D	Faculty Residence	1915	2,685.00	5	12,864	1,608	1,332	1,332
Dairy Barn	8	F	Dairy Barn	1906	5,900.49	5	129,580	11,780	10,096	10,096
Dining Hall	40	D	Dining Hall	1920	94,049.53	3	331,459	34,171	25,647	19,920
Dwelling House No. 8	1	D	Faculty Residence	1896	4,450.00	5	30,024	3,336	2,748	2,748
Farm Laborers Cottage No. 2	34	D	Staff Residence	1915	5,219.77	5	14,192	1,774	1,554	1,554
Feed Grain Storage	52	F	Feed Grain Storage	1954	12,967.45	6	12,600	1,800	1,682	1,682
Four-Family Flat No. 1	39	D	Staff Residence	1920	16,550.39	5	40,176	5,022	4,431	4,431
Girls' Dormitory	50	D	Residence Hall	1941	188,089.07	1	276,176	24,960	22,644	18,280
Grain Elevator	30	F	Grain Storage	1913	8,150.00	5	14,352	2,392	2,280	2,280
Greenhouse	23	F	Greenhouse, Tool Shed	1923	1,500.00	5	15,520	2,064	1,876	1,876
Health Service	46	C	Health Service	1926	27,897.77	3	48,384	4,032	3,498	3,498
Heating Plant	31	B	Heating and Power Plant	1950	347,794.85	1	115,860	5,793	5,214	5,214
Hill Building	24	B	Classrooms	1912	36,000.00	3	158,364	13,197	12,000	9,443
Hog Barn	53	F	Hog Barn	1950	10,201.14	5	12,600	1,800	1,682	1,682
Home Economics	6	B	Home Economics, Music	1906	45,562.18	3	86,730	8,260	7,096	6,006
Horse Barn	2	F	Horse Barn	1902	2,500.00	5	85,680	10,112	9,520	9,520
House (West)	55	D	Staff Residence	1905 (1938)	3,429.36	5	17,160	1,552	1,362	1,362
Implement Shed No. 1	7	F	Implement Shed	1906	1,200.00	5	36,456	3,659	3,038	3,038
Implement Shed No. 2	25	F	Implement Shed	1913	2,000.00	5	31,752	2,268	1,976	1,976
Kiehle Building	13	B	Administration, Library	1910	67,336.49	3	264,164	14,677	13,178	10,712
Machine Shed Granary	56	F	Machine Shed	1900	765.00	5	12,000	1,500	1,426	1,426
Main Poultry House	3	F	Poultry Department	1897	2,000.00	5	21,024	2,592	2,336	2,336
Owen Hall	9	B	Shops, Recitation Rooms	1908 (1938)	49,599.11	3	278,256	25,296	22,883	21,253

SCHEDULE A—Continued

CROOKSTON CAMPUS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Physical Education Building	47	E	Physical Education	1930	\$89,361.39	1	167,248	16,836	15,200	14,257
Poultry House (Concrete)	28	F	Poultry Department	1913	none	3	33,024	2,752	2,535	2,535
Poultry House (Frame)	27	F	Poultry Department	1913	350.00	5	3,528	504	432	432
Robertson Hall	12	B, D	Boys' Residence Hall	1910	27,702.72	3	149,711	14,535	13,026	9,662
Root Cellar	37	F	Root Cellar	1909	500.00	1	5,329	686	686	686
Sheep Barn	16	F	Sheep Barn	1933	2,850.00	5	77,760	3,600	3,048	3,048
Sheep Barn	48	F	Sheep Barn	1932	none	5	2,880	960	889	889
Sheep Barn (West)	58	F	Sheep Barn	1912	775.00	5	2,880	952	891	891
Selvig Hall	32	B, D	Girls' Residence Hall	1914	44,741.59	3	130,080	12,960	11,484	7,998
Station Garage	36	F	Employees' Garage	1918	900.00	5	12,474	1,386	1,262	1,262
Stephens Hall	10	D	Boys' Residence Hall	1908	41,246.50	3	252,826	26,508	23,562	17,049
Superintendent's Garage	14	D	Garage	1911	300.00	5	5,412	528	451	451
Superintendent's House	5	D	Residence	1906	4,520.52	5	19,890	2,210	1,972	1,972
Swine Barn	26	F	Swine Barn	1913	1,845.20	5	29,700	3,300	2,852	2,852
TOTAL							3,160,849	290,785	254,944	222,241

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Animal Products Building	44	781	1,044		196			2,021
Heating Plant	31				5,214			5,214
Hill Building	24	8,274		995	174			9,443
Home Economics	6	6,006						6,006
Kiehle Building	13	2,759	6,276	1,549	16	112		10,712
Owen Hall	9	19,263		165	1,825			21,253
Robertson Hall	12				336			336
Selvig Hall	32				60			60
TOTAL		37,083	7,320	2,709	7,821	112		55,045

CROOKSTON CAMPUS

SCHEDULE C. INTERNAL SERVICES

1	2	3	4	5	6	7	8	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Health Service	46	Health Service Building	3,498					3,498
TOTAL			3,498					3,498

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Cottage No. 3	17	Faculty Residence		1,332		1,332					1,332
Cottage No. 4	18	Faculty Residence		1,332		1,332					1,332
Cottage No. 5	19	Faculty Residence		1,332		1,332					1,332
Cottage No. 6	20	Faculty Residence		1,332		1,332					1,332
Cottage No. 7	33	Faculty Residence		1,332		1,332					1,332
Dining Hall	40	Dining and Dormitory	64	25,047	402	7,431	8,968		387	3,134	19,920
Dwelling House No. 8	1	Faculty Residence		2,748		2,748					2,748
Farm Laborer's Cottage No. 2	34	Faculty Residence		1,554		1,554					1,554
Four-Family Flat No. 1	39	Staff Residence		4,431		4,431					4,431
Girls' Dormitory	50	Girls' Residence Hall	104	22,644	218	13,304			320	4,656	18,280
House (West)	57	Staff Residence		1,362		1,362					1,362
Robertson Hall	12	Boys' Residence Hall	99	12,532	127	8,654		448	224		9,326
Selvig Hall	32	Girls' Residence Hall	44	11,424	260	7,105		646	187		7,938
Stephens Hall	10	Boys' Residence Hall	114		206	15,310		816	187	736	17,049
Superintendent's Garage	14	Garage								451	451
Superintendent's House	5	Residence		1,972		1,972					1,972
TOTAL				114,536		70,531	8,968	1,910	1,305	8,977	91,691

SCHEDULE E. INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

CROOKSTON CAMPUS

1	2	3	4	5	6	7
Building Name	Building Number	Gymnasium	Seating (sq. ft.)	Office	Service	Total Assignable Area This Schedule (sq. ft.)
Physical Education Building	47	7,101	2,576	308	4,272	14,257
TOTAL		7,101	2,576	308	4,272	14,257

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Barn (West)	57	1,394			1,394
Bee Storage House	49	189			189
Beef Barn	45	5,984			5,984
Beef Feeding Shed	43	1,408			1,408
Brooder House	15	268			268
Dairy Barn	8	10,096			10,096
Feed Grain Storage	52	1,682			1,682
Grain Elevator	30	2,280			2,280
Greenhouse	23	1,876			1,876
Hog Barn	53	1,682			1,682
Horse Barn	2	9,520			9,520
Implement Shed No. 1	7	3,038			3,038
Implement Shed No. 2	25	1,976			1,976
Machine Shed Granary	56	1,426			1,426
Main Poultry House	3	2,336			2,336
Poultry House Concrete	28	2,535			2,535
Poultry House Frame	27	432			432
Root Cellar	37	686			686
Sheep Barn	16	3,048			3,048
Sheep Barn	48	889			889
Sheep Barn (West)	58	891			891

CROOKSTON CAMPUS**SCHEDULE F—Continued**

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Station Garage	36			1,262	1,262
Swine Barn	26	2,852			2,852
TOTAL		56,488		1,262	57,750

