AN HISTORICAL SURVEY OF MULTIPLE THEATRE ARCHITECTURE SINCE 1900

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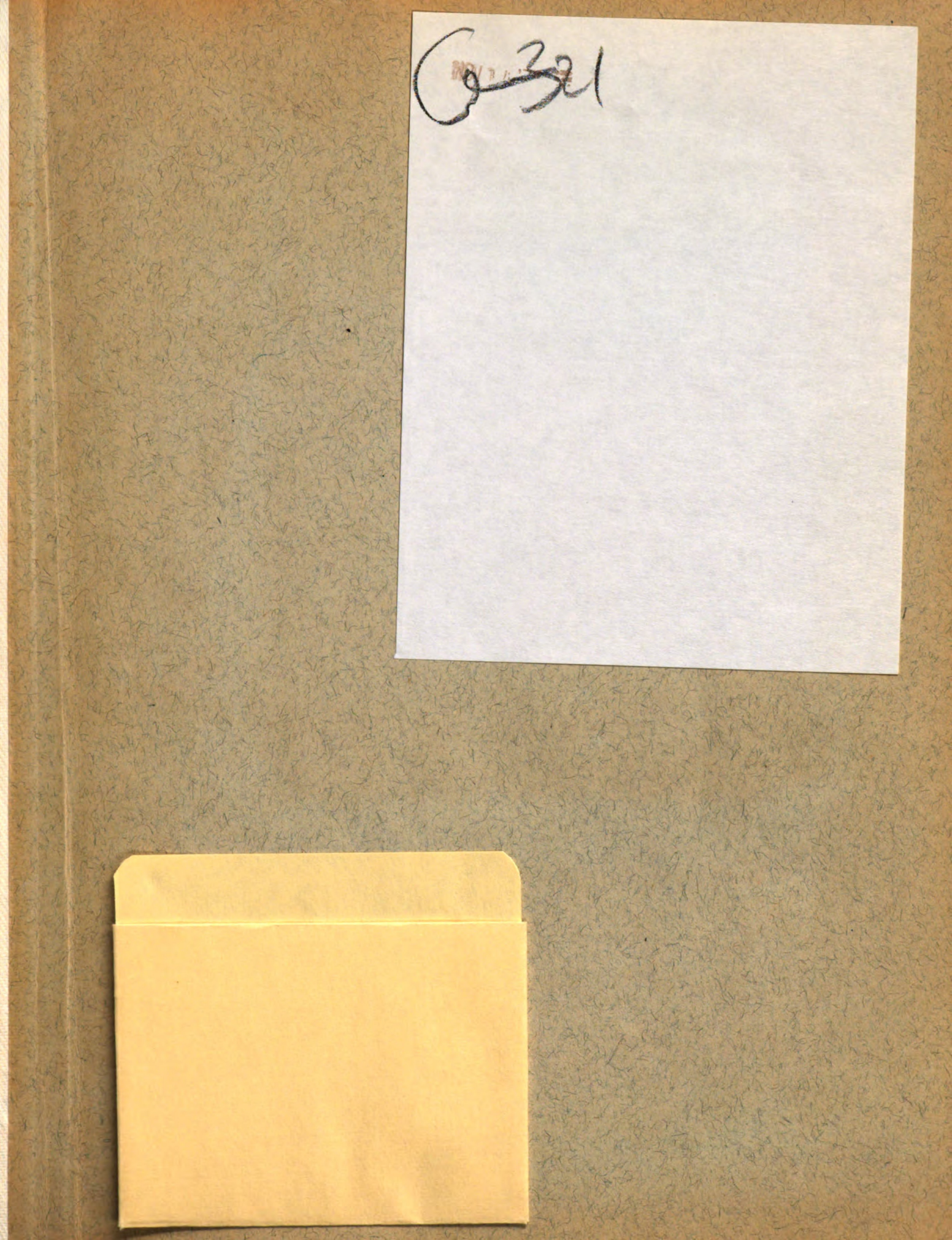

AN HISTORICAL SURVEY OF MULTIPLE THEATRE ARCHITECTURE SINCE 1900

By

Faber Bennett DeChaine

A THESIS

Submitted to the School of Graduate Studies of Michigan State College of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

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INTRODUCTION

Theatre architecture has taken many different forms and styles in the history of the theatre. During the first half of the Twentieth Century a new form grew out of a revolt against the conventional proscenium theatre of the time. This new form has been termed Multiple Theatre Architecture by the author.

During the height of this revolt three men came forth as champions of a multiple theatre: Walter Gropius, with his "Totaltheatre", Frederick Kiesler with his "Universal Theatre", and Norman Bel Geddes with several projects all of which had multiple architectural characteristics. Although these men and their contributions to multiple theatre architecture will be the main concern of this thesis, other examples of multiple theatre architecture which exist primarily in the United States today will be included.

At the outset, the term Multiple Staging or Multiple Theatre must be defined. Multiple Staging or Multiple Theatre is a plan of theatre architecture which incorporates within a single auditorium a variety of types of stages. This definition excludes any building where several stages are separated one from the other and function as individual theatres.

From time to time reference will be made to three established stage forms or styles, i.e., proscenium, central, and amphitheatre. These forms are defined as follows: the proscenium stage, or "peephole" stage as it is sometimes called, is that playing area in a theatre

which is separated from the auditorium by an arch or frame. The central, circus, or arena stage is that playing area which is located in the center of an auditorium with the audience surrounding it. The amphitheatre or Greek Theatre is that stage arrangement where the stage is located at one side of the auditorium with the audience surrounding it on three sides.

Within the multiple theatre designs, these several types of stages were included, and often even other actor-audience space relationships were established.

This study will confine itself to the theatre of the Western World and will be devoted primarily to a consideration of the growth of multiple theatre.

The architectural revolt against existing theatre building which formed the stimulus for Multiple Theatre will precede the main discussion which centers about the contributions of three men: Walter Gropius, Frederick Kiesler, and Norman Bel Geddes. Other less extensive multiple theatres will be grouped together for consideration as a whole.

The author's purpose is to explore one minute part of the history of the theatre and to report his findings with as much fidelity as he is able.

CHAPTER I

HISTORICAL BACKGROUND

The earliest evidence of a reaction against the proscenium theatre has been found in the philosophy of Johann Wolfgang van Goethe. "...Goethe (1749-1832) was to Germany what Moliere was to France, Shakespeare to England, and Ibsen to Norway."[1] It was Goethe, during his reign of theatrical influence in continental Europe, who offered indication of change in the prevailing conceptions of the relation between the stage and the auditorium. He, in association with a leading architect of that era, Carl Friedrich Schinkel, became vitally interested in the theatrical techniques of the Shakespearian theatre. They hoped to bring back to the architecture of the theatre the large forestage or apron, and to renew the interplay of the actor and audience which that style of theatre afforded. As a theatrical practitioner, Goethe exercised some influence with regard to this conception, but his theories died with him. A comparable conception did not return to the theatre until the turn of the Twentieth century.[2]

Richard Wagner was the next leading theatrical figure to exercise a substantial influence on the architecture of the theatre. Like Goethe he was interested in the specific effect that theatre architecture would

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1. George Freedley and John A. Reves, A History of the Theatre, Grown Publishers, New York, 1941. p. 247.

2. Kenneth Macgowan, The Theatre of Tomorrow, Boni and Liveright, New York. pp. 187-188.

offer his productions. Goethe desired a union of actor and audience; Wagner wished for a divorcement in the relationship of player to viewer. With this basic concept in mind, he and his associate, Gottfried Semper, an established architect of that era, set forth to build a theatre that would accomplish this aim.[3]

Wagner's own commentary on his famed "Mystic Gulf" can best explain this idea:

> My requiring the concealment of the orchestra soon led the eminent and ingenious architect whom it was my privilege first to consult with upon the subject, to conceive the idea of a vacant space between the proscenium and the first row of seats. This we called the 'Mystic Gulf', since it would seem to divide the real from the ideal; and the architect placed in front of it a second and wider proscenium, the effect of which was intended to be a wonderful illusion of the senses, the stage appearing to be more distant from the spectators than it really was, owing to the difference between its width and that of the second proscenium. Thus, though the spectator would see what took place on the stage, with all the distinctness of actual proximity, he would imagine that a considerable space intervened. From this would result another illusion, viz., that the dramatic personages would seem to be magnified into superhuman proportions.
>
> The result of this contrivance might of itself suffice to show how admirable this new relation between the spectator and the scenic tableau works...."
>
> ...the question again arises to what was to be done with the side walls. The first of the plans given in the appendix exhibits to us an oblong figure, narrowing as it approaches the stage; this is the space actually intended for the spectators. On each side are the walls, forming with the proscenium an ugly angle, which could be used for the purpose of giving to the spectators a convenient passage to their seats. To make as little obnoxious as possible the troublesome, bare walls near the proscenium, and to reduce their disturbing influence to a minimum, my present ingenious advisor hit on the plan of interposing a third proscenium, placed still further forward and extending still further out.[4]

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3. Loc. cit.

