a theatre for black mountain college.

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presented in cambridge mass. by anatole kopp.

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A THEATRE FOR BLACK MOUNTAIN COLLEGE
Having stayed and worked at Black Mountain College for one school year I felt I was sufficiently acquainted with the requirements of the College. Having been connected with every dramatic production staged by the drama department during this year, the particular problems of that department were well known to me. Whatever the dramatics department has done so far, has been done without the help of even the minimum equipment necessary. One can say that for every production, a theatre had to be built and dismantled the next day. Trying to improve the quality of the productions meant of course that the technical difficulties to be overcome every time became greater and greater until they reached the present point where some sort of permanent building and equipment is necessary if one wants to keep the dramatics department alive and on a more or less equal footing with other colleges.

The aim of this thesis is to study the requirements for such a building and find a solution to these requirements.
general conditions

Black Mountain College being a very special kind of college, its nature will very much affect the architectural solution of any building designed for its campus. I have here in a few words tried to picture what the college is, what its aims are and what makes it different from other colleges. I also have tried to picture the dramatics department. For more detailed explanation the reader will look at the excerpts of the college catalogue given here.

The college aim, is broadly to give the students a general education and to train them to live in today's world, and meeting today's problems. This means that the teacher will rely less on books and more on the students own experience.

Black Mountain College is a college without a board of trustees which means that its financial existence is difficult and its means limited. Partly because of that and partly because the college considers manual work as being a necessary part in anybody's education, the college has what is called the Work Program. According to this Work Program, the students do all the work, connected with the physical existence of the college. They work usually three afternoons a week. This aspect of college life is
more completely explained in a further chapter.

The community plays an important part in the life of the college. This means contact between professors and students, it means also that every student is to some degree exposed to the influences of art, music and drama. Performances and concerts are given in front of the community.

Roughly, one can say that the general aim of the college is to give the individual an all around development.
EDUCATIONAL AIMS OF THE COLLEGE

About a decade ago some people saw that the western world was going through a change as profound and dramatic in its swiftness and thoroughness as any in western history. The last eight years have confirmed that impression. How could education prepare people to live in such a world? It was obvious that education based on the accumulation of knowledge alone would not give students independence of judgment and the sureness which comes from working to the roots of things, that a strange new world demands. They must learn to recognize problems when they exist, to face them as imperative facts, to see their nature, and to make the wisest possible decisions. Startled citizens of this strange century, they cannot avoid meeting a world of impinging problems; they face difficult choices, where tradition and fact give no trustworthy guidance and even the wisdom of teachers is insecure.

In 1933 a group of teachers and students joined together to form a college which, they hoped, would find an answer to this great educational need. Higher education had become confused, lost in the maze of the credit system, the clichés of classroom instruction divorced from life, the arbitrary division of subject matter, and above all the impersonality of the relation between teacher and student. The primary aim of the founders of the College was this: to bring the student into immediate contact with his world by making him face the problems arising from his own experience and to train him to make decisions in an intelligent way. Philosophy and the social sciences would become a study of man's eternal problems in terms of the student's own responsibilities, decisions, questions; art an exploration of the world around him directed by the penetrating eye of the artist-teacher; music a participation in actual performance of master works; literature a study of the experiences of mankind with their many facets and values, in comparison with those of his own life; in short, education was thought of as a preparation for life brought about to a considerable degree through the use of the student's own experience. The recorded past of mankind, the existing social problems, and the vivid present experiences and problems of a student's own life would be the materials for study. In general this has remained the educational aim of the College.
How shape a college which would draw the student into a direct relation with life and its possibilities and at the same time confront him with the dilemmas of the citizen of today without breaking his spirit? And how lead him to find his own way of facing realities? The answer seemed to lie in two things: in an intensive and personal exploration of the liberal arts, the sciences, and the fine arts in such a way that they might really liberate his mind, and in a social organization which would confront the students with some of the major experiences and responsibilities of mature life. The College lives and works together as a community, sharing responsibilities and plans, much as in a large family. The student body is made up of young men and women from all parts of the United States and from several foreign countries. Together with the faculty they form a community which is self-governing, the students participating with the faculty in that government. The responsibilities of intelligent community citizenship are exacted and the art of living justly and pleasantly with one’s fellows becomes developed of necessity.

Freedom of choice is given wherever a student shows he can be responsible for using that freedom. In the curriculum courses are not required, on the assumption that the students either can or must quickly learn to make significant choices themselves, under the guidance of the faculty. Considerable responsibility is placed upon the student body and particularly upon the student officers for the organization and carrying out of a program which will maintain the life of the community at the highest possible social and educational level, and will improve and maintain the physical plant of the College. By demanding intelligence and character of students, in an environment in which these must constantly operate, the College offers a unique kind of training. The liberal and fine arts, the sciences, physical work, and social obligations become the living media for shaping the lives of young people for real citizenship in a democracy, and for giving them some true understanding of themselves and their world. Only out of such knowledge can true leadership emerge in a world so uncertain as ours is today.

ORGANIZATION

When the College was incorporated its charter was so drawn as to place control of all its affairs ultimately with the Faculty. Matters of educational policy and discipline are dealt with directly by them. Appointments and financial affairs are handled by the Board of Fellows, members of which are elected for three-year terms by the Faculty from their own membership. A Rector, elected by the Faculty from among the Fellows for a one-year term, presides over the Board, which in turn elects from its membership a Secretary and a Treasurer. Thus there is
no division of responsibility in the educational and administrative functions of the College.

A student government of more than nominal or honorary importance is administered by four student officers elected by the students. The by-laws of the Corporation provide for the automatic nomination of the chief student officer for election to the Board of Fellows by the Faculty. Student participation in College affairs is, however, not limited to this legal representation on the Board. The student officers regularly attend the business meetings of the Faculty and meet from time to time with the Board. Much of the administration of the College is carried on through committees. The students are represented on every committee in which their opinion is of value, as for example the Admissions Committee, the Building Committee, or the Radio Program Committee. By these means students share much of the responsibility and have a voice in making the decisions on matters in which they are involved.

In keeping with this democratic organization, there are frequent meetings of the whole community. These general meetings may be called by the Rector or by any five individuals for the purpose of discussing problems and policies affecting the community as a whole. Policies are formed through free and vital discussion, which is continued until there is general agreement based on thorough understanding.

In addition there is an Advisory Council, composed of friends of the College whose experience enables them to give advice in matters of College concern from an external point of view.

LOCATION

Black Mountain College is located in the mountains of western North Carolina near the town of Black Mountain, and about fifteen miles east of Asheville on U. S. highway number 70. It is on one of the main lines of the Southern Railway and is also easily reached by motor car and bus. Since it is centrally located in respect to the eastern part of the country, it is conveniently accessible to both northern and southern centers of population. The College lies in a region which is well known for its pleasant and healthful climate throughout the year, as well as for its unusual scenic beauty.

The property of the College comprises some seven hundred acres of farm and mountain wood land lying on the North Fork of the Swannanoa River. It has on it some fifteen buildings suitable for college purposes, a farm, tennis courts, and a lake suitable for swimming and rowing. In addition, the main wing of a large modern building, providing individual studies for students and faculty, was constructed last year.
LIFE

The physical setting, with its relative isolation, is well suited to the educational aims of the College. All formal education assumes that life itself does not offer the optimum environment for the growth of future citizens, that certain controlled types of influence will produce better individuals. In the belief that education should concern itself not merely with the intellect, but rather with the whole person, all aspects of the college life have been designed to promote the maximum development of the student.

The location offers an environment where the immediate, trivial, or merely exciting aspects of contemporary life do not obscure the more fundamental issues. Essential questions and problems of enduring importance may be brought into the foreground and viewed more objectively than is often the case in the modern educational world. The best thought and recorded experience of man is not lost in the pressure and turmoil of everyday living.

This does not mean that life in the community is cloistered or that the affairs and problems of the world of today are ignored. On the contrary, it is believed that students can understand these problems only through the achievement of perspective and the accumulation of experience. Neither the great books of the past nor contemporary writings have any real meaning to the student except in terms of his own personal experience. Thus the life of the community must be a microcosm where the student encounters the essential problems of the world through his own living. With the help of his teachers he learns to apply the wisdom of others to the solution of these problems. He learns to relate community problems to those of society at large. Questions arising from lectures, class work, committee meetings, radio broadcasts, or any other aspects of college life may stimulate general and fruitful discussion. The community keeps in touch with affairs outside the College through a fairly constant stream of visitors, many of whom speak on subjects in which they have a special competence. The long winter vacation enables students and faculty to visit metropolitan centers during the season when cultural activities are at their height, or to pursue special studies for which time is lacking during the academic year.

Since students learn from people as well as from books, every opportunity is afforded for a close contact between teacher and student in all aspects of college life. Faculty members live in the men's and women's dormitories or in nearby faculty cottages. In general there are three students to a bedroom, with the exception of the large attic rooms in both dormitories, each of which accommodates about nine students. With the completion of the new building every student will have an individual study. It has always been the belief of the College that individual development is most significant when a student has the privacy
of a room of his own, where he may organize his own hours of study, as well as his social life.

In social activities and recreation the same close contact of faculty and students prevails. Two or three times a week there is a half hour of informal dancing after dinner, and almost every Saturday night a semi-formal dance. Frequent concerts given by members of the College and by outside people provide a broad musical background. Art exhibitions from galleries and foundations come to the College, and the artists within the College exhibit their works from time to time. Several plays are presented during the year. In addition to these cultural activities, recreation in the sports is available. Though the work program takes the place of the usual intercollegiate athletics, opportunities are provided for informal sports such as tennis and swimming. Many miles of beautiful mountain trails are available for hiking, horseback riding, and for skiing. These cultural and social activities, in addition to their recreational value, give a common basis of experience in the life of the community.