GRAND RAPIDS

NORTH CENTRAL SCHOOL AND
EXPERIMENT STATION

GRAND RAPIDS CAMPUS, NORTH CENTRAL SCHOOL AND EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Classroom and Utilities	55	B	Classrooms, Utilities	1948 (1953)	\$132,867.05	5	162,780	13,565	12,690	10,555
Dairy Barn and Silo No. 2	9	F	Sheep Barn, Hay Storage	1910	8,696.28	5	81,000	7,360	6,776	6,776
Dairy Barn, 2 Silos, and Milk House	37	F	Dairy Barn	1932 (1945)	19,542.02	5	178,416	4,248	3,621	3,621
Farm House	6	D	Staff Residence	1905	6,696.02	5	30,000	3,750	3,396	3,396
Garage	46	F	Garage, Machine Shed	1942	4,052.31	5	23,760	2,640	2,442	2,442
Granary	7	F	Granary	1905	966.87	5	12,960	864	819	819
Hog House and Granary	54	F	Hog House, Granary	1947	26,818.73	5	132,420	11,304	10,197	10,197
Horse Barn	44	F	Seed Processing	1939 (1942)	12,366.02	5	54,000	1,800	1,764	1,764
Ice House	2	F	Storage	1898	200.00	5	5,620	690	676	676
Machine Shed	58	F	Farm Shop	1915	4,091.93	5	62,700	6,600	6,048	6,048
Machine Shed	18	F	Farm Shop	1915	4,091.93	5	31,360	2,244	2,092	2,092
Manure Storage	20	F	Sheep Shed	1920	3,067.35	5	50,400	2,400	2,283	2,283
Old Creamery	10	B, D	Classrooms, Residence	1910	5,716.54	5	9,950	1,244	1,092	1,092
Pole Barn	59	F	Livestock Shelter	1955	2,802.70	5	36,000	3,000	2,888	2,888
Poultryman's Cottage	14	D	Staff Residence	1910	7,420.73	5	16,128	2,016	1,863	1,863
Poultry House	49	F	Poultry House	1944	755.74	5	4,032	576	524	524
Root Cellar	3	F	Root Cellar	1898	400.00	3	3,528	441	441	441
School Building	24	B	Administration, Classrooms, Library	1925 (1953)	98,991.19	1	223,080	17,160	15,264	12,829
School Dormitory	25	D	Dining, Residence Hall	1926	82,718.32	1	236,702	22,543	20,833	17,175
Smoke House	45	F	Storage		63.08	5	3,062	384	345	345
Storage Shed	26	F	Machine Shed	1926	1,976.50	5	20,480	2,048	1,936	1,936
Superintendent's Garage	36	D	Garage	1954	250.00	5	2,765	288	234	234
Superintendent's Residence	35	D	Residence	1932	10,677.03	5	22,644	2,664	2,277	2,277
Water Tower Heater House	17	F	Water Tower Heater House	1915 (1940)	11,277.88	5	3,762	418	399	399
TOTAL							1,407,549	110,247	100,900	92,672

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

GRAND RAPIDS CAMPUS

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Classrooms and Utilities Building	55	9,313			1,242			10,555
Old Creamery	10	728						728
School Building	24	6,822	4,067	920	1,020			12,829
TOTAL		16,863	4,067	920	2,262			24,112

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Farm House	6	Staff Residence		3,396		3,396					3,396
Old Creamery	10	Residence		364		364					364
Poultryman's Cottage	14	Residence		1,863		1,863					1,863
School Dormitory	25	Dining, Residence Hall	100	20,833	208	8,414	3,646	2,060	180	2,875	17,175
Superintendent's Garage	36	Garage								234	234
Superintendent's Residence	35	Residence		2,277		2,277					2,277
TOTAL				28,733		16,314	3,646	2,060	180	3,109	25,309

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Dairy Barn, Silo No. 2	9	6,776			6,776
Dairy Barn, 2 Silos, and Milk House	37	3,621			3,621
Garage	46	2,442			2,442

GRAND RAPIDS CAMPUS
SCHEDULE F—Continued

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Granary	7	819			819
Hog House, Granary	54	10,197			10,197
Horse Barn	44	1,764			1,764
Ice House	2			676	676
Machine Shed	58	6,048			6,048
Machine Shed	18	2,092			2,092
Manure Storage	20	2,283			2,283
Pole Barn	59	2,888			2,888
Poultry House	49	524			524
Root Cellar	3	441			441
Smoke House	45	345			345
Storage Shed	26	1,936			1,936
Water Tower Heater House	17			399	399
TOTAL		42,176		1,075	43,251

MORRIS

WEST CENTRAL SCHOOL AND EXPERIMENT STATION

MORRIS CAMPUS, WEST CENTRAL SCHOOL AND EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Administration	1	B	Administration	1900	\$41,435.64	3	111,650	8,932	8,113	7,110
Agricultural Hall	25	B	Agricultural Hall	1921	85,233.23	3	176,700	16,050	13,400	12,052
Agricultural Hall Addition	38	B	Animal and Poultry Husbandry	1949	116,833.70	3	74,200	8,240	7,274	6,579
Beef Cattle Barn	40	F	Beef Barn	1937	3,007.16	5	62,000	7,260	6,942	6,942
Cattle Barn	9	F	Cattle Barn	1911	8,066.60	5	20,736	2,592	2,352	2,352
Corncrib	36	F	Corncrib	1940	1,061.32	5	20,160	1,440	1,363	1,363
Dairy Barn and Milk House	8	F	Cow Barn, Silo	1930	63,931.77	5	175,077	16,674	15,338	15,338
Dining Hall	21	D	Dining Hall, Women's Residence Hall	1918 (1926)	110,693.46	3	320,305	27,260	22,368	20,125
Engineering Building	17	B	Engineering Division	1915 (1921)	28,605.12	3	193,032	16,086	14,505	12,908
Experimental Sheep Barn	33	F	Experimental Sheep Feeding Barn	1926	1,500.00	5	45,560	5,000	3,960	3,960
Farm Cottage	12	D	Herdsmen's Residence	1915	1,080.00	5	8,000	800	684	684
Farm Cottage	14	D	Farm Cottage	1915	3,863.00	5	19,629	2,181	1,824	1,824
Girls' Dormitory	16	B, D	Residence Hall	1912	93,000.45	3	191,247	18,214	16,137	12,447
Greenhouse and Headhouse	46	F	Greenhouse	1953	29,394.46	5	21,862	2,572	2,333	2,333
Gymnasium	35	E	Physical Education	1930	101,640.28	3	270,320	18,088	15,340	13,134
Health Service	32	C	Hospital	1924	25,320.00	3	53,300	5,330	4,620	3,624
Heating Plant	7	B	Heating Plant	1911 (1950)	226,292.57	1	137,352	5,773	4,310	4,289
Hog Barn	23	F	Hog Barn	1918 (1929)	4,560.33	5	19,320	2,100	1,904	1,904
Home Economics	45	B	Home Economics	1953	230,207.37	1	156,996	14,952	12,575	9,595
Home Management House	22	B	Home Management House	1915	5,361.50	5	30,720	2,880	2,655	2,655
Junior Hall	34	D	Men's Residence Hall	1926	97,778.09	3	181,250	18,125	15,394	13,533
Machine Shed	18	F	Machine Shed	1911	1,270.87	5	25,501	1,821	1,652	1,652
Music Hall	2	B	Music Hall	1899 (1921)	30,645.00	3	75,210	7,820	7,080	6,112
Poultry House No. 1	10	F	Poultry Division	1914	800.00	5	9,856	896	712	712
Poultry House No. 2	30	F	Poultry Division	1922	2,887.72	5	29,856	3,092	2,842	2,842
Quarantine Barn	27	F	Quarantine Barn	1922 (1933)	600.00	5	5,600	560	432	432
Root Cellar	37	F	Root Cellar	1946	879.00	5	9,459	1,084	865	865
Seed House	19	F	Storage	1954	10,326.53	5	19,200	1,200	1,064	1,064

SCHEDULE A—Continued

MORRIS CAMPUS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Senior Hall	24	D	Men's Residence Hall	1920	\$96,180.29	3	160,500	16,050	14,610	12,051
Sheep Barn	11	F	Sheep Barn	1911	3,200.00	5	36,576	3,036	2,736	2,736
Spooner Hall	15	B, D	Men's Residence Hall	1913	62,350.03	3	253,995	24,190	21,447	16,567
Superintendent's Cottage and Garage	4	D	Residence and Garage	1937	12,876.71	3	30,131	3,348	2,907	2,907
TOTAL							2,945,300	263,646	229,738	202,691

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Administration	1	1,185	4,125	1,800				7,110
Agricultural Hall	25	8,583			3,469			12,052
Agricultural Hall Addition	38	6,427			152			6,579
Engineering Building	17	12,433			475			12,908
Girls' Dormitory	16	2,083						2,083
Heating Plant	7				4,289			4,289
Home Economics	45	8,190		504	602	299		9,595
Home Management House	22	2,655						2,655
Music Hall	2	5,155		256	701			6,112
Spooner Hall	15	629			833			1,462
TOTAL		47,340	4,125	2,560	10,521	299		64,845

MORRIS CAMPUS
SCHEDULE C. INTERNAL SERVICES

1	2	3	4	5	6	7	8	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Health Service	32		3,624					3,624
TOTAL			3,624					3,624

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Dining Hall	21	Dining Hall and Women's Residence Hall	38	22,368	587	6,462	4,795			8,868	20,125
Farm Cottage	12	Herdsmen's Residence		684		684					684
Farm Cottage	14	Farm Cottage		1,824		1,824					1,824
Girls' Dormitory	16	Residence Hall for Women	80	13,533	169	7,069		2,280	216	799	10,364
Junior Hall	34	Men's Residence Hall	84	15,394	183	9,231		759		3,543	13,533
Senior Hall	24	Men's Residence Hall	74	14,610	198	9,569			350	2,132	12,051
Spooner Hall	15	Men's Residence Hall	76	18,753	247	11,540		629	216	2,720	15,105
Superintendent's Cottage and Garage	4	Residence and Garage		2,907		2,907					2,907
TOTAL				90,073		49,286	4,795	3,668	782	18,062	76,593

SCHEDULE E. INTRAMURAL AND INTERCOLLEGIATE ATHLETICS

1	2	3	4	5	6	7
Building Name	Building Number	Gymnasium	Seating (sq. ft.)	Office	Service	Total Assignable Area This Schedule (sq. ft.)
Gymnasium	35	6,924	2,284	308	3,618	13,134
TOTAL		6,924	2,284	308	3,618	13,134