4. Edward L. Burlingame, Art Life and Theories of Richard Wagner, Henry Holt and Company, New York, 1875. pp. 283-284.

Goethe and Wagner held to diametrically opposed philosophies and yet were leaders in the same field. However, they were not contemporaries. Goethe practiced during the first half of the Eighteenth Century, while Wagner was composing during the last half of the same century.

The proscenium type theatre was well established by the time of Goethe, so for him it was a matter of breaking away from Baroque Classicism, the convention of the day, when he proposed a new architectural form for the theatre. Mordecai Gorelik in his book, New Theatres for Old, maintains that Goethe anticipated the revolt against the "Peep-hole" or "Mystic-Gulf" that came in the first part of the Twentieth Century.[5]

Gorelik further points out that "Goethe's innovation claims a place in history. It started a counter-movement when the current was flowing ever more swiftly in the direction of illusory staging. It set forth issues of a problem which has yet to be settled."[6]

Unlike Goethe, Wagner accepted the conventions of the time and proposed even greater limitations on the proscenium theatre.

> It was not until the beginning of the present century that a reaction set in against the framed-in picture stage. The Munich Artists' Theatre, built in 1908, on the Theatricalist principles, with a shelf-like stage brought close to the audience, was perhaps the first conventional-style theatre building of the modern era. Here a notable step was taken toward a reunion of the stage and auditorium.[7]

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5. Mordecai Gorelik, New Theatres for Old, Samuel French, Binghamton, New York, 1941. p. 285.

6. Ibid., p. 289.

7. Ibid., p. 289.

This first theatre, the Munich Artists' Theatre, was not a great deviation from the theatres that had existed at the time. However, it did have an apron that protruded into the auditorium, and because of this was a forerunner in the revolt against Wagnarian philosophy.[8]

Thus, the theatre, or at least some of the theatre, envisioned a different architectural form. Some innovators discarded the "Mystic-Gulf" or "Peep-hole" theatre of Wagner and set forth to bring actor-audience relationship closer together.

Several theatres immediately followed the lead of the Munich Artists' Theatre and built new playhouses that embraced the principle of union between actor and audience. Among them were the Schiller Theatre in Charlottenburg, the twin theatres in Stuttart, and the Munich Kunstler Theatre.[9]

These theatres served as a stimulus for the development of even more radically designed houses. Van de Velde's Werkbundtheatre at Cologne, in 1914, was attributed by K. Lonberg-Holm to be the first of a series of theatres that eventually led to multiple theatre planning,[10] and so is one of the first significant contributions to the subject under discussion. This theatre with its stage at one end of the auditorium was similar to the conventional proscenium theatre. However, a

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8. Fredrich Von Kranich, Buhentechnik Der Gegenwart, Verlag Von R. Oldenburg, Berlin, 1933. p. 232.

9. Macgowan, Op. cit., p. 189. For pictorial representation of the Munich Artists' Theatre see Von Kranich, Op. cit., p. 232.

10. K. Lonberg-holm, "New Theatre in Europe", Architectural Record, May, 1930, Vol. 67, p. 490.

significant deviation existed in the construction of the stage. The design called for three separate openings or stage areas so that the production could move rapidly from one scene to another. A curtain was drawn across those areas which were not in actual use. The center area was built parallel to the seats in the auditorium. The other two areas were angled inward from the center area and banked toward the auditorium at approximately a thirty degree angle.[11] Thus, the audience was forced to change its focal interest each time the scene locale was changed. The Werkbundtheater, like the Munich Artists' Theatre, fostered intimate relationship between actor and audience. In addition to the three areas there was an apron which was brought out past the acting areas, although not as far as those in theatres which were to follow the same general plan.

The Paris Exposition of 1925 saw the plans of still another theatre which was built in much the same manner as Van de Velde's theatre. A. and G. Perret were its architects. They employed the three-acting-area-type stage with the center area parallel to the auditorium seats and the two side areas at approximately a thirty degree angle. The main difference in the two theatres was that the Perrets' theatre was brought closer to the auditorium and began "... to encircle the auditorium."[12] The center area was located very close to the first row of seats. The

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11. Von Kranich, Op. cit., p. 300. For pictorial representation of Henry Van de Velde's theatre see, Von Kranich, Op. cit., p. 300.

12. Lonberg-Holm, Op. cit., p. 491.

side areas then protruded along the sides of the first several rows of seats (see Figure 1). This change from Van de Velde's design required an even greater alteration of focal interest by the audience. When the side areas were in use, the actors were actually behind many members of the audience. The size of the auditorium was much smaller than the Werkbundtheatre and thus offered more intimacy.[13]

The first theatre to offer an actual multiplicity in staging techniques was the famous Grosses Schauspielhaus, designed by Hans Poelizig for producer Max Reinhardt. Although this theatre was made up of the physical properties of the multiple theatre as defined, Max Reinhardt as producer did not use it in its several separate forms, but rather as a whole. Kenneth Macgowan titles the Grosses Schauspielhaus, "The Theatre of the Five Thousand." In this great theatre Reinhardt hoped to establish intimacy between actor and audience, but with a huge audience. Heretofore, the theatres which had striven for intimacy did so by limiting the spectators to a small number.

> Reinhardt stressed the importance of the actors being made one with the audience through appearing in their midst. This maintained the intimacy which, he felt, was the most valuable contribution of the realistic movement in the theatre---an intimacy produced in the main by small auditoriums required if conversational acting were audible. Gigantic conceptions and tremendous emotional emphasis could thus be brought home to the spectator.[14]

Thus Reinhardt's innovation was to weld the conception of intimacy with that of spectacle.

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13. Loc. cit.

14. Macgowan, Kenneth and Robert Edmund Jones, Continental Stage Craft, p. 163, Harcourt, Brace and Co., New York, 1922. p. 163.

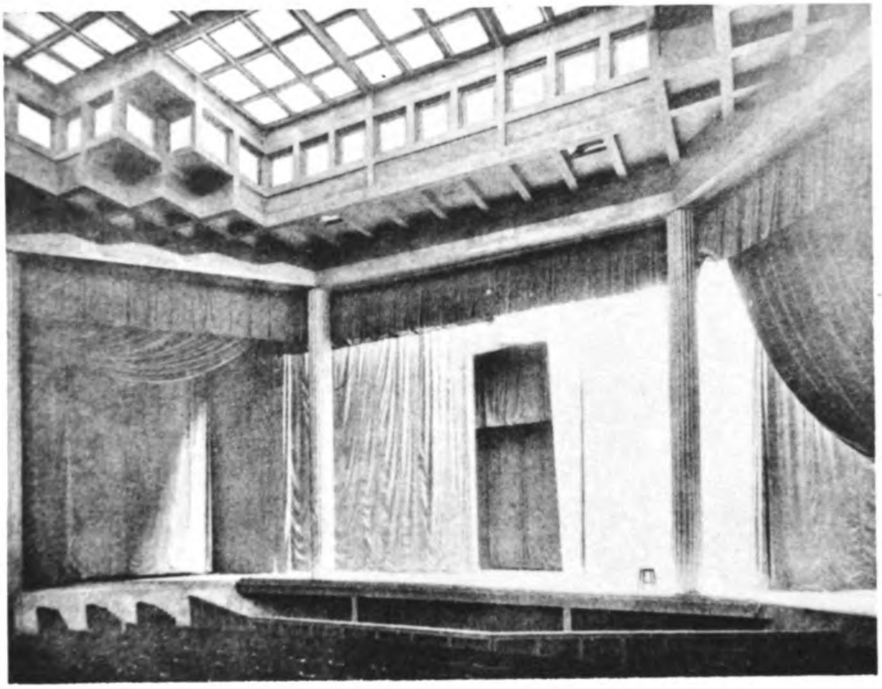

Figure 1.

Looking toward the three section stage of the theatre of A. and G. Perret. Note how the three stage areas seem to start to circumscribe the first rows of seats.

This discussion does not intend to determine the success or failure of this great venture of 1919 as the architectural aspects only are of primary concern. The Grosses Schauspielhaus was the first theatre to embrace two diametrically opposed philosophies in theatre practice, for here the proscenium and the Greek arena were brought together.