The relationship of people within the College is not so much that of teacher to student as of one member of the community to another. Thus the student has informal access to the knowledge and help of every member of the faculty, and the latter in turn has direct acquaintance with the student's attitudes and interests. This ease of communication, in a natural and informal environment, meets one of the time-tested needs of education. The student not only receives impersonal knowledge, but is influenced by the attitudes, enthusiasms, and methods of work of his instructors. He acquires a sense of values and direction in life which spring from real human relationships. To a large degree this element of personal guidance and example renders the customary formal curriculum superfluous. Such an organic union of living and study, however, creates a kind of life for which not all students are suited, since it is more congenial for some people to follow a prescribed track than to find their own goal and their own way toward it.

The community life of the College contributes much toward what is regarded as an important aspect of education: namely, the development in the student of an attitude of intelligent responsibility toward the society in which he lives, together with an understanding of its problems based upon personal contact with them. The structure of American society seems to require that men and women should be educated together, and that they should learn to associate with each other in most of the important activities of life on a basis of common humanity. Consequently it is believed that co-education should be more than attendance of the same classes and participation in social trivialities at an entirely artificial level. By sharing intellectual work, manual work, recreation, and responsibility both to themselves and to the group, young men and women may come to respect each other primarily as human beings, and to establish a healthy and mature attitude toward one another.
It is believed that the development of intelligently responsible people can be brought about only by trusting students with responsibility. This the College attempts to do in all directions and to the fullest extent compatible with their ability to assume it. The placing of responsibility upon all members of the group implies a minimum of rules. Students learn from experience the necessity of consideration for others, since they themselves are involved when that consideration is not shown. Consequently cooperation develops from a personal understanding of its basic necessity in any society, rather than from externally imposed rules. Such agreements about forms of social living as the students have, are assumed voluntarily, and these are subject to re-examination at any time. In this way the student learns to formulate and to examine the laws by which he lives. He comes to recognize the fact that democracy not only guarantees rights but also requires that obligations be assumed. When he has reached sufficient maturity to see his actions in terms of their effect upon the community as well as upon himself, to consider the future as well as the present, and to recognize those areas in which he is competent to have an opinion and those in which he is not, one of the tasks of the College is done.

STUDY AND CURRICULUM

At Black Mountain College there is not the sharp cleavage that often exists between work and play, between curricular and extra-curricular activities, since all these are regarded as contributing to a student’s education. The aim is to avoid an artificial separation of intellectual development from emotional and social life. In the area of his formal studies, which naturally is the central element of a student’s life at the College, he is encouraged, in so far as he is capable, to learn how to work on his own initiative and to regard the teacher as a guide to wisdom rather than as a source of wisdom. Classes are small, and as a result there is active student participation. The more advanced students receive tutorial guidance from the instructors.

The student chooses some member of the Faculty as his adviser, and because of the smallness of the community and the large area of interests held in common, the relation between adviser and student is distinctly a personal one. Working together, the adviser and student assume the responsibility for seeking the best path for the maximum development of the student. In addition, the Faculty as a whole periodically examines the progress of each student during the course of the year. Each person is discussed as an individual, and recommendations concerning the academic, social, and personal progress of the student are used by the adviser for further guidance.

The College has no required courses. Since the process of becoming
educated is not only complex but varies greatly from individual to individual, depending upon educational background and native ability, rigid curricula are often more logical than they are effective. Hence more emphasis is placed upon organic development and upon the total accomplishment at the end of the college career than upon day-to-day and week-to-week accomplishment in various subjects. The student is free to elect, under the guidance of his adviser, those studies which he believes will be of greatest benefit to him at a given time, and he is urged to follow and enlarge his own interests, in the belief that interest is one of the surest guides to real self-development. However, he is expected at some time in the early part of his college career to explore in the four general areas into which the curriculum is divided. To further facilitate the pursuit of individual interests, either within the curriculum or in contiguous areas, there is an interlude each term. This is a period, usually of a week, in which classes and regular meetings are suspended in order that members of the community may pursue with their whole attention projects in which they are interested. Such a system of instruction and such an elastic organization of the curriculum provide the flexibility necessary to care for the individual needs of an organically developing human personality. They imply that a student shall have a will to work and that he shall make an honest effort to know and to experience the thought and achievements of mankind in order to discover his own real interests. It is recognized, however, that the student's interests do not necessarily correspond with the structure of the world, and that consequently the acquisition of sound knowledge always involves discipline and effort.

Students are encouraged to acquire wisdom for its own sake rather than for external rewards. In order to avoid confusion in the student's mind between working for grades and becoming educated, no grades are given to students. However, for the sake of possible transfer of credit, records are kept.

In his studies the student is offered the opportunity to integrate his knowledge so that he may understand, question, and reinterpret both the material within a given subject and the relations among the various fields. In the special field of his choice he is expected to gain a substantial and systematic body of information. However, he is not given facts merely to be accumulated, passively held, and forgotten; his study should lead him from a search for facts to an examination of the basic assumptions underlying them, and in this way to an understanding of the essential unity of knowledge. Thus the student may discover for himself the essential problems of man, both in their objective relations and in direct regard to himself. It is the aim of the College to lead him to such an understanding of the world and his own position in it that he will live within a broadened horizon and will find his way to true decisions. In short, it is believed that the student cannot be merely a disciple; he must reshape his experiences in his own way.

It is believed that a student's synthesis of knowledge and experience is
fostered by work in creative activities such as music, dramatics, the arts, and the writing and interpretation of literature. Hence these are regarded as an integral part of the life of the College and of importance equal to that of the courses that usually occupy the center of the curriculum. In the early part of the student's career, they are considered of particular importance because they are, when properly employed, least subject to direction from without and yet have within them a severe discipline of their own. The fine arts in their broadest sense express things which are too subtle to be grasped through the more strictly intellectual terminology of other fields. They offer the student primarily experience itself rather than ideas about experience; and since they do not have to be translated into terms other than their own to be understood, they have an immediacy sometimes lacking in other kinds of communication and subject matter. Since they are by nature subject only to qualitative evaluation, experience in them tends to correct the quantitative standards of judging things, which the student has often unthinkingly accepted. Finally, aesthetic awareness is heightened, and a sensory and motor training is given in these studies which is not produced by work in the strictly academic subjects. Hence the student is urged to participate in at least one of the fine arts, even though he may not regard himself as having a particular talent.

All work at the College is regarded as general education rather than as training for specific professions or vocations. This does not mean, however, that a thorough background or a high degree of proficiency cannot be obtained in any field.

At two points in the student's career he must face comprehensive tests of failure or success in his program. The curriculum of the College is divided into two parts, the Junior Division and the Senior Division. Before moving from the former to the latter the student must pass one of these tests, and before graduating, the other.
Drama is primarily an art form. Yet outside of its literary and creative aspects are other educational values. An actor must live for a while another life; he must discover other ways of thinking and make those ways his own. He must put himself in another place, another time, another situation. From a written outline, he must create a living person.

There is rigid discipline in the necessary surrender of the personal and the peculiar, in the finding of fundamentals in movement and voice. The actor discovers that motion comes out of emotion; that within the character he assumes, are absolutes of rhythm, tempo, mood. He finds that a play, like a musical performance, is a carefully balanced whole, and that he must always be aware of himself as part of that whole. He realizes that his acting (or it may be his costume design, his scenery, his lighting) is good only in the degree to which it communicates the ideas of the play and its author, and the attitude of the performers towards those ideas.
What has been said about the general aims of the college can be repeated for the drama department. It is not, or rather it is not only, a dramatic school. This will be best shown by taking as our basis of comparison other schools' dramatics department.

The Yale graduate school of drama, and the dramatics department of the University of North Carolina, at Chapel Hill, N.C. are typical of the two kinds of dramatics schools to be found in Colleges teaching drama seriously. (In some colleges it is not more than a students activity getting as much credit as the Freshman prom committee).

The Yale graduate school of drama puts all the emphasis on the technical aspect of dramatics production: designing, building and painting scenery, designing and making costumes, scenery shifting and every kind of backstage work, stage management and direction, lighting and recording. The work of the actor is a necessary part of the dramatic production and is studied only as such. No time is given to the study of acting. No consideration is given either to drama as part in the general education of
a student nor to its importance in art training in general. This can be explained by the fact that the Yale drama school is a graduate school. The Yale drama school catalogue says: "Emphasis is laid on the necessity of playwrights taking courses in practical direction and of design and of designers studying the problems of the playwrights and the producer."

The University of Chapel Hill is one could say the opposite of Yale. Chapel Hill is mainly concerned with acting and directing, all technical aspects of a production being left to staff technicians or particularly interested students.

These two examples give the pattern for the different types of dramatics department to be found in this country. Among other colleges having serious dramatics departments are Iowa, University of Wisconsin, University of California.

The Dramatics department at Black Mountain College is different from both the types cited above. The ideal of the Dramatics Department of Black Mountain is about the same as for the college as a whole: to give the student a general education,
to make him a well rounded person. They also want to give him a solid foundation for a specialized training. The college considers that drama helps the general education of a student, that is, helps him to understand problems with which he is not familiar, that the fact of acting someone's part, different from his own part in life develops his personality. Also that drama as a profession is something worth while especially as an educational instrument in high schools, colleges etc. A thorough preparation for such a profession is more than the study of one aspect of drama as offered in most colleges. All aspects of the subject have to be considered and not only the acting or some technical aspect of the production. We can summarize by saying that the aims of the dramatics department at Black Mountain College are double:

a. a general education

b. a knowledge of all fields of drama
A college dramatics department

what a college dramatics department is up
against; main difficulties and shortcomings.
how this is true particularly at black
mountain college.

A professional theatre and a college theatre have actually
very little in common. Their only similarity, I think,
is the fact that both produce plays. A college theatre
has to overcome many difficulties a professional theatre
does not have. Where the ultimate goal of a professional
theatre is to produce a play which will attract a large
enough public to make it a financial success.

For the college theatre, there is no such problem. The
final production is not more important than anything else,
one might even say the opposite. The different steps of the
production: rehearsing, designing and building scenery,
studying the lighting, are from an educational standpoint
far more important than the production itself. Where in
a professional theatre a perfectly good way of doing things
is to get a good director who will do everything according
to his own ideas, it is important in a college to have every-
body's ideas discussed and eventually used. The goal to be
achieved, it seems to me, is to have as little as possible
work done by the staff, and as much as possible by the stud-
ents. This is in a sense a shortcoming of the college
theatre. The professional has always the same people
take care of the equipment or, if not the same people, at least trained people which is a certain guarantee that the equipment will not be misused. The amateur handling that equipment is always somewhat of a nuisance, but in a college theatre it must be that way so that the students get the maximum out of their studies. This means of course that the equipment must be such that it is not difficult to handle and easy to replace, eventually...