SCHEDULE F. AUXILIARY BUILDINGS

MORRIS CAMPUS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Beef Cattle Barn	40	6,942			6,942
Cattle Barn	9	2,352			2,352
Cornerrib	36	1,363			1,363
Dairy Barn and Milk House	8	15,338			15,338
Experimental Sheep Barn	33	3,960			3,960
Greenhouse and Headhouse	46	2,333			2,333
Hog Barn	23	1,904			1,904
Machine Shed	18	1,652			1,652
Poultry House No. 1	10	712			712
Poultry House No. 2	30	2,842			2,842
Quarantine Barn	27	432			432
Root Cellar	37	865			865
Seed House	19	1,064			1,064
Sheep Barn	11	2,736			2,736
TOTAL		44,495			44,495

WASECA, SOUTHERN SCHOOL AND EXPERIMENT STATION

WASECA CAMPUS, SOUTHERN SCHOOL AND EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Barn and Silo	19	F	Horses, Sheep, and Hay Storage	1916 (1923)	\$5,500.00	5	79,224	7,216	6,408	6,408
Bull Barn	17	F	Bull and Horse Barn	1920 (1948)	1,000.00	5	17,472	2,688	2,376	2,376
Car Shed	26	F	Cars, Machinery	1933	100.00	5	3,312	414	378	378
Corn Building	38	F	Seed Storage	1942	5,875.54	5	30,240	3,360	3,016	3,016
Corncrib (Steel)	47	F	Feed Storage	1950	3,210.65	6	5,400	600	504	504
Cottage	25	D	Staff Residence	1930 (1944)	1,500.00	5	4,224	528	440	440
Dairy Barn and Silo	42	F	Cattle Shelter, Feed Storage	1949	30,346.17	5	151,920	9,600	9,044	9,044
Farm House	11	D	Staff Residence	1914	3,607.68	5	23,184	3,024	2,652	2,652
Granary	45	F	Feed Storage	1950	3,328.40	5	5,400	600	504	504
Hay Shed	56	F	Hay and Straw Storage	1955	2,820.00	5	27,200	3,400	3,154	3,154
Hog House	41	F	Farrowing, Feeding	1947	13,655.35	5	42,240	5,168	4,424	4,424
Institute Hall	10	F	Grain Storage	1914	5,600.00	5	45,795	4,260	4,060	4,060
Machine Shed	13	F	Machine Storage	1914 (1921)	1,100.00	5	27,840	3,696	3,392	3,392
Machine Shed	48	F	Machine Storage	1948	6,149.00	5	35,100	3,900	3,429	3,429
Milk House	39	F	Milk House	1942	1,000.00	5	3,264	384	345	345
New Seed House	55	B, F	Seed Storage	1954	32,789.29	3	63,800	5,800	5,170	5,300
Office Building	28	B, D	Office, Residence	1937	9,816.73	5	20,736	2,304	1,980	1,666
Poultry House	8	F	Sheep Shed	1905	100.00	5	2,560	320	285	285
Poultry House	21	F	Feed Storage	1926	400.00	5	2,880	480	420	420
Scale House	27	F	Scale House	1935	195.50	5	840	120	99	99
School of Agriculture Building	46	B, D	School of Agriculture, Dormitory	1951	1,548,196.44	1	1,634,014	117,708	100,464	75,795
Seed House	20	F	Seed Storage	1924 (1933)	2,827.90	5	13,824	1,536	1,320	1,320
Shop and Machine Shed	22	F	Tools, Machinery	1923	1,800.00	5	18,000	2,880	2,552	2,552
Steer Shed	16	F	Steer Feeding	1919	2,628.81	5	14,400	2,304	2,024	2,024
Straw Shed	23	F	Feed, Straw, Hay Storage	1928	1,500.00	5	15,606	1,836	1,568	1,568
Straw Shed	30	F	Straw Storage	1939	350.00	5	11,520	1,440	1,357	1,357
Superintendent's Garage	54	D	Garage	1923	200.00	5	1,920	240	198	198
Superintendent's House	18	D	Residence	1921	5,993.00	5	24,520	2,940	2,574	2,574
Wood Shed	7	F	Storage	1890	200.00	5	2,800	400	359	359
TOTAL							2,329,235	189,146	164,496	139,643

WASECA CAMPUS**SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE**

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
New Seed House	55			130				130
Office Building	28	687		242	77			1,006
School of Agriculture Building	46	34,048		1,890	5,988			41,926
TOTAL		34,735		2,262	6,065			43,062

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Cottage	25	Staff Residence		440		440					440
Farm House	11	Staff Residence		2,652		2,652					2,652
Office Building	28	Staff Residence		660		660					660
School of Agriculture	46	Girls' and Boys' Residence Hall	132	47,680	361	10,890	6,455	5,706		10,818	33,869
Superintendent's Garage	54	Garage								198	198
Superintendent's House	18	Residence		2,574		2,574					2,574
TOTAL				54,006		17,216	6,455	5,706		11,016	40,393

SCHEDULE F. AUXILIARY BUILDINGS

WASECA CAMPUS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Barn and Silo	19	6,408			6,408
Bull Barn	17	2,376			2,376
Car Shed	26	378			378
Corn Building	38	3,016			3,016
Corncrib (Steel)	47	504			504
Dairy Barn and Silo	42	9,044			9,044
Granary	45	504			504
Hay Shed	56	3,154			3,154
Hog House	41	4,424			4,424
Institute Hall	10	4,060			4,060
Machine Shed	13	3,392			3,392
Machine Shed	48	3,429			3,429
Milk House	39	345			345
New Seed House	55	5,170			5,170
Poultry House	8	285			285
Poultry House	21	420			420
Scale House	27	99			99
Shop and Machine Shed	22	2,552			2,552
Seed House	20	1,320			1,320
Steer Shed	16	2,024			2,024
Straw Shed	23	1,568			1,568
Straw Shed	30	1,357			1,357
Woodshed	7	359			359
TOTAL		56,188			56,188

EXCELSIOR FRUIT BREEDING FARM

ZUMBRA HEIGHTS, CARVER COUNTY

ZUMBRA HEIGHTS, EXCELSIOR FRUIT BREEDING FARM

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Barn	2	F	Barn, Machine Shed	1907	\$3,000.00	5	75,284	3,906	3,416	3,416
Barn	26	F	Barn	1932	2,000.00	5	68,400	3,600	3,240	3,240
Beekeeping House	12	F	Entomology Department	1918	500.00	5	5,184	648	595	595
Chicken House No. 1	9	F	Chicken House	1913	100.00	5	3,259	336	290	290
Chicken House No. 2	8	F	Chicken House	1913	100.00	5	3,259	336	290	290
Dwelling	25	D	Dwelling	1907	4,807.50	5	37,500	3,750	3,324	3,324
Farm House (attached to Greenhouse)	3	D	Foreman's House	1908	3,807.50	5	11,889	1,321	1,168	1,168
Garage	11	D	Garage	1916	100.00	5	7,350	750	699	699
Greenhouse and Headhouse	19	F	Greenhouse	1939	18,155.10	5	94,512	7,876	6,432	6,432
Laboratory and Office	18	B, D	Laboratory, Office	1933	16,888.71	5	45,000	4,500	4,032	3,209
Machine Shed and Garage	10	F	Garage	1916	600.00	5	22,530	1,560	1,392	1,392
Machine Shed and Tool House	27	F	Machine Shed, Tool House	1937	1,750.00	5	6,300	700	646	616
Market House	16	F	Market House	1927	200.00	5	2,304	192	152	152
Old Farm House	1	D	Dwelling House	1907	3,500.00	5	17,469	1,941	1,664	1,664
Professor's Cottage No. 1	6	D	Residence	1909	2,580.43	5	4,057	484	431	431
Professor's Cottage No. 2	14	D	Residence	1921	2,580.42	5	4,057	484	431	431
Professor's Cottage No. 3	15	D	Residence	1925	2,380.41	5	4,057	484	431	431
Professor's Cottage	21	D	Residence	1939-40	2,500.00	5	13,581	1,508	1,374	1,374
Pumphouse (on lake)	17	F	Pumphouse	1927	75.00	5	18,550	1,750	1,520	1,520
Pumphouse and Woodshed	4	F	Pumphouse, Woodshed	1908	250.00	5	5,394	421	390	390
Storage Cellar and Warehouse	13	F	Storage Cellar Warehouse	1920	2,800.00	5	52,000	4,160	3,933	3,933
Storage Cellar and Warehouse	20	F	Nursery Storage Cellar, Warehouse	1938-39	4,238.58	5	27,000	3,000	2,761	2,761
Superintendent's Cottage	7	D	Residence	1911	8,566.49	5	20,160	2,520	2,184	2,184
Water Tower and Pumphouse	5	F	Pumphouse, Tool Shed	1908 (1917, 1921)	1,250.00	5	3,982	595	499	499
TOTAL							553,078	46,822	41,294	40,471

EXCELSIOR
SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Laboratory and Office	18	2,057		280	88			2,425
TOTAL		2,057		280	88			2,425

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Dwelling	25	Staff Residence		3,324		3,324					3,324
Farm House (attached to Greenhouse)	3	Foreman's House		1,168		1,168					1,168
Garage	11	Garage								699	699
Laboratory and Office	18	Staff Apartment		784		784					784
Old Farm House	1	Staff Residence		1,664		1,664					1,664
Professor's Cottage No. 1	6	Faculty Residence		431		431					431
Professor's Cottage No. 2	14	Faculty Residence		431		431					431
Professor's Cottage No. 3	15	Faculty Residence		431		431					431
Professor's Cottage No. 4	21	Faculty Residence		1,374		1,374					1,374
Superintendent's Cottage	7	Residence		2,184		2,184					2,184
TOTAL				11,791		11,791				699	12,490