> The audience, something over three thousand in number, is seated in one bank of seats surrounding the acting space. This space is first of all the orchestra, as in the ancient Greek theatre. There, upon the floor of the auditorium, in the midst of the spectators, passes much of the most intimate action and there great mobs move. They gain access to this space from runways passing beneath the seats of the audience and from portals near the stage proper. The stage itself (a conventional proscenium stage at one end of the auditorium) is a huge affair, as large as any in common use in Berlin, and equipped with plaster dome, revolving stage and curtain. From the stage, which itself may be built up into various levels, steps and platforms lead down into the orchestra. Thus the house combines the essential features of the Greek theatre, the orchestra in the midst of the spectators, with the essential features of the modern theatre, the mechanical picture-stage.[15] (See Figure 2)

In discussing the success of the Grosses Schauspielhaus, Kenneth Macgowan and Robert Edmund Jones challenged the venture by maintaining it was a compromise rather than a new form. They pointed out that "... he made the thing a compromise between the Greek theatre, a circus, and the modern playhouse, by slapping a proscenium arch into the side wall... It was beyond human nature to resist the temptation of playing with the whole gigantic toy."[16]

Reinhardt, unlike those architects who were searching for a multiple theatre, did not think in terms of adaptability of the Grosses

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15. Macgowan, Op. cit., pp. 196-198.

16. Macgowan and Jones, Op. cit., pp. 164-165.

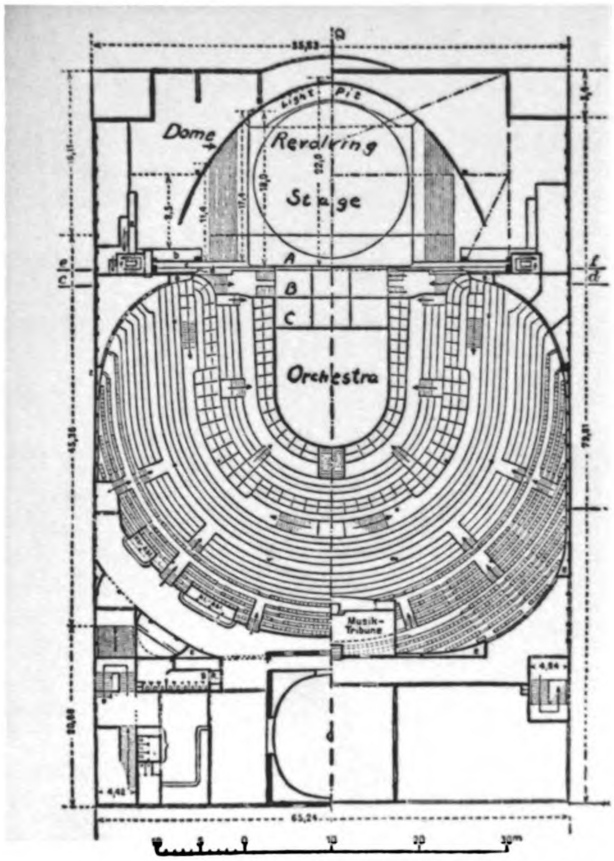

Figure 2.

A floor plan line drawing of Poelizig's Grosses Schauspielhaus.

Schauspielhaus into the several types of stages as if they were to be used alone. Yet, this great theatre had both the features of the Greek theatre and the conventional proscenium theatre. He was primarily interested in the union of great numbers of players with masses of spectators. To accomplish this he felt all architectural features should be used to their utmost. He, like the contemporary anti-proscenium revolutionists, used his theater for a single effect: intimacy!

The Grosses Schauspielhaus was the first theatre to incorporate more than one stage in one auditorium. The purpose for which it was used breaches the author's definition of multiple staging; thus it shall be excluded from a detailed discussion. However, it did contribute to the development of a multiple stage, for it joined two forms (Greek and conventional theatre stages); it offered intimacy with mass audience; it served as stimulae for those designers who were primarily concerned with the multiple theatre principle.

There was still another anti-proscenium movement that bears significantly on the development of the multiple theatre--the Circus or Central theatre. The circus, like the other anti-proscenium theatres, was searching for a union of actor and audience. This was achieved by having the audience surround the acting area. Drawing a line between circus and theatre is difficult, and theatre historians are not in agreement in the division of the two forms. Prior to 1860, there were no actual buildings for circus performance; this type of entertainment was given in the open air or in tents. In that year the Circus-Otto in Berlin, designed by Hitzig, became the first building

to house a circus. This actually preceeded the revolt against Wagner's "Mystic-Gulf". The Architectural plans revealed it to be a massive circular building with the performing area in the very center of an encircling auditorium. Ample off stage area was available for dressing rooms and stables. This structure was primarily used for equestrian shows and animal circuses.[17] This type of building was quite different from the conventional theatre, but in twenty years another circus was constructed that included an important architectural element of the transitional theatre, namely the proscenium.

In 1880, Herr Wesenberg designed the Circus-Renz in Berlin. This building was not unlike the Grosses Schauspielhaus which was to follow thirty years later. In this auditorium an arena was located nearly in the center of the massive seating area. The banks of seats failed to completely circumscribe this arena, and at one end, off the arena, was a conventional stage with a proscenium opening.[18] Here the circus had borrowed from the theatre. Some time elapsed before the theatre reciprocated by borrowing architectural elements of the circus building.

The Circus-Apollo in Dusseldorf, Germany, designed by Endt in 1898, was very similar in design to the Circus-Renz. The basic difference was that the Circus-Apollo not only had an arena which was completely surrounded by audience, but also had a conventional proscenium which was set apart from the arena proper. When this stage was in use, the audience was seated in the acting area of the circus arena.[19] This circus building

17. Herman Rosse, "The Circus Theatre," Theatre Arts Monthly, July, 1923, Vol. 7, p. 132.

18. Ibid., p. 133.

19. Loc. cit.

remarkably resembles a projected design of Norman Bel Geddes, an innovator of anti-proscenium and multiple staging who is to be discussed later. Had this been a theatre building rather than one designed primarily for circus fare, the Circus-Apollo could be marked as the first multiple theatre.

Germany was not the only country that had concerned itself with a permanent circus edifice. In 1860, there was an example of a similar arena-stage building in Florence, Italy. The architect was Buonaiati and the building, dated the same year as the Circus-Otto in Berlin, was called Teatro Politeama. This structure was very large and incorporated not only a vast arena and formal stage at one end of the auditorium, but also a spacious entrance foyer and ballroom. The location of the dressing rooms and stables indicated that this building was also concerned primarily with equestrian and circus type productions.[20]

Herman Rosse, a contemporary of Reinhardt and Poelizig and one who embraced the philosophy of reunion among actor and audience, maintained the circus type performance held a vitality that could not be wiped out by "...Wagner's Mystic Abyss..."

"Filling up the Mystic Abyss of Wagner's theatre the stage reform movement (i.e., anti-proscenium movement) had brought forth again, first the apron, then the platform and finally the arena and the plastic stage."[21]

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20. Ibid., p. 231.

21. Ibid., p. 242.

Margo Jones asserts that probably the first dramatic offering to use the circus type stage was a production of Sophocles' Oedipus Rex given in the Circus Schumann in 1910, by director Max Reinhardt, who also in the same year, staged Sumurun. In 1911, he produced a Hofmannsthalian version of Everyman and an adaptation of Maeterlinck's Sister Beatrice which was later known as The Miracle.[22]

The revolt against the proscenium in America was most evident in the development of central staging. This form of theatre had come to be known by several names; theatre-in-the-round, Penthouse theatre (taken from the name of a playhouse located at the University of Washington), central staging, arena, and circus or circus staging.

"The first actual use of central staging in America must be accredited to Azubah Latham, who directed The Mask of Joy at Teachers College of Columbia University in 1914, in the center of a gymnasium."[23] Central-staging has grown since this beginning in 1914, and Margo Jones in her book, Theatre-in-the-Round, published in 1951, lists fifty-one producing organizations that offer central-stage theatre. Central-staging was an important concern of those architects who later devised systems of multiple staging. Central-staging had, by the time of Gropius' design, become an accepted and practiced form of theatrical presentation.

Still another form of anti-proscenium theatre developed in France, was the Theatre du Vieux-Colombier of Jacques Copeau. Mordecai Gorelik

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22. Jones, Margo, Theatre-in-the-Round, Rinehart and Company, Inc., New York, 1951. p. 34.

23. Ibid., p. 38.

attributes Copeau's theatre as being the stimulus for the theatre of A. and G. Perret which was displayed at the Graphic Arts exhibition at Paris in 1925.[24] Copeau's Vieux-Colombier opened in 1913,[25] and this preceeded even Van de Velde's Werkbundtheatre at Cologne. The Theater du Vieux-Colombier was, for the first time since the Elizabethian playhouse, a truly architectural stage. The Vieux-Colombier "...continued the architecture of the auditorium up to and upon the stage platform, which was joined to the hall by three broad sections of steps. Copeau used the formal architecture of this stage as the basis for all his settings, with minor changes such as the addition of properties or draperies, the insertion of doors and windows."[26] This theatre was, like most of the small theatres in Europe at that time, turning to intimacy and gaining it by a reduction in size. The Theatre du Vieux-Colombier played no direct influence upon the development of the multiple theatre idea, but it did point up one of the many diversified changes that was going on in the architecture of the theatre.

