REPORT

OF THE

UNIVERSITY COMMITTEE ON THE ARBORETUM

JULY 27, 1967

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PROGRAM FOR UNIVERSITY OF WASHINGTON ARBORETUM

INTRODUCTION

The educational objectives and opportunities and the community responsibilities and developmental needs of the Arboretum have been studied by the University Committee on the Arboretum. Current statements and previous writings of the Arboretum staff, viewpoints of the faculty of the College of Forest Resources and the viewpoints of the faculties of other concerned Colleges and Departments of the University of Washington and interested public groups have all been utilized. In making the study, the committee has considered existing programs and the additional teaching, research, and public service activities which could logically be developed at the Arboretum.

Specific considerations have, in particular, taken the following into account:

A. The large public interest in the Arboretum as a display area, park, and center for popular botanical information and education.

B. The regional importance of the Arboretum to western Washington and Oregon ornamental horticulture as an introduction, testing and information center.

C. The actual and potential roles of the Arboretum as an educational arm of the University in continuing education and undergraduate and graduate instruction in both practical and theoretical aspects.

D. The potential of the Arboretum as a research center.

E. The present and future needs of the Arboretum relative to staffing, building, and financing.

I. THE DEVELOPMENT OF THE ARBORETUM FLORAL HALL BUILDING PROGRAM

For a long time it has been apparent that the physical facilities of the Arboretum including offices, conference rooms, greenhouses, etc., were inadequate. During this period various individuals and organizations have been active in planning ways to meet the physical plant needs of the Arboretum. A floral hall committee of the Arboretum Foundation has been active in raising funds to provide the facilities required to meet the public service needs of the Arboretum. These have included space for an auditorium conference rooms, plant exhibit space, offices and meeting rooms for garden clubs and plant societies, and the services associated with these functions. The University has been planning for administrative office space, herbarium, library, classrooms, laboratories and greenhouses.

In 1964, it appeared that funds might be available to construct some of the facilities needed. A payment of $469,905 had been made to the City of Seattle by the State of Washington in compensation for the Arboretum property condemned for the Evergreen Point Bridge. The city agreed to allocate some portion of these funds for the development of a necessary administrative building in the Arboretum. Earlier Mr. R. D. Merrill had made a gift of $42,000 to the University of Washington (with accrued interest now totalling approximately $54,000) with a request that it be used to build a floral hall. Mr. Merrill's will also included a substantial bequest to the University which could be devoted to a floral hall. Other gifts from the Truax and Thorgrimson estates were for development of the administrative portion of the building. In addition the Arboretum Foundation and other garden clubs and plant societies had funds that they were prepared to allocate to some aspect of the building program.

As the University began to plan for the construction of needed physical facilities it appeared that the limited resources in land and money available to meet these needs

could be used with maximum effectiveness if all building needs could be combined in a single building program. This would have several obvious advantages:

A. A number of the areas in the building or buildings could be used for several purposes.

B. Service facilities of all kinds could be developed in common.

C. The amount of valuable land space allotted to buildings could be minimized.

Accordingly it was decided to proceed with plans for an Arboretum Floral Hall Complex that would undertake to meet all of the building needs in the Arboretum. The architectural firms of Nelson and Sabin and Bain and Overturf were commissioned by the Board of Regents of the University to plan and design an Arboretum Floral Hall Complex.

The plans for the building complex undertake to meet the needs of teaching, research, administration extension, and public services.

This building program calls for a total of 40,360 sq. ft. of space in buildings to be constructed. Of this 14,715 sq. ft. are allocated to those public use functions earlier associated with the floral hall, and 37,100 sq. ft. are allocated to uses related to the administrative, teaching and research functions. There are 8,225 sq. ft. allocated to both floral hall needs and administrative needs. See Appendix E for a specific layout of space allocations.

This comprehensive building plan, in which all Arboretum space needs are consolidated in one building complex, will provide maximum economy and utilization of both funds and area. The actual permanent exhibit space will provide for the large majority of floral exhibits by all groups which have indicated an interest in use of Arboretum space. Other areas which can be converted to exhibit space will provide

for the large majority of floral exhibits by all groups which have indicated an interest in use of Arboretum space. Other areas which can be converted to exhibit space will provide space for the larger floral displays. Supporting facilities such as preparation rooms, lobby areas, and interpretive areas would be available to accommodate the public attending such functions in the Arboretum.

The remainder of this report addresses itself to building and general planning background and details. Appendix A. outlines in detail the proposed Arboretum Floral Hall complex.

II. OBJECTIVES OF THE UNIVERSITY OF WASHINGTON ARBORETUM

The University Committee on the Arboretum has reviewed as much information as possible relating to the Arboretum and has defined what it feels to be the best relationship of the Arboretum to the University.. From this review, we suggest the following as appropriate objectives for the University of Washington Arboretum.

A. To serve as an introduction, acclimatization, demonstration, and dissemination center for new plant materials.

B. To become a regional information and display center for plant culture, disease control and landscape use in western Washington.

C. To serve as a center for continuing public education programs in the science of ornamental plants of all types, native and exotic, at both the popular and technical levels.

D. To serve as an outdoor study area for the general public, and also for the various Colleges and Departments within the University that use the Arboretum at both the beginning and more advanced levels.

E. To serve as a training and research facility for students majoring in outdoor recreation management planning, and interpretation within the College of Forest Resources.

F. To develop an active teaching and research program in such areas as plant introduction, systematics, pathology, plant breeding and physiology.

We believe that these objectives clearly indicate the role and stake of the University of Washington in the Arboretum. Further, we believe that enhancement of University participation in Arboretum activities would greatly strengthen and expand its public services--educational, informational, and recreational. However, all aspects of public education are considered to remain one of the primary responsibilities of a University oriented Arboretum.

III. RECOMMENDATIONS AND IMPLEMENTATION

A. Recommendations:

Specifically, we recommend that the following be accomplished in an orderly and integrated fashion:

1. Development of a stronger undergraduate, graduate, and continuing education programs in all aspects related to plant science--botany, landscape, soils, human environmental use, conservation, and nature study. It should be recognized that this would probably necessitate:
   a. A greater investment (especially operating budget) by the University in the Arboretum program.
   b. A closer association of the Arboretum and its professional staff with the faculties of Forestry, Botany, Landscape Architecture in order to make better use of their particular talents in the education program in the Arboretum.

c. Development in the College of Forest Resources, of a continuing education program which will be closely related to the Public Service Groups already interested in and sponsoring continuing education classes in the Arboretum.

d. Increased support from volunteer groups.

e. The expansion of the Arboretum activities to include all groups of plant life suitable to this region.

2. Development of the Arboretum into a regional center for information on the use of ornamental plants and trees. No such center now exists in the Pacific Northwest, and a center of this kind would be of great service to the general public, amateur gardeners, professional horticulturalists, and Public agencies. For implementation of such program, we anticipate the following to be necessary:

a. Expansion of the facilities and staff of the Arboretum.

b. Incorporation of the professional staff of the Arboretum into the regular teaching faculty through lectureships and/or joint appointments with Forestry, Botany, Landscape Architecture, etc.

c. Acquisition or development of additional land areas to accommodate some of the functions and plant materials envisaged.

B. Implementation:

We believe that considerably expanded support of the Arboretum, both tangibl and intangible, will be necessary to fully realize the potential of the Arboretum and that a specific program of implementing the recommendations of the committee be carried out.

New facilities are needed. The present facilities are over 30 years old and are now totally inadequate to meet the administrative, educational and

maintenance needs of the Arboretum. The committee has carefully considered the many public and University uses of the Arboretum and has formulated recommendations to serve as guidelines for a building program. We feel that these recommendations will provide a building program which will aid materially in carrying out the Arboretum's objectives as outlined in Section II. Throughout these considerations, the creation of an integrated University Arboretum public education and service program has been the overriding goal.

1. Building Format.

   We recommend the building of a compact well-integrated structure, to be planned as a whole, but suggested to be constructed in two phases (I - essential needs of the present; II - to provide for the inevitable needs for expansion in the next decade or two.

2. Location.

   We recommend that the new floral hall complex be located in accordance with the plan of the University Architect's Office, dated February 14, 1966, near the north terminus of Azalea Way, although some additional study and consideration may be necessary.

3. University and Continuing Education.

   a. The Arboretum has great potential for use in University teaching and undergraduate advanced study programs. These same programs have a definite relationship to development of a continuing education program and the general orientation of the University to the community at large.

      We believe a strong continuing education program is very important and should be given strong consideration. We recommend that the

Arboretum floral hall complex be so designed that effective use can be made of its facilities for an expanded program of informal continuing education classes in the plant sciences, as well as a more fully developed Arboretum interpretive program.

b. For such instructional efforts, we recommend that an auditorium, classrooms (including provision for experimental floral studies), display areas, advance study areas, and interpretive exhibit areas be provided.

4. Arboretum Operations and Administrative Areas.

a. We recommend that the following be provided:

(1) A spacious public entry, consultation and display area.

(2) Offices and administrative areas.

(3) Areas for special use, such as library, herbarium, interpretive wing, and rooms for conferences related to the functions of the Arboretum.

5. Research Facilities.

In order to fulfill its proper functions as a regional center we recommend that appropriate space be provided for investigation and research in library, herbarium and laboratories facilities. Since graduate student research assistantships would be the most economical way of encouraging an Arboretum-oriented research program, space should be provided for such personnel. This space could also be used for certain public research activities. Additional space also will be required to accommodate an enlarged scientific research staff.

6. Public Use

a. We recommend providing a moderate-sized auditorium (200 seats), including space for floral displays. It would be unwise, in view of

limited space and funds and the great need for further development of a public education program, for the University to develop a large permanent, floral display space in the Arboretum. Careful analysis of past and predicted use shows that such a structure would serve a limited purpose as well as using too much land, a minimum of which should be used for buildings. We suggest that 3500 square feet is an adequate size.

b. The ausitorium together with the large lobby space of 1500 square feet will accommodate the majority of meetings and floral displays. However, on occasions such as plant sales in the Arboretum, expansion space will be needed. We recommend that a partially paved plaza of 6,000 square feet be provided at the head of Azalea Way between the parking lot(s) and the entrance to the complex. This plaza should have a paved area of approximately 3,000 square feet and an adjacent grass area (part of Azalea Way) of 3,000 square feet; both areas could be covered temporarily by use of a removable roof. Thus a total of 8,200 square feet of display space (2,200 square feet from the Auditorium and Lobby and 6,000 square feet from the Plaza) could be made available for special occasions.

c. We also recommend a natural history exhibit facility of approximately 1,350 square feet area. Such a facility will serve to interpret the natural history of the Arboretum. An ancillary purpose would be to guide public use in a constructive fashion and to provide students with the opportunity to direct visitor circulation and observe exhibit comprehension within an exhibition facility.

7. Special Office Areas.

We recommend that the floral hall complex contain office space which could be utilized by organizations within the community which have a special and important relationship to the Arboretum and which contribute substantially to its opperation.

8. Greenhouse and Seed Handling Facilities.

We recommend that the floral hall complex provide adequate greenhouse facilities for Arboretum development and educational activities. The development of advanced study work in the Arboretum and increased use by the Arboretum staff of present facilities has greatly expanded the need for larger facilities which would include greenhouse, seed storage, head house, and lath house space.

9. Vehicle Storage Space and Outside Staff Facilities.

We recommend the construction of new covered vehicular storage space, a new foreman/watchman's residence, workmen's lunch and restroom, and workshop in conjunction with this building program. The age and inadequacy of present facilities are causing much inconvenience and repair expense.

10. Public Automobile Parking Space.

We strongly recommend that parking space for no more than 150 vehicles be provided for this floral hall complex. Parking areas should be connected by well-lighted pathways to the complex. Plants, not parking space, should be near this structure.

IV. STAFFING

In order to adequately carry out the program of improvements, education, and research recommended by this committee, additional professional staff will be needed. These

people, a plant taxonomist, plant geneticist, plant physiologist, and plant pathologist, will initiate the research program at the Arboretum and provide professional advice and teaching assistance to the Continuing Education Program. Their presence will necessitate additional office and research laboratory space which is provided under the present building program.

In the future as the Arboretum continues to grow and use becomes more intensive, additional employees will be necessary. It is anticipated that the following will be needed:

1 Superintendent

1 Assistant Plant Propagator

3 Groundsmen

1 Gardener

1 Curator of Collections

2 Secretaries

Present staffing for the Arboretum includes the following full time personnel:

1 Director

1 Assistant Director

1 Arboretum Foreman

1 Nursery Foreman

1 Propagator Nurseryman

1 Botanical Recorder

2 Gardners

3 Groundsmen

3 Grounds Equipment Operators

1 Truck Driver

1 Secretary

1 Continuing Education Director

Part time personnel include:

Several Groundsmen

Guards

Janitor

It is expected that these positions would be created and space provided for their activities under a future expansion program at the Arboretum that would at the same time improve and expand the facilities initiated under this building program. It is also likely that additional Safety Division personnel will be needed in the Arboretum to help control some of the problems related to expanding public use, as well as for protection of the facilities and buildings.