SCHEDULE F. AUXILIARY BUILDINGS

EXCELSIOR

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Barn	2	3,416			3,416
Barn	6	3,240			3,240
Beekeeping House	12	595			595
Chicken House No. 1	9	290			290
Chicken House No. 2	8	290			290
Greenhouse and Headhouse	19	6,432			6,432
Machine Shed and Garage	10	1,392			1,392
Machine Shed and Tool House	27	646			646
Market House	16	152			152
Pumphouse (by lake)	17	1,520			1,520
Pumphouse and Woodshed	4	390			390
Storage Cellar and Warehouse	13	3,933			3,933
Storage Cellar and Warehouse	20	2,761			2,761
Water Tower and Pumphouse	5	499			499
TOTAL		<u>25,556</u>			<u>25,556</u>

DULUTH

NORTHEAST EXPERIMENT STATION

DULUTH, NORTHEAST EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Agronomy Lodge	25	F	Seed House	1921 (1933)	\$1,500.00	1	16,370	1,102	1,036	1,036
Brooder House	20	F	Poultry House	1923	900.00	5	4,372	720	623	623
Farmhouse	3	D	Staff Residence	1913	6,500.00	5	31,676	3,726	3,264	3,264
Garage	10	F	Garage	1917 (1921)	500.00	5	5,508	631	580	580
General Purpose Barn and Silo	29	F	General Purpose	1951	40,851.92	5	134,606	7,918	7,350	7,350
Granary (Old)	9	F	Feed Storage	1917	500.00	5	7,690	432	390	390
Greenhouse	17	F	Greenhouse	1921	2,058.17	5	7,416	720	598	598
Herdsmen's Cottage	16	D	Plotman's Cottage	1919 (1938)	2,300.00	5	14,256	1,584	1,445	1,445
Hog Barn	4	F	Hog Barn	1913	1,080.00	5	10,400	1,300	752	752
Horse Barn	11	F	Horse Barn	1919	2,500.00	5	50,400	3,600	3,230	3,230
Icehouse	26	F	Icehouse	1933	500.00	5	2,304	384	346	346
Institute Hall and Basement Garage	18	B	Institute Hall Garage	1921 (1930)	29,974.14	4	158,445	14,250	12,448	11,575
Machine Shed	5	F	Machine Shed	1913	1,800.00	5	30,240	6,720	6,550	6,550
Machine Shed and Storage	34	F	Machine Shed	1953	13,430.34	6	41,650	2,975	2,739	2,739
Office and Laboratory	28	B, D	Office, Laboratory	1939	13,789.56	5	22,680	2,520	2,178	1,899
Poultry House	8	F	Poultry House	1913 (1925)	1,800.00	5	27,328	3,904	3,645	3,645
Poultryman's Cottage	7	D	Foreman's Cottage	1913 (1923)	4,215.57	5	18,144	1,728	1,587	1,587
Root House	19	F	Root House	1922	500.00	3	3,920	352	315	315
Shop	24	F	Shop	1923	300.00	5	4,256	432	392	392
Superintendent's Cottage	15	D	Residence	1919 (1953)	15,126.41	5	30,030	2,860	2,466	2,466
Water Tower and Heater-house	30	F	Water Service	1949	35,082.82	5	330	36	30	30
TOTAL							622,021	57,894	51,964	50,812

NORTHEAST EXPERIMENT
SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Institute Hall	18	3,964	6,848		763			11,575
Office and Laboratory	28	382		572	169			1,123
TOTAL		4,346	6,848	572	932			12,698

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Farmhouse	3	Staff Residence		3,264		3,264					3,264
Herdsmen's Cottage	16	Foreman's Cottage		1,445		1,445					1,445
Office and Laboratory	28	Staff Residence		776		776					776
Poultryman's Cottage	7	Foreman's Cottage		1,587		1,587					1,587
Superintendent's Cottage	15	Residence		2,466		2,466					2,466
TOTAL				9,538		9,538					9,538

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Agronomy Lodge	25	1,036			1,036
Brooder House	20	623			623
Garage	10	580			580

SCHEDULE F—Continued

NORTHEAST EXPERIMENT

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
General Purpose Barn and Silo	29	7,350			7,350
Granary (Old)	9	390			390
Greenhouse	17	598			598
Hog Barn	4	752			752
Horse Barn	11	3,230			3,230
Ice House	26	346			346
Machine Shed	5	6,550			6,550
Machine Shed and Storage	34	2,739			2,739
Poultry House	8	3,645			3,645
Root House	19	315			315
Shop	24	392			392
Water Tower and Heater House	30	30			30
TOTAL		28,576			28,576

VILLAGE OF
ROSEMOUNT

AGRICULTURAL EXPERIMENT STATION ROSEMOUNT

NORTH BEEF

POULTRY FARM

SWINE & SHEEP FARM

DAIRY FARM

FARM SERVICE

PLANT PATHOLOGY

SOILS FARM

AGRONOMY FARM

NORTH

ROSEMOUNT AGRICULTURAL EXPERIMENT STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Administration	101	B	Administrative Offices	1950	\$5,828.28	5	6,400	552	480	480
Agronomy Shed	901A	F	Machine Storage	1947	7,700.00	5	15,722	1,748	1,520	1,520
Barn No. 1	309	F	Hog Barn	1947	7,899.34	5	28,668	2,389	2,184	2,184
Barn No. 2 (Elliot)	304	F	Horse Barn, Hog Barn, Storage	1947	3,364.22	5	110,400	9,200	8,624	8,624
Dairy Barn	203A,B	F	General Barn, Office	1947	20,268.51	5	139,392	11,212	9,750	9,750
Dairy Calf Barn	208	F	Calf Barn	1953	1,128.16	5	64,400	6,440	5,600	5,600
Dairy Pole Barn	204	F	Cattle Barn	1950	4,810.32	5	66,816	4,802	4,176	4,176
Experimental Farrowing Barn	313B	F	Farrowing Barn	1955	4,992.60	5	38,612	2,758	2,633	2,633
Farmhouse (Elliot)	301	D	Farm Employee's Residence	1947	20,611.09	5	26,730	2,970	2,454	2,454
Feed Storage No. 1	306	F	Storage	1955	1,860.00	5	32,400	2,700	2,596	2,596
Feed Storage No. 2	203D	F	Storage	1955	2,386.00	5	54,288	4,524	4,389	4,389
Feed Storage No. 3	801B	F	Storage	1955	1,860.00	5	32,400	2,700	2,596	2,596
Feed Storage No. 4	803	F	Storage	1955	1,955.00	5	15,600	1,560	1,475	1,475
Granary	308	F	Granary	1950	176.41	5	16,560	1,380	1,200	1,200
Hog Barn	313A	F	Hog Barn	1950	20,742.40	5	23,071	2,964	2,688	2,688
Igloo I	601	F	Seed House	1947	4,281.70	5	64,400	3,864	3,360	3,360
Igloo II	602	F	Farm Shop	1947	1,886.31	5	15,600	1,932	1,680	1,680
Igloo III	603	F	Storage	1947	1,899.49	5	15,600	1,932	1,680	1,680
Igloo IV	604	F	Storage	1947	386.31	5	15,600	1,932	1,680	1,680
Igloo V	605	F	Seed Storage	1947	3,460.23	5	64,400	3,864	3,360	3,360
Igloo VI	606	F	Agricultural Engineering Shop and Headquarters	1947	1,906.23	5	15,600	1,932	1,680	1,680
Igloo VII	607	F	Lumber Storage	1947	468.08	5	15,600	1,932	1,680	1,680
Igloo VIII	608	F	Seed Storage	1947	2,590.18	5	64,400	3,864	3,360	3,360
Lambing Barn	310	F	Lambing Barn	1950	1,875.21	5	29,700	2,700	2,464	2,464
Plant Pathology Shed	701A	F	Storage	1952	2,337.30	5	26,910	2,691	2,340	2,340
Poultry I	404A	F	Poultry House	1950	2,675.48	5	58,289	5,299	4,608	4,608
Poultry II	404C	F	Poultry House	1952	1,763.54	5	12,540	1,140	960	960
Poultry III	404B	F	Poultry House	1950	2,061.72	5	30,360	2,760	2,400	2,400
Poultry Service Building	401	F	Equipment and Service Storage	1950	4,538.57	5	8,000	800	684	684
Poultry Storage	403	F	Storage	1950	1,816.76	5	61,600	6,160	5,776	5,776

ROSEMOUNT AGRICULTURAL

SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Soils Barn	805	F	Beef Cattle	1952	\$2,408.60	5	124,384	7,774	6,760	6,760
Soils Shed	804	F	Storage	1952	1,649.49	5	7,700	777	676	676
Soils Shed	801A	F	Soils Storage	1952	1,262.92	5	7,700	777	676	676
Storage Shed	611	F	Oil and Grease Storage	1953	430.00	5	3,840	384	345	345
Superintendent's Residence and Garage	102	D	Superintendent's Residence and Garage	1953	24,464.27	5	29,056	3,632	3,155	3,155
Trailer House No. 1		D	Farm Laborer's Residence	1952	150.00	5	1,536	192	161	161
Workmen's Change House	610	D	Workmen's Quarters	1952	2,419.93	5	4,096	512	465	465
TOTAL							1,348,370	114,749	102,315	102,315

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Administration	101			480				480
TOTAL				480				480