For a professional the same lighting will do twice or as many times as desired until the public gets tired of it. The same is true of the general idea of the settings. In general, innovations can be brought in gradually and only when the budget permits it. In a college theatre experimentation is the rule. Settings should not be used twice. To make plays with old costumes would deprive the student interested in making them of an exercise. Therefore for each new production there should be new costumes. The same is true of lighting, of every little detail of the production: furniture, properties, etc... This means, of course, that the equipment must be flexible enough to permit every possible kind of experiment.

It is customary to classify stages in four different categories: the picture frame stage, the sculptural stage,
the central stage and the plastic stage.

A professional stage will adopt one of these stages and always stage its productions in the same fashion i.e. as this particular type of stage makes it possible. In this country it is always the picture frame stage which is used. In some European theatres other solutions have been considered as we will see.

the picture frame stage

The picture frame stage is the most favorable type of stage to create the conventional type of illusionistic staging. It is characterized by the fact that everything happens behind the proscenium arch. Not only is the setting kept behind that frame, but also the acting. If the spectator can forget about that frame then this is the best type of stage for realistic settings. On the other hand it separates the spectator from the stage and makes him feel as if he was watching something out of another world.

the sculptural stage

The best type of sculptural is the "Theatre du Vieux Colombier" in Paris. There is no proscenium arch; the stage is simply a platform in the house and whatever scenery is used in symbolical plastic forms. This type of stage
2. circular stage

3. picture frame stage

4. sculptural stage
brings the actor nearer to the audience, makes for more intercommunication between them. If pushed to the extreme this stage becomes the central stage with the audience sitting all around it.

The plastic stage

The plastic stage is a combination of both the picture frame stage and the sculptural stage. There is no prosenium opening but also a rather large forstage. The settings are reduced to a minimum and permanent architectural elements are used as much as possible.

A professional theatre will use one kind of stage, the one the public is most accustomed to. It is of little importance which one it is as good plays can be produced on any stage.

A college theatre must be planned so that its students can get training in every kind of acting, in every kind of design. This means that the ideal to be achieved as far as the stage is concerned is flexibility. Freedom to have a sculptural stage for one production and a picture frame for the next one.

In most colleges this problem is solved by having more than
The theatre of the University of Wisconsin is the most recently built college theatre. It has 2 different stages and houses. The main auditorium which is rather conventional, and the "Laboratory theatre" inspired from the Theatre tripartide of Auguste Perret (Paris, exposition des arts deco. It has 3 stages.
one theatre. Several stages combined in one single building. This is the case at Yale, at the University of Wisconsin, etc...

At Black Mountain College, however, the situation is entirely different from what it is in other colleges. Yale, Iowa, Wisconsin, etc. have hundreds of students interested in dramatics. The funds appropriated for the dramatics departments are proportionally large. The professional staff is also important enough in number to take care of the equipment and buildings. At Black Mountain, it cannot be hoped to have more than fifteen students interested in dramatics. These fifteen people, in addition to having parts in the plays, will also build the scenery and strike it, arrange the lighting, build, find and take care of the properties. It cannot be hoped have professional carpenters build the scenery, even less to have it done in professional studios from the sketches done at the college.

In other words, we are faced by the following situation:

build a theatre with facilities for diversified productions and experimental plays for a small number of students with no professional help. a theatre to be built on a small budget and to be run on a few dollars a year.
DRAMATICS

The work in dramatics is intended to serve several purposes: to be a meeting point of all the arts, to give the student an opportunity to gain familiarity with good dramatic literature, and to gain wide and practical experience in designing and creating scenery and costumes. Dramatics at the College is not primarily designed for the training of actors but rather to be the medium through which the student, interpreting and performing under the direction of the playwright's mind, may become more fully aware of himself as a person.

Through the medium of acting, dramatics, as a means of education, offers an opportunity for the simultaneous personal and artistic development of the individual student. In order that beginning students may work constantly with more advanced students there is no required sequence of dramatic courses. Students specializing in dramatics may gain experience not only in stage production, scenery and costume designing, scenery construction, and acting but also in the direction of plays. Most of the College productions are of a laboratory nature; consequently the entertainment of spectators is of secondary importance. Occasionally, however, a play is presented by the more experienced students so that the rest of the College and its guests may become aware of drama as an artistic form.

Plays of genuine literary merit are usually selected for production, but some are chosen for the opportunities for experimentation they afford to actors and technicians.
One can very well conceive a play given by actors on a platform without the aid of any technical devices whatsoever. Indeed some people have argued that that was the real theatre and that everything else was adulterated theatre. Plays have been given that way for centuries. This aspect of the theatre does not require anything else than talent and no building will help. Its requirements as far as the building is concerned would be very simple and probably limited to some considerations of acoustics and of vision. Therefore the technical side which we have proven is necessary to the education of the student will be the dominant factor in the final design of our theatre building. Before going in to these requirements a thorough study of the technical work of the dramatics department at B.M.C. is necessary.

The best way to describe how this work is done is to take an example from the preparation for a production. Let us, for instance, study the production of "Ethan Frome" given at the College during the second quarter of 1942-1943.

The plays are given in the Dining-Hall which is, by no means, designed for theatre productions. The construction work
is done in what is known as the "Drama shed". It is a wooden shack 20 feet long and 9 feet wide, at a distance of a quarter of a mile from the dining hall. This is also where the old scenery is kept, it is the properties and costume storage. No machine tools or even hand tools are available there. These are kept in the work shop three quarters of a mile from the drama shed and half a mile from the dining hall. The size of the drama shed makes any work inside of it impossible. All the work has to be done in the open air and North Carolina has one of the most damp climates in the United States. Work in the dining hall is impossible also as piano practice is held there at every hour of the day. Furthermore, there are in the dining-hall lectures every wednesday evening and concerts followed by dancing every saturday evening which take up the rest of the time. Even rehearsals have to be held elsewhere except during the last week before the performance. That means that a tremendous amount of time and energy is wasted in going from one place to another, driving the truck needed elsewhere from the drama shed to the dining hall and from there to the shop. Platforms have to be installed in the dining hall for the performance and rehearsals on the platforms in the settings are to few to be of any real value. It also means that as soon as the stage is set, that is a week or so before the performance, no other activities can take place in the
dining hall. The same is true after the performance before the stage is cleared.

The play "Ethan Frome" had five different sets and twelve changes. These had to be built at the drama shed, brought to the dining hall on a truck and carried inside through a normal sized door: 2' 8" x 6' 9" and set on the platforms. (The platforms had been brought in too). As there is no ways of flying the scenery, every piece had to be self-supporting, which made it heavy. As can be seen from the sketches, in order to save materials and to simplify the construction, the house which had to be seen both from the inside and from the outside, was built in one piece. This was considered more simple than to build it in separate pieces, as all that had to be done that way was to turn the house around. A fly system would have permitted the use of separate pieces which could have been used for another play if resurfaced.

The lighting of the stage in the dining hall is poor. The lights (except the side lights) are hung from a frame attached to the dining room ceiling in front of the stage. This means that in order to change their direction, their focus or their color, one has to use a ladder in the dining hall. This is, of course impossible during a performance and the result is that one has to choose between a poorly lit performance or by having enough lighting equipment to have all the lights set before the performance. This last issue is
financially impossible and unnecessary if the lights are accessible.

Even if we forget the impossible condition created by the fact that the distance between the dining hall and the drama shed are so far apart, other factors arise calling for a work shop adjoining the stage. Scenery has to be painted under the stage light, otherwise the painting will not mean anything on the stage. To paint it outside, in the sun one day and in the shade next day is an impossible task.

Least but not last: this situation calls for such a physical effort that the tendency is to do as little stage work as possible. Instead of working on the scenery, instead of experimenting in painting, the first thing done is generally considered good enough.

The number of students, as already pointed out, is an important factor. Where only a few people are available it is important to have as little preliminary work as possible. It has happened, and often will happen, that only one or two persons will work on one particular day; in fact it has been the case all through this last year. If they have to carry flats to paint them outside the dramashed, and then carry them in again to store them and start this all over the next day, they will soon give up. If on the other hand, every-
thing is ready for them to start working they will feel inclined to spend more time in the workshop.
In an ordinary college the final product of the dramatic activity is the least important part of the whole. As has already been said, it is what the student gets out of the whole process of staging a play that counts. At Black Mountain College, however, the situation is a little different. All the preparatory work is considered just as important, of course, drama being the meeting point of all the arts. But the ultimate result, the finished production is, I think, more important than in other colleges. The reason is that other colleges are ONLY COLLEGES as at Black Mountain there is the COMMUNITY to be considered.

The only source of cultural life the Black Mountain College Community has, is what can be found in the community itself. This means that every play, every concert, every lecture has to fulfill in addition to its own particular purpose, the larger purpose of contributing to the cultural of the community. This means, practically, that, in spite of the fact that Black Mountain has a small dramatics department, it is expected to give performances of a higher quality than what is given in other places. Also, plays and concerts are the only events to draw outsiders, sometimes from very far, to the college. It is one of the most important links with the outside world. As the college has not yet reached the point where
Music at Black Mountain is not only a part of the curriculum but an essential element of community life. Students and teachers of every interest take part in the instrumental and vocal groups enjoying the experience and discipline that comes from functioning consciously as part of a whole. Their performances are a weekly occurrence. Music is studied as a language with its own innate logic and architecture. Designs in melody, harmony, counterpoint and rhythms are practiced as elements of musical architecture and in their mutual interdependence. The history of music is conceived as an integral part of the culture of a period. The early music studied is sung and played before it is analyzed. A good music library facilitates the practical and theoretical work. Black Mountain believes that in a shaken world of ideas, music as a world of inner order can help toward developing that community for which we all toil.
it can rest assured on its own reputation. It has to show the visitors work of high quality.