V. UNIVERSITY EDUCATION AND RESEARCH

A. Educational and Research Values of an Arboretum to Plant Sciences and Other Fields

1. Collections of native and exotic plants form an integral part of the resources for Plant Science departments in colleges and universities around the world. Excellence, in terms of diversity of species, wide geographic representation, and sustained programs of botanical education and research, is most often obtained in botanical gardens and arboreta that are affiliated with educational institutions* Thus, greater expansion and diversification of the plant collections with substantially augmented staff and facilities at the University of Washington would create an invaluable teaching and research resource out of the present Arboretum. Few other places in the world have the potential for growing such a diversity of temperate zone flora.

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*e.g., Arnold Arboretum at Harvard University, the botanic gardens of the University of California at Berkeley and Davis, Rancho Santa Ana Botanic Garden at the Claremont Colleges, California, Morris Arboretum of the University of Pennsylvania, and the botanic gardens of Oxford, Cambridge, and St. Andrews Universities in Britain.

A combined Botanic Garden and Arboretum in the Puget Sound area fully integrated with the University of Washington could aspire to national leadership in horticulture and allied plant sciences.

2. Specific objectives of an arboretum that are relevant to University education and research.
   a. Expanded program of plant introduction to include herbaceous plants and a synoptic collection of tropical-subtropical families under glass.
   b. Institution of a program of teaching and research in ornamental horticulture.
   c. Promotion of graduate and faculty research that is uniquely arboretum-oriented.
   d. Curating horticultural collections (herbarium, seed collections, etc.)
   e. Integration of Arboretum resources with programs of research in Plant Sciences at the University.
3. Implementation of these objectives.
   a. Acquisition of land to permit expansion of plant collections.
   b. Substantial increase in professional staff of Arboretum.
   c. Creation of suitable teaching and research facilities (offices, labs, etc.) for staff increase.
   d. Creation of a permanent Plant Science Development Committee to promote interactions between Arboretum and campus-oriented groups.

B. Current Teaching and Research Activities that Utilize the Arboretum

A set of distinctive features possessed by the Arboretum has guided its use by University faculty and students over the years. For some disciplines,

the rich and diverse collections of woody plant species have been the chief asset and attraction. Systematists in the Department of Botany and both the dendrologist and forest geneticist in the College of Forest Resources have made continued use in recent years of the taxonomic diversity of the collections. For zoologists, the exceptional array of microhabitats (ponds, streams, shoreline, cattail marshes, underbrush, etc.) have permitted ecological and systematic studies of insects, aquatic invertebrates and birds. The aesthetic attractions of open spaces, patterns of native and exotic plant groupings, displays of plant form and color, etc., have attracted members of the Art and Landscape Design departments. Though moderate over the years, these varied uses bespeak the wealth of different values that the University community can find in the Arboretum. As the Arboretum expands in space for growing more kinds of plants, both woody and herbaceous, and concomitantly adds research and teaching staff along with appropriate facilities, the intercourse between the Arboretum and the University is bound to increase.

Specific Activities of the Various Departments

1. Botany

   a. Undergraduate: Spring quarter finds two undergraduate courses in botany frequently in the Arboretum. Botany 331 - Ornamental Plants (taught by Professors C. Leo Hitchcock and A. R. Kruckeberg for many years) - brings a class of from 10 to 20 students into the Arboretum at least once a week. The emphasis is on the identification, recognition, and horticultural uses of woody ornamentals. Botany 331 is a service course to majors in secondary

education (Biology) and in landscape architecture as well as to botany majors. Botany 113--Local Flora--stresses native Washington plants to about 80-100 students each spring; occasionally visits to the Arboretum are made in groups comprising single laboratory sections. Only limited attempts have been made to get laboratory sections of the larger elementary courses, Biology 101-102 and Botany 111-112, to use the Arboretum for introductory discourse on ideas of ecology (species diversity, community organizations, vegetation pattern, trophic structure of community, etc.,) or general principles of plant morphology and physiology. Much more should be done to introduce students in elementary courses to the Arboretum. The elements of natural history, observations of pattern, structure, and function in biotic communities, and conservation are all accessible ideas and strategems for using the Arboretum as an outdoor laboratory for college students (beginning biology and nonscience students).

b. Graduate education and research in Botany. The Department of Botany has made but slight use of the Arboretum for graduate instruction and research. One student in the senior honors program currently is doing his undergraduate thesis on plant material in the Arboretum (Mr. Allen Sylvester: "Crossing Affinities in Asiatic Maples"). Graduate students and faculty in systematics take advantage of the world-wide seed exchange of the Arboretum; living materials for research have been obtained thru this service in substantial amounts in recent years. Some sporadic collections of particular species in the Arboretum grounds or in greenhouses have been used in experiments by the plant physiologists

(Professors B.J.D. Meeuse and R. B. Walker). As yet, no M.S. or Ph.D. thesis has used in depth the plant collections of the Arboretum. Under the proposed program of expansion and integration of Arboretum and campus Plant Science activities, thesis programs in botany would figure prominently in the over-all development of graduate research in the arboretum.

2. College of Forest Resources

   a. Undergraduate instruction. Students in forestry become well acquainted with the Arboretum in the sophomore and junior years through the college's course in Dendrology (Forestry 204). Annually, 50-60 students are enrolled in this course taught by Professor C. Frank Brockman. The emphasis is on identification and recognition of coniferous and hardwood trees. Occasional use in other undergraduate areas of forest resources include forest entomology, forest pathology, and forest ecology.

   b. Graduate studies. The Arboretum has served as a reservoir of genetic variation for the forest genetics program over the years. The general theme of graduate training and research in forest genetics is the study of reproductive biology in forest trees with special emphasis on Pacific Northwest hardwoods (mainly species of Populus and Alnus). Current projects involve the development of methods to overcome reproductive isolation barriers between species; the induction of haploid parthenogenesis to study the effects of homozygosity; and the study of the genetics and physiology of sex expression. As the proposed program develops, the cooperative activity between the Arboretum and the forest genetics program will intensify. The forest genetics work, incidentally,

periodically contributes valuable tree hybrids to the Arboretum.

3. Department of Zoology. The ponds and streams of the Arboretum have always provided nearby sources of cultures of invertebrate animals for classroom use. Courses in Natural History of Vertebrates and Ornithology also make intermittent use of the Arboretum. Members of the Zoology faculty have repeatedly expressed the wish to see certain sectors of the Arboretum kept in as near a wild state as possible for sustained sources of local animals. Graduate student research problems in zoology have occasionally centered in the Arboretum. Professors Richardson and Orians have directed thesis research on marsh wrens and redwing blackbirds; the Ph.D. Thesis of Jared Verner drew heavily from observations made at the Arboretum. Professor Osterud has supervised thesis work involving parasites of aquatic animals.
4. Uses by other departments. The departments of Art and Landscape Architecture continue to make occasional use of the aesthetic and design features of the Arboretum. Individual student design problems as well as group instruction utilize the displays of color, plant groupings and urban open spaces at the Arboretum.

Appraisal of Present Levels of Use by the University

The past and current less-than-optimal use of the Arboretum by various University departments probably stems from several situations, most of which are attributable to the level of financial support received by the Arboretum. Insufficient professional staff, lack of proper classroom and research facilities, inconveniences of transporting students to and fro, all are partial explanations. But the crux of the near-hiatus in the campus-Arboretum relationship is probably the attitudes

(or lack thereof) of those faculties that logically would be involved. Given the knowledge of the resources of the Arboretum, only a modest amount of imagination would disclose the great potentialities for teaching in biological sciences and landscape art-design that the Arboretum holds. How then may we wed relevant sectors of the University academic community to the Arboretum? Detailed proposals will be presented elsewhere in this report, but we may generalize a bit here. It is unlikely that existing University faculty will substantially turn their attentions from already crowded programs to still more active involvement in the Arboretum. The impetus will have to come from the Arboretum through its own expansion and greater integration with the University. A diversified staff of professionals based in the Arboretum with faculty appointments in the various departments would draw students into the Arboretum sphere. A broadly based program in horticultural science, either as a separate department or one shared in Botany, Forest Resources and Architecture could bring an expanded Arboretum program the continuity and University stature it needs. Should the University assume the dedicated responsibility to support such a program with additional staff and facilities, as well as greater lebensraum for growing plants, the rewards shared by the University community and regional horticulture of the Northwest will be both immediate and will grow with time.

C. Projected University Education and Research Activities

1. As pointed out in the previous section, the Arboretum is currently used as an effective tool in undergraduate and graduate education as well as in research by a variety of University departments. At the

same time, it is realized that its resources have not been exploited to the fullest extent. From the following section the need for a vigorous scientific and educational Arboretum program, carefully integrated with the over-all activities of the University enterprise, will be obvious. The price for such an expanded program will be an increased investment in the form of land acquisition, establishment of appropriate buildings, expansion of the scientific, administrative and maintenance staff, and a corresponding increase in the annual budget. The benefits of such an expanded program to the University will be greater breadth and depth in the training of students and scientists, and greater public service opportunities.

2. A brief description of projected activities is given below.

Plant systematics is the traditional and integrative discipline in botany that studies the kinds and diversity of plants and their interrelationships. Thus systematics is central to all other plant science activities. The Arboretum's resident Botanical Recorder, its plant systematist, has several functions, the principle one being identification and proper naming of plants in the collections. The systematics program of the Arboretum also should be encouraged to develop at least two undergraduate courses in the taxonomy of ornamental plants--one dealing with woody species, the other with herbaceous plants. Then, in conjunction with systematists in the Department of Botany and the dendrologist in the College of Forest Resources, the Arboretum systemmatists can develop a program of undergraduate seminars and graduate research in systematics. We would envision the joint sponsorship of graduate student theses for the M.A. and Ph.D. degrees between the

Arboretum staff and the systematist on the University campus. Both traditional monographic studies and biosystematic approaches could be undertaken. The large collections in certain genera (Ilex, Sorbus, Rhododendron, Prunus, Acer,, etc.,) would be particularly amenable to systematic studies in depth. Cytotaxonomic approached, crossability tests, reproductive biology (pollination ecology, etc.,) interspecific cytogenetics, biochemical taxonomy--all are relevant approaches in the systematics of ornamental plants. Work in systematics of ornamental species would require an adequate herbarium and library housed in the Arboretum.

Professional horticultural training is presently served within the state by the program of instruction at Washington State University. Growing conditions differ vastly between Pullman and Seattle; the range and variety of plant materials that can be used at the two places is commensurately different. It is natural therefore to expect that horticultural programs at the University of Washington would complement those at Washington State University. Moreover, we are cognizant of the W.S.U. Extension Service and Experiment Station enterprises in western Washington. Horticultural development on this campus should seek co-operative association with these other horticultural activities of the state university system. (e.g., the experiment stations at Puyallup and Mt. Vernon.)

Plant breeding and genetics should play a major role in the future program of the Arboretum. This program should be conducted by a resident plant geneticist, who would work in close connection with other geneticists on the campus, taking advantage of equipment (high energy

radiation sources, etc.,) and talent already available. This research would provide excellent demonstration and study material for undergraduate and graduate courses in taxonomy, dendrology, and genetics. In addition development and improvement of ornamental species through conventional genetic methods such as selective breeding, interspecific hybridization, and mutation breeding in its broadest sense. Its aim would be to engineer ornamentals toward specific objectives (physiological, morphological) and to study methods of their mass propagation.

The forest genetics program continues to rely on an intimate cooperation with the Arboretum. Research in this field will be pursued along similar lines as in the past, i.e., emphasizing the study of reproductive isolation barriers between species; the induction of haploid parthenogenesis with the purpose of studying the effects of homozygosity; the study of the genetics and physiology of sex expression; and the study of induced polyploidy in selected species. Much of this research will have to rely on the availability of a wide array of species in certain genera, a prerequisite which is partly satisfied by the current Arboretum collection. It is planned to systematically augment this collection by adding to it newly developed hybrids, mutants, homozygous lines, and other valuable germ plasm. A great need is seen for the development of genetic stock centers in forest tree species, particularly with respect to material that may not necessarily be commercially important, yet extremely valuable for research use. Graduate training in forest genetics will continue to expand at a steady rate and it seems realistic to predict that 10-20 graduate students per year will take one of the courses offered.

The physiology of ornamentals is still poorly understood. Problems such as frost hardiness, draught resistance, tolerance with respect to chemical and physical soil properties are far from solved, particularly in relation to specific genera and species with desirable horticultural attributes. This calls for a systematic research program on selected physiological problems characteristic for Pacific Northwest growth conditions.