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Farm House (Elliot)	301	Residence		2,454		2,454					2,454
Superintendent's Residence and Garage	102	Residence		3,155		3,155					3,155
Trailer House No. 1		Residence		161		161					161
Workmen's Change House	610	Residence		465		465					465
TOTAL				6,235		6,235					6,235

SCHEDULE F. AUXILIARY BUILDINGS

ROSEMOUNT AGRICULTURAL

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Agronomy Shed	901A	1,520			1,520
Barn No. 1	309	2,184			2,184
Barn No. 2 (Elliot)	301	8,624			8,624
Dairy Barn	203A, B	9,750			9,750
Dairy Calf Barn	208	5,600			5,600
Dairy Pole Barn	204	4,176			4,176
Experimental Farrowing Barn	313B	2,633			2,633
Feed Storage	203D	2,596			2,596
Feed Storage	306	4,389			4,389
Feed Storage	803	2,596			2,596
Feed Storage	801B	1,475			1,475
Granary	308	1,200			1,200
Hog Barn	313A	2,688			2,688
Igloo I	601	3,360			3,360
Igloo II	602	1,680			1,680
Igloo III	603	1,680			1,680
Igloo IV	604	1,680			1,680
Igloo V	605	3,360			3,360
Igloo VI	606	1,680			1,680
Igloo VII	607	1,680			1,680
Igloo VIII	608	3,360			3,360
Lambing Barn	310	2,464			2,464
Plant Pathology Shed	701A	2,340			2,340
Poultry I	404A	4,608			4,608
Poultry II	404C	960			960
Poultry III	404B	2,400			2,400
Poultry Service Building	401	684			684
Poultry Storage	403	5,776			5,776
Soils Barn	805	6,760			6,760
Soils Shed	804	676			676
Soils Shed	801A	676			676
Storage Shed	611	345			345
TOTAL		95,600			95,600

CASTLE DANGER

POTATO BREEDING FARM

CASTLE DANGER POTATO BREEDING FARM

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Administration	1	B	Administration	1949	\$3,619.02	5	7,296	912	728	728
Trailer No. 1		D	Employee's Residence	1951	213.39	5	1,680	240	203	203
Trailer No. 2		D	Employee's Residence	1951	213.39	5	1,680	240	203	203
Trailer No. 3		D	Employee's Residence	1951	213.39	5	1,680	240	203	203
Trailer No. 4		D	Employee's Residence	1951	213.39	5	1,680	240	203	203
TOTAL							14,016	1,872	1,540	1,540

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Administration	1			728				728
TOTAL				728				728

CASTLE DANGER
SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Trailer No. 1		Employee's Residence		203		203					203
Trailer No. 2		Employee's Residence		203		203					203
Trailer No. 3		Employee's Residence		203		203					203
Trailer No. 4		Employee's Residence		203		203					203
TOTAL						<u>812</u>					<u>812</u>

CLOQUET

EXPERIMENTAL FOREST

CLOQUET EXPERIMENTAL FOREST

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Assistants' Garage	1	D	Clubhouse Garage	1916	\$300.00	5	1,920	246	209	209
Barn	21	F	Storage	1918	3,000.00	5	47,232	3,384	3,255	3,255
Bathhouse	13	D	Bathhouse	1936	3,846.27	5	12,000	1,500	1,421	1,421
Bunkhouse	24	F	Storage for Student Equipment	1915 (1946)	800.00	5	2,400	320	285	285
Bunkhouse No. 1	14	D	Student Residence	1934	500.00	5	2,400	320	285	285
Bunkhouse No. 2	7	D	Student Residence	1928 (1934)	800.00	5	2,880	384	345	345
Bunkhouse No. 3	8	D	Student Residence	1934	500.00	5	2,400	320	285	285
Bunkhouse No. 4	9	D	Student Residence	1934	500.00	5	2,400	320	285	285
Bunkhouse No. 5	10	D	Student Residence	1939	1,500.00	5	2,400	320	285	285
Bunkhouse No. 6	11	D	Student Residence	1948	1,500.00	5	2,400	320	285	285
Bunkhouse No. 7	12	D	Student Residence	1948	1,500.00	5	2,400	320	285	285
Cabin	33	D	Guest Cabin	1953	11,982.16	5	7,642	954	866	866
Chicken House	32	F	Storage	1928	500.00	5	1,820	260	228	228
Clubhouse	2	D	Cottage	1932	3,000.00	5	36,504	3,042	2,912	2,912
Director's Cottage	30	D	Director's Cottage	1912 (1931)	9,267.54	5	38,430	5,124	4,934	4,934
Double Garage	23	D	Garage	1919	450.00	5	3,200	400	361	361
Double Garage	25	D	Garage	1927	500.00	5	4,704	588	453	453
Foreman's Cottage	17	D	Foreman's Cottage	1910	5,252.83	5	23,205	3,094	2,703	2,703
Foreman's Chicken House	20	F	Chicken House	1925	300.00	5	1,960	280	227	227
Office and Laboratory	29	B	Office, Laboratory	1934	5,302.19	5	27,000	4,320	4,170	4,170
Packing Shed	4	F	Storage	1922	1,000.00	5	9,720	1,620	1,478	1,478
Planer Shed	26	F	Planing Mill	1940	1,200.00	5	13,440	1,680	1,501	1,501
Pumphouse	6	F	Nursery Pumps	1937	300.00	5	960	120	109	109
Root House	34	F	Storage	1915	500.00	5	1,080	150	126	126
Sawmill Building	28	F	Sawmill	1932	250.00	5	19,860	1,448	1,349	1,349
Seed House	3	F	Seed Extraction	1934	1,500.00	5	9,600	1,440	1,365	1,365
Shop	19	F	Shop	1926	1,000.00	5	10,260	1,824	1,664	1,664
Students' Bunkhouse	16	D	Dining Hall, Kitchen	1927 (1946)	9,000.00	5	22,159	2,629	2,415	2,415
Students' Woodshed	15	F	Woodshed	1928	100.00	5	1,600	200	172	172

SCHEDULE A—Continued

CLOQUET

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Superintendent's Garage	31	D	Garage	1946	\$600.00	5	1,920	240	209	209
Treating Plant	27	F	Wood Preserving	1951	182.76	5	3,240	360	290	290
Warehouse	22	F	Warehouse	1933	1,310.00	5	30,240	3,024	2,914	2,914
Woodshed	18	F	Foreman's Woodshed	1913	385.00	5	1,536	192	171	171
TOTAL							350,912	40,743	37,842	37,842

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Office and Laboratory		4,170						4,170
TOTAL		4,170						4,170

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Assistant's Garage	1	Garage								209	209
Bathhouse	13	Bathhouse								1,421	1,421
Bunkhouse No. 1	14	Student Residence		285		285					285
Bunkhouse No. 2	7	Student Residence		345		345					345
Bunkhouse No. 3	8	Student Residence		285		285					285
Bunkhouse No. 4	9	Student Residence		285		285					285

CLOQUET

SCHEDULE D—Continued

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Bunkhouse No. 5	10	Student Residence		285		285					285
Bunkhouse No. 6	11	Student Residence		285		285					285
Bunkhouse No. 7	12	Student Residence		285		285					285
Cabin	33	Faculty Cabin		866		866					866
Clubhouse	2	Cottage		2,912		2,912					2,912
Director's Cottage	30	Cottage		4,934		4,934					4,934
Double Garage	23	Garage								361	361
Double Garage	52	Garage								453	453
Foreman's Cottage	17	Foreman's Cottage		2,703		2,703					2,703
Students' Bunkhouse	16	Dining Hall, Kitchen					2,415				2,415
Superintendent's Garage	31	Garage								209	209
TOTAL				13,470		13,470	2,415			2,653	18,538

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operations	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Barn	21	3,255			3,255
Bunkhouse	24	285			285
Chicken House	32	228			228
Foreman's Chicken House	20	227			227
Packing Shed	4	1,478			1,478
Planer Shed	26	1,501			1,501
Pumphouse	6	109			109
Root House	34	126			126
Sawmill Building	28	1,349			1,349
Seed House	3	1,365			1,365
Shop	19	1,664			1,664

SCHEDULE F—Continued

CLOQUET

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operations	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Students' Woodshed	15	172			172
Treating Plant	27	290			290
Warehouse	22	2,914			2,914
Woodshed	18	171			171
TOTAL		15,134			15,134