In addition to the plays the college produces, other events will have to take place in the theatre in order to return the dining hall to its real use: meals and dances. These events will be concerts and lectures. The lectures sometimes are accompanied by projections, sometimes specialized equipment is needed (example: a lecture on acoustics given this year). The concert can be anything from one piano to chamber music and chorus concert.

why is a theatre building needed at black mountain college.

As we have seen the quality of the work produced suffers under the present conditions of work. Actual construction work should require as little effort as possible in its execution otherwise the result obtained is disproportionate to the amount of work involved. The financial aspect of the production suffers also from the waste caused by the impossibility to store finished products and supplies. The community life and the other activities of the college suffer from the invasion of the dining hall by the dramatics department. Not only does it take time away from other departments but it
CONCERTS, ART EXHIBITIONS, guest lectures are held frequently in the college dining hall which is converted into a grand salon for special occasions. Plays are presented here by the college group. Saturday nights students and faculty hold a semi-formal dance.
gradually deteriorates the dining hall, makes its cleaning difficult etc...

If we consider the other aspect of a theatre production, i.e. the rehearsing and directing part, they are also hampered by the absence of a permanent building. Rehearsals are to be conducted in another room as the stage platforms can be brought in only a short time before the performance. This means that the actor cannot get used to the stage as the room used to rehearse in is about one fourth the size of the dining hall, nor can he get used to project his voice in a large space.

we can then summarize and say that a theatre building is needed for:

a. the quality of work
b. the economy of work
c. the community life
POOR SIGHT LINES

GOOD SIGHT LINES

SEATS
PASSAGES
This thesis cannot and should not be a treatise on theatre buildings. However in this chapter, I will try to analyze the fundamentals of a theatre buildings. This will give a first serie of general requirements. In the following chapters we will see how these general requirements will be modified by the particular conditions of Black Mountain College.

A theatre building is divided into two main parts:

- the house, intended for the audience
- the stage.

A college theatre needs a third part which is as important as the two others:

- carpenters shop
- the workshop
- paint shop
- costumes
- costumes

We will study these three different parts.

the house

the main requirements of the house are: good visibility, good acoustics, comfort, safety.

visibility

(see adjoining diagram). From the diagrams we can see the
These 2 sketches represent the same stage setting. The top one is drawn from an orchestra seat, the bottom one, from the balcony (high). It shows why seats should never be too high above the level of the stage.

Another reason against looking at the stage from above is that in any scene involving a crowd, the stage has to be really filled if the audience looks down at the stage.
the best seats are those comprised between two lines drawn so as to be perpendicular to the proscenium, at the two sides of the proscenium. As soon as seats are built outside of this area, they do not get full view of the stage, and they look too much in the wings. This last consequence is more important for the stage than for the house and we will study it in the paragraph consacrated to the stage. The same is true for the height of the seat above or under the stage floor. The balcony (if any) looks down on the stage and the proscenium arch may if it is not high enough cut off the back stage area from the spectators view. On the other hand the front row of the orchestra seats looks up in the stage well and the higher the opening the larger the area of stage wall seen.

It is a rule, without almost any exceptions one might say, that all the professional theatres have impossible houses. If half of the audience can see they are considered good. The reason for this is an economic and not an architectural reason. The ideal vision diagram proves that the width of the house should not exceed the width of the stage. It would be awkward to have a stage wider than about forty feet as it would be too wide for almost any scene taking place indoors. On the other hand if the size of the stage is to be reduced by tormentors, then the side lines are not
Little backstage space.
Small acting area. The reason for this design is to get as much audience space as possible. It is a real estate solution, not an architectural one.

Compared areas of the Printz Regent Theatre in Munich

Stage Services House Foyers etc...

This is a solution to the problem: Produce good plays for an audience. No real estate consideration. (This solution is not up to date, as the theatre was built at the end of the 19th century, still it has more possibilities than the typical Broadway theatre.)
good again. With such a narrow opening, the only way the
the management of the theatre could make up for the lost
space would be to have a very long house. The vision would
be poor (too far from the stage) and the acoustic defective.
There would be a danger of having an echo.

This would tend to prove that a good theatre has to be small
and seat few people. Of course it is not economically sound.
But a college theatre does not have to be economically sound.
We will, therefore consider these sightlines requirements as
sound. Just to illustrate this point one should compare the
two sketches given here of a Broadway theatre and of the
Municipal Opera in Munich. One is economically sound, but
no good production can be given there. The other one is
economically unsound but has all the facilities available
in the days when it was built. The case of a College theatre
is the same as in Munich. It does not have to be economi-
cally sound.

The slope of the house floor is an important factor too. One
can design a correct slope by using the diagram illustrated in
the final drawings of this thesis. It is not done in city
theatres because of the cost of excavation. Traditional
architecture would prohibit the raising of the last row of the
orchestra too much above the street level. It would also be
considered to uncomfortable for a paying audience. And finally the most important reason would be that such a floor raises very sharply. After about twenty rows the slope is such that it is difficult to break up the aisle with enough steps to follow the slope.

In the case of the medium sized theatre the slope does not get so steep that the aisle cannot be walked up. What happens is that the last rows are about as high as a balcony which means that if the proscenium is not high enough, the last rows will not have a full view of the stage. The high proscenium is not an advantage, however, but a draw back. It means that much more scenery has to be built for exterior sets and realistic interiors cannot be designed at all.

All this proves, I think, that in order to design a good house, simple enough to be a practical proposition, and in the same time with good sight lines and acoustics, one has to design a small house.

The matter of comfort, I think, is of rather small importance. The main discomfort to be found in a theatre is directly derived from what we have considered so far: poor vision and poor acoustics. Much more often discomfort is created by poor vision which forces the spectator to sit on the edge of his chair, to twist his head and body about in order to catch a
glimpse of the stage, also by the nervous strain resulting from trying to hear in a room where hearing is impossible. The rest is a matter of small importance: fairly comfortable chairs, enough space for your legs, temperature and ventilation well regulated.

The last problem is a problem of circulation. This a problem that is rather easy to solve in a small theatre. To it is related a problem of safety: fireproofing and easy exits.

the stage

First we should define what we are going to call stage. Under this heading will come the proper acting area, the area occupied by the scenery when in use or when stored between acts (this is related to stage shifting and does not include permanent storage space), the outstage (wings and back stage), the lighting equipment (more and more in modern theatres the lighting equipment is as much in the house as back stage), the staging devices of permanent character.

the acting area

The acting area itself is usually made of yellow pine tong and grove flooring, laid parallely to the proscenium opening; in some small theatres, colleges and high school auditoriums, hardwood flooring has been used under the assumption that it
would wear out less. This assumption seems to be wrong as
the traditional kind of scenery is held in place by stage
braces screwed to the stage floor. The screws are of the wing
type and about $\frac{1}{2}$ inch in diameter. The use of these screws
naturally deteriorates the floor. However yellow pine by
being more fibrous suffers less than hard wood. Another
advantage is that the operation of screwing into yellow
pine is much faster than that of screwing into hard wood.
As both, finally, do deteriorate anyway, it is cheaper to
replace yellow pine.

In some large theatres, mostly in Europe, the stage floor
is sloped towards the audience. It seems that this practice
has started in those old theatre where the seats for the
audience were all built on the same level. This compensated
somewhat the vision of the people away from the stage. Even
if we disregard the fact that it makes acting difficult it
is not a practice to be discouraged. If it is done it means
that one has to compensate for this slope in every flat of
the scenery one builds for this stage. Otherwise, to take
for an example an ordinary box set, one will have the back
wall of the set leaning forward and every door in it will get
stuck if opening on stage. It will mean that that back wall
will hang from the stage braces instead of transmitting its
own weight directly to the floor as is the case when the
wall is set square. It also will make for awkward cracks
between side pieces and hung pieces, the hung pieces, of course hanging vertically.

In modern theatres it seems to be the rule to have the stage floor completely trapped. That is to be able to make an opening anywhere in the floor. This is however a much more difficult problem than it seems. If money is available both for construction of the theatre and for production it is a good thing to have. It means, however, that one is faced by a rather complicated framing problem. It is not that the traps would create unusual structural difficulties but it makes it almost impossible to have a smooth stage floor surface. If the traps are to fit tightly as would be desirable then the shrinkage and swelling will make their operation almost impossible. This could be overcome by having metal edges put on the traps, these edges covering the crack. They, however, make an unpleasant pattern on the floor. In most professional theatres and in colleges where money is available for production this is overcome by use of a floor canvas. It is a piece of cloth covering the acting area. It must stop at the edge of the set itself otherwise the stage braces would have to be screwed through it. This means that for every set size a new canvas is needed. This is a rather expensive proposition as the canvas in order to last has to be of
good quality. Its stretching also is quite a problem especially during the intermission. Another shortcoming of the trap system is that the space under the stage cannot be used for anything, even storage cannot be done there with any kind of a system as any trap may be used at any time and than the space under it has to be cleared.

Stage pockets are always to be found around the acting area. They are depressions in the stage floor with a cover to protect them. In them are light plugs for movable lighting equipment.

temporary storage

By temporary storage we mean the space where the scenery is kept when not in use in the scene being performed but which scenery is used in that particular play, that is scenery which will be used that night or has been used. This is quite a different problem from the permanent scenery dock. This scenery has to be rapidly accessible. The storage of this kind can be classified in two groups:

a. off stage space
b. in the flies

off stage space

This means the stage and the back stage area. In the wings
one stores everything which cannot be flown, i.e., all the built pieces (plastic pieces in opposition to flats), the side walls of box sets (although they can sometimes be flown if enough space is available in the gridiron), the furniture. It is, of course, possible with some ingenuity to fly everything on the stage and one of the advantages is that less stage hands are necessary. On the other hand gridirons are so built that three lines go to one piece; flying a table on one line wastes two lines. On the main line the chair is flown and if the table is three feet wide it wastes two more lines as the lines are set one foot apart.