4. The appointment of a resident physiologist to the Arboretum staff could initiate a strong program oriented toward the optimum utilization of Arboretum resources in relation to the physiology of ornamentals; as a result, he would add to the depth of undergraduate and graduate programs in Botany; furthermore, he would add breadth to the interdisciplinary approach in problems related to the growth and development of ornamental plants.

Ornamental plants are ideally suited for the study of selected problems in morphogenesis, such as the mechanism underlying leaf shape development, phyllotaxy, floral differentiation, etc. Studies of this sort are particularly promising on the background of available strength in developmental biology, ultrastructure, and biochemistry in a variety of departments.

The pathology of trees, shrubs, and ornamentals is a continuously expanding field that calls for adequate representation in the future program of the Arboretum. Appointment of a resident plant pathologist is a must for any large operation involving valuable plant material such as envisaged in the Arboretum. He would not only cope with the

day-to-day preventive, diagnostic, and therapeutic measures, but he would also conduct systematic research on selected pests and diseases that are of major concern with the plant material available. He would both contribute to and benefit from the existing programs in mycology and pathology in the Botany Department and the College of Forest Resources.

The Arboretum offers enough diversity in animal and plant life, mainly in man-made but also in a few remaining natural habitats, to be useful in ecological research and teaching. Species-oriented studies on selected problems of animal-plant relationships, reproductive biology and dispersal ecology would be ideally suited to the available resources and would contribute important basic understanding on the biology of particular taxa. Many such studies would be excellent student-research topics for undergraduates and graduates in Botany, Zoology and Forest Resources.

With increasing interest in the impact of man on his environment, notably in centers of urbanization, more and more efforts will be devoted to quantitative studies measuring critical parameters susceptible to human pressure. Areas such as the Arboretum, located in the midst of a rapidly expanding population center, surrounded by freeways, open to the public, yet large enough to be managed as a unique plant-animal community, will become focal points for studies of this kind.

The interest in the interaction of man and his surroundings is also shared by students of outdoor recreation, a program that has been expanded recently at the College of Forest Resources. Undergraduate and

and graduate training is now offered with the purpose of preparing specialists competent in the design, location, establishment and management of public parks, recreational forests, etc. Training in this field requires experience with techniques and methods used in evaluating and interpreting a land tract used for recreational purposes. For this purpose, the Arboretum would be an excellent study area. A good example of such a project is the study currently conducted by a Forest Resources graduate student in determining the types, extent, physical impact, community value, competitive relation to other uses, and overall ecologic effect of public recreational use in the Arboretum. Results of this study will form the basis for guiding the public use of the area in a meaningful way, taking into account the intents and purposes of the Arboretum.

In connection with the proposed trail over Foster Island which will bring more attention and more people to the Arboretum, it is felt that a carefully planned interpretive educational program will have to be developed. This will require continuous research on public attitude and interest as well as response measurement in relation to carefully designed experiments involving a wide array of interpretive techniques. This research will not only help in the effective management of the Arboretum, but also will serve as a testing ground for social research methodology, and will provide students with realistic demonstrations.

Utilization of students in the Outdoor Recreation curriculum of the College of Forest Resources as guides for groups interested in the Natural History offerings of the Arboretum should be considered as an

essential part of the student's training as well as an integral part of the Arboretum's Interpretive Program. Coordinating these guides with visiting groups to the Arboretum should be one of the prime activities of the Director of Continuing Education in conjunction with the College of Forest Resources' Professor of Outdoor Recreation.

The outdoor recreation interest in the Arboretum will be strongly supported by Professor Walter Fairservis in connection with certain educational services provided by the Burke Washington State Museum. The Museum plans to intensify three interrelated activities that would utilize the Arboretum. (1) In the area of School Services, primary and secondary school students will be given first-hand acquaintance with the local natural history, the Arboretum being a prime site. Also, special workshops in natural history for public school teachers are planned. (2) The Museum hopes to coordinate a finite group of field stations for public school instruction in natural history and conservation education. The Arboretum has several such sites. (3) The Museum staff is anxious to cooperate with the College of Forest Resources' training of outdoor recreation students. Particularly, the Museum can aid the College in the development of interpretive displays, both as direct public education and as a means to train students in exhibiting technique and visitor comprehension.

As in the past, the Departments of Art and Landscape Architecture plan to use continuously the Arboretum as a convenient area to conduct classes in form drawing, water color expression, and design. The principal characteristics that make the area desirable are its landscapes and perspectives, both in the large and minute sense.

It's usefulness would be enhanced considerably by the availability in the Arboretum of a simple classroom facility which would allow classes to meet and discuss relevant topics under less than optimal weather conditions.

Much of the program of the University education and research that is detailed above has a strong horticultural orientation. As has been mentioned elsewhere in the report, the horticultural science sectors of the proposed Arboretum program could be administered in more than one way. In any arrangement, though, we would support faculty status for the professional horticultural staff, including the Director and his immediate professional associates. The horticultural staff could be assigned to the three campus plant science groups (Botany, Forest Resources, and Landscape Architecture) or be created as a separate Department of Horticulture.

3. Additional facilities required for the projected activities include:

-- Outplanting areas, trial grounds, acclimatization plots;

-- Greenhouses, including controlled environment chambers, pathology isolation chambers, conservatory or tropical house;

-- Herbarium

-- Library

-- Laboratories (research, staff)

-- Classrooms

-- Staff offices

4. Additional Staffing required for the projected activities include:

1 Plant Taxonomist

1 Plant Geneticist

1 Plant Physiologist

1 Plant Pathologist

1 Superintendent

1 Assistant Propagator

3 Groundsmen

1 Gardner

1 Curator of Collections

2 Secretaries

VI. CONTINUING EDUCATION PROGRAM

A. Objective

The Arboretum should become the center for public education programs in the culture of ornamental plants of all types, native and exotic, at both popular and technical levels. It should also become the center for a number of other public information programs related to Arboretum uses and plant science. These include development and extension of soil information, physiological relationship of plants, and nature interpretation.

Material from various sources has been drawn together to suggest how these objectives could be attained. A brief statement on the history of public educational use of the Arboretum is included to give perspective for the present planning.

B. History

The educational values to be gained from the Arboretum were recognized from the beginning and were exemplified with the publication of a Bulletin. The first issue of "The Arboretum Bulletin" was published in December, 1936. The second issue came in January, 1937, and contained an informational

story on the Arnold Arboretum. Subsequent issues carried articles on use of chemicals in propagating cuttings, on rooting cuttings of some species, on pruning and cultivation of various kinds of plants, on taxonomy and on description of certain tree and shrub categories.

Tours of the Arboretum were started in 1938, and it is likely that these, also, were conceived of as an educational device. Weekly radio programs about the Arboretum and related subjects were scheduled in 1937.

These activities were under the leadership and guidance of the Arboretum Foundation. Of course, Dean Winkenwerder and the College of Forest Resources (Forestry) were active in the beginning days of the Foundation, and it is likely that this influence was felt in the early efforts of the Foundation's educational program.

There always have been educational programs in the Arboretum. Part of the impetus for these programs has been furnished by the Arboretum Foundation, while the professional staff of the Arboretum also has actively participated in program planning and execution. In addition, there has always been an informal educational program carried on by the Arboretum staff alone as a result of requests from garden clubs and other interested groups. The level and technical content of presentations by invited speakers at all Arboretum educational programs has been governed by the kind of audience involved.

There have been other special educational efforts in the Arboretum from time to time as circumstances arose, such as the training classes for veterans which were carried on for a time after World War II by Mr. Carl Weiting.

C. The Last Ten Years

The educational effort has been somewhat more organized in the last ten years than in the period just previous. There have been 123 offerings involving about 2400 participants. Some of the offerings have been repeated many times in response to demand.

Mr. Joseph Witt estimates that half of the participants (students) in the educational effort have been members of the Arboretum Foundation or the Friends of the Arboretum. This program was started by the late Mrs. Pat Ballard, who organized an Arboretum Educational Committee and personally gave many classes.

Mrs. David Metheny carried on the program after the death of Mrs. Ballard. This committee has in times past been composed of Arboretum Foundation members, faculty and staff of the University and city (Seattle Public Schools) members. As presently constituted it has representatives of both the Arboretum Foundation and Friends of the Arboretum as well as University staff.

The education program has been self-supporting with charges for all classes. These moneys have been used for materials and other instructional expenses as has been necessary. Surpluses have been turned over to the Arboretum Foundation general fund with the stipulation that the money should not lose its identity. Disposition is intended to be directed by the Arboretum Education Committee. As of March 20, 1967, there was $4,377 in this fund after transfer of $1,500 to the University as a part of a larger contribution on the part of the Arboretum Foundation. The assumption of the Arboretum Education Committee is that this remaining

sum will be turned over to the University for some specified Arboretum purpose at the time or after the proposed Arboretum physical plant improvements are made. For instance, part might be used for the purchase of books for the Arboretum library.

Although there have been a few "professional" courses in the Arboretum education program, most courses have been of the extension type in which emphasis is placed on demonstration and participation. Only rarely has course content, level and intensity of presentation reached what would generally be accepted as college level work. This presumably, has resulted from gearing the effort to what has been desired by the audiences and determined by their backgrounds and not to any inability or unwillingness on the part of those making presentations. Indeed, it is likely more difficult for those teaching or making presentations to keep them sufficiently simple for the limited time available than it would be to work at a more nearly scientific level. Even so, there is some evidence that some of the audiences and prospective audiences have felt that the level of some offerings was more challenging, i.e., difficult, than that with which they were willing or able to cope.

D. What of the Future?

As a basis for planning future educational efforts in the Arboretum, these points should be kept in mind. First, the character of the program carried on in the past has been largely determined by the desires of the people in the Arboretum Foundation and in the Friends of the Arboretum, as well as other interested groups. They appear to be the people who are most interested in the Arboretum and who are most willing to work at the chores associated with making it a "going concern."

Second, there is continuing demand for an educational program in the Arboretum of the same or similar kind, level, and content as that which has been carried on in the past. Presumably, its audience would be the same people or the same kind of people who have participated in these past educational efforts.

Third, if there is to be a stepped-up program of higher level courses in the Arboretum aimed at people not in or part of the University, then additional registrants will have to be found.

E. Development of the Program

A review of material accumulated on campus, and discussions with many interested individuals outside the University, indicates that a continuing education program consisting of the following types of activities would most closely fulfill all needs of the community, as well as make the Arboretum investment much more useful:

1. Informational service courses in which the main objective is to present up-to-date useful information to the general community either for immediate application by them or for general planning purposes. To a large extent, this is the type of program now being conducted in association with the Arboretum Foundation and the Friends of the Arboretum.
2. General appreciation courses. These would be courses designed to enable the public to appreciate more fully either special features of the Arboretum, such as the Japanese Tea Garden, particular plant collections, or the role of arboreta in daily life.
3. Interpretation classes. In some respects, these would be related to category 2, but would have different emphasis with respect to the

public. Special efforts would be made by the staff of the College of Forest Resources to provide interpretive information about the Arboretum and classes to emphasize special values of the Arboretum.

4. Nature study. The Arboretum provides a large number of unique opportunities to interest the general public in various facets of nature study. These involve both altered and unaltered areas. A number of these have been utilized in the past, such as specific nature walks or bird observations. A great deal more needs to be done, especially with elementary school teachers and students. The exhibits in the planned Natural History Interpretive Wing will offer an introduction to the arboretum's relatively undisturbed areas, particularly the marsh areas.

5. Advanced education. In some special areas we believe that advanced educational programs must be developed to enable certain subjects to be presented on a higher level and also more completely. For instance, courses in soils, horticulture, botany, should be offered as quarter-long studies. Certain courses now given in campus continuing education programs could be more appropriately offered at the Arboretum if adequate facilities were available.

F. Organization for Continuing Education

We believe a formal organization must be developed having these essential components:

1. Director of Continuing Education. Acting as an executive secretary to other committees and being responsible for all course planning and approval.

2. General Continuing Education Planning Committee. To develop over-all plans in association with the Director. Members would come from a

wide variety of interests throughout the University and the general community. They would be responsible for setting over-all programs.

3. Technical Education Committees. Small committees in specific areas to plan and organize specific courses.

Courses would be subject to approval by the Director of Continuing Education, as outlined in the following draft:

Suggested Procedure for Handling Continuing Education In the Arboretum:

G. Approving Courses*

The procedure for approving courses should be the same for all persons or groups. Thus, regardless of whether it were a unit of the Arboretum Foundation, a member of the Arboretum Staff, a member of the University faculty, or some other group or person, the mechanics would be the same. The College of Forest Resources would be responsible for course approval.

The attached form is suggested as the document for consideration of a course.