Norman Bel Geddes, Friedrick Kiesler, and Walter Gropius were those architects who first envisioned a combination or multiple theatre. They, like the architects here discussed, searched for a new form and yet hoped to weld the existing conventions into this new form.

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24. Gorelik, Op. cit., p. 290.

25. Freedley and Reeves, Op. cit., p. 363.

26. Gorelik, Op. cit., p. 290.

CHAPTER II

THE "TOTALTHEATRE" OF WALTER GROPIUS

Probably the first contribution to the field of Multiple Theatre architecture was expressed in the design for the "Total theatre" of Walter Gropius. Not only did Mr. Gropius offer a projected design for a multiple theatre building, but also he was able to realize many of his ideas in the reconstruction of the Piscator Theatre in Berlin.

Gropius, like other theatre architects discussed in Chapter I, was dissatisfied with existing theatre building, but he went much farther than his predecessors. They sought a different actor-audience relationship from that of the "peep-hole" theatre, and proposed a different building which would eliminate the proscenium arch principle. Gropius on the other hand incorporated in his building not only the proscenium arch theatre, but also an arena stage designed much in the style of the Greek theatre and a central or circus stage. All of these several stages were to be made available within one theatre building.

Mr. Gropius has been very successful in the field of architecture, more particularly for industrial buildings than the limited field of theatre architecture. He has also been an active teacher, still holding the position of Chairman of the Department of Architecture, Graduate School of Design, Harvard University. His fellow architects have named him "The Bauhaus Man", for he was the organizer of the famed "Bauhaus" school of architecture.[27]

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27. For biographical discussion of Mr. Gropius, see APPENDIX A, Section 1, Walter Gropius.

Gropius' first significant contribution to theatre architecture was the remodeling of the State Theatre at Jena, Germany. This project of 1919-1923, was said by Sheldon Cheney to be "...one of the most interesting European examples of the present period of 'stripped architecture', absolutely without ornament but with indications of new decorative values, which may forerun a real machine-age architectural 'style.' The accentuation of straight lines and angles, the importance of sculptural mass design, and the reliance on flat walls, interesting for their texture, are all typical of the anti-operatic school of theatre design."[28]

This theatre was an outgrowth of the philosophy carried out in Gropius' famed school of Art and Architecture, The "Bauhaus". By the time the design for the State Theatre at Jena had become a reality, Gropius and his colleague, A. Meyer, had established themselves as belonging to the school of modern designers. While the functionalist attitudes of Gropius had been expressed in other building projects, this was the first time the theatre had experienced this revolutionary trend in architecture.[29]

The contributions of Walter Gropius to multiple theatre were three fold: one, his projected design for the "Totaltheatre"; two, the realization of many of his ideas incorporated in the reconstruction of the Piscator Theatre in Berlin; and three, the use of many of his ideas by P. E. Blomstedt in the latter's design for the Kansanteatteri or People's Theatre in Finland.

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28. Sheldon Cheney, "The Theatre in the Machine Age," Theatre Arts Monthly, August, 1926. Vol. 10, p. 509.

29. Loc. cit.

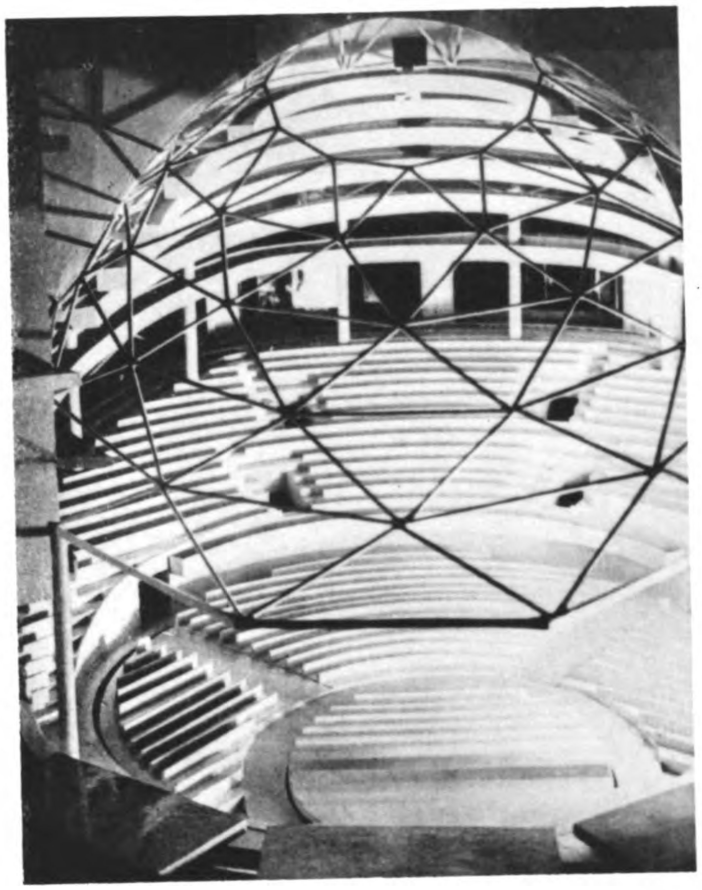

Figure 3

Airplane view looking through the domed roof of the "Totaltheatre" past the proscenium stage into the auditorium. The seating arrangement is set for the proscenium type production.

In 1927, Gropius introduced his project for the "Totaltheatre." This theatre had three stage areas. One, the conventional proscenium stage-auditorium; two, an amphitheatre, i.e., the regular proscenium stage with a large protruding arena which was surrounded on three sides by auditorium seats; and three, a circus or central stage with the audience surrounding the acting area.[30]

In an article, "Modern Theatre Construction," Gropius discussed the reasons underlying his "Totaltheatre" design.

> Modern building principles have scarcely invaded the world of the theatre up to the present. Important producers of the last generation sought new spacial and technical means for drawing spectators into closer relation with the stage happenings than had formerly been possible, but theatre construction never broke away fundamentally from the old deep stage, since, for architects of the time, decorative interest outweighed interest in function. Van de Velde's three-fold deep stage in the Union Theatre in Cologne in 1914 (which idea Perret carried further in the theatre of the Paris Industrial Art Exposition in1925) and Poelzig's rebuilding of the Great Playhouse in Berlin with provision for a proscenium extending far out in front of the regular stage are the only attempts which have been practically carried out to loosen up the rigid conventions of theatre construction and to fundamentally change them.[31]

> In the history of theatre construction three fundamental types of stage arrangements are to be distinguished: (1) the arena, i.e., the circus, with its centrally located playing space on which action takes place concentrically, fully visable from all sides; (2) the amphitheatre of the Greeks and Romans, the half-round arena with a semi-circular stage or proscenium on which the scene develops like a relief against a permanent background, but which is not separated from the audience by curtains; (3) the deep stage or 'peep-show stage', which completely divides the real world of the spectators from the world of illusion by means of a front curtain and orchestra pit and allows the stage picture to appear like a flat projection against the backdrop.

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30. Lonberg-Holm, Op. cit., p. 492.

31. These are the same architects discussed in Chapter I of this thesis.

> The last named is almost the only of these theatre forms that we know to-day, the picture frame stage, which has the great disadvantage of not drawing the audience actively into the scene. Avoidance of this disadvantage must bring a reviving influence into the theatre, a strengthening of the power of illusion.[32]

Gropius revolted against existing theatre architecture as did others of his contemporaries discussed in Chapter I of this thesis. Unlike them, however, he envisioned a theatre that would house the several types of stages within one theatre building.

The shell construction of the "Totaltheatre" was oval in shape and the walls were carried on twelve columns which were the primary superstructure of the building. Extending away from this main portion of the building, which housed the auditorium, was that area which was to serve the proscenium stage. This stage was divided into three units similar to the stages of Van de Velde's and Perret's theatres. Each of these stage areas was placed at intervals between four columns. The scenery was changed by means of horizontal conveyers, or platform wagons. Thus, as in the theatres of Van de Velde and Perret, one, two, or all three stage areas could be used, and the scenery could be swiftly moved and reset by alteration of the acting areas. These stage areas also protruded toward the auditorium, on the sides, so that the first several rows of seats in the auditorium were actually behind the side stages or acting areas.[33,34] (See Figure 5).

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32. Walter Gropius, "Modern Theatre Construction," The Drama, February, 1928. Vol. 18, p. 136.

33. Loc. cit.

34. Lonberg-Holm, Op. cit., p. 494.

Mechanical devices in the floor of the auditorium enabled the theatre to be transformed into the other two types of stages, i.e., the circus and the amphitheatre or Greek styled stage. Two circular tracks which followed the slope of the floor were laid immediately in front of the proscenium stage area. One of these tracks was large and extended into the auditorium past the center of the building proper. The second track was approximately one-third as large as the big track and was set inside the larger one. This smaller track was also mounted immediately adjacent to the proscenium stage area and so the two tracks met at one point on their respective circumferences. Part of the floor of the theatre was built to revolve on these tracks. On the larger revolving floor were curved sections of seats built around the perimeter of the smaller revolving floor. The remaining seats of the auditorium were stationary and a permanent part of the building. The seats in this area followed the perimeter of the seats which were mounted on the larger revolving floor. The smaller revolving floor could be mounted with temporary seats. These seats comprised the first several rows when the floor was arranged for the proscenium type theatre.