It is considered necessary to have at least the same space off stage as one has on the stage. In some cases, as in the Munich Opera, the on stage is one fifth of the total space available. This perhaps is too much for the usual production; however, too much space cannot hurt. Space must be provided for actors waiting, musical accompaniment, properties (one table per act), stage manager, prompter, scenery and furniture. In the case of large plastics, to have enough stage space may spell the difference between an intermission of fifteen minutes or one of five minutes. If space is available the piece can be assembled waiting the moment to be pushed on the stage. If one lacks space it has to be assembled on the stage.
fly space

The fly space is the space above the stage. It is composed of the gridiron, a surface of beams extending over the entire stage floor and holding pulleys and loft blocks. There are three pulleys for one loft block as is shown on the sketch. The purpose of these is to haul the scenery up in the flies and out of the public's view. The hauling is done either by pulling the lines over the loft block from the fly gallery (small balcony at one side of the stage) or with the help of a counter weight system. The pulleys are usually set about one foot apart. In certain cases, by using enough lines, it is possible to fly a full box set, i.e., the back wall and the two side walls, without striking it. If several box sets are used in one play, by having them built to fit into each other, all of them can be flown without striking.

the back wall

If the back wall is smoothly plastered it can be used as a back drop for the sky by lighting it properly or by using an effect machine. It is important then to have the full back wall (not only the portion in front of the proscenium arch) free of doors and windows and plastered.
permanent scenery

The permanent scenery is really more part of the theatre itself than of the scenery as such. It is therefore necessary for us to study it here. We will call permanent scenery all such stage equipment as is used with whatever special scenery is built for a play.

Stage sets can roughly be classified in three categories:

a. the interior set
b. the exterior set
c. the abstract set

For interiors little permanent scenery can be used except for such things as backings behind openings of doors and windows and also the doors and window units themselves. This, however, is just scenery and has nothing to do with the permanent equipment of a theatre building.

Let us now consider the exterior setting. Any exterior setting can be summarized as follows: it is a number of plastic pieces, trees, rocks, ground rows, fences, etc...

The problem is to create the space. In a theatre there is no "space". We are limited by the acting area and have to hide from the view of the spectators all the backstage area, the wings etc... As the art of stage craft has evolved this problem has been met in different ways which we will analyze.
Back Drop: Back Drop
Borders: Borders
Wings: Wings
Box Set: Box Set
From the days of Moliere, up to as recently as the end of the last century (and up to now in most theatres) this problem has been met by using what is known as wings, borders and backdrops. This is illustrated in the accompanying sketch. If one admitted the representational convention this method created, it was the best and the simplest way devised so far. No technical problem was created, changes of scenery were easy as the wings could slide in special grooves and the borders be flown in the flies.

Simple as it may be, this method was not considered good enough for the realistic plays of the end of the 19th. century. The wings and borders were, of course, a poor way of representing the depth of heaven. They looked what they really were, that is painted canvas, which was too much to bear for the stage directors who brought real trees on the stage. Different solution to the problem were found. All of them are really part more of the theatre than of the scenery. That is why we are going to discuss them here.

the canvas cyclorama (see sketch)
A cyclorama is a piece of canvas stretched so far as to be free of wrinkles and extending from wing to wing and
MASKING means hiding from the audience the backstage area, this can be done:

A. With wings, borders, and a backdrop. Early fashioned system.

B. With a canvas cyclorama, i.e., an enclosure of canvas, high enough so that its top is hidden by the proscenium arch and its edges by the wings of the proscenium arch.

C. A plaster wall, curved like a cyclorama. (No wrinkles.)
around the acting area. When properly lighted and properly stretched it creates to a certain extent the illusion of space. At least it does not give the effect of the wings that is planes of canvas at regular intervals. It hides the wings but gives no solution to the problem of hiding the flies. However, if the gridiron is high enough, by degrading the light on the top of the cyclorama, one gets a rather satisfactory effect. The great advantage of the cyclorama, as compared to other existing systems is that it can be removed rather simply and rapidly.

the sky dome

The sky dome consists of a quarter of a sphere, plastered inside and enclosing the proscenium opening in order to hide both the flies and the wings from the spectators' view. When uniformly lit, the dome becomes invisible, in the sense that it is impossible for the spectator to focus on its surface. As far as the effect obtained is concerned, it is the best method conceived until now. However, it has a the following drawbacks: it is not very satisfactory acoustically; it cuts off the flies from the stage and makes it impossible to shift scenery from the gridiron. This has been overcome in some theatres (Germany) by having the dome
A movable sky dome.
movable, i.e. designed in such a way that it can be pulled back far enough to permit the use of the gridiron. This, however is mechanically very complicated and too expensive in most cases. It is also a great waste of space.

A curved plastered wall

A curved plastered wall does not wrinkle like the cyclorama and it does not make the use of the gridiron impossible. The effect, however, is not as good as the dome and it seems that the cyclorama is always as good and more flexible.

Other methods

Other methods to create "space" on the stage do exist: the Fortuny coupole is a canvas dome held firm by compressed air between the two layers of canvas the dome is made of. This method has been largely abandoned.

What we have said here about creating space for exterior setting is true also about abstract scenery. There, also, the problem is to have a few plastic pieces against a neutral background. The best neutral background will be the same as before: a cyclorama, a dome, etc... In our theatre for Black Mountain College we will have then to make a choice between the existing methods or adapt one of them to our particular theatre.
REVOLVING STAGE

WAGON STAGE

PLATFORMS
mechanical scenery shifting

Without going into the details it should be mentioned that there are other methods besides the flies system for shifting scenery. All of them are essentially the same, i.e. instead of shifting scenery piece by piece, one shifts the stage as a whole with a complete new set on it. The accompanying sketches show how this is done.

lighting

In order to understand what the lighting problem is in a theatre we have first to consider what the theatre lighting was about 40 years ago.

The lighting was largely conditioned by the type of stage scenery. The set, as we have seen, was made of borders, wings and backdrop. The problem was to light the actors, the backdrop, the wings and the borders. This was at a time when lighting equipment was still rather primitive. The best thing to be done was to give a uniform light on the whole stage. As the shadow cast by a border on the next one would have been disastrous (it would have made it obvious that there were only strips of canvas) not a shadow was allowed to subsist on the stage. This meant a flat uniform lighting, without interest or possibilities. Such a lighting was achieved...
ved by the following instruments:

the border lights, whose function was to light the borders. They were half cylinders, hung from the flies between the borders. The bulbs were of low wattage.

the strip lights, were border lights, hung vertically and lighting the wings

the foot lights, were the main source of light and the only one, as far as the actors were concerned. They gave, and still give, a very poor light. The light comes from below and lights the under parts of tables and the actors chins.

Obviously we could not use such a lighting now with the development of plastic scenery. Nothing will look plastic if the light is so arranged as to give no shadow. Why, in the first place, then make it plastic?

The problem with our present scenery is to have selective lighting, i.e. have the possibility to light any part of the stage at any time with any intensity and any color. Present day scenery depends to a large extent on what is called "painting with light". That means that a color effect is secured more by mixing lights than by mixing pigments on the canvas. To secure this effect the modern theatres depend more on the use of spotlights and effect machines than on general lighting instruments, like the ones
mentioned above.

As every stage presents a different lighting problem, we will discuss the lighting in the second part of this thesis dealing with the specific design, worked out for Black Mountain College.
This first part has been devoted to those general rules any theatre building has to comply to. We will now in the second part of this report, study the requirements of "a theatre at Black Mountain College". These requirements will be function of the location, the type of audience, the kind of work done on the stage, and the different uses the theatre will be subject to.

Note: the questions relative to the construction, methods, to the work program, and students labor will be studied later under "construction"
different uses of the theatre

As already said before the theatre will be used for practically everything that now takes place in the college dining hall, i.e. drama, lectures, concerts. To illustrate the uses of the dining hall, let us look at the schedule for a busy week at the college:

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<tr>
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<th>morning</th>
<th>afternoon</th>
<th>evening</th>
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</thead>
<tbody>
<tr>
<td>monday</td>
<td>music practice</td>
<td>drama rehearsal</td>
<td></td>
</tr>
<tr>
<td>tuesday</td>
<td>music practice</td>
<td>drama rehearsal</td>
<td>lecture</td>
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<td>wednesday</td>
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<td>eukinectics</td>
<td>drama rehearsal</td>
</tr>
<tr>
<td>thursday</td>
<td>music practice</td>
<td>eukinectics</td>
<td>drama performance</td>
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<tr>
<td>friday</td>
<td>pract-</td>
<td>eukinectics</td>
<td>concert and dance</td>
</tr>
<tr>
<td>saturday</td>
<td>ice</td>
<td>music practice</td>
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Drama performances, of course, do not happen every week. However, construction on the stage has to be started some time in advance. This is practically impossible under actual conditions, as one does not want to perform the Saturday concert in the settings of the coming play. Hammering during piano practice is not desirable. An example of the difficulty of the actual conditions: during the rehearsal period of "Ethan Frome" in February 1943, a tank of compressed air exploded on the stage tearing the set to pieces. The tank was to be used for the coming lecture on "Acoustics".

With the new building eukinectics, a kind of rhythmic
dance course, music practice, practice for concerts and dances can still be held in the dining hall. This means that in the new theatre nothing but dramatic performances, concerts and lectures will be given. Even these three activities can eventually overlap.

In order that the compressed air accident does not happen again, one of two solutions is possible.

a. Never leave any equipment on the stage, such as equipment for lectures or stage scenery. This means that students have to diverted from the work program and its essential activities to perform this useless task.

b. The stage could be so designed that part of it could be shown to the public and others hidden. In this way it would be possible to keep the maximum of equipment and scenery on the stage at all times. The second solution seems much more economical, both of work, and of material and equipment. It means, also, that rehearsals in the settings can be conducted any time without interference with other activities. It is then the second solution that we are going to try to provide.

the financial aspect

It has already been pointed out that that the financial
Study Building, built by students and faculty, lower right. Assembly and Dining Hall and twin dormitories at left.
situation of Black Mountain College is of a very special nature. When a building is built for the college, it is always understood that every cent spent has to go into something which increases the facilities of the college. No money is available to make the buildings "college like" or to impress the outside world. This means that our theatre building has to be 100% usable.