ITASCA

FORESTRY AND BIOLOGICAL STATION

ITASCA FORESTRY AND BIOLOGICAL STATION

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Administration and Library	43	B	Office, Library	1951	\$3,486.92	5	6,025	754	678	678
Bathhouse (Men)	54	D	Bathhouse	1948	3,015.12	5	3,840	480	437	437
Bathhouse (Women)	50	D	Bathhouse	1950	2,938.43	5	2,560	320	300	300
Boathouse	46	F	Boathouse	1931 (1953)	5,208.71	5	5,592	699	627	627
Caretaker's Cottage	60	D	Caretaker's Cottage	1916 (1945)	4,036.54	5	19,200	2,880	2,697	2,697
Cook's Quarters	52	D	Employee's Residence	1952	3,000.00	5	2,560	320	290	290
Cottage No. 1	1	D	Faculty Cottage	1910	800.00	5	6,912	864	805	805
Cottage No. 2	2	D	Faculty Cottage	1913	500.00	5	4,608	576	529	529
Cottage No. 3	3	D	Faculty Cottage	1953	6,500.00	5	8,080	1,010	920	920
Cottage No. 4	4	D	Faculty Cottage	1909	1,500.00	5	4,608	576	529	529
Cottage No. 5	5	D	Faculty Cottage	1947	1,400.03	5	3,072	384	345	345
Cottage No. 6	6	D	Faculty Cottage	1947	1,400.03	5	3,072	384	345	345
Cottage No. 7	7	D	Faculty Cottage	1947	1,400.03	5	3,072	384	345	345
Cottage No. 8	8	D	Faculty Cottage	1947	1,400.03	5	3,072	384	345	345
Cottage No. 9	9	D	Faculty Cottage	1952	2,000.00	5	3,072	384	345	345
Cottage No. 10	10	D	Nursery Laboratory, Dormitory	1934	750.00	5	3,456	432	391	391
Cottage No. 20	20	D	Women Student Cottages	1935	850.00	5	3,456	432	391	391
Cottage No. 21	21	D	Women Student Cottages	1935	850.00	5	3,456	432	391	391
Cottage No. 22	22	D	Women Student Cottages	1952	2,938.44	5	3,696	462	419	419
Cottage No. 23	23	D	Women Student Cottages	1952	2,938.44	5	3,696	462	419	419
Cottage No. 24	24	D	Women Student Cottages	1935	850.00	5	3,456	432	391	391
Cottage No. 25	25	D	Women Student Cottages	1952	3,469.17	5	3,072	384	345	345
Cottage No. 30	30	D	Men Student Cottages	1952	2,000.00	5	3,728	466	423	423
Cottage No. 31	31	D	Men Student Cottages	1946	2,334.00	5	3,728	466	423	423
Cottage No. 32	32	D	Men Student Cottages	1946	2,334.00	5	3,728	466	423	423
Cottage No. 33	33	D	Men Student Cottages	1946	2,334.00	5	3,728	466	423	423
Cottage No. 34	34	D	Men Student Cottages	1948	1,077.21	5	3,728	466	423	423
Cottage No. 35	35	D	Men Student Cottages	1952	2,000.00	5	3,728	466	423	423
Cottage No. 36	36	D	Men Student Cottages	1948	1,077.22	5	3,728	466	423	423
Dining Hall	53	D	Dining Hall, Kitchen	1950	14,922.22	5	17,880	3,360	3,162	3,162

ITASCA
SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Faculty Wash House	59	D	Laundry	1953	\$1,421.12	5	1,592	199	171	171
Fish House	45	F	Fish House	1953	150.00	5	196	28	28	28
Fish House	56	F	Fish House	1953	150.00	5	196	28	28	28
Icehouse	58	F	Icehouse	1931	200.00	5	2,620	328	292	292
Infirmery	51	C	Infirmery	1939	1,500.00	5	4,608	576	529	529
Laboratory	40	B	Laboratory	1946	1,857.28	5	13,200	1,650	1,580	1,580
Laboratory	41	B	Laboratory	1946	2,400.50	5	13,200	1,650	1,580	1,580
Limnological Laboratory	44	B	Laboratory	1942	3,500.00	5	13,440	1,680	1,501	1,501
Pumphouse, Lake	55	F	Pumphouse	1951	150.00	5	1,600	200	171	171
Pumphouse, Well	57	F	Pumphouse	1946	100.00	5	609	87	87	87
Warehouse	63	F	Warehouse	1948	1,615.10	5	16,640	2,080	1,986	1,986
Warehouse	64	F	Warehouse and Boat Storage	1929	600.00	5	3,840	480	437	437
Woodshed	62	F	Trailer Shed	1939	50.00	5	1,386	198	198	198
Workshop	61	F	Workshop	1939 (1940)	1,000.00	5	14,400	1,800	1,691	1,691
TOTAL							235,136	31,041	28,686	28,686

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Administration and Library	43	678						678
Laboratory	40	1,580						1,580
Laboratory	41	1,580						1,580
Limnological Laboratory	44	1,501						1,501
TOTAL		5,339						5,339

SCHEDULE C. INTERNAL SERVICES

ITASCA

1	2	3	4	5	6	7	9	10
Building Name	Building Number	Type of Service	Hospitals and Related Activities	Laboratory Schools	Shop or Workroom	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Infirmary	51	Infirmary	529					529
TOTAL			529					529

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Bathhouse (Men)	54	Bathhouse								437	437
Bathhouse (Women)	50	Bathhouse								300	300
Caretaker's Cottage	60	Caretaker's Cottage		2,697		2,697					2,697
Cook's Quarters	52	Employee's Residence		290		290					290
Cottage No. 1	1	Faculty Cottage		805		805					805
Cottage No. 2	2	Faculty Cottage		529		529					529
Cottage No. 3	3	Faculty Cottage		920		920					920
Cottage No. 4	4	Faculty Cottage		529		529					529
Cottage No. 5	5	Faculty Cottage		345		345					345
Cottage No. 6	6	Faculty Cottage		345		345					345
Cottage No. 7	7	Faculty Cottage		345		345					345
Cottage No. 8	8	Faculty Cottage		345		345					345
Cottage No. 9	9	Faculty Cottage		345		345					345
Cottage No. 10	10	Nursery Laboratory, Dormitory		391		391					391
Cottage No. 20	20	Women Student Cottage		391		391					391
Cottage No. 21	21	Women Student Cottage		391		391					391
Cottage No. 22	22	Women Student Cottage		419		419					419
Cottage No. 23	23	Women Student Cottage		419		419					419
Cottage No. 24	24	Women Student Cottage		391		391					391
Cottage No. 25	25	Women Student Cottage		345		345					345
Cottage No. 30	30	Men Student Cottage		423		423					423
Cottage No. 31	31	Men Student Cottage		423		423					423
Cottage No. 32	32	Men Student Cottage		423		423					423

ITASCA
SCHEDULE D—Continued

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Cottage No. 33	33	Men Student Cottage		423		423					423
Cottage No. 34	34	Men Student Cottage		423		423					423
Cottage No. 35	35	Men Student Cottage		423		423					423
Cottage No. 36	36	Men Student Cottage		423		423					423
Dining Hall, Kitchen	53	Dining Hall, Kitchen					3,162				3,162
Faculty Wash House	59	Laundry								171	171
TOTAL				<u>13,203</u>		<u>13,203</u>	<u>3,162</u>			<u>908</u>	<u>17,273</u>

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operations	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Boathouse	46	627			627
Fish House	45	28			28
Fish House	56	28			28
Icehouse	58	292			292
Pump House, Lake	55	171			171
Pump House, Well	57	87			87
Warehouse	63	1,986			1,986
Warehouse	64	437			437
Woodshed	62	198			198
Workshop	61	1,691			1,691
TOTAL		<u>5,545</u>			<u>5,545</u>

ROSEMOUNT RESEARCH CENTER

ROSEMOUNT RESEARCH CENTER

SCHEDULE A. ALPHABETICAL LISTING OF ALL BUILDINGS

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Acetylene Storage	927	F	Storage	1947		5	13,200	978	812	812
Aeronautical Engineering Laboratory	1420A	B	Hypersonic Blow Down Tunnel Research Laboratory	1947 (1953)	\$94,583.75	5	211,732	15,236	14,586	14,586
Aeronautical Engineering Office	924	B	Aeronautical Engineering Office	1947	11,053.26	5	138,200	12,560	12,040	12,040
Aeronautical Engineering Office	850	F	Aeronautical Engineering Storage	1947	1,144.12	5	56,000	5,600	5,420	5,420
Aeronautical Laboratory	930	B	Electronic Laboratory	1947	6,410.03	5	40,180	3,800	3,660	3,600
Aeronautical Warehouse	1450	F	Storage	1947		5	109,200	7,280	6,940	6,940
Administration	323	F	Storage	1917	57.70		11,650	1,260	1,110	1,110
Ballistic Range	1460	F	Ballistic Range	1947		5	595,000	59,500	58,900	58,900
Boiler House No. 1	326A	B	Administrative Area Heating Plant	1947	13,987.45		6,912	576	526	526
Cafeteria	321	F	Administrative Area Cafeteria	1947	10,025.92	5	99,800	9,980	9,700	9,700
Cancer Laboratory	1403	F	Storage	1947	4,700.83	5	30,600	2,800	2,582	2,582
Change House	727	F		1947		5	5,280	480	392	392
Civil Engineering Camp Boiler House	1511	B	Boiler House—706A	1947	161.63	5	1,080	120	99	99
Civil Engineering Survey Summer Camp	1512	F		1947	7,685.12	5	175,300	11,690	10,765	10,765
Civil Engineering Survey Summer Camp	1510	F		1947	5,902.02	5	13,300	1,333	1,190	1,190
Combined Shops	923A	B	All Shop Operations, Tool Crib	1947	27,744.39	5	666,000	47,600	46,200	46,200
Drinking Water Well	340	F	Water System	1947		5	2,190	252	192	192
Drinking Water Well	901	F	Water System	1947		5	2,190	252	192	192
Farm Barn	2112A	F	Barn	1947		5	46,800	3,600	3,248	3,248
Farm Building	1401	F	Miscellaneous	1947		5	9,180	612	512	512
Farm Equipment Storage	874	F	Equipment Storage, Repair	1947	190.93	5	14,350	1,024	897	897
Farmhouse	(Razed)	D	Residence	1947		5	24,516	2,724	2,652	2,652
Garage	501	F	State Highway Department	1947		5	26,880	1,920	1,740	1,740
Garage	325	F	Storage	1947		5	17,595	1,955	1,743	1,743
Guard House	922	F	Guard House	1947	371.68	5	2,080	260	228	228
Heavy Equipment Garage	931A	F	Heavy Equipment	1947	999.42	5	143,000	10,220	9,810	9,810