H. Publicity

Publicity has been handled largely by the Arboretum Foundation. If, under University sponsorship, continuing education courses were initiated by faculty or Arboretum Staff, it would be desirable to utilize the services of the Continuing Education office. If this was done, courses might be listed in Spectrum and announced on radio or in the newspapers.

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* See Appendix D for Course Request form.

Presumably, the decision regarding publicity would be made at time of course approval by the Director of Continuing Education, College of Forest Resources. Copies of approved applications will be furnished to Institute of Forest Products Editor and to Office of Short Courses and Conferences.

I. Registration

Any requirement that persons registering for Arboretum courses come to the campus for that purpose only should be avoided. Possible exception could be if Arboretum sponsored courses, lectures, or seminars were being presented in campus facilities, registration could be handled at the time of the presentation. In some unusual circumstances pre-registration could be handled by mail. Generally, it is contemplated that registration be accomplished at the Arboretum by a registration secretary. If a large (30 or more) class were involved, help could be requested from the Short Course office and perhaps Short Course personnel assigned to the Arboretum temporarily.

The crux of this phase of the matter seems to be that, for at least some of the prospective "customers" registration will be their first contact with the University. If the procedures are onerous or inconvenient, they may decide against participation. This would be unfortunate.

J. Handling Registration Fees

Registration fees would be collected at the time of registration and a receipt issued. Fees would be collected by the registration secretary. All fees collected at the Arboretum should be forwarded via Campus Mail to the Office of Short Courses.

The office of Short Courses will establish a special fund which will be credited with all fees collected from the Arboretum. Charges for materials, supplies, and all course expenses will be made against that fund. All surplus which might develop would remain in the fund and not be lost at the end of the biennium. Surpluses will be utilized for any Arboretum purposes approved by the Dean of the College of Forest Resources or whoever is designated fund administrator.

K. Faculty

Faculty will be recruited from the University staff and graduate students, or any other area of qualified personnel. Remuneration should be consistent with service rendered.

L. Space Needs

Office and classroom space is requested in the section relating to the building. The classroom space for University education and research also can be used by the continuing education program. From time to time there will certainly be need for a large auditorium for special educational meetings.

Adequate space provision for displays and placement of interpretive material will also be important to any continuing education program.

An office for continuing education must be provided containing sufficient space for the Director, as well as for secretarial personnel to provide for handling of course registration, fee collection, and distribution of materials.

M. Financing

Experience of present and past programs indicates that they can be self-financing. Therefore, fee structure for all courses should be planned

on this basis. Educational materials relating to courses are in considerable demand and if sold for a nominal fee can also aid the financial program. In fact, the publication program of the Arboretum in general needs to be reviewed, especially as it relates to general public information.

VII. PUBLIC USE OF THE ARBORETUM AND ITS RELATION TO PROPOSED DEVELOPMENTS

Historically, Dean Hugo Winkenwerder made a number of verbal commitments in his efforts to secure use of Washington Park as the University Arboretum. These commitments might best be exemplified by his speech to the Montlake-Interlaken Improvement Club in April, 1930, . . ."I meant to emphasize again that the area (Washington Park) will be developed and maintained as a public park and the scientific staff of the University will be concerned with the purely scientific and economic phases of its management. . ." "Dean Winkenwerder recognized, of course, that Washington Park was in fact a park area and that the (City) Board of Park Commissioners for that reason must protect the public use of the area."* Later, when the agreement with and 99 year lease to the University by the city was signed on December 6, 1934, the following stipulations were made.

A. The first party (Seattle) hereby grants to the second party (the University) the right to use all or any portion of said Washington Park, as now established or as may be hereafter extended, for an arboretum and botanical garden--the second party to designate from time to time the exact areas which it desires to devote to such use.

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*Former University President Henry Schmitz, unpublished manuscript on History of College of Forestry, Chap. 8, page 14.

B. The first party shall, at its own expense as funds are available, construct and maintain all roads, driveways, water systems, lighting facilities, and other such permanent improvements as may be necessary to make accessible such scientific, educational, and recreational advantages as may be derived from the establishment and maintenance of such arboretum and botanical garden. . .

C. The second party (the University) shall, subject to the provisions of section 3 of Article 3 of the City Charter, have full control of the area devoted to said arboretum and botanical garden, provided, however, that such area be made available to visits by the public generally under rules and regulations adopted by the second party (sic) by its board of park commissioners . . ."

Thereafter, public use became an actual policy and such use has increased through the years to the 1966 level of more than 500,000 persons (as measured on the Arboretum Drive Traffic counter, which does not include waterfront and Japanese Garden users who fail to drive through, nor persons who walk, bicycle or boat into the area.) The use for the first quarter of 1967 is about 8 per cent ahead of the same period in 1966.

It would appear that much of this use outside of the waterfront areas is closely correlated with the blooming periods of the more colorful plants. However, many other activities besides enjoyment of the blooms are participated in by this visiting public. Picnicking, hiking, playing, sunbathing, boating, fishing, bird watching, bicycling, bird feeding, and other activities constitute much of the non-floral oriented activity in the area. Perhaps the floral display creates a favored environment for these other activities.

It is hoped that the proposed 1967 recreational use study by the College of Forest Resources of the Arboretum will help determine the percentages of the various uses and activities, and the relationship of these uses to the presence of the floral and other esthetic features of the area.

The large numbers of visitors appear to create some policing, sanitary, safety, access, guidance, control, and staffing problems similar to other public park areas. This is particularly evident in the waterfront areas. However, the impact on the whole Arboretum has been definitely restricted by the limited parking areas.

Using the factor of 3.2 persons per car established by the Arboretum staff for traffic counts, there is parking available in the Arboretum for about 800 persons at any one time. Walk-ins, boat-ins, and cycling may increase this figure by approximately 20 per cent. Parking space in the north end, near the arboretum office and waterfront, is limited to about 390 persons.

However, if a large parking area is constructed and the waterfront nature trail ties Foster Island to the Museum of History and Industry, parking will be available for 1,200 additional visitors. This would allow more than 1,600 people on ground in the waterfront and north end of the area at any one time, instead of the present 400 or more.

Thus the result of these two anticipated developments in the Arboretum may lead to the quadrupling of public trampling, littering, vandalism, and abuse of a very expensive cultivated garden, and one of the few remaining examples of an unmanaged natural marsh area in this burgeoning city. The waterfowl, songbirds, beaver, and cottontails will presumably be affected by the influx of humanity, and their extinction could deny the university

a valuable research area, and deny the citizens an interesting natural water front area with considerable educational value. To preserve the environmental values of the marsh without resorting to fencing the entire area or rationing use, considerable thought must be given to preventing additional near-by parking.

Further, if increased access is permitted, the present highly inadequate restroom facilities will have to be expanded. Expensive utilities will be required to pump sewage from Foster Island. Manpower to clean up litter as it falls will be required every weekend. Full time police patrol will be necessary to prevent vandalism, theft, and disorderly conduct. Fencing and railings will be required to protect expensive plants and vulnerable natural areas. Graveling or black-topping of most trails will become necessary to prevent trail deterioration. Closing part of the existing road system might even be considered.

A larger information desk and with additional weekend staffing will also be necessary. The present annual arboretum budget will need increasing to accommodate the growing weekend use of the area.

Increase in public use resulting from new developments and the attendant strain on the budget, will competitively affect the educational facilities and research proposals contained in this report.

The University, presumably, is legally and morally bound to expend funds and foster developments which are primarily for research and educational purposes. However, large increases in maintenance and management costs may result from increased public use. Expanded facilities and access will increase public use to the detriment of environmental values, yet the general

public cannot be excluded from the arboretum. In accepting the terms of the lease for the arboretum, the University has accepted some responsibility for providing public recreation.

In order to maintain the quality of the area, parking should be maintained at near-present levels. In order to best serve the University from a research and teaching standpoint and maintain the high quality of the arboretum, the public facilities should be oriented toward guiding and aiding proper public use of the area. This can be done through educational devices, interpretive displays, and a public information and visitor center. The special interest of the various floral groups in the Arboretum has perhaps obscured the fact that the general public has historically used and continues to use the area in ever-increasing numbers.

It is recommended that the remaining marsh land be maintained in that state. The marsh is a valuable University and public study area and has considerable and unique community value in its relatively natural state. It should be managed by the Arboretum staff in such a way that as much consideration for protection, maintenance, and interpretation is given it as other parts of the Arboretum.

It is further recommended that provision for interpretive exhibits of floral and marsh areas be made in the Arboretum building. Such exhibits are best planned and constructed as an integral part of a building based on public visitation needs and problems. The public service portions of the building should be designed to include space for preplanned exhibits, rather than constructing the building and deciding later what exhibits should be installed.

The University has two roles in its management of the Arboretum as caretaker for the public:

A. The primary University function of research and education.

B. The protection of the public interest, by managing the area for its original purposes, according to the terms of the lease.

Both should be done in a professional manner, setting the best possible example. The expanding population of this city and its metropolitan area, the increased interest in parks, open space and nature, all indicate continued upward use trends and increased demands for park areas. Intelligent management of physical access, and the guidance of public use by proper interpretive and information facilities are perhaps the only politically acceptable methods of preventing overuse of irreplaceable areas such as the University Arboretum.

VIII. ARBORETUM PLANTING PROGRAM

Historically, the plantings in the Arboretum have followed the plans developed by the Olmsted Brothers, Brookline, Mass. in 1936. This plan essentially employed the systematic approach and called for the grouping of plants in family areas, i.e., the oaks, chestnuts, beeches, etc. were planted together in the oak section at the north end of the Arboretum. The one exception was Azalea Way, a grassy walk which had primarily an aesthetic value in its flowering cherries, azaleas and dogwoods.

Certain changes were made in the Olmsted plan from the very beginning, especially when it became apparent that some members of a plant family were not adapted to the site assigned them. For instance, the lilacs were to have

been planted in a damp peat meadow, a most unsuitable location. Certain other areas were treated on an ecological basis. The Cistus collection, slighted in the original plans, was enlarged and planted with species from Mediterranean climatic zones.

The advent of the Evergreen Point bridge approaches in 1960 required that many plants be moved, and in order to make do with available space some plant groups had to be doubled up. The mountain ash, for instance, occupy the same area as the Philadelphus and Deutzia collections, and other similar situations may be cited. Even with these changes the Olmsted plan is still the guiding principle for current plantings in the Arboretum.

Plant acquisitions, now as in the past, are guided by two objectives:

1. To form comprehensive collections, selectively so in large genera, of all kinds of trees and shrubs likely to be hardy or nearly so in this climate.
2. To introduce from all possible sources, new or rare woody plants likely to succeed in this area.

To this end the Arboretum has built up impressive collections of the following general, Rhododendron, Camellia, Abies, Pinus, Acer, Ilex, Magnolia, Prunus, Quercus, Rosa, and Viburnum, to mention only a few. These and the other collections represent a unique source of plant material available to the various departments of the University concerned with plant and environmental sciences. Their value is not limited to the University alone, however. Indeed, it often seems that the non-University community makes greater use of them than does the University. For instance, there is a constant demand for information on plants for landscape purposes by the general public

and by public and private organizations such as the State Highway Department, Municipal Parks Departments, and professional landscape consultants. There is also a small but continual stream of requests for research material from other institutions of higher learning who have found the Arboretum's collections often contain the only specimens of certain plants in this country.

However, there is need for updating of plans and continual collaboration between University personnel regarding Arboretum improvements.

Recommendations:

1. A planning committee should be established to assist the Arboretum Director in making decisions on all major plantings. It should also serve as liaison between the Director and the various colleges and departments of the University that might require special plantings for research or educational purposes.
2. The Olmsted plans should be brought up to date and a new generalized plan prepared incorporating recommendations by Sasaki and Associates. These plans should include consideration of permanent open spaces.
3. A consultant in landscape design should be available to the Director in order to coordinate the visual design of major plantings.
4. Closer collaboration between plantings on the campus and the Arboretum seems desirable. The planning committee could discuss and recommend the use of surplus plants from the Arboretum for the Campus, taking into account the fact that several landscape consultants are used on the Campus.
5. A consultant should be available to the Director to advise him on all plantings and improvements in the Japanese Garden. It is also desirable

that the maintenance of this area be raised to an acceptable level by increasing the staff.

6. Budgets should be established and sums of money be allocated for specific projects such as preparation of plans as mentioned in paragraph #2 above, for plantings in conjunction with the building program, and for any research or education plantings.

7. New lands must soon be found if the plant collections are to be expanded. As the situation now exists, certain groups of woody plants, particularly those which contain large trees, will have to be sharply curtailed in the near future because of lack of available space.