Thus when the proscenium theatre was in use, the floors were so arranged that the smaller floor was immediately adjacent to the stage and the movable seats were mounted on it. Behind these seats was the second tier of seats following the curved arrangement. This second tier of seats was mounted permanently on the second and larger revolving floor. The third tier of seats was most distant from the proscenium stage area. With this arrangement the "Totaltheatre" was set for the use of a proscenium or conventional type production.

To enable the building to be used for the Greek or Amphitheatre, the temporary seats which were mounted on the small floor were simply removed. With such an arrangement the proscenium area and a fore stage were ready to receive an amphitheatre production.

To transform the building into the central or circus type stage, the revolving floor was brought into play. The larger revolving floor was rotated 180 degrees. The smaller floor, by this rotation, was removed from its previous adjacency to the proscenium stage and placed directly in the center of the building. It was then between the permanently mounted seats and those seats which were mounted on the larger revolving floor. The smaller floor became the central stage, and its elevation could be controlled by an elevator which was located directly beneath the smaller floor when it was placed in this position.[35] (See Figure 4).

No matter in what position the theatre was set, all of the stages were readily accessible by aisles, and for the proscenium stage, entrance was gained from the backstage as well as the aisles. There was also provision made for entrance from stairs below the stage and the design went so far as to enable entrances to be made from ladders that were suspended from the ceiling.[36]

> Provisions are made for extensive use of static or moving screen pictures and light effects to support the stage action. Screens between the columns, on the walls and ceiling and the stage background, serve as projection surface for light and movie projectors placed outside the columns in a projection room suspended from the

35. Loc. cit.

36. Loc. cit.

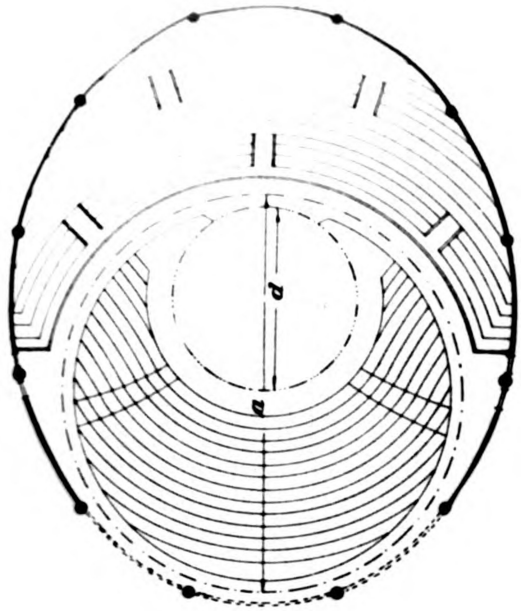
Figure 4

The line drawings show the side view and floor plan of the "Total-theatre."

The two drawings on the lower part of the figure indicate the position of the movable floors when the arrangement is set for the proscenium type production.

The upper two drawings indicate the floor position when the theatre is set for the central stage arrangement.

Note the elevator position on each of the side view drawings.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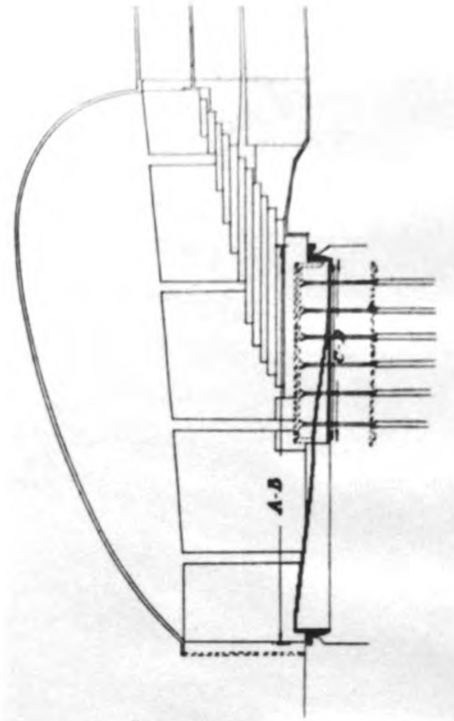
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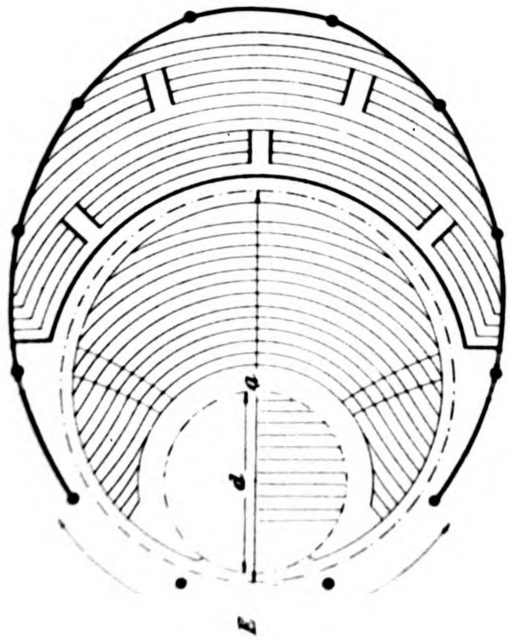
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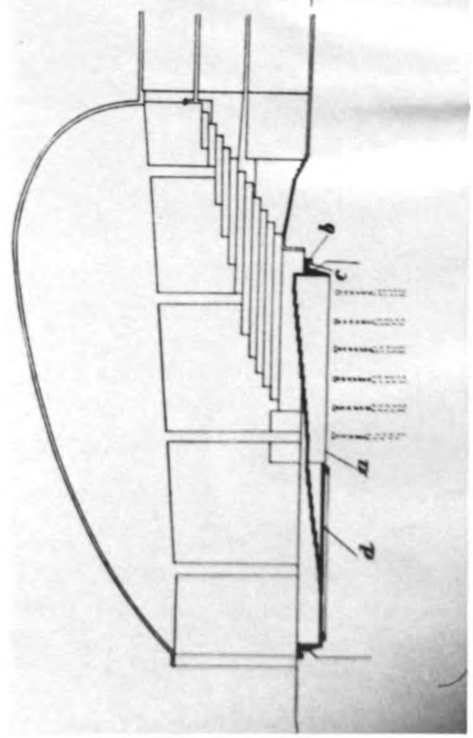
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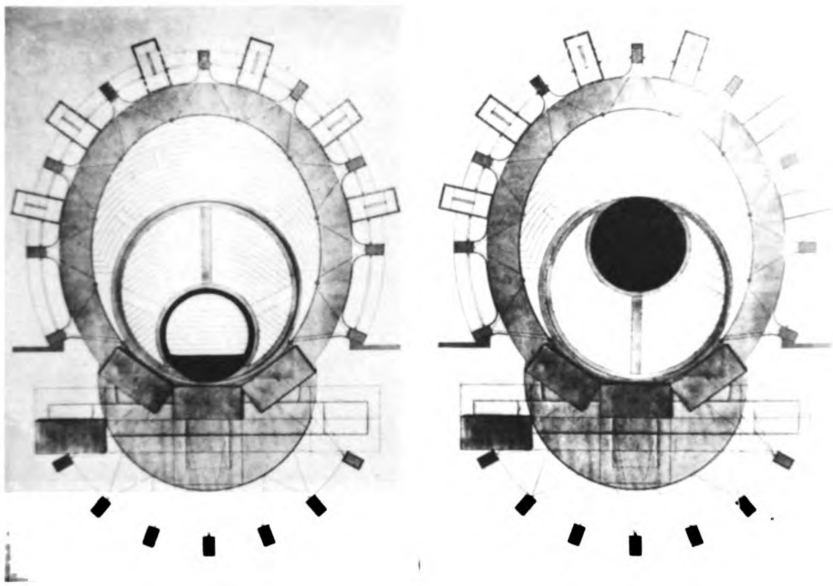

Figure 5

The same stage relationships are shown here as in Figure 4. The grey and black portions represent the acting areas. The drawings on the left indicate the theatre positioned for the proscenium stage; the drawing on the right indicates the theatre positioned for the central stage.

> ceiling. The spectator is placed in the center of the action. The theatre becomes a flexible space-machine that easily can be changed to meet the varying demands of the stage directors. The audience becomes not only a witness but an active factor in the show.[37]

Gropius was given an opportunity to put many of the ideas he had incorporated in the "Totaltheatre" project into actual practice when he was commissioned to rebuild the Piscator Theatre in Berlin.