On the other hand, a theatre where students are going to study drama has to have a minimum amount of facilities, the same as a laboratory. If it does not provide certain essential facilities, it might just as well not exist altogether, as it could not be used at all. The design presented in this thesis, is such a minimum theatre, giving possibilities of studies to the students.

It is a minimum a college such as B. M. C. should have, and the design as well as the requirements have been planned so as to have every cent spent made useful. The money that would be needed to carry this project to completion would have to come from a donation as all colleges have some time or other.

location

As can be seen from the adjoining picture and from the plot
plan, the campus at Black Mountain College has a very strong relief. The only two flat areas available are the place where the theatre is shown standing and the flat space between the studies building at the right and the lake. That last location is excluded as any construction there would interfere with the view from the studies building. Also, the drop from the road to that flat piece of land is very sharp and it would be difficult to make it accessible by car without spoiling the landscape. It seems, furthermore, that a building like the theatre which will attract many outsiders should be kept near to the entrance of the campus so as to separate the Study area from the area of activities.

The reasons for the choice of the location are, consequently, the following: it is near the entrance, it is level, it is far from anyplace where concentration is needed for work; a large parking place would do no harm there to the landscape as it is seen from practically nowhere on the campus. The ground is, also, more favorable to construction than at the foot of the studies building where it is marshy. Moreover, trucks bringing materials would have to cross the whole campus, whereas on our selected spot it is at the very entrance of the college.
The audience is of two kinds: the outside visitors and the college community. The outside visitors come by car, sometimes from rather far away, most of them from Asheville however. Asheville is situated about 15 miles away and is the nearest big town (about 100,000 inhabitants). They come to see the play or to listen to the concert and in addition to that purpose, to see the college. The college community (students, teachers and staff) walk from the dining hall after dinner, or sometimes drive down from their cottages. Both, then, need parking facilities.

The college community at its maximum is never supposed to be over 180 people. This figur however has never been attained, so far. Experience has shown that the outside visitors number generally about 100 people. A figure of 300 seems then to be satisfactory.

This, though, is not the only reason to keep the maximum capacity at 300. As will be seen through our proposed theatre the slope of the floor after the first 15 rows. If this slope was reduced the visibility would not be as
Another reason is even more important: the dramatic performances are given by amateurs. (the concerts given by professionals never draw as big an audience) and amateurs have their limitations. The matter of voice is one. It is impossible for an amateur of the ordinary type to fill, in the dramatic sense of the word, a big theatre. It will always sound empty and feel empty. This is important not only for the audience, but also, and even more, for the performing students. To perform in a theatre where he knows he is not well heard and not well seen, breaks the confidence of the actor, and spoils all the performance. From the point of view of the cost of production a small theatre is much better. Leaving aside questions like heating, cleaning, etc... which obviously cost more in a large theatre, such items as stage construction and lighting which are part of the studies become too high-priced in a large theatre. In the first part of this report we have discarded the fan shaped theatre as bad from the point of view of vision. We have said that the good shape was rectangular. This means that the larger the theatre the wider the stage and the wider the stage, the more work and money goes in the stage sets.
One might say that the figures given here of 180 and 100 people may increase. That is, of course, true. The drama department, however, has always felt that if it had to perform a play twice it would give the student another experience needed for those interested in the theatre. So far, there never has been enough demand for two performances and the audience has always been accommodated at one time. If, however, this figure should increase, one would give two performances with priority for seats to the outsiders and the college community filling the empty ones.

approaches, entrances and lobby.

At Black Mountain College, people come for the performance. Easy approaches, entrances and lobby is all that is desired. As the lobby will never become a social hall, that function being performed by the dining hall, its size can be kept to a minimum.

the house

All that is needed in the house is reasonable good seating, very good vision and very good hearing. Acoustics in a small house are reasonably simple matters. That will be discussed in part three.
discussed in part three of this report where the explanation of the design will be exposed. The question of vision has already been discussed in part one. What we want is then: 300 good seats, no balcony, easy circulation and steps from the auditorium to the stage. This last is wanted for several reasons: to permit the musician who is going to perform to stay in the house until the last moment and also to give such plays where movement of the actors from the house to the stage is called for. The matter of providing 300 "good" seats is a simple one if we are not considering the economical and real estate aspects of theatre construction.

The stage

We have already defined what is called plastic stage, sculptural stage, etc... We have also said that for a college theatre it is important to make it possible to have as many stages as possible. Leaving aside the circular stage with the audience seated all around it which calls for a special building, we will try to design a stage where plays can be given in different ways. For this purpose we will design a forstage wide enough to permit performances in front of the stage (sculptural stage). Furthermore, we will attempt to arrange it so that certain
parts of the stage can be used separately. A great advantage of having this wide apron is that musical instruments can stand there ready for concerts while the stage proper is left untouched with the setting standing on it.

In addition to the inevitable flying system to change scenery we will want another device, especially useful in a college theatre where the number of stage hands is limited. It seems that sliding platforms would be the solution. These platforms can be pushed in and out with the setting complete on them. In an experimental theatre plastic scenery is liable to be used quite a bit and the platforms would be a great advantage under those conditions. Traditionally built flats, borders, etc... can be flown easily and rapidly. With plastic scenery, the situation becomes more complicated.

These platforms, of course, will have to be moved by hand. Any kind of mechanical system will be out of the question on account of the financial situation. Their size will, therefore, have to be limited so as not to be too heavy. Usually, the way this is solved, is to have several platforms. The settings are built on all or part of them and they are then brought together on the stage.
Now, the question arises: what kind of permanent backing shall we select? We have the choice of sky dome, cyclorama, etc... I think, we will choose the cyclorama. It is by far the least expensive, the most flexible and the easiest to build. A sky dome obstructs the wings of the theatre, and makes, thus, the use of sliding platforms impossible. If one uses a cyclorama, one can always fly it high enough to let the platforms go through.

In addition to the cyclorama, we will have a smooth back wall behind the stage, uniformly covered with plaster. For such plays where only interiors are used, or where the wings are masked in some fashion, the plastered back wall is more efficient than the cyclorama as it makes circulation easier between the wings and the acting area.

When no cyclorama is used and when the back wall is fully exposed, it becomes necessary to provide a passage from one wing to another. This is done by going under the stage.

dressing rooms

Dressingrooms, costume and small properties storage have to be provided. As we have pointed out before, traps in
the stage floor are not an absolute necessity. We can therefore use the space under the stage for these purposes.

the construction and costume department.

the settings storage department.

Previous experience has shown that no greater mistake can be done than to have the construction of the sets and their storage in the same place. The same is true for the making and the storage of costumes. The reason for this is that the tendency is then to use the old pieces as a basis for the new ones. The result of such a policy is that:

a. no stock of scenery can be achieved
b. the new pieces built, are always flimsy and carry some kind of a flavor of the old production.

The fact that the construction is separated from the storage is not a disadvantage as far as the transportation goes. The accompanying diagram shows why (we have to keep in mind what has been said about temporary and permanent storage).
two types of paint frame.
Painting of scenery should be done under artificial lighting and a paint frame should be built so as to be able to paint sets in a vertical position. This gives the painter a chance to step back to look at the result.

As far as carpentry is concerned, in addition to the usual hand tools, a band saw, a circular saw and a power plane should be provided. Also there should be enough place to rip a sixteen feet piece. Flats are usually built on raised platforms with a device that makes it possible to build a flat with a minimum of measurements (jig).

For costume making, in addition to the usual sewing equipment, vats for dying should be installed. At B. M. C. this has so far been done in bath tubs. Dying is an easy procedure and should be done whenever necessary rather than buying material in the only colours that can be found. Even the uneveness of the colour is an advantage on the stage.

the lighting.

One cannot for obvious reasons, give any precise requirements for the installation or kind of lighting equipment that will be used on the stage. This is a direct result of the size and shape of the stage de-
signed.

We have defined in the first part what the different kind of lighting instruments are. They are controlled from a central switchboard, where every lighting instrument including the house light can be plugged in. The location of this switchboard is a very important matter.

In most theatres it is built in one of the wings of the theatre. In such a position it is impossible for the operator to get a full view of the stage and to get an idea of what the spectator sees. In a professional theatre, this is not very important. The play having been planned and timed, the electrician from his light plot can tell at what moment what light has to come in or out. In our case, however, the situation is different. Amateurs seldom perform the same play the same way at every performance and rehearsal. Also the result obtained by working the light in full view of the stage, is more satisfactory than from a poor light plot. In order to write a good light plot, two or three light rehearsals have to be conducted. This is seldom possible, in this case, where the time for rehearsals is limited. We will therefore design a switchboard so located that the elec-
The democratic way of life means social equality. It means also equality of obligation and of work. Through the community work program Black Mountain asks of its students and teachers participation in a community citizenship which is far from theoretical. Community work is in no sense “made” work, contrived for educational purposes, nor is it a system in which some students become the servants of others. Instead, it is work necessary to the operation of the College, shared voluntarily by community members, and the responsibilities it imposes are real responsibilities. People at the College spend from ten to fifteen hours a week chopping wood, cutting corn, driving the tractor, working in the office. A student may manage the College store; he may report College news; he may dig a ditch. Most students do several such jobs.
trician can see the stage. This means of course that some
kind of interior telephone will have to be provided for
the stage manager to communicate with the electrician.

As already explained the college has a work program. Every
student has to contribute to the physical life of the
college. The New Studies Building shown on the first
page of this report, has been built mostly by students
and faculty labor. It was done in the following way:
professional carpenters, masons, etc... worked on the con-
struction. Instead of professional helpers, they had the
students. Work like hauling stone, mixing cement, dig-
ning, bringing lumber, helping with the framing, laying
floors, surfacing walls with plywood, or other sheet
materials, sanding floors, etc... was done by students.
Of course, where the students were particularly skilled
they took the place of professionals.