SCHEDULE A—Continued

ROSEMOUNT RESEARCH

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Laboratory Animal Hospital Committee	911	B	Animal Shelter	1947	\$3,442.69	5	40,180	3,800	3,660	3,660
Laboratory Animal Hospital Committee	932	B	Animal Shelter	1947		5	37,150	3,230	3,110	3,110
Laboratory Animal Hospital Committee	910	B	Animal Shelter	1947	3,167.31	5	40,180	3,800	3,660	3,660
Laboratory Physical Medicine	912	F	Laboratory	1947	6,002.02	5	37,150	3,230	3,110	3,110
Locomotive House	870A	F		1947		5	74,700	4,390	4,100	4,100
Lumber Storage Shed	871	F	Storage	1947		5	33,000	2,200	1,960	1,960
Machine Shed	2111	F	Machine Shed	1947		5	13,200	1,320	1,152	1,152
Main Office Building	322	F	Administrative Area Storage	1947	7,556.37	5	1,205,000	133,900	132,230	132,230
Material Shed	872	F	Storage	1947		5	96,000	8,000	7,639	7,639
Milk House	203	F	Milk House	1947		5	640	80	63	63
Nurses' Home	324	D	Residence	1947			84,950	9,445	8,921	8,921
Oil Storage	934	F	Storage	1947		5	17,359	2,240	2,040	2,040
Paint Storage	929	F	Storage	1947		5	7,055	588	480	480
Paint Storage	926	F	Storage	1947		5	1,088	136	101	101
Radioactive Storage	940	F	Radioactive Storage	1947	578.81	5	18,144	1,008	880	880
Rented to Minneapolis Moline	810	F	Tractor Service, Storage	1947		5	3,000	375	299	299
Rosemount Hospital	320	F	Administrative Area Storage	1947	5,440.25	5	647,000	64,700	63,750	63,750
Sewage Disposal Plant	1440	F	Sewage Treatment	1947	181.79	5	289,575	26,325	25,669	25,669
Sewage Station Pump	1520	F	Sewage Treatment	1947		5	3,000	375	299	299
Scale House	(Razed)	F	Scale House	1947		5	7,200	720	633	633
Staff Garage	302	D	Garage	1947		5	4,800	400	324	324
Staff House	801	D	Residence	1947	2,241.43	5	28,080	3,120	2,736	2,736
Staff House	2110	D	Residence	1947	934.28	5	16,632	1,848	1,560	1,560
Staff House	301	D	Residence	1947	2,326.21	5	37,584	4,176	3,808	3,808
Staff House	201	D	Residence	1947	12,047.91	5	32,847	3,648	3,312	3,312
Staff House	1502	D	Residence	1947	2,863.41	5	17,040	1,704	1,536	1,536
Staff House	1410	D	Residence	1947	3,369.52	5	9,759	1,000	835	835
Staff House	2101	D	Residence	1947	68.43	5	3,000	375	299	299
Staff House	601	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	602	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	603	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	604	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	605	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	606	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	607	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896

ROSEMOUNT RESEARCH

SCHEDULE A—Continued

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Staff House	608	D	Residence	1947	\$17,191.67	5	18,048	2,256	1,896	1,896
Staff House	609	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	610	D	Residence	1947	17,191.67	5	18,048	2,256	1,896	1,896
Staff House	611	D	Residence	1947	17,191.67	5	16,339	2,122	1,820	1,820
Staff House	612	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	613	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	614	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	615	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	616	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	617	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	618	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	619	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	620	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	621	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	622	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	623	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	624	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Staff House	625	D	Residence	1947	17,191.67	5	15,488	2,065	1,815	1,815
Storage	2001	F	Storage	1947		5	47,500	5,000	4,704	4,704
Storage	2002	F	Storage	1947		5	47,500	5,000	4,704	4,704
Storage	925	F	Storage	1947		5	30,750	3,075	2,760	2,760
Storage	1501	F	Storage	1947		5	2,310	237	220	220
Storage	928	F	Electric Storage	1947		5	31,200	3,200	2,965	2,965
Storage	933	F	Storage	1947		5	8,000	800	684	684
Storage	1402	F	Storage	1947		5	28,300	2,575	2,410	2,410
Storage	935	F	Storage	1947		5	65,600	4,860	4,560	4,560
Storage	873	F	Storage	1947		5	3,000	375	299	299
Superintendent's Office, Warehouse	921	B	Administration and Stores	1947	7,527.00	5	270,700	17,600	17,018	17,018
Supersonic Laboratory	820A	B	Supersonic and Transonic Speeds Research	1947		5	214,760	16,588	15,452	15,452
Supersonic Laboratory	820G	B	Research	1947		5	40,180	3,800	3,660	3,660
Supersonic Laboratory	820B	B	Research	1947		5	8,000	800	684	684
Supersonic Laboratory	820C	B	Research	1947		5	8,000	800	684	684
Surgery Research	1405	B	Surgery Research	1947	4,454.86	5	40,180	3,800	3,660	3,660
Surgery Research Storage	1430	F	Storage	1947		5	3,000	375	299	299
Warehouse	860	F	Storage	1947	881.06	5	288,000	23,050	22,750	22,750
Warehouse	861	F	Storage	1947	899.27	5	288,000	23,050	22,750	22,750

SCHEDULE A—Continued

ROSEMOUNT RESEARCH

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Warehouse	862	F	Storage	1947	\$2,351.62	5	288,000	23,050	22,750	22,750
Warehouse	2120	F	Storage	1947	3,691.25	5	1,103,500	81,200	79,900	79,900
Warehouse	2121	F	Storage	1947	10,277.91	5	1,103,500	81,200	79,900	79,900
Warehouse	920	F	Stores	1947	2,140.25	5	270,700	17,600	17,018	17,018
TOTAL							9,871,859	861,372	830,323	830,323

SCHEDULE B. INSTRUCTION, RESEARCH, AND GENERAL USE

1	2	3-4	5	6	7	8	9	10
Building Name	Building Number	Instruction and Research	Public Services	Administration	Plant Operations	Student Services	Noninstitutional Organizations	Total Assignable Area This Schedule (sq. ft.)
Aeronautical Engineering Laboratory	1420	13,866			720			14,586
Aeronautical Engineering Office	924	12,040						12,040
Aeronautical Laboratory	930	3,660						3,660
Boiler House No. 1	326A				526			526
Civil Engineering Camp Boiler House	1511				99			99
Combined Shops	923				46,200			46,200
Laboratory Animal Hospital Committee	911	3,660						3,660
Laboratory Animal Hospital Committee	932	3,110						3,110
Laboratory Animal Hospital Committee	910	3,660						3,660
Superintendent's Office, Warehouse	921			8,509	8,509			17,018
Supersonic Laboratory	820A	15,452						15,452
Supersonic Laboratory	820G	3,660						3,660
Supersonic Laboratory	820B	684						684
Supersonic Laboratory	820C	684						684
Surgery Research	1405	3,660						3,660
TOTAL		64,136		8,509	56,054			128,699

ROSEMOUNT RESEARCH

SCHEDULE D. HOUSING AND FEEDING

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Farm House	(Razed)	Residence		2,652		2,652					2,652
Nurses' Home	324	Residence		8,921		8,921					8,921
Staff Garage	202	Garage								324	324
Staff House	801	Residence		2,736		2,736					2,736
Staff House	2110	Residence		1,560		1,560					1,560
Staff House	301	Residence		3,808		3,808					3,808
Staff House	201	Residence		3,312		3,312					3,312
Staff House	1502	Residence		1,536		1,536					1,536
Staff House	1410	Residence		835		835					835
Staff House	2101	Residence		299		299					299
Staff House	601	Residence		1,896		1,896					1,896
Staff House	602	Residence		1,896		1,896					1,896
Staff House	603	Residence		1,896		1,896					1,896
Staff House	604	Residence		1,896		1,896					1,896
Staff House	605	Residence		1,896		1,896					1,896
Staff House	606	Residence		1,896		1,896					1,896
Staff House	607	Residence		1,896		1,896					1,896
Staff House	608	Residence		1,896		1,896					1,896
Staff House	609	Residence		1,896		1,896					1,896
Staff House	610	Residence		1,896		1,896					1,896
Staff House	611	Residence		1,820		1,820					1,820
Staff House	612	Residence		1,815		1,815					1,815
Staff House	613	Residence		1,815		1,815					1,815
Staff House	614	Residence		1,815		1,815					1,815
Staff House	615	Residence		1,815		1,815					1,815
Staff House	616	Residence		1,815		1,815					1,815
Staff House	617	Residence		1,815		1,815					1,815
Staff House	618	Residence		1,815		1,815					1,815
Staff House	619	Residence		1,815		1,815					1,815
Staff House	620	Residence		1,815		1,815					1,815
Staff House	621	Residence		1,815		1,815					1,815
Staff House	622	Residence		1,815		1,815					1,815

SCHEDULE D—Continued

ROSEMOUNT RESEARCH

1	2	3	4	5	6	7	8	9	10	11	12
Building Name	Building Number	How Used	Capacity	Usable Residence Hall Area	Usable Residence Hall Area Per Student	Residence	Food Preparation and Serving	Recreation	Office	Storage and Service	Total Assignable Area This Schedule (sq. ft.)
Staff House	623	Residence		1,815		1,815					1,815
Staff House	624	Residence		1,815		1,815					1,815
Staff House	625	Residence		1,815		1,815					1,815
TOTAL				71,849		71,849				324	72,173