Gropius wrote:

> When Erwin Piscator gave over to me the planning of his new theatre, with the audacious self-confidence of his temperment he presented Utopian demands which aimed at the creation of a technically highly-developed, pliable theatre-instrument which should satisfy the varied needs of different types of producers and should to a great degree allow the audience to participate actively in the scene, so as to increase its effectiveness. This problem of stage arrangement had long been occupying the attention of myself and my colleagues. Piscator's welcome commission and the severity of his demands brought about the solution which now stands embodied in the building.[38]

The Piscator assignment actually took on more ramifications than the "Totaltheatre" project. In addition to the multiple stage device of the revolving floor, a ramp or passageway through the auditorium was made available for dramatic action. This passageway connected with either side of the proscenium stage area. This extended area could be used by the actors or "...Wagon stages can be moved on to this from the regular stage so that certain scenes can be played around the spectators."[39]

Still another device in the Piscator Theatre allowed greater flexibility of the fore-stage or amphitheatre area.

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37. Loc. cit.

38. Gropius, Op. cit., p. 136.

39. Loc. cit.

> The smaller front section of the parquet (orchestra or stalls) is sinkable so that, freed in the basement from its chairs, it can be used as a fore-stage, partly surrounded by the front rows of seats. From here the player can step down into the body of the spectators by way of the middle aisle and can return through their midst to his starting point by way of the passage encircling the larger parquet.[40]

Piscator demanded of the design for his theatre the use of still and motion picture projection, not only toward the usual focal point of the proscenium stage, but also on the ceiling and walls. This led Gropius to even greater imagination in the use of film projection.

> ...I have not only envisioned the possibility of film projection upon the whole cyclorama of my three-fold stage by means of movable projectors, but I can also set the entire auditorium inside a film, as it were, by projecting on walls and ceilings. To this end screens are to be stretched between the twelve pillars, on the transparent surface on which twelve films can be thrown simultaneously from behind. The spectators may thus, for example, find themselves in the midst of a billowy sea or of crowds of people who are rushing upon them from all sides. At the same time an auxiliary set of apparatus suspended in the center of the room can project upon these screens from the inside. Here too is placed the cloud apparatus which, from its central position, can throw upon the ceiling clouds, constellations or abstract forms. Therefore, in place of the projection plane of the cinema, we have now the projection room. The real auditorium neutralized by absence of light, becomes, through projected light, the room of illusion, the actual theatre of events.[41]

Gropius insisted that his theatre ideas were not designed as mere technical refinements and tricks. He felt that they were contributory toward bringing the spectator into the scene and thus making him a part of that scene rather than divorcing him from the action of the drama by

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40. Loc. cit.

41. Loc. cit. This system of projecting film on a cyclorama which partially circumscribes the auditorium was a consideration of Gropius' as early as 1927. In the year of the writing of this thesis, the idea is a reality. The process is named Cinerama.

a curtain and space. He maintained that the theatre building should become the instrument of the stage director, and should be "....so pliant and variable that it never hampers any director, but lends itself to the development of varied artistic conceptions."[42]

Ironically almost ten years after Gropius had envisioned his "Total-theatre", and had accepted voluntary exile from his native Germany, another architect, P. E. Blomstedt, of Finland, designed and had constructed a theatre which was almost a replica of that project Gropius had left on the drawing board.

In 1935, Blomstedt designed and, in 1936, had constructed the Kansanteatteri, or Peoples Theatre, in Helsingfors, Finland.[43] The Kansanteatteri did have slightly more focal interest toward the formal or proscenium stage than did the "Totaltheatre". This stage was located at one end of a square building, in the traditional fashion, with typical proscenium stage properties. It had an amply high gridiron, an orchestra pit, and a single proscenium arch.[44]

Although the "Totaltheatre" did not have these physical properties as such, Gropius' design had a flexibility that would allow for an orchestra pit, flies, and a proscenium stage (actually three proscenium stage openings).

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42. Loc. cit.

43. Joe Losey, "A New Theatre for Finland," Theatre Arts Monthly, January, 1936. Vol. 20, p. 33.

44. Ibid., p. 34, 35.

The close similarity between the two theatres was evidenced specifically in the designs of the auditoriums. As described, the "Totaltheatre" had an oval seating area which was constructed in three banks or tiers of seats. The first bank was on the small revolving floor close to the proscenium stage, the second following these on the second revolving floor, and the third permanently mounted behind this second tier. The Kansanteatteri incorporated the revolving floor principle also. A large revolving floor was placed in front of the proscenium stage, but unlike the "Totaltheatre", there was only the one. On this floor were mounted seats which, when the floor was in this position it served as the first rows of seats for the proscenium stage. Behind this tier of seats, and following the curvature the first had established, two other tiers of permanent seats were mounted. To shift this theatre into position for the circus type production, the revolving floor was turned 180 degrees (exactly the same system proposed by Gropius), and the seats on the revolving floor became the smaller of two banks of seats which surrounded a central acting area.[45] "In the Gropius project, there are two parteere revolving discs, the smaller about half the diameter of the larger, and they touch at one point. This permits a circular arena, a shape that seems better suited to balanced movement. Blomstedt's modification of this satisfactory arrangement is probably caused by lack of funds."[46] When the fore-portion of the revolving floor became the central arena, this acting area had

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45. Loc. cit.

46. Loc. cit.

an elipsodial shape rather than a circular one.[47] (See Figure 6).

Another feature that was incorporated in the Blomstedt design which had great similarity to the "Totaltheatre" was the use of peripheral runways and aisles. Running throughout the auditorium and also circumscribing it were runways that originated at and then rejoined the proscenium stage at several points.[48]

The ladder-way and booth, which were designed by Gropius for entrances to the circus stage, were also incorporated by Blomstedt. "Actors may play virtually from the ceiling, for overhead is a projection booth with a suspended runway from which a Juliet may cast a rose to Romeo."[49] From this booth, and throughout runways in the ceiling, film projection made possible a great deal of flexibility, as had the "Totaltheatre" of Gropius.[50]

Gropius was the first to offer the theatrical world a truly multiple theatre which would meet the demands for all the varied forms of dramatic offering. He was able to realize some of his planning in the reconstruction of the Piscator Theatre in Berlin, and the "Totaltheatre" was so imitable that P. E. Blomstedt was only one of many to see practicability in this invention.

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47. Loc. cit.

48. Loc. cit.

49. Loc. cit.

50. Loc. cit.

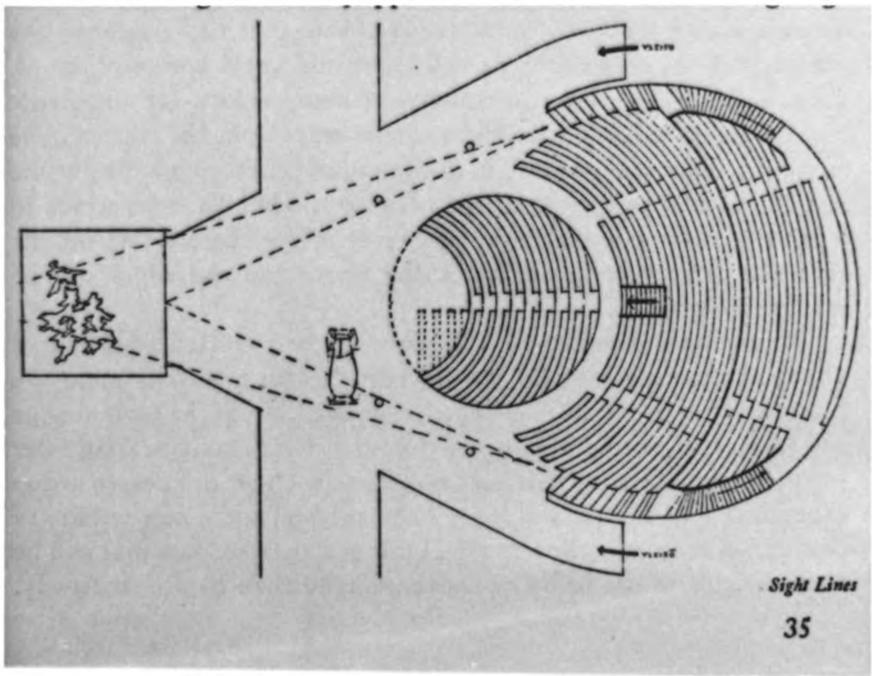

Figure 6

Ground plan line drawing of Blomstedt's Finnish National Theatre. Note the similarity to Gropius' "Totaltheatre", particularly the revolving floor and passage runways around the auditorium.

CHAPTER III

THE UNIVERSAL THEATRE OF FREDERICK KIESLER

A second major contribution to multiple theatre architecture was brought forth in the design of Frederick Kiesler's Universal Theatre. Although Mr. Kiesler, unlike Mr. Gropius, was unable to realize construction of his "Universal Theatre" design, his work adds significantly to the efforts in this limited field.