APPENDIX A: DESCRIPTION OF ARBORETUM FLORAL HALL COMPLEX

Project Program Space Summary
(All figures in Square Feet)

I.	Public Spaces	
	A. Auditorium 200 seats (Exhibit Space: 1700 ft.)	3500
	B. Preparation Room	150
	C. Kitchen	150
	D. Natural History Exhibit Wing and Interpretative Preparation Room (Exhibit Space: 900 ft.)	1350
	E. Two (2) classrooms	1000
	F. Two (2) Public toilets	300
	G. Lobby (Exhibit Space: 500 ft.)	1500
	H. Storage rooms sufficient for tables, chairs, etc., for Auditorium	400
	TOTAL	8350
II.	The Plant Sciences Staff Space	
	A. Secretary	150
	B. Director's office	200
	C. Assistant Director's office	150
	D. Botanical Recorder's office	150
	E. Herbarium	750
	F. Library	1250
	G. Superintendent's office	150
	H. Advanced study laboratory	430
	I. Photographic darkroom	80
	J. Continuing education office	150

	K. Scientific storage room		350
	L. Staff offices (4)		600
		TOTAL	4410
III.	Public Service Office Space		
	A. Multiple-office room with secondary dividers		900
	B. Storage space		100
		TOTAL	1000
IV.	Common Supporting Facilities		
	A. Kitchen/lunchroom		150
	B. Staff toilets		175
	C. Central mimeo-ditto and supply		120
	D. Conference room - 14 person capacity		300
	E. Janitor's storage		80
	F. Corridors and mechanical equipment		2500
		TOTAL	3325
		MAIN BUILDING AREA	17085
V.	Plaza		
	A. Paved Area		3000
	B. Unpaved Area		3000
		TOTAL PLAZA	6000
VI.	Vehicular Storage and Outdoor Staff Facilities		5125
VII.	Greenhouse and Seed Handling Facilities		
	A. Glasshouse with seed cleaning and storage		8150
	B. Headhouse, cold rooms, (4) preparation rooms, (1) office		2000
	C. Lath house		2000
		TOTAL (Greenhouse)	12150
VIII.	Automobile Parking - remote space for no more than 150 cars		

IX.	Caretaker's house	1,500

SUMMARY

Main Building Area	17,085
Plaza	6,000
Greenhouse facilities	12,150
Caretaker's house	1,500
Vehicle storage, etc.	5,125
GRAND TOTAL	41,860
Space for 150 cars (270 square feet/car)	40,500

PRELIMINARY BUDGET

COMPONENT	POTENTIAL SOURCES OF FUNDS		
	U of W Trust Funds	Potential External Grants	
		Educational Grants	Research Grants
Main Building (at $25.00/sq. ft.)	$ 102,625	$ 189,875	$ 85,875
Glass House (at $17.00/sq. ft.)			138,550
Head House (at $17.00/sq. ft.)			34,000
Lath House (at $7.00/sq. ft.)			14,000
Vehicular Storage (at $15.00/sq. ft.)	76,875		
Caretaker's House (at $15.00/sq. ft.)	22,500		
Car Parking (at $15.00/sq. ft.)	20,250		
Site Utilities Proportionately	16,000	12,000	20,000
Terracing and Planting	23,000		
Demolition	5,000		
Rerouting Arboretum Drive	28,000		
Subtotal	$ 294,250	$ 201,875	$ 292,425
Fees, Taxes, etc. at 16.7%	49,140	33,713	48,835
Furnishings Allowance Proportionately (Main Building only)	8,500	15,000	6,500
Total	$ 351,890	$ 250,588	$ 347,760
	173,880	← Matching →	
	$ 525,770	$ 250,588	$ 173,880
GRAND TOTAL	$ 950,238		

Project Program Detail

Introduction

The University Board of Regents has approved a proposal to construct a floral hall complex for administration, teaching, and display at the north end of Azalea Way. This project will form an administrative center for the Arboretum near the existing greenhouses and nursery area, to be jointly designed by Nelson, Sabin & Varey and Brian & Overturf, architects. In addition to providing Arboretum administrative space, areas for teaching, plant displays, and demonstrations will be provided.

The new offices will replace the existing out-dated offices, storage, and tractor shed. These present facilities date back to 1935 and are too small for required office equipment and library books, do not provide sufficient space for the staff, and are inadequate for the various functions required. The Arboretum has expanded greatly through the years. During the period of July 1, 1963, through June 30, 1964, 147,210 cars were counted at the north gate and 2,230 telephone inquiries were received.

The new structure is to be designed to adequately house a staff of sufficient size to administer and develop the Arboretum, to provide facilities for an expanded educational program, to provide facilities to handle the anticipated visitors and inquiries, and to create accommodations for the functions of organizations with special and important relationships to the Arboretum.

Location

It has been recommended that the site of the new Arboretum buildings be in the area to the northwest of the present Administration buildings. This site is convenient

to existing facilities, parking lots and roads, and lies in the terminus of Azalea Way. As a part of this project, the Arboretum Drive East is to be moved to the east side of the complex, so that visitors may park their cars and enter the building complex, and/or Azalea Way without crossing a roadway. A copy of the topographical survey of this area, prepared by Yeager, Bush, and Associates, together with a utility survey plan has been given to the architects to assist them in the preparation of the site development plan.

General Requirements

I. Use of Site

It is imperative that the site be carefully planned to prevent damage to the character of the setting. Every effort must be made to preserve the native shrubs and trees. The architects should work directly with the Arboretum Director and the University Architect in determining which shrubs and trees will require transplanting. This information should be included in the contract bidding documents. Certain existing buildings in the area will have to be removed to make the site available for new construction. The architects, as part of their responsibilities, shall make recommendations to the University as to the feasibility of relocating these structures.

II. Relationship of Elements

The major elements of the complex - public areas, administrative offices, supporting facilities and parking - all must properly relate to each other and must fit aesthetically to the site.

A. The Auditorium is to be in close proximity to the parking areas, public restrooms, and other public areas, and should be incorporated in the main structure.

B. The administrative offices need to be close to the lobby and the supporting facilities, but separated.

C. The parking areas should be near the rerouted Arboretum Drive East and near the greenhouses.

III. Aesthetic Consideration

It is extremely important that the architects use their skill in the selection of materials, the arrangement of space, and the use of the site. The complex, when complete, must be an asset to its surroundings.

Specific Requirements

I. The Public Areas

A. The Auditorium

1. Function: The purpose of the Auditorium is to provide a suitable location for conducting illustrated lectures to moderate sized groups and for small horticultural exhibits. It will also serve as a facility for smaller instruction sessions and meetings.

2. Location: Because of the number of people that will use the Auditorium, it is particularly important that it be centrally located within the complex.

3. Size: Seating space should be provided for a maximum of 200. For the purposes of this program, 3500 sq. ft. is a reasonable size for this facility, combining a main seating room of 200 seats, with background display areas.*

* Note that 101 Johnson Hall, with 221 seats, has an area of 2548 square feet.

4. Physical Characteristics:

The front portion of the Auditorium should have a level floor of 1,700 square feet with folding or stacking chairs provided. Storage for the entire quantity is required. The rest of the floor could be stepped up. A raised platform of optimum height to allow proper sight lines should be designed in relation to the use of the Auditorium. This platform should be of a depth which will permit the use of an overhead projector. On the wall behind the platform, a projection screen should be provided that can be hidden from view when not in use. Two concealed conduits should be provided between the platform and the back of the room. One will be used for the speaker wires and the other for a central circuit for audio-visual equipment. The architect should contact the Audio-visual Department to determine the exact requirements, when the physical characteristics of the Auditorium have been established.

A projection booth is required so that the pre-prepared programs may be given quickly and professionally to visiting groups. This requires a secure booth with space for both dual projector slide presentations (with accessory controls, recorders, and amplifiers) as well as space for 16 mm motion picture projectors. An electrically operated screen is required as well as facilities for remotely operating the projection equipment from the stage and, ideally, from the telephone operator/ receptionist's desk.

It is necessary to provide numerous convenience outlets (110 volts, 20 amps) on the walls, especially near the front, level section, for the operation of tape recorders and auxiliary lights. A portable chalkboard

with storage for it should be provided. An alternate method of providing the chalkboard would be to mount the board on the wall behind the platform and conceal it with drapery. The electrically-operated screen should be concealed in this manner, in any event.

It is believed that the Auditorium will better serve its primary and secondary functions if natural daylight is provided together with general artificial lighting and display lights. Light control will be necessary to reduce the incident light on the screen to 2 or 3 foot candles. Accoustical treatment will be required. It should be remembered that the folding chairs will contribute little to the absorption of sound. Also the floor will have to be easily cleaned and maintained so it too will have undesirable sound characteristics. Adequate mechanical ventilation must be supplied during those periods when windows are blacked out.

The level floor of the Auditorium shall be designed with minimum finished surfaces sufficient for the holding of floral shows. It must be able to withstand the impact of dust and water on it. The space shall have a complete lighting system on the level portion allowing for display effects. Facilities for use in horticultural displays, such as movable planting beds, complete irrigation and drainage systems must be considered and provided for in the detailed design. The Auditorium must be directly accessible by truck.

B. Preparation Room

1. Function: As a supplement to the Auditorium, a small preparation room is required. Primarily it will be used for preparation of floral displays and specimens for lectures.

2. Location: It should be immediately adjacent to the platform and the kitchen.

3. Size: Approximately 150 square feet.

4. Physical Characteristics: 2 large sinks built into a counter with cupboards above and below are needed.

C. The Kitchen

1. Function: It will be used to prepare and set up light refreshments to be served in the Auditorium and, on occasion, in the classrooms.

2. Location: It should be immediately adjacent to the Auditorium and close to the other public areas. Because food carts will be used, there should be no stairs between the kitchen and the areas to be served.

3. Size: It is estimated that this room will be approximately 150 square feet.

4. Physical Characteristics: It should be equipped with a large sink with drainboards, dishwasher, disposal, electric range, and refrigerator. A good sized working surface for the preparation of coffee and service set-up is required. All surfaces should be easily cleaned and maintained. Electric outlets for a large coffee urn and supplementary appliances are needed. It should be noted that when full-course meals are served, a catering service will normally be commissioned. Therefore, the equipment need not be elaborate, but space should be provided for the catering operations.

D. Natural History Exhibit Wing and Preparation Room

1. Function: To interpret the natural history of the relatively undisturbed areas of the Arboretum including the marsh and lakefront habitats. The intent is to guide public use of the total Arboretum in a constructive fashion. The Wing would also lend itself to student studies

of visitor circulation and exhibit comprehension. An Interpretive Preparation room will be needed adjacent to the Natural History Wing.

2. Location: The Natural History Wing should be accessible directly from the lobby.

3. Size: Approximately 1350 square feet will be required: 900 square feet for the Exhibit Wing and 450 square feet for the adjacent Interpretive Preparation room.

4. Physical Characteristics:

   a. The Exhibit Wing: It should have two sets of double swinging doors off the lobby, for exiting and entering. The walls of the room should be windowless and be designed to accommodate a variety of exhibit types, including dioramas with and without sound, electrical quizzes, terraria, aquaria, three-dimensional and flat displays, and a 27 by 39-inch rear projection diffusing screen and speaker located in the wall between the Exhibit Wing and the Preparation Room. Additional speakers should be located throughout the Wing such that an even distribution of sound is achieved. Projectors and amplifiers for the screen and speakers will be housed in the Interpretive Preparation room.

   b. The Interpretive Preparation room: The dimensions should be approximately 15 x 30 feet, depending on the architecture of the building. The room will permanently house the projectors, message repeaters and amplifiers in appropriate cabinets, the projector cabinet being sound-proofed. A second rear projection diffusing screen, larger than that in the Exhibit Wing, will be located between the lobby and the Interpretive Preparation room. All projectors should be located such that as much of the room as possible is available for other use.

The room should contain two three by five foot desks with chairs, one 2.5 by 10 foot wall mounted work bench with hot and cold water, a small sink with storage drawers, one four by eight foot wooden work table in the center of the room, slide storage cabinets, and tape storage cabinets.

E. Two (2) Classrooms

1. Function: These rooms will be used for conducting classes in plant propagation, botany, plant materials, and other related subjects.
2. Location: They should be close to the main entrance and lobby.
3. Size: Each classroom should be approximately 20 feet by 25 feet or a total of 500 square feet each.
4. Physical Characteristics: A permanently installed chalkboard with a combination tack board should be provided at the head of the room. 35 to 40 movable tablet armchairs will be required. It is suggested that if these are movable, some flexibility of the room can be achieved. To minimize maintenance and cleaning problems, the chairs should be permanently fastened together in groups of four. It will be unnecessary to plan for any special facilities for audio-visual equipment, except for the usual convenience outlets, a portable projection screen, and a satisfactory method for darkening the room. If possible one classroom should be planned for north light. One classroom will require an instructor's laboratory bench complete with hot and cold water, small sink, and storage cabinets below. The top of laminated plastic should be approximately 36 inches by 96 inches. The other classroom should be provided with 6 sturdy tables approximately 30 inches by 72 inches.