The type of construction the student can master the fast-
est is frame construction. Frame construction is not
ideal for a building like a theatre. Safety is the main
factor against it. All the same, the studies building,
where one hundred students work all the time, the dormi-
tories and the faculty cottages are all built of wood.
WORK

The College has always understood practical work to be a valid part of education. The work program is the expression of this understanding in a tangible form. In line with the democratic organization of the College, the students share equally with the faculty in the planning and administration of the work program. Responsibility is made a matter of aptitude and ability; and often students supervise or direct the projects on which they and their teachers are working. An average of seven or eight hours a week, depending on how much time they feel they can afford, members of the community work together on the new College buildings or about the College grounds.

While a considerable degree of technical skill may be acquired from work carried on in such a program, the fundamental contribution lies in the inculcation of a spirit of responsibility. Through working together, the students learn the necessity of social organization and the implications of active citizenship in a group. They also learn how the efforts of individuals, when combined in group activity, can overcome difficult obstacles and change a plan into a reality. Furthermore, by doing types of work that are the occupations and the means of livelihood for a large section of the country's population, students gain a social consciousness which is more than a political byword; they gain respect for skilled workmanship and come to adopt a more realistic and sympathetic attitude toward necessary hard work and toward those who perform it. The work program also affords an opportunity for the development of resourcefulness, practical judgment, and the ability to cope with certain kinds of emergency. As in art or craft work, students learn that materials have limitations and laws of their own, and that working with them requires discipline and technique.

But there is more to the work program than its educational aspects. It is the most important step the College has taken towards a desired and ultimate economic self-sufficiency. The ideal of a college free from dependence upon external philanthropies is a relatively new one in
American education. Through an understanding of this ideal by members of the community, the work program becomes something very real and important to them. It becomes an economic as well as an educational experiment, and finds its justification in practical reality as well as in educational theory.

Work equipment at the College is modern and suited to projects requiring a considerable degree of skill. The work is of many kinds, varying in nature from stone gathering or ditch digging, to electrical wiring or cabinet making. Many of the skills acquired, such as truck driving, construction work, and machine repairing, have been found valuable by students now engaged in national defense work. There are new buildings to be designed and constructed, roads to be built or repaired, older buildings to be maintained, and landscaping to be planned and completed. The College farm, another factor in a long range plan for self-sufficiency, has an important place in the work program; community members help in clearing and draining land and in plowing and harvesting. Students who for one reason or another do not participate in the regular work program often assist in the College offices, in the library, or in the print shop.

Because of the practical nature of the work, because the students share responsibility in its organization and supervision, and because of the discipline it affords, the work program tends to complement intellectual education to an unusual degree. Through its cooperative and economic aspects it emphasizes the importance of community citizenship. The student becomes very much a part of the College and assumes responsibility in the solution of its problems.
looking at the new building from the theatre location

(architect: A. L. Kocher)
They are insured and no difficulties seem to have occurred there. The strongest point in favor of frame construction is the matter of cost. The college owns about 300 acres of forest, mostly pine, oak and locust. For all previous building the lumber has been cut from that supply and it would, of course, be the case of the theatre too. It will bring the cost down about 18% judging from previous experiences.

Frame construction could not be used for all the theatre, though. The stage house should be built of steel. The gridiron is a rather heavy structure. It supports scenery which is heavy too, and has to be about 60 feet above the stage floor. A frame construction, if designed to support such a heavy load and the wind pressure that such a large expanse of wall would present, would be too bulky, and probably would not be much cheaper than steel.

Little or no student labor could be used for the erection of the stage house. This would have to be done by a specialized construction company. Student could be used for foundation work and for carrying materials. Also such accessory jobs as surveying, truck driving, care of tools, could be done by students.

The adjoining pictures show the general aspect of the
new studies building. The new theatre should be built as much as possible in harmony with this existing building. Another new structure on the campus, "the Jalowetz cottage" (faculty cottage) is built with the same materials.
this has been a study of specific requirements for a theatre at B.M.C. By combining them with the general theatre requirements and by modifying them as we progress we will now be able to start the third part:

the design
the proposed design

location and approaches

We have already selected the plot at the entrance to the college grounds. It is limited by the main college road, the lake, and the county road to the village of Black Mountain. This plot is level.

The theatre is placed perpendicularly to the road so as to provide two entrances, one from the visitors parking, one from the college side. This is done with the purpose of keeping the visitors traffic out of the college ground. The stage and the services are accessible from the college parking lot. A road circles the building and allows for truck traffic behind the theatre, to the heating plant entrance, the workshops and the scenery storage. Scenery storage and workshops are also accessible from the stage entrance under the building. The doors mentioned here are freight entrances, located at the second floor of the building, so that heavy pieces can be lowered in the truck.

the spectator area.

The fact that the floor of the auditorium is sloped
1. Entrance under the stage. No extra construction for lobby.

2. City type construction. Excavation so as to permit access from ground level.

3. Type adopted for B.M.C. stairs to last row of orchestra.
means that there will be quite a difference of level between one end of the theatre and the other. Two solutions are possible.

a. the solution adopted in urban theatres: excavate so as to bring the last row of the orchestra level with the street.

b. have a flight of steps up to the last row of the orchestra and then go down slowly.

The second method, without excavation has been adopted here. Excavations are costly and, with our type of labor, take a very long time to do. Furthermore, we do not have, like in a city, to meet a zoning law as to the height of the buildings. A third solution, shown in the adjoining diagram, has been discarded. The scheme was to bring the road under the auditorium and using the space under the stage as an entrance hall. The house then was shorter as no lobby was necessary at the end of the orchestra. This scheme was discarded because it raised the last row of the orchestra much too high, and also because it made for rather awkward circulation at the entrance.

the entrance hall.

Entering from either side one finds the stairs up to the orchestra. At the entrance level are the toilets and a
space to hang coats. These are hung by the spectators and there is no one to attend as is now the procedure at B. M. C. However, if in the future this method should prove unsatisfactory, there is always the possibility of building a counter in front. No admission is ever charged at the college performances. No booth has, therefore, to be provided. If, however, this policy should change, the perception of the entrance fee and the control would be done in an informal way and arrangements for that function would easily be done.

Going up the stairs one reaches the upper floor lobby with two windows opening on the mountains. A heavy curtain separates the lobby from the auditorium proper. This curtain can be pulled closed during the performance by the ushers.

The house

The house has been designed according to the rule we have laid. All the seats are included between two lines drawn perpendicularly to the proscenium opening at its two ends. The slope of the floor has been computed so as to permit every spectator to see over the head of the one in front of him (see section).
Despite the slight waste in capacity, the system with two aisles along the walls and two in the seating area has been preferred, rather than one in the center. The central aisle takes up the place of the best seats; it gives also the performer a feeling that the house is empty. In a small house like the one we are designing there is no problem in having the actor heard from the audience. (See later under acoustics). It has, therefore, been felt that there was no necessity in designing a ceiling of such shape so as to reflect the sound from the stage unto the audience. The ceiling is flat with one break, where the light bridge is located (see later under stage). Two fire exits are located at the lower end of the house near the stage. This means that we have exits at both ends of the theatre which should be enough.

The seats are made as shown on the adjoining detail. A sheet of bent plywood (3/4") forms the back. To it is attached the seat proper (springs and upholstery). These should be cheap to have made and they could be assembled by the students.

Lighting is controlled from the general switchboard
and can be dimmed through the master dimmer. The light sources are spherical reflectors with a smaller reflector attached to the bulb (see drawing). These give an easy and even light. The code prescribes permanent lighting fixtures indicating where the exits are. These will be provided also.

the stage

The stage, the storage and working area, the dressing rooms, etc... are all located in the large block set at right angle to the house. It is a separate unit, structurally as well as functionally. It has to be structurally different from the house because of the special equipment it contains, the gridiron particularly, and because of its height. First, we will study the relationship between the different areas contained in the stage house.

These elements are: the stage

acting area
back stage & wings
scenery shift, elem.
perm. scenery
lighting equip.

the workshops
storage of materials
carpenter's shop
painters shop
paint frame
In order to understand the relationship between these areas we will study the trip a piece of scenery, a costume, a piece of property takes through the theatre. Also what other activities taking place at the same time there are.

The materials arrive by truck and are brought in the building through the second floor door of the workshop wing. If brought by hand, they come up the stairs and the trap door. Flats and other pieces of scenery are made on the work bench, property pieces equally. Canvas is tacked and glued and the pieces move to the paint shop to be painted. Both the areas where the pieces are built and painted are three stories high so that any size of scenery can be handled. In the paint shop the paint frame can be used. It consists of:
a. a device to hang or stand the scenery against the wall.

b. a bridge of the type that house painters use, that can be lowered and made higher at will by the person doing the painting. This permits the painter to come down to the floor and look at the scenery as it will stand on the stage. There are few windows so that all the painting can be done under artificial light.

All the scenery built is for the coming performance. At the end of each workday the completed pieces are brought on the stage and put in their place in the flies or in the wings.

Let us suppose that the rehearsals are already going on. One can start using for rehearsals the scenery which is completed. This scenery need not interfere with the coming concert as the musical instruments are in front of the curtain. In case of an unusually large orchestra, the scenery is kept back of the second curtain. (See further).

The performance takes place. After it is finished, whatever scenery does not take up too much space in the flies is left there.
in the flies is left there. The rest (probably most of it) is moved to the scenery storage. The same trip is taken by the heavy pieces of property such as furniture. These are stored in the three floors of the storage wing. A hand elevator can be used.

If the play goes on tour, the scenery leaves the theatre from the construction wing if it is built especially for the tour and if not built especially for the tour it leaves from the storage wing.

Costumes are made and dyed in the two floors above the carpenter's shop. They are stored in the costume storage near the dressing rooms where they are at hand.

All the dressing rooms (for men and women), the toilets, the costume storage and hand properties storage, which are functionally connected with the dressing rooms are in the basement under the stage. They are off a central corridor, connected at both ends with the stage. The entrances from the campus are also at the end of this corridor.
study of the stage

the stage proper

The stage is divided into three parts, the central part which is the acting area and the two wings. The acting area does not present any particularities. It is a flat yellow pine floor, and stage pockets are provided for movable lighting equipment. Parallel to the proscenium opening we have two pairs of tracks for the movable platforms, kept in the wings. These tracks are metal grooves set so that their top is flush with the floor. The platforms are on casters rolling in the grooves.