Although Mr. Kiesler can not be grouped with the early continental revolutionists who desired to break away from the traditions of the proscenium theatre because of his residence in the United States and his lack of participation in theatre architecture in his early years, he too found fault with the limiting characteristics of the proscenium theatre and sought a theatre building which would have enough utility to be a paying concern.

Mr. Kiesler was a successful practitioner in art and architecture as well as a stage designer. He, like Mr. Gropius, was a teacher, serving as scene designer at Juilliard School of Music and as director of the laboratory for Design Correlation at Columbia University.[52]

Kiesler, like Gropius, envisioned a theatre building that would not only provide the conventional stage-auditorium relationship that the proscenium theatre afforded, but also other relationships of stage or acting area to the auditorium. The "Universal Theatre" of Kiesler

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52. For a biographical discussion of Mr. Kiesler, see APPENDIX A, Section 2, Frederick J. Kiesler.

incorporated several actor-audience relationships, and had even more ramifications than did Gropius' "Totaltheatre".

Kiesler felt that certain stages lent themselves better to particular types of productions. In Morton Eustis' article, "A Universal Theatre", he explains how the several stages should, in Kiesler's mind, be used.

THE UNIVERSAL THEATRE

A Plastic Architectural Unit, Adjustable to All Types of Dramatic Expression, A Theatre which can adapt itself structurally to the organic requirements of various dramatic forms instead of forcing the drama to adapt and cramp itself to structural limitations.

The following table lists the ideal requirements for each type of dramatic expression:

Spoken Drama	Proscenium Stage
Opera: Revue	Peripheral Stage
Concert: Orchestra, Vocal	Acustical-Radial Stage
Cinema	Focal Auditorium
Dance	Round Stage or Arena
Sports: Circus	Arena
Convention	Halls with large seating capacity

The average theatre, concert hall, auditorium or sports arena is functionally equipped to meet only one or two of the requirements listed above. The use of the theatre for any other form of drmatic expression imposes an adjustment which is necessarily a makeshift. The Universal Theatre, expressing the new architectural concept of "Time-Space-Continuity", is so constructed that within a prescribed nucleus it can adjust its seating capacity and internal form to meet every ideal requirement of every form of dramatic expression, changing its proscenium stage to a peripheral of acoustic-radial stage at will; eliminating the stage entirely for conventions, meetings, or substituting an arena stage for sporting events, dance programs or pageants. In addition it provides for any natural expression in the size of the community by its variable seating capacity. It includes as well: club quarters, exhibition halls, emergency hotel shelter, an open terrace restaurant, gasoline service station, parking space for 250 cars, and adequate storage space.[53]

53. Morton Eustis, "A Universal Theatre," Theatre Arts Monthly, June, 1933, Vol. 17, p. 456.

In preparing himself to design such a theatre, Mr. Kiesler felt he should be aware of the needs of the community. As previously mentioned, this theatre was designed in competition for the community of Woodstock, New York. He studied the community and discovered that three theatres in that city were commercially unsuccessful. This led him to the idea that if a theatre were to be successful in such a community, it "...must be capable of being used effectively by all types of dramatic expression, and should be flexible enough to meet the changing demands of both the small permanent population and the larger transient population."[54] He felt that to serve the needs of the producer of all types of theatrical fare, the theatre should be so constructed that it could allow actor-audience relationships best suited to the type of production offered.

To keep building cost at a minimum and to afford proper ventilation in the summer, Kiesler planned the construction of piping and wire mesh with walls of reinforced canvas. The interior was to have no decoration except that which could be achieved by the projection of light in different designs on the walls and ceilings.[55]

The stage area which was to serve the proscenium type production did not have the traditional fly area, but rather had a grid system, whose floor was three times larger than the stage itself. This grid protruded to one side. By this invention the scenery was "swung" into

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54. Ibid., p. 451

55. Loc. cit.

place rather than being lowered onto the stage. This was accomplished by a system of pulleys which were made to slide on the griding. By literally making the flies horizontal rather than vertical, it allowed for more storage space directly off stage.[56]

The theatre was designed with the stage that served the proscenium as the "pivotal centre" of the building. This stage area served two auditoriums. One of these auditoriums was small, seating eighty-four persons, and was to be used primarily for rehearsal, experimental drama, and, if a producer felt a smaller house was desirable, for general production. The other auditorium was much larger and served events requiring such a house. The two theatres could be used independently of one another for a wasll, curved much like a cyclorama, could be placed on the large stage area thus dividing the stage into two separately functioning stages. In addition, either auditorium could be shut off from the stage by a system of sliding panels.[57]

The large auditorium had permanent seating for three hundred eleven patrons and could be expanded to meet the needs of one hundred more. The permanent seats were arranged in a semi-circle in much the same fashion as the Grosses Schauspielhaus. Each side of the auditorium was divided into two banks of seats which were movable. They could either face each other, thus leaving an arena between them; or they could be rolled together, thus serving the proscenium stage in the conventional fashion. By this simple operation two actor-audience relationships could

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56. Loc. cit.

57. Ibid., pp. 451, 452.

be achieved: one, the conventional type, and the other, the Greek theatre type. (See Figures 7 and 8). This second position still allowed the use of the proscenium arch. Kiesler went so far as to enable the change of position of the tiers of seats during a performance.[58]

To set the theatre for central staging, the seats in the small auditorium came into play. The floor area between the two sections of permanent seats in the large auditorium became the stage. Then, to set the auditorium in a complete circle, the seats in the small auditorium, which were also movable, were wheeled onto that area which served as the proscenium stage. Thus the area which had been used for the Greek theatre arena became the arena for the theatre-in-the-round.[59] (See Figure 9).

In addition to the four theatres described, other arrangements allowed for even greater flexibility of the building. Walks and rampways which ran throughout the large auditorium were connected to any one of the stages which might be in use. If it were so desired, the actors could use these peripheral runways and actually mingle with the audience, and still have contact with the primary acting area or stage. There were two levels of these peripheral stages. One circumscribed the movable seats which were immediately adjacent to the arena floor. The other was higher and circled the second tier of permanent seats which could be closed off by a system of sliding panels, thus making the large auditorium smaller. These runways also served the purpose of aisles, but were different from the conventional theatre aisles in that they were directly

58. Loc. cit.

59. Loc. cit.

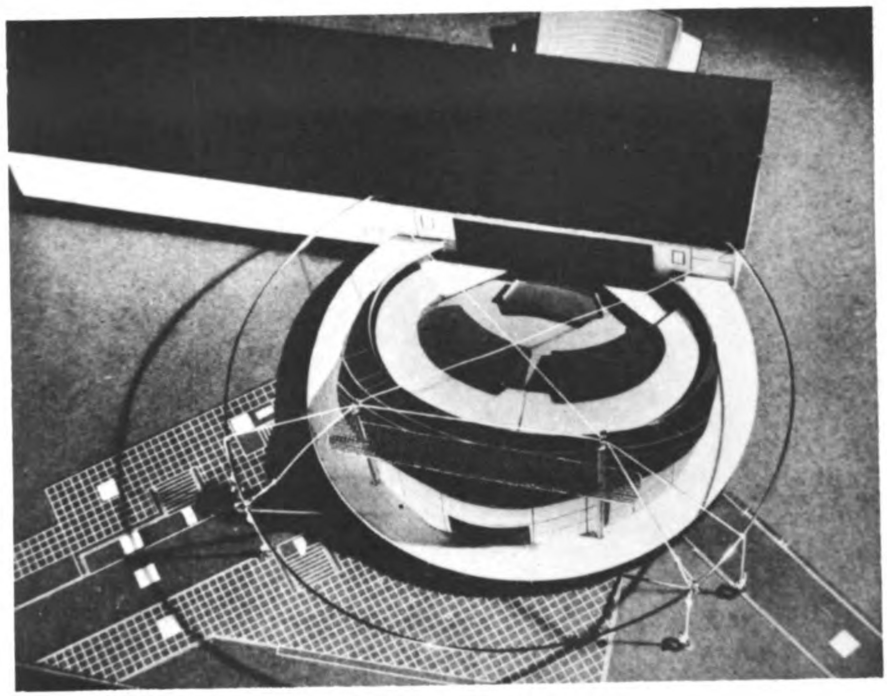

Figure 7

Airplane view of a cutaway model of Kiesler's Universal Theatre. The viewer is above and to the rear of the auditorium looking toward the proscenium stage. The semi-circular black areas are tiers of seats facing the proscenium.