SCHEDULE F. AUXILIARY BUILDINGS

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Acetylene Storage	927	812			812
Administration	323	1,110			1,110
Aeronautical Engineering Office	850	5,420			5,420
Aeronautical Warehouse	1450	6,940			6,940
Ballistic Range	1460	58,900			58,900
Cafeteria	321	9,700			9,700
Cancer Laboratory	1403	2,582			2,582
Change House	327	392			392
Civil Engineering	1512	10,765			10,765
Survey Summer Camp					
Civil Engineering	1510	1,190			1,190
Survey Summer Camp					
Drinking Water Well	340	192			192
Drinking Water Well	901	192			192
Farm Barn	2112A	3,248			3,248
Farm Building	1401	512			512
Farm Equipment Storage	874	897			897
Garage	501	1,740			1,740
Garage	325	1,743			1,743
Guard House	922	228			228
Heavy Equipment Storage	931A	9,810			9,810

ROSEMOUNT RESEARCH

SCHEDULE F—Continued

1	2	3-4	5	6	7
Building Name	Building Number	Instruction and Research	Plant Operation	Institutional Services	Total Assignable Area This Schedule (sq. ft.)
Laboratory, Physical Medicine	912	3,110			3,110
Locomotive House	870A	4,100			4,100
Lumber Storage Shed	871	1,960			1,960
Machine Shed	2111	1,152			1,152
Main Office Building	322	132,230			132,230
Material Shed	872	7,639			7,639
Milk House	203	63			63
Oil Storage	934	2,040			2,040
Paint Storage	929	480			480
Paint Storage	926	101			101
Radioactive Storage	940	880			880
Rented to Minneapolis Moline	810	299			299
Rosemount Hospital	320	63,750			63,750
Sewage Disposal Plant	1440		25,669		25,669
Sewage Pump Station	1520		299		299
Scale House	(Razed)	633			633
Storage	2001	4,704			4,704
Storage	2002	4,704			4,704
Storage	925	2,760			2,760
Storage	1501	220			220
Storage	928	2,965			2,965
Storage	933	684			684
Storage	1402	2,410			2,410
Storage	935	4,560			4,560
Storage	873	299			299
Surgery Research Storage	1430	299			299
Warehouse	860	22,750			22,750
Warehouse	861	22,750			22,750
Warehouse	862	22,750			22,750
Warehouse	2120	79,900			79,900
Warehouse	2121	79,900			79,900
Warehouse	920	17,018			17,018
TOTAL		603,483	25,968		629,451

SUPPLEMENTS

SUPPLEMENT 1. SUMMARY OF TEMPORARY BUILDINGS *

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Temporary North of Child Welfare	89	B	Industrial Education Classrooms, Offices	1947	\$20,263.74	5	173,000	14,400	13,569	11,292
Temporary North Court of Engineering	84	B	Drawing rooms, Offices	1947	6,109.56	5	104,200	7,200	6,824	5,490
Temporary North of Health Service	86	B, C	Offices	1947	6,892.86	5	97,000	6,696	5,964	4,158
Temporary North of Mines	91	B	General Studies Classrooms, Offices	1947	186.10	5	146,875	13,320	11,665	8,465
Temporary South Court of Engineering	85	B	Drawing Rooms, Offices	1947	4,432.42	5	104,200	7,200	6,649	5,424
Temporary South of Folwell	80	B, C	Student Employment Bureau, English Offices, Art	1947	9,372.11	5	270,000	17,360	15,197	11,003
Temporary South of Mines A	92	B	Student Activities Bureau	1947	1.00	5	146,875	13,320	11,858	8,813
Temporary South of Mines B	93	B, C	Scientific Apparatus Repair Shop, Industrial Relations Institute	1947	535.55	5	146,875	13,320	11,974	9,108
Temporary South of Mines C	94	B, C	Alumni Offices, State Organization Service	1947	2,429.13	5	146,875	13,320	11,815	8,613
Temporary West of Hospital	88	B, C	School of Medicine, Veteran Vocational Advisement	1947	10,372.20	5	127,000	9,726	8,834	6,498
TOTAL							1,462,900	115,862	104,349	78,864

* These buildings are included in Schedule A.

SUPPLEMENT 2. SUMMARY OF OBSOLETE AND TEMPORARY BUILDINGS *

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
OBSOLETE BUILDINGS										
Agricultural Botany	307	B	State Department of Agriculture and Plant Pathology	1893 (1920)	\$67,488.98	3	321,500	25,317	20,317	15,980
Botany Head House	308	B	Plant Pathology	1914 (1930)	3,000.00	5	55,632	6,954	6,228	6,188
Brewster Hall	313	D	Women's Residence Hall	1897	42,379.75	3	380,000	30,165	25,320	19,280
Carpenter and Repair Shop	325	B, C	Physical Plant Shops	1907	9,947.96	5	65,100	6,058	4,817	4,679
Cold Storage	333	C	Cold Storage Plant	1915	23,806.50	3	115,900	12,780	8,161	7,303
Dexter Hall	319	D	Men's Residence Hall	1902	35,969.40	3	201,134	21,172	19,128	14,874
Dining Hall and Dormitory	311	B, D	Dining Hall, Dormitory, Cafeteria	1895 (1911)	145,329.80	3	297,000	54,791	45,779	44,037
Greenhouse (East of Horticulture)	340	B	Horticulture Greenhouse	1914	12,497.55	5	126,900	13,597	8,955	8,867
Greenhouse (Rear of Botany)	339	B	Plant Pathology	1914	10,629.40	5	182,500	14,634	7,173	6,915
Horticulture	314	B	Horticulture, Agriculture Education	1899 (1920)	79,701.66	3	321,000	21,200	17,808	14,672
Insectary Spray Laboratory	359A	F	Entomology	1908	2,300.00	5	23,274	1,293	1,012	1,012
Livestock Pavilion	321	B, C	Animal Husbandry, Entomology	1904	32,631.93	3	314,500	26,775	21,749	20,138
Meat House	315	B	Animal Husbandry	1901	10,303.05	5	57,400	7,379	6,447	6,072
Music Building	305	B	School of Agriculture Classrooms, Offices	1890	8,021.80	5	110,500	11,648	9,056	7,459
Old Dairy Building	306	B, C	Rural Sociology, Union	1891 (1939)	74,490.53	3	344,000	30,337	25,440	15,000
Pendergast Hall	304	D	Men's Residence Hall	1889	37,941.92	3	232,000	21,760	18,150	14,584
Powerhouse	312	B	Powerhouse, Physical Plant Offices	1897 (1940)	508,737.95	3	210,960	26,370	13,643	6,181
Soils Building	317	B	Soils Department	1902	42,292.47	3	319,000	23,342	19,212	12,312
Veterinary Anatomy	316	B	Veterinary Medicine Offices, Classrooms	1901	38,003.01	3	225,000	16,724	13,767	12,259
TEMPORARY BUILDINGS										
Temporary East of Haecker	369	B	School of Veterinary Medicine	1947	1.00	5	209,528	19,048	17,219	13,075
Temporary South of Coffey	367	B	Rhetoric	1947	4,499.36	5	105,300	7,272	6,797	4,819
Temporary South of Haecker	368	B	School of Agriculture, Extension Division	1947	3,381.53	5	105,300	7,272	6,702	5,037
TOTAL							4,218,128	405,888	322,880	260,743

* These buildings are included in Schedule A.

SUPPLEMENT 3. BUILDINGS TO BE RAZED OR ABANDONED FOR CONSOLIDATION OF THE DULUTH BRANCH CAMPUS *

1	2	3	4	5	6	7	8	9	10	11
Building Name	Building Number	Space Use	General Description of Building Use	Date of Erection	Book Value	Type of Construction	Cubic Content (cu. ft.)	Gross Area (sq. ft.)	Usable Area (sq. ft.)	Assignable Area (sq. ft.)
Darling Observatory	511	B	Astronomy	1916	\$3,400.00	5	13,023	1,447	1,143	1,081
Lakeshore Studio	517	B	Studios, Art Exhibitions	1888 (1952)	Included in Land Value	5	62,738	6,604	5,317	2,656
Main Building	501	B, C	Administration Offices, Library, Laboratories, Classrooms, Auditorium	1901 (1950)	216,871.55	3	1,297,920	83,038	73,323	53,020
Olcott Garage	507	B	Garage, Caretaker's Apartment	1904	4,192.00	3	19,467	3,108	2,215	1,691
Olcott Hall	506	B	Music Department	1904 (1940)	22,050.00	3	147,872	12,464	11,556	6,638
Torrance Hall	505	C, D	Girls' Dormitory, Cafeteria	1906 (1948)	111,117.21	3	282,942	25,722	21,433	14,317
Tweed Annex	509	B	Art	1910 (1946)	6,720.00	3	35,750	3,575	3,293	2,639
Tweed Hall	508	B, C	Classrooms, Sculpturing and Painting Studios, Music and Recital Room	1908 (1952)	48,337.07	1	232,000	17,949	13,738	10,182
Washburn Hall	504	B, C	Health Service, Post Office, Bookstore, Lounge, Offices	1910 (1948)	49,332.29	3	220,080	18,340	13,350	10,628
TOTAL							2,311,792	172,247	145,368	102,852

* These buildings are included in Schedule A.