F. Public Toilets

1. Function: The necessary rest room facilities must be provided for Arboretum visitors.

2. Location: Public rest rooms should be located near the Auditorium with direct access from the parking area.

3. Size: Approximately 300 square feet will be required for the public rest rooms.

4. Physical Characteristics: It is important that all walls, floors, and other surfaces within the room be easily cleaned and maintained. Good lighting and ventilation should be provided in accordance with the best practices. One drinking fountain adjacent to the rest rooms should be provided. The men's rest room should be equipped with 2 water closets, 3 urinals, 2 lavoratories with mirror, and 2 paper towel dispensers with receptacle. The women's rest room should be equipped with 4 water closets, 3 lavatories with mirror, 1 sanitary napkin dispenser with receptacle, and 2 paper towel dispensers with receptacle. Also a vanity shelf and mirror for three or four persons should be provided.

G. Lobby

1. Function: The lobby shall service as a transitional area between the outside and the public areas within. To set the tone of the building, a well-lit corridor with planting beds for semi-hardy plants and an exhibition of seasonally flowering plants (through a rear projection diffusing screen) should be provided. The lobby shall also serve as an answering area for questions by a telephone operator/receptionist who will welcome visitors, offer directions, and furnish Arboretum pamphlets.

2. Location: Its function dictates that it be centrally located in relationship to the public areas, Auditorium and parking but physically remote from the offices. One should be able to enter from the outside into the lobby and then to desired areas.

3. Size: The exact size of the lobby will have to be studied and carefully adjusted to meet the architectural requirements, but, for now we suggest approximately 1500 square feet.

4. Physical Characteristics: It is important that it be attractive and inviting. It should be equipped with sofas or benches, to seat approximately 10 persons. It should be provided with a conspicuously placed directory which will list the facilities within the complex. A bulletin board for announcements of coming events is also desired. It is anticipated that large numbers of visitors will pass through this area and, therefore, it is important that the selected materials be hard surfaces and easily maintained. A seasonal display area of approximately 500 square feet should be provided together with a drinking fountain. The telephone operator/receptionist's desk should have a counter approximately 42 inches high. It should be large enough to hold a guest book (approximately 18 by 36 inches when opened), Arboretum pamphlets, guidebooks and post cards, display case and cash drawer. The rear projection diffusing screen will be somewhat larger than that in the Exhibit Wing, and will be located between the lobby and Interpretive Preparation Room. Public telephones should be available here.

H. Storage Rooms

1. Function: Sufficient storage space must be provided for tables, chairs, and all equipment related to the Auditorium.

II. The Plant Sciences Staff Spaces

A. Secretary

1. Function: The secretarial space will provide room for the Secretarial staff for their normal duties of filing, typing, stenography, and routing of visitors within the Administrative areas.

2. Location: This office should be located immediately adjacent to the main lobby, or perhaps, it could become a part of the lobby. It should be adjacent to the office of the Director with a connecting door, close to the Assistant Director, and the conference room.

3. Size: Approximately 150 square feet will be required.

4. Physical Characteristics: Needed is space for 2 secretaries' desks approximately 30 by 60 inches each, 2 typewriter stands, 4 four-drawer file cabinets, 3 slide chairs and a small fire-proof safe. Natural daylight is desirable, but not absolutely imperative. Good artificial light for typing and close work could suffice.

B. Arboretum Director's Office

1. Function: In addition to the responsibilities of developing and maintaining the Arboretum, the Director provides information on all aspects of selecting, obtaining and cultivating trees and shrubs in this region.

2. Location: The Director's Office should be close to the main entrance, the conference room, library, and adjacent to the secretary-receptionist

3. Size: Approximately 200 square feet will be required.

4. Physical Characteristics: A desk approximately 30 by 72 inches, a desk chair, a table approximately 30 by 72 inches, approximately 120 lineal feet of adjustable bookshelves, with locking cupboards below, 2 comfortable side chairs, a tackboard of approximately 30 by 48 inches in size, and 2 two-drawer file cabinets will be required. If possible this office should be given a desirable view of the landscape. Provide a door to the secretary-receptionist area and a door to a passageway leading to other University Arboretum spaces. Coat storage closet should be provided.

C. Assistant Director's Office

1. Function: This staff member is responsible to the Director and shall assist him in the performance of his many responsibilities.

2. Location: The Assistant Director should be close to the Director's Office, the main entrance, the conference room, the library, and the secretary-receptionist.

3. Size: Approximately 150 square feet will be required.

4. Physical Characteristics: A 30 by 72 inch desk with desk chair, a 36 by 84 inch table, two 4-drawer file cabinets, 4 to 6 card file cabinets (3 x 5 and 5 x 7 inch), two cabinets about 34 inches high with locks for storage of cameras and other valuable equipment, approximately 120 linear feet of bookshelves, 2 comfortable side chairs, and one 30 x 48 inch tack board are required. If possible, provide a view of the landscape. Coat closet should be provided.

D. Botanical Recorder's Office

1. Function: The purpose of this office is to provide a location in which plant labels may be prepared and permanent records of the plants and shrubs may be housed.

2. Location: The function of this office requires little contact with the public, so it may be located away from the main lobby. It should, however, be near the secondary entrance.

3. Size: Approximately 150 square feet will be required.

4. Physical Characteristics: One sturdy table approximately 30 by 60 inches high for the labeling machine should be located near the center of the room. A desk approximately 30 by 60 inches, a desk chair, 2 side chairs, and 2 four-drawer filing cabinets with space for two Diebold rotary files and several card index files are required. Provide

a set of drawers for planting plans and shelves for storage of labels and other materials. Natural light is desirable, but not mandatory. Good artificial light is required for the close work. Coat closet should be provided.

E. Herbarium

1. Function: This room is designed to house the growing Arboretum collection of dried specimens, and other preserved plant material (cones, fruits, sections of tree trunks) and to provide space for work and study. It may occasionally be used in part as a small classroom or meeting room. It is primarily intended for the use of the Arboretum staff and as a reference and information tool and, secondary, for the use of the public.

2. Location: Its function indicates that it should be located close to the staff offices, easily accessible from the main entrance.

3. Size: Approximately 750 square feet.

4. Physical Characteristics: The herbarium should have a work table, bookshelves, cupboard for microscope, projectors, tape recorders, etc. and space for 12 cupboards approximately 7 feet high, 27 inches wide and 18 inches deep for the storage of herbarium specimens.

F. Library

1. Function: This room is designed to house the Arboretum library (books, periodicals, catalogues, pamphlets).

2. Location: This too should be located near the staff offices easily accessible from the main entrance, but through the auspicies of a clerk, so general public access can be restricted.

3. Size: Approximately 1250 square feet.

4. Physical Characteristics: The library should have adjustable bookshelves on two walls with space on others to have glass-fronted book and plant specimen cases with locks (one available 60 inches high, 93 inches wide). Cupboards or cabinets with drawers approximately 34 inches high will provide suitable sloping shelving for display of periodicals. Two free standing show cases are desirable. Details of casework to be developed in consultation with the Director of Arboretum. Provide two reading tables approximately 48 by 72 inches with comfortable library chairs. The use of paneling of different woods and installation of a fireplace should be investigated for the library. The room is to be quiet, conducive to study and research, yet attractive and inviting.

G. Superintendent's Office

1. Function: The Superintendent's prime responsibility is the supervision of the planting and maintenance of the Arboretum. He will frequently meet the public in conducting tours and giving practical advice. He reports to the Director.

2. Location: This office need not be near the lobby, but it should be close to the secondary entrance.

3. Size: Approximately 150 square feet will be required.

4. Physical Characteristics: A desk, 30 by 60 inches, with a desk chair, a bookshelf, a set of drawers for plans, and two cupboards about 32 inches high, 2 side chairs, and 2 four-drawer file cabinets are required. A folding drafting table will also be kept here. Coat closet should be provided.

H. Advanced Study Laboratory

1. Function: This room is to provide space for advanced students to work on horticultural research.

2. Location: It should be near the Botanical Recorder's office and the office of the Assistant Director.

3. Size: Approximately 430 square feet.

4. Physical Characteristics: This room should contain laboratory benches with formica tops, stainless steel sink with acid-resistant waste, gas outlet, 220 V. and 110 V. electric outlets, fluorescent lighting providing 75 foot candles on the benches. Provision should be made for a future fume hood.

I. Photographic Darkroom

1. Function: This room is to provide facilities for photographic developing and enlarging and for storage of slides and photographs used in Arboretum publications and lectures.

2. Location: It should be near the Research Laboratory.

3. Size: Approximately 80 square feet.

4. Physical Characteristics: This room should have complete exclusion of light, provision of two stainless steel sinks, one of them with temperature control mixing valve, 220 V. and 110 V. outlets at bench height, and ceiling safety light.

J. Continuing Education Offices

1. Function: This room will provide space for the continuing education program.

2. Location: It should be located next to the Advanced Study Laboratory.

3. Size: Approximately 150 square feet.

4. Physical Characteristics: Provide two 30 by 48 inch desks with desk chairs, two 4-drawer file cabinets, shelves and tackboards on the walls and two side chairs.

K. Storage Room

1. Function: This room is required to provide needed storage space to support the facilities of the building.
2. Location: It would be ideal if the storage room could be located close to the administrative offices and the Auditorium. However, this is not mandatory. As the design develops, this storage room should be placed in a convenient location consistent with the design of the building.
3. Size: Approximately 350 square feet will be required.
4. Physical Characteristics: Adjustable shelves, 12 inches deep, should be provided along one wall for the storage of miscellaneous office supplies, equipment, publications, old periodicals, catalogues and little-used books from the library. Balance of the room should be without shelves so that it may be easily adapted for the storage of file cabinets, photographic equipment, slides, etc. This room need not have natural light.

L. Scientific Staff Offices (4)

1. Function: These offices will house the professional staff, -- Taxonomist, Geneticist, Physiologist and Pathologist.
2. Location: These offices should be located near the research labs and at the same time be convenient to the administrative/clerical center.
3. Size: Each office should be 150 sq. ft., totalling 600 sq. ft. for all offices.
4. Physical Characteristics: A 3 by 5 foot desk with chair is required as well as sufficient shelf space. Two 4-drawer file cabinets are also required. Coat closet space should be provided as well as one side chair in each office.

III. Public Service Space

A. Open Office and Storage Space

1. Function: To provide office space to organizations who have a special and important relationship to the operation of the Arboretum.

2. Location: It should be located near the Lobby for easy public access, but remote from the Director's and Assistant Director's offices.

3. Size: Approximately 900 square feet is required, plus an additional 100 square feet of storage space.

4. Physical Characteristics: The space should be open office space. It can be subdivided by the organizations using it to suit their needs.

IV. Common Supporting Facilities

The following areas will be used by the Arboretum staff and by groups jointly supporting the University Arboretum.

A. Kitchen-Lunchroom

1. Function: This small space will be used to prepare light luncheons and coffee by the staff for their own use. It is noted that because of the building location, it is virtually impossible for the staff to have lunch at a restaurant during the normal lunch hour. Because of frequent conflict in functions, it is not feasible to use the kitchen adjacent to the Auditorium for this purpose.

2. Location: It would be desirable to have this facility close to the staff offices.

3. Size: Approximately 150 square feet will be required.

4. Physical Characteristics: Required will be a small sink, range, refrigerator, and a modest amount of storage space for cooking utensils, plates, cups and saucers. A laminated plastic topped table and chairs for 6 will be required.

B. Staff Toilets

1. Function: The necessary comfort facilities must be provided for the Arboretum staff.

2. Location: They should be near the offices of the University Arboretum and the Public Service Office Space (see section III, preceding).

3. Size: Approximately 175 square feet will be required.

4. Physical Characteristics: Walls, floors, and other surfaces within the room must be easily cleaned and maintained. Good lighting and ventilation should be provided in accordance with the best practices. A drinking fountain should be provided outside the restrooms. The men's restroom should be equipped with 1 water closet, 1 urinal, 1 lavatory with mirror, and 1 paper towel dispenser with receptacle. The women's restroom should be equipped with 2 water closets, 2 lavatories with mirror, 1 sanitary napkin dispenser with receptacle, 1 paper towel dispenser with receptacle, and a vanity shelf and mirror for 2 people. Also a small cot should be provided.

C. The Mimeograph and Supply Room

1. Function: This space should be designed to provide working space for the operation of the mimeograph machine, mirrorscope, and the necessary layout and assembly functions. It will also be used to store required supplies of paper and ink.

2. Location: Because of its frequent use by the staff members, it is important that it be located close to the administrative offices.