Above the acting area we have the gridiron. It is a metal frame (see construction) holding sets of three pulleys. Three lines are attached to the piece of scenery. They go over the three pulleys to a fourth one or loft block over the fly floor. From the fly floor the three lines are pulled and the scenery goes up. These sets of pulleys are spaced every foot all over the acting area.

subdivisions the stage.

The stage is dividing in the following zones (see drawing #...)

a. forstage. Accessible by doors in the proscenium opening. It is about 7 feet wide. Four feet of this width
It is about seven feet wide and four feet of it are the thickness of the proscenium opening. This thickness serves the purpose of masking the flies and reduces the height of the stage house.

b. first half. This part of the stage can be isolated from the rest by a back curtain and side curtains flown from the grid. It is wide enough to permit the use of the two front sliding platforms. While the performance goes on in this front space (about 16 feet wide) scenery can be changed behind. It is the principle of elizabethan theatres.

c. full stage. All four platforms can be used.

the wings

In the wings we have the platforms bearing the built up scenery, two in each wing. For an elaborated piece, it can be built on several platforms and then brought together. These platforms are about 4 inches high and roll in the tracks mentioned before. The gridiron extends over the wings and can be used either for storage or for shifting on the platforms. Each wing has his own set of two pulleys and loft block. Against the two side walls
are the stairs leading to the dressing rooms.

the permanent scenery.

The only piece of permanent scenery is the cyclorama illustrated on drawing # G. It is a surface of canvas with horizontal seams and stretched between two metal pipes. The bottom pipe can be attached to the floor with hooks, if necessary. The stretching is done with a rope going through metal eyes in the canvas and through hooks on the pipes. The rope is free in the canvas so that the stretching is even. Special pulleys are provided in the gridiron for the cyclorama. It can be flown in two different ways: either only the bottom pipe to let the platforms pass under, or the whole cyclorama to have it out of view. The way it is done is illustrated on the adjoining diagram. Only the cyclorama uses an electric engine because of its weight. The diagram in order not to be confusing shows only the lines to the top of the cyclorama, but it can be seen how the same engine could be made to work both sets of lines.

the lighting

The lighting instruments are of two kinds: the fixed
equipment and the movable equipment. (See drawings at the end). The movable equipment is used for certain special effects which are not repeated twice the same way. An example would be the light coming in through a window or else the light from a fire place. These instruments are mounted on stands and when not in use are kept in a storage. The striplight used for cyclorama lighting also are considered as movable equipment as they can be removed when the cyclorama is not in use.

The permanent lighting equipment is used for the acting area lighting. The instruments used are spot lights. They are located in three different places:

a. on two vertical pipes at each side of the proscenium opening, for side lighting

b. above the proscenium arch for lighting of the back of the stage and at such an angle that no light falls on the cyclorama.

c. in the house, to light the front stage area.

All these lights are accessible; the side lights from the floor and from the built in ladders leading to the bridge over the proscenium arch, the proscenium light from that same bridge and the lights in the house from the light bridge over the audience where the operator sits. It is of prime importance that the lights should be accessible as one sel-
The theatre has enough instruments. That means that the focus, the colour and the direction has to be changed several times during the play. In our design one man could take care of all the permanent instruments and also be at the switchboard (except for exceptional cases). From the switchboard (see plan # E) it is only a few steps to the proscenium bridge. Another man would be in charge of the movable equipment, for instance, one of the properties attendants.

The movable lights are on stands as has been said. The exception are the border lights flown from the grid and the cyclorama light flown in the same fashion.

de light ing o per at or.

From the sections through the theatre one will see where the switchboard is located. It is in a gallery extending the full width of the house. The front is open and has spot lights attached to metal pipe. In the back is the switchboard and a bench for the operator. He has there a full view of the stage. The projection machine for lectures can also be installed there. The switchboard itself is best understood by looking at the diagram drawing # K. Individual dimmers for the different instruments are provided and also a master dimmer that can be used either for the stage lights or for the house lights.
An interior telephone connects the electrician to the stage manager. This gallery will not be seen by the spectators except from the very first rows and, of course, even from there they will have to turn and look back.

We already have described the workshops and the storage space. We also have said where the dressing room, toilets, etc., were located. A look at the plans at the end of this report will give a better idea of what they actually are than a written description. We will now proceed with the construction and the ventilation of our building.
construction & materials.

The building can be considered as two distinct parts: the house and the stage and shops. As has been explained these two parts are of a different type of construction. The whole building is supported on a concrete foundation, a foundation wall all around the building and walls under the main partitions. Under the house proper, i. e., under the seating for the audience, every second row of seats, is supported on concrete piles.

the house.

The two side walls are masonry and so is the back wall. The back wall is masonry all the way up to the roof, whereas the side walls only to the level of the aisle alongside the seating, approximately. As can be seen from the section, the ceiling height above the aisle is not the same as above the house. This is built in the following fashion: on the inside of the aisle (along the seating) the foundation piles raise to the level of the house floor minus the thickness of the floor. Lally columns rest on them and are carried to a height of 8 feet above the floor level at that point. Wooden girts connect them to another, and on that girt a frame wall is built carrying the wall up to the ceiling.
On the outside of the aisle, a frame wall encloses the building and stops at a height level with the girt previously mentioned. A small roof covers it at that height. The roof of the house itself is made of widely spaced trusses of the type illustrated. Joists cover the span from truss to truss. The light gallery is only another truss raised to meet the requirements. The floor of the gallery is attached at one end to this truss, at the other end it hangs from the next truss by steel rods. The floor of the house is built on frame supports spaced every two rows of seating.

The area under the stage is built of concrete with a stone facing to match the rest of the theatre. (It is the dressing room part). The stage house itself and the shops are steel frame with concrete fireproofing. The back stage wall has its inside of plaster on metal lath. The gridiron is a light steel frame carrying the flying apparatus as previously explained. The roofing is explained in the chapter of the house construction as it is the same.

Materials

Masonry where indicated, frame walls (southern yellow
Outside wall: corrugated and flat transite as indicated.

Roofing: 5 layers roofing paper mopped on; metal flashing.

Inside walls: stried plywood and corksheets on plywood as indicated in section #.

Back wall: masonry.

Ceiling: acoustical plaster.

Floors: Hard wood flooring on southern yellow pine subflooring. The outside material of the stage house is flat transite.

**Heating & Ventilation.**

As can be seen from the drawings, the building has no windows in the area reserved for the spectators. The only windows are in the workshops. This has been done on purpose as it was felt that windows in the house were useless and that their masking so as to prevent natural light was difficult.

This means that the building has to be artificially ventilated. The system adopted was (see drawing) a forced air system. The heater and fan room are in the basement under the stage. The ducts are carried under the stage and under the house floor. The inlets are built in the steps of the aisles. The air is evacuated through openings in the side walls of the house and the air is not reused.

The service and dressing rooms are also heated by hot air; however, as they have windows there is no mechanical provision for evacuating the air.
Conclusion

Here ends the study of a theatre for Black Mountain College. It is, and was bound to be rather theoretical. Any study done without a cost limit would be. One might argue that there is such a thing as a minimum house but there certainly is no minimum theatre. The reason is that a minimum house is necessary in order to live (even if it is a tent or a cave) but a theatre is not indispensable to produce drama. In Greece, drama existed before the first theatre was built. Many court performances in Versailles were given in any room there was available. The Italian "Comedia del Arte" had nothing but public squares to perform in for two centuries and in 1938 in France that tradition was taken up again by the "Théâtre des quatre saisons".

What we have tried to do in this study then, is not to design a minimum building for theatre performances, but a minimum building for the study of the arts and technics of the theatre. For that purpose a minimum can be defined. We hope to have done it in this proposed design. It is a minimum of equipment sufficient to prepare the student for the conditions he will encounter on other stages, and to help him to understand the problems of modern theatrical performances according to modern standards and to make it possible for him to compare theatrical products at the college with what he has seen elsewhere.
performances according to modern standards and to make it possible for him to compare the theatrical product at the college favorably with what he has seen elsewhere.

mk/ak
Addendum.

From the day of its foundation until the school year 1941-1942 included Black Mountain College was located at Blue Ridge, N. C., in a hotel-like structure rented year after year. When the college decided to move to its present location, they asked Gropius and Breuer for a project for the college buildings. The property being a former summer resort, few constructions on its campus could be used for college buildings.

Gropius' and Breuer's scheme called for one single building, located along the south shore of the lake. (The location of our projected theatre and the dining hall) In this project a theatre was included. The project was abandoned for financial reasons.

This theatre (as can be seen from the adjoining plan) was a combination theatre and dining hall, which at the college has proved unsuccessful for reasons already explained. For every performance the visibility would be poor for lack of a slope in the seating. The stage area is adequate but the combination stage shop and additional stage space not very satisfactory. The two activities are bound to interfere and side stages as a rule are difficult to use as half the audience sits with its back toward it. There is no flying space. The access to the set storage is difficult and inadequate in space.
faculty living area

Kurtz apartment

new building existing wing

machine shop

B.R. House

fac. Cottage

chem lab

girls

boys

fac.

dining music

new theater

music practice

to the drama shed

in from Black Mountain & Asheville
ground level plan.

level 7
level 5

same as level 4

level 4

storage
sets
stor.
props.

in to lights

lights

same as below

dying
costumes

same as below

sewing
costumes
gridiron
plaster wall
gridiron framing
onstage flying
onstage loft blocks
ofstage flying
ofstage loft blocks
cyclorama flying
access stairs
proscenium op.

level 2 (from top
plaster wall
stairs to gridiron

level 3
fly bridge
fly bridge
light bridge

horizontal sections through the stage tower.
different uses of the stage, use is made of curtains separating different areas of the stage.
structural section.
lighting layout.

- cyc. lights from grid.
- border lights from grid.
- bridge lights

back wall

- cyc. lights
- gallery lights
- bridge lights
- cyc. lights
switch board diagram.