3. Size: Approximately 120 square feet will be required.

4. Physical Characteristics: Approximately 100 lineal feet of 12-inch deep adjustable shelves should be built in. The balance of the equipment and furnishings will be provided by outside groups who jointly support the Arboretum.

D. The Conference Room

1. Function: This room will be used primarily for staff meetings, on occasion for seminars, and for meetings of the Arboretum Committee and other Arboretum-oriented groups.

2. Location: It should be located close to the Director's Office, the Assistant Director's Office, and the secretary-receptionist.

3. Size: Approximately 240 square feet will be required.

4. Physical Characteristics: A conference table approximately 36-inches wide by 108-inches long, with 14 comfortable chairs should be provided. It is not imperative that this room have outside light, but it is desirable and, if possible, should be located so that a pleasant view may be enjoyed. Blackboard and corkboard should be provided.

E. Janitor's Storage

1. Function: These small rooms are needed to provide facilities so that the janitors may readily clean and maintain the building.

2. Location: It is, of course, not necessary that these be centrally located, but in the event the building becomes a two-floor structure, 1 closet will be required on each floor.

3. Size: A total of 80 square feet has been allocated.

4. Physical Characteristics: A standard, easily cleaned mop sink, shelves for the storage of a small supply of paper towels, toilet tissue, soap, etc., a mop and broom strip, and storage space for floor machines and other cleaning equipment will be required.

F. Corridors and Mechanical Equipment

These supporting areas will have to be designed to conform with the building requirements as they are developed by the architect. The corridors must be well lighted, attractive, and designed to handle the flow of traffic to the

various areas within the building. For the purposes of budgeting, a total of 2500 square feet has been allocated for these spaces. A complete intercom system connecting the principal offices and the greenhouses should be provided.

V. Plaza

A. Function: The plaza will serve as an extension of the Lobby and Auditorium display space. It could perhaps be incorporated in the entrance area of the complex and thus during shows help to set off the complex.

B. Location: It should be located close to and convenient to the Auditorium and Lobby.

C. Size: The total area of the plaza will be 6,000 square feet. It will be broken into two segments: 1) with a paved floor area, and 2) without a paved floor area. It is suggested that this area have a grass covering. The entire plaza is to have a removable covering which can be pulled over the area during inclement weather. It should have plantings of tall material around its periphery to protect the plaza from gusty winds.

VI. Vehicular Storage and Outdoor Staff Facilities

A. Function: Various items of equipment, including tractors, trucks, mowers, and tools require increased protection from the elements when not in use. A small maintenance workshop, crew's lunchroom and restroom are also required.

B. Location: These should be located in an area protected from view from the complex, convenient to access roads and the superintendent's office.

C. Size: Total vehicular and equipment storage space needs are estimated at 5,125 square feet. Enclosed storage for fertilizer and materials requires 500 square feet, while lunch and restroom facilities require 625 square feet. A crew's workroom requires an additional 500 square feet. The

remaining area, approximately 3500 square feet, should be devoted to storage for vehicles and equipment. Approximately 1750 square feet of this storage space should be covered. All of it should be enclosed in a strong, vandal-proof fence.

D. Physical Characteristics: The existing gasoline storage tank and pump are to be retained and reused as plans permit. The storage areas should have asphalt surfacing and the buildings should be provided with concrete floors, good lighting and electrical service. All buildings should be provided with locks and be capable of being secured completely.

VII. Greenhouse

A. Function: To provide new, increased greenhouse and culture space for Arboretum staff use and University use.

B. Location: This should be located near the Administration Complex.

C. Size:

1. Glass house 8,000 square feet.
2. Head house, cold rooms, 4 preparation rooms, 1 office, 2,150 feet plus seed cleaning and storage room. 1,000 square feet for general use.
3. Lath house, 2,000 square feet.

D. Physical Characteristics: The Greenhouse complex should consist of three elements: (1) a conventional glass house; (2) a headhouse building with full basement containing preparation rooms, office space for a foreman, heating plant, and space for 4 preparatory and analytical laboratories; and (3) a lathhouse in the immediate area of, but not necessarily in physical contact with, the glasshouse building.

The glasshouse will have two wings, 4,000 square feet each of which will be compartmentalized. The building will be under positive pressure, have

thermostatically controlled temperatures and ventilation, and have a lath shading section over the roof.

The headhouse laboratories should be approximately 200 square feet each and contain the usual types of analytical and preparatory equipment.

The seed cleaning and handling room in the head house should have walls lined with adjustable shelves. A large stainless steel sink with drainboards and a refrigerator are required. A sturdy work table of approximately 30 by 60 inches will be needed. This room need not have natural light, but it is imperative that excellent artificial light and ventilation be provided. This room should have a smooth, easily cleaned concrete floor, should be dry, and conducive to the proper storage of seed.

VIII. Parking

Virtually every staff member and visitor will come to the complex by automobile. It would be a serious mistake, however, to provide a parking lot large enough to handle all cars for the maximum number of visitors. If this were done, needless expense would be incurred and the Arboretum would lose precious growing areas. A better solution is to provide an area for maximum of approximately 150 cars.

The location of the parking area will need considerable study, concurrent with the development of the complex design. The parking area should be convenient to the complex and yet should be somewhat hidden from view--it should not be allowed to dominate the setting. To avoid a huge, unbroken, and hard surface expense, it is suggested that the total parking facility might well be divided into two or more smaller areas. The location of the

parking lot(s) should be studied so that there is a minimum of pedestrian and vehicular cross traffic. Planting for screening and shade must be considered.

The lots and the foot paths leading to the parking lots should be well lighted and attractive for both day and night use. The possibility of providing parking under the building should be investigated.

IX. Caretaker's House.

The caretaker's house should contain a living room, kitchen, bath, and two bedrooms. It should contain 1500 square feet in total.

APPENDIX B: HISTORY OF THE UNIVERSITY OF WASHINGTON ARBORETUM

I. General

The University of Washington Arboretum has been in active existence for more than thirty years, having been founded by an agreement between the City of Seattle, represented by its Board of Park Commissioners, and the Board of Regents of the University of Washington in January, 1935. By this agreement, the University of Washington received certain land (Washington Park) from the City of Seattle for the purpose of establishing an Arboretum on a long-term lease basis.

II. Objectives as envisaged by the original developers

The original objectives of the University of Washington Arboretum may be summarized as follows:

A. To form and maintain a living museum of the finest trees and shrubs hardy in the Pacific Northwest and especially the Puget Sound region, and to develop the available area most advantageously, having due regard to the plants growing there and to the persons who will visit and use it.

B. To introduce new or rare woody plants from all possible sources; to propagate and distribute those considered potentially valuable, in any respect, to appropriate similar institutions, research or experiment stations, or to nurseries for wider dissemination.

C. To supply information on horticultural matters to groups and individuals through lectures, classes, demonstrations, publications, and use of the Arboretum library.

D. To provide an outdoor study area for a number of departments and colleges of the University, especially the Colleges of Forest Resources and Architecture and Urban Planning and the Departments of Botany, Zoology and Art.

E. To cooperate in providing materials and/or facilities for research connected with woody plants.

III. Financial Development

In 1935, $93,500 was allocated by the Federal Emergency Relief Administration for surveying and mapping the Arboretum area, which comprised some 268 acres. In the same year, the Seattle Garden Club gave approximately $5,000 for the development of a plan for the Arboretum by Olmstead Brothers, Landscape Architects of Brookline, Massachusetts. During the period from December, 1935 to July, 1936, the WPA allocated $166,600 to the Arboretum and, additionally, the University and the City of Seattle appropriated $130,000 in services and materials. In October, 1936, the WPA made an additional grant of $239,185 for the development of various projects. During the period from 1935 to 1941, it has been estimated that $1,500,000 in federal, state, city and private funds were spent in the basic development of the Arboretum.

The first direct contribution by the State of Washington was made in April, 1943, when $41,700 was appropriated for the biennium. Since that time, the state has appropriated $788,948 for developing and maintaining the Arboretum. At the present time the annual University budget for the Arboretum is $125,000. Since 1936, when the University of Washington Arboretum Foundation was organized, this organization, together with various garden clubs throughout the state has given approximately $250,000 to the Arboretum. The total funds given by individuals, organizations and government bodies, to the Arboretum, is about $2,500,000.

IV. Physical Development

The development of an Arboretum takes many years. The first plantings were made in December, 1937. In May, 1940, 300 cherry trees and 200 Eastern dogwoods were placed

along Azalea Way. A year later, 1500 rhododendrons were planted in Rhododendron Glen, now the nucleus of one of the most extensive collections in the United States. From November, 1941 to April, 1942, 3,245 young trees and shrubs were set out at various locations in the Arboretum. In recent years, an average of 800 to 900 plants are set out annually. Over the years, large collections have been assembled of such important woody plant groups as azaleas, rhododendrons, camellias, hollies, magnolias, Japanese cherries, maples, mountain ashes, oaks, lilacs and coniferous trees and a great variety of smaller special collections and individual specimens. The Arboretum contains examples of over 500 tree species, 120 of them conifers, and more than 1,700 species of shrubs. Since 1945, more than 400 new or little-known plants have been procured for growing and testing in the Arboretum.

Perhaps the most popular new addition to the Arboretum has been the Japanese Garden which was completed in the spring of 1960 and has been visited by over 42,000 visitors in 1964, 41,000 in 1963.

In recent years there has been a gradual reduction in the size of the Arboretum. Of the original 268 acres granted to Arboretum development, 84 acres were shoreland lots or unsuitable places for planting because of their boggy nature, another 14 acres were dedicated to the Madison Playfield, and most recently, 54 acres were eliminated for construction of the Second Lake Washington Floating Bridge and the extension of the Empire Way Expressway (Thomson Expressway). These inroads into the usable size of the Arboretum have reduced its effective area to approximately 116 acres, thus severely reducing the space available for continued expansion of the plant collections in the style of the past. This space limitation must be a serious consideration in building or developmental programs.

V. Recognition of the Arboretum

In certain areas and activities the Arboretum has gained national and international recognition as one of the foremost arboreta in the world. It has been visited by people from every part of the state, from nearly every state in the nation, and from 33 foreign countries. Some have come for extended visits to study the collection of native and exotic flora. In 1958, the Botanical Garden of Rio de Janeiro, in celebration of its 150th anniversary, presented a medal to the University of Washington Arboretum for the outstanding work it has done. Only six other arboretums throughout the United States were similarly honored. The Arboretum has been designated by the American Rhododendron Society and the Holly Society of America as an official testing garden for new plant materials. The United States Department of Agriculture Bureau of Plant Introductions also has recognized the Arboretum by selecting it as one of the official testing gardens for azaleas. Further recognition of the Arboretum was given when the director, Mr. Brian O. Mulligan, was elected president of the American Association of Botanical Gardens and Arboreta in 1952 and 1953. He is also now vice-president of the American Rock Garden Society, and on the Council of the International Dendrological Society.

VI. Future development

These facts lead to the obvious conclusion that the University of Washington Arboretum does have a significant reputation, and a very great potential in the development of plant science and related study areas. Additionally, its potential as a regional tourist attraction is great and correct planning and development can successfully utilize this attribute to advantage. Today, from 250,000 to 300,000 visitations are made annually to the Arboretum grounds.

The University must assess the Arboretum in relationship to University objectives as well as community interests and development. After this assessment, the University must then assume firm leadership and guide the Arboretum to outstanding performance in educational enterprise, as well as plant collections.

APPENDIX C: PROJECTED COMMUNITY USE OF ARBORETUM FACILITIES

I. Introduction

Space requirements for the Seattle area floral organizations which are potential users of the Arboretum Building Complex were determined in a survey conducted during the first two weeks in October, 1966.

Through telephone conversations and personal interviews, information was gathered from each of the organizations listed in the enclosed tables. Whenever possible, the presiding officer of the organization was contacted to present the views of his group. When he was not available, the secretary was contacted. The information thus gathered reflects the opinions of the present officer who was interviewed.

Organizations contacted were either single plant societies, e.g., rose, orchid, etc., or clubs with fifty or more members on the roll. Club lists from the Snoqualmie District of the Federation of Garden Clubs, and the Arboretum Foundation were used as the basic sources.

II. Future Use and Requested Facilities

Respondents to the recent inquiry concerning the use of proposed Arboretum facilities indicate that, even with rentals designed to only cover maintenance and operation costs, there would still be times when the facilities would not be in use for community activities. Table I indicates when facilities would be requested by organizations if rents were changed.

Auditorium seating for 150 persons would serve all groups adequately except one. This group would use larger facilities only four times per year.

A stage is required for certain functions that will be conducted in the auditorium. Easy access to the stage area from the main part of the building as well as the outside is desirable for installing exhibits and equipment. Audio-visual equipment will be used frequently in the auditorium. This should be taken into consideration in the layout of electrical connections, conduits, and in the general accoustical design.

Workrooms accommodating activities of study groups of the clubs are considered to be highly desirable. These workrooms would be furnished with tables, sinks, chairs, chalkboards, movie screen and opaque shades. In addition, one group expressed a desire for facilities in which to conduct formal research.

Kitchen facilities are required to fill the needs of organizations sponsoring functions. These kitchen facilities should be adequate to serve refreshments at monthly meetings and formal teas, and to fill the needs of a caterer in serving a banquet for a capacity crowd in the largest meeting room provided in the building. No desire has been expressed for the on-site preparation of foods.

An exhibition area of 6,000 square feet would meet the requirements of all except two organizations desiring to hold their shows in Arboretum facilities. Only one of these two groups currently is using a larger area for staging its annual show. The exhibition area should have water readily available. The floor should be constructed of materials that are not readily damaged by moisture. Lighting should be of a neutral nature to neither add to nor detract from the appearance of plant materials displayed. Provision should be made for the delivery of materials to the display area.

Conference facilities for approximately twenty persons would be highly desirable for the meetings of governing boards of organizations. Larger committees could use

larger meeting rooms available in the Arboretum building. Storage space was requested by many of the groups for storage of club equipment and show props. Public telephones should be made available in the public areas of the building complex.

Office space for organizations closely associated with the functions of the Arboretum should be considered. In addition to the Arboretum Foundation, which now maintains an office with two full-time personnel, the Washington State Federation of Garden Clubs, the Seattle Garden Club, and the Friends of the Arboretum are interested in office space for full-time employees in the Arboretum Building Complex. Several other organizations are interested in having space to maintain their club records.

Transportation ranks as the greatest deterrent to potential occupants. Limited space for parking, as well as the physical distance between the parking facilities and the present clubhouse renders the facilities less than desirable from the standpoint of users during inclement weather.

Access to Arboretum facilities via public transportation leaves a great deal to be desired. From existing bus lines, a person must walk 1/3 - 1/2 mile through poorly lighted areas. Parking facilities located adjacent to the building would increase greatly the attractiveness of the meeting place for groups which are composed of older persons.

One club raised the question of whether organizations would be permitted to charge admission to functions held in the Arboretum Building Complex. University policy in this respect should be further clarified.

III. Present Use

Community use of Arboretum facilities outside the University Continuing Education program falls largely into uses related to the activities of the various garden clubs

and floral societies, the Arboretum Foundation, and other Arboretum organizations and interest groups. Such organizations present a wide array of requirements for facilities in which their group activities are conducted.

Arboretum facilities are now available for use of organizations at a small rental charge. Such rental, along with the limited size of the facilities serves as a rationing device for the facilities. Even with the current token rents, the facilities are not utilized to full capacity. There are still times when they are not in use.

A check of the busiest month of 1966 (illustrated in Table II) shows that the Arboretum clubhouse was in use only 36 out of a possible 60 time periods.* Thus, there were 24 additional time periods in which the clubhouse could have been scheduled for additional meetings and organization functions.

When the preferred times for meetings are considered, those groups desiring to utilize Arboretum facilities show only two scheduling conflicts. Therefore, it appears that there may be a need for facilities capable of hosting meetings for two groups simultaneously, but rarely would three or more groups be meeting at the same time. Special note should be made of the free time periods when extension education classes could be worked into the schedule as it exists today. With more careful co-ordination of programs, it would be possible to serve a larger number of organizations.

IV. Other Facilities Available for the Use of Floral Societies and Garden Clubs

In addition to the facilities available to the floral groups in the Arboretum, there

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*In this particular examination of the scheduling which was conducted by the Arboretum Foundation, the time periods considered were morning, afternoon, and evening. When the function used a portion of a time period, it was considered to have used the entire time period. There were some instances in which several meetings were scheduled for a single time period.

are several other facilities which could be used on the University of Washington campus and at the Seattle Center. These are discussed in the following sections.

Auditoria	Seating Capacity	Area Square Feet
Student Union Building	478	5,062
Health Sciences Auditorium	538	5,345
Architecture Hall	384	3,540
Guggenheim Auditorium	365	3,500
Johnson Hall	221	2,548
Display Buildings		
Edmundson Pavillion		52,997
Stadium Concourse		19,560

Source: UW Architects Plan Files

V. Facilities Available at Seattle Center

At the Pacific Science Center, three classrooms and three auditoriums are available for public use. The policy of the Science Center concerning the use of these facilities is that the organizations must be scientific, educational or governmental. Fee policies for the use of the rooms are not clear-cut, and the fee for each use is negotiated. Capacities of the rooms are as follows: three classrooms, 30 persons each; and auditoria seating 188, 275, 500 persons.

In the near future, the Pacific Science Center will have two laboratory-classrooms which will serve approximately 30 persons each.

Floral organizations have been offered the use of the Flag Plaza Pavillion of the Seattle Center for their flower shows. This building is 63 feet by 270 feet with

adequate space for the larger shows.* It is arranged in such a manner that smaller areas may be set off through the use of screens and dividers. The Center has offered to store tables for the floral groups if they are available for the use of all floral groups using the building.

The proposed horticultural building in the Seattle Center appears to be still in the planning stages. The fact that the building proposed for this development belongs to the National Guard, which is reluctant to sell the building, and that the renovation would cost approximately $10 million leave this proposal in a state of uncertainty.

The facilities available at the Seattle Center appear to be ideally located for good attendance at floral exhibits held there. The reasonable rental fees make the Center facilities an alternative which must be considered in the decision of construction of additional facilities for hosting functions of plant organizations.

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* 17,000 square feet.

TABLE 1. Desired schedule from Survey (with Rental Charge)

		Day						
Week	Time Period	S	M	T	W	Th	F	S
1	Morning						x	
	Afternoon						x	
	Evening		x		x		x	
2	Morning						x	
	Afternoon							
	Evening				x		x	
3	Morning							
	Afternoon							
	Evening			x			x	
4	Morning							
	Afternoon							
	Evening							

Source: Survey for Ad Hoc Committee

TABLE 2. Peak Schedule for Arboretum Clubhouse (April, 1966)

		Day						
Week	Time Period	S	M	T	W	Th	F	S
1	Morning		x	x	x	x	x	
	Afternoon					x	x	
	Evening			x				
2	Morning		x	x	x	x	x	
	Afternoon			x		x		
	Evening			x		x	x	
3	Morning		x	x	x			
	Afternoon				x	x	x	
	Evening			x	x			
4	Morning		x	x	x	x	x	
	Afternoon			x		x	x	
	Evening			x			x	

Source: Arboretum Foundation Scheduling Calendar

TABLE 3- POTENTIAL USERS OF ARBORETUM FACILITIES (WITH RENTAL CHARGE)

Organizations	Total Membership	Attendance Maximum	Facilities Required for meetings	Frequency of meetings	Area Requirements Sales	Shows	Other	Future Needs	Remarks
Amateur Gardeners	40	40		Monthly			Luncheon	Slight	20 parking spaces
American Rock Garden Society	100	80	Audio-visual	Monthly				5% Inc.	1969 Conven. Storage space
City Wide Flower Club	164	110	Conference tables audio-visual	Monthly			7200 sq.ft.	Same	
Friends of the Arboretum		350					Lectures		Record storage Sect.space
Hiawatha Garden Club		85		Quarterly			Workshop	Sales	Only special events
Lake Forest Park Garden Club	55	55	Table for Pres.	Quarterly	2400			10% inc.	Only special events
Men's Garden Club	70	150	Audio-visual, refreshments	Monthly	9600 sq.ft.				
North End Flower Club	150	80	Table & Chairs Audio-visual	Quarterly			Board meeting	Same	Room for 100+
N.W. Median Iris Society	30	30	Room for 30, Potluck	Annual				Same	
Puget Sound Beekeepers Assn.	140	70	Refreshments Audio-visual	Monthly			Sale - Honey	Same	
Seattle Br.,Amer. Begonia Society	63	70	Table & Chairs Kitchen	Monthly		6000 sq.ft.		10% inc.	Truck Ent.
Seattle Chrysanthemum Society	180	100	Audio-visual Blackboard	Monthly		3000 sq.ft.		Slight Increase	
Seattle Dahlia Society	125	60	Audio-visual tables, refres.	Monthly					
Seattle Rhododendron Society	300	100	Audio-visual	Monthly		10,000 sq.ft.			
Snoqualmie Dist. Fed. of Garden Clubs	3072	450	Auditor,, Study Rms Luncheon	Quarterly		5000 sq.ft.			
Wash.State Fed. of Garden Clubs (Board)		85	Luncheon	Quarterly					
Wash. State Primrose Society	75	70	Tables, Chairs Refreshments	Monthly		5000 sq.ft.	Potluck	Slight Increase	

TABLE 4

POTENTIAL USERS OF ARBORETUM FACILITIES
(WITH NO RENTAL CHARGE)

Organizations	Total Membership	Attendance Maximum	Facilities Required for meetings	Frequency of meetings	Area Requirements Sales	Show	Other	Future Needs	Remarks
Mycological Society	377	225		Monthly		5000 people			Research Facility
Puget Sound Lily Society	25	25	Refreshments	Monthly				Same	
Seattle Audubon Society	600	100		Monthly			Film series		Rental would be deterrant
American Iris Society	50	30		Monthly		20,000 sq.ft.		5% inc.	
Seattle Herb Society	20	10	Kitchen	Monthly				Same	
Seattle Rose Society	200	70	Slide shows, refreshments	Monthly		6500 sq.ft.		Slight inc.	Admiss. to shows

TABLE 5: Groups Not Interested in Using Arboretum Facilities

Organization	Total Membership	Attendance Average	Attendance Maximum
Aqua Vista Garden Club	72		
Bainbridge Island Garden Club	87		
Blue Ridge Garden Club	60		
Greater Seattle Fuschia Soc.	50	35	50
Mercer Island Garden Club			
Puget Sound Fushia Soc.	50	30	40
Wash. Soc. of Landscape Architects	30	20	25
Wash. State Herb Society	40	20	30
West Seattle Garden Club	200	90	150

APPENDIX D: COURSE REQUEST FORM

COLLEGE OF FOREST RESOURCES
CONTINUING EDUCATION COURSE REQUEST

COURSE PROPOSAL Date of Submission _____

1. Title of Course (Descriptive) _____

_____

2. Brief Synopsis of Subject Matter _____

_____

3. Name and Address of Lecturer, Instructor, Speaker (List each if more than one)

Name	Address
_____	_____
_____	_____
_____	_____

4. Name of Course Coordinator _____
5. Location for classes or sessions: _____
   Labs or demonstrations: _____
6. Schedule (give dates and hours) _____

_____

7. Number of students anticipated (If there is a maximum or minimum number which should be observed, please indicate.) _____
8. Registration fee _____
9. Special Equipment Required _____

_____

10. Publicity desired _____
11. Budget:

(a) Honoraria	$ _____
(b) Travel	_____
(c) Supplies (specify)	_____
(d) Materials (specify)	_____
(e) Transportation (specify)	_____
(f) Food Items (if any)	_____
(g) Secretarial-Clerical	_____
(h) Other Contractual Services (printing, mailing, telephone toll calls, photography, etc.)	_____
(i) IFP Services or Administrative	_____

APPROVED: Date _____

_____
Director, Continuing Education
College of Forest Resources
Institute of Forest Products

N.B.: Prepare in quintuplicate
Original-Files, College of Forest Resources
2nd copy-Arboretum
3rd copy to Proponent
4th copy to Editor, Inst. For. Products
5th copy to Course Coordinator

APPENDIX E: SPACE ALLOWEATIONS

Space Designation	Area $ft.^2$	Public Use Function	Administration Function
Auditorium	3500	+	
Preparation Room	150	+	
Kitchen	150	+	
Natural History Wing	1350	+	+
Classrooms	1000		+
Public Toilets	300	+	+
Lobby & Exhibition Space	1500	+	+
Storage Rooms	400	+	
Plant Science Secretary	150		+
Arboretum Director Off.	200		+
Arboretum Asst. Dir. Off.	150		+
Botanical Recorder	150		+
Herbarium	750		+
Library	1250	+	+
Superintendent's Off.	150		+
Advanced Study Lab.	430		+
Photographic Dark Room	80		+
Cont. Educ. Offices	150	+	+
Storage Room	350	+	+
Science Staff Off.	600		+
Public Service Office and Storage	1000	+	
Kitchen-Lunchroom	150	+	+
Staff Toilets	175	+	+
Mimeo & Supply Room	120	+	+
Conference Room	300	+	+
Janitor's Storage	80	+	+
Corridors & Mech. Eqpt.	2500	+	+
Plaza	6000	+	
Vehicular Storage	5125		+
Greenhouse	12150		+
	40,360	square feet	