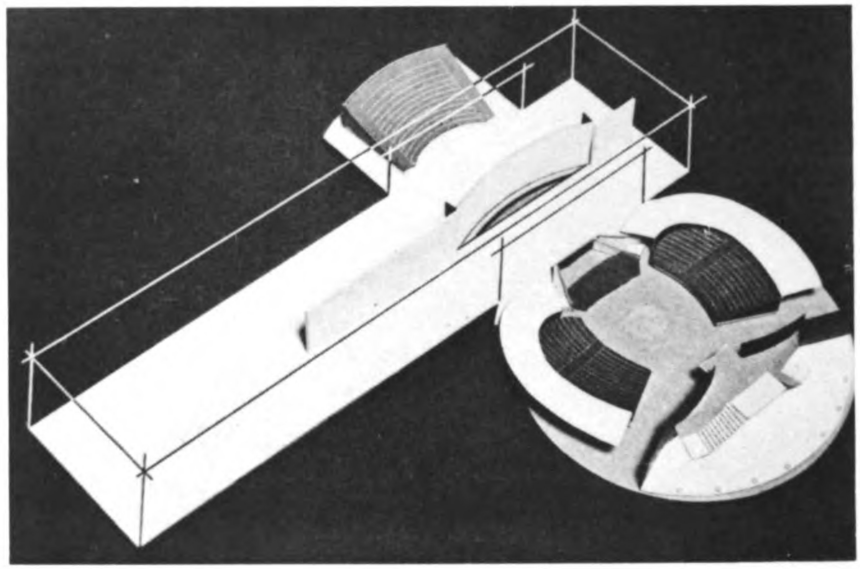

Figure 8

The Universal Theatre set for the amphitheatre arrangement. Note the lower tier of seats have been divided in two and positions at the sides. Compare this to their position in Figure 7.

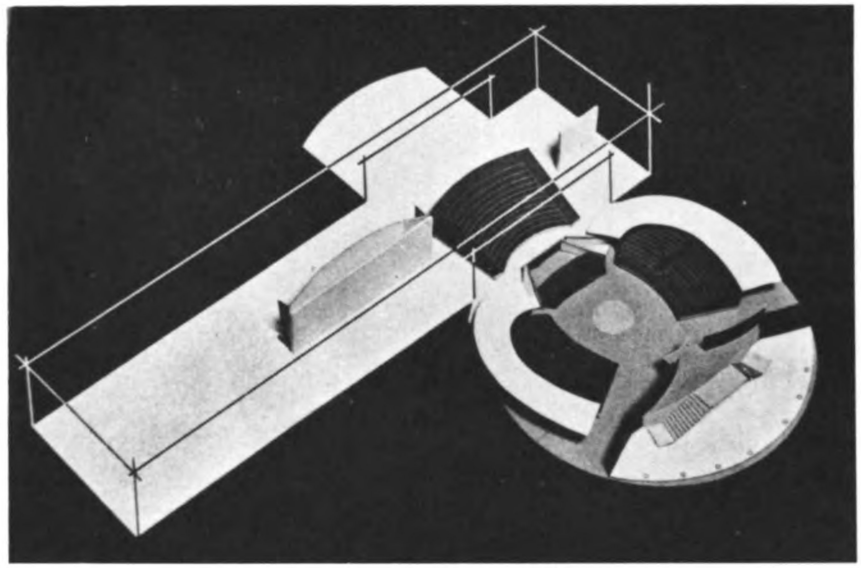

Figure 9

The Universal Theatre set for the central stage. Note how the main auditorium remained the same as in Figure 8 and that the addition of the seats from the small theatre onto the proscenium stage transformed the theatre into the central stage type.

connected to the several stages.[60]

The Universal Theatre building not only served the several stage-auditorium relationships, but also could be converted to a convention hall, ballroom or display hall. To accomplish this coversion Kiesler designed all the tiers of seats with castors. They were simply rolled into the scene storage area along with all the scenery from the proscenium stage. This left both the auditoriums entirely empty. Tables, chairs and necessary paraphenailia could then be placed in this great hall for any use desired.[61]

Other functional uses of the theatre building were not neglected. In addition to the swinging grid system, the "stage traffic" was planned in a decentralized method whereby there would be a minimum of crossing. All other working rooms were designed from the proscenium stage area. Leading in a radial fashion off stage left, the following rooms were located, the first, up stage, the last, extreme down stage: quick dressing, rest room and rehearsal, manager, furniture, costumes, exits, actors and chorus dressing. Off right stage and in a like fashion were: scenery, work shop, stage hands, exits, actresses and chorus dressing.[62] By this arrangement no matter which stage was in use, there was a minimum of backstage movement and confusion.

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60. Ibid., p. 452.

61. Loc. cit.

62. Ibid., p. 453.

The acoustics, in the spirit of the building design, were also flexible.

> The acoustic properties of the theatre have been largely predetermined and the slope of the ceiling is established by formula for this reason. The Theatre is equipped with flexible acoustics so that, for concerts, an orchestra or singer appearing on any one of the stages can be placed in acoustical focus. Flexibility was also the guiding principle in determining the lighting and it is possible to light any or all parts of the auditorium or the stages from a suspended bridge in the rear of the auditorium.[63]

Still another function of this theatre concerned the motion picture. The seating arrangement was the same in this instance as for the proscenium stage. The sight lines were such, and this was true of all the types of stages, that every patron had a clear and undistorted view. The screen was to be placed far enough away from the first rows of seats so that these seats were equally as good as those farther back in the house. The screen was transparent and, for this reason, the picture projected could be seen from either auditorium. If subtitles were necessary, they were projected in reverse negative for the small auditorium.[64]

Incorporated in the design were subsidiary features such as, club quarters, a gas station, a parking lot, a restaurant, and provisions for an emergency hotel shelter.[65]

Another theatre design of Frederick Kiesler, and one for which he is probably better known, was his "Space-Theatre." Elaine de Kooning in her article for Art News, "The Modern Museum's fifteen:

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63. Ibid., p. 454.

64. Ibid., p. 455.

65. Ibid., p. 456.

Dickinson and Kiesler", points out Kiesler's interest in space. "Kiesler, who, as a young architect in Austria, was playfully tagged Doktor Raum because of his possessive attitude toward 'Space', which he made his personal property as a prefix for any project---the space theatre, -stage, -city, -house, etc..."[66]

Applying the term "Space" to theatre architecture was quite analogous to his Universal Theatre project. Space in this instance was defined as having no end. This was quite true of Kiesler's "Space-Theatre" and his "Space-Stage."[67]

Kiesler's project for the "Space-Theatre" (1916-1924) was designed for a seating capacity of 100,000 people.

> The whole structure is encased in double shells of steel and opaque welded glass. The stage (shown white on the plan) an endless spiral. The various levels are connected with elevators and platforms. Seating platforms, stage and elevator platforms are suspended and spanned above each other and next to each other is space. The structure is an elastic building system of cables and platforms developed from bridge building. The drama can expand and develop freely in space mounted on the spiral.[68] (See Figure 10).

All the architectural features in this building were blended one into the other, so virtually no aspect of the architecture met abruptly with that of another which would have caused an end. The outer shell of the building was also designed in circles and ellipses, and the interior design followed these curves. Thus the blending of all units

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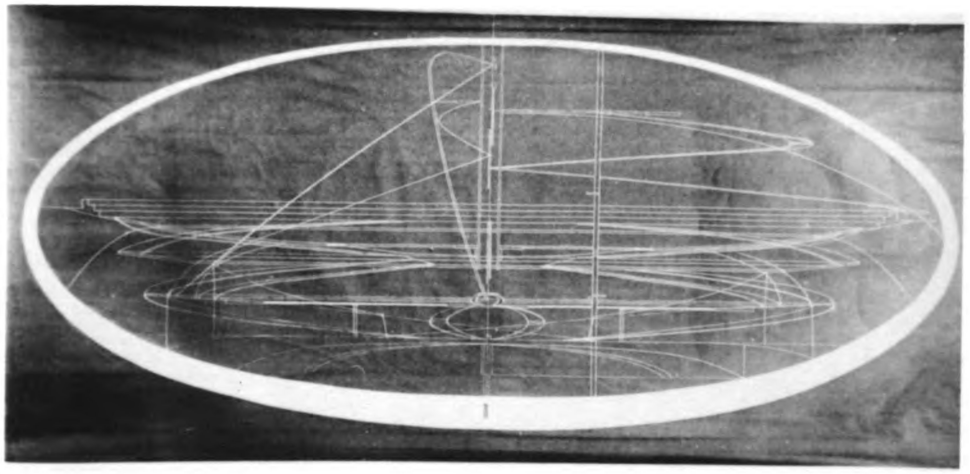
66. de Kooning, Elaine, "The Modern Museum's fifteen: Dickinson and Kiesler", Art News. April, 1952, Vol. 51, p. 20.

67. The peripheral stages of the Universal Theatre were exemplary of the space theatre idea. They too followed the contours of the building and were circular in construction, one blending with that of another.

68. Lonberg-Holm, Op. cit., p. 495.



PROJECT FOR A "SPACE-THEATRE" SEATING 100,000 PEOPLE
FREDERICK KIESLER, ARCHITECT (1916-1924)

Figure 10

made the structure a "Space-Theatre".[69]

In 1924, the first "Space-Stage" was designed and constructed by Kiesler.

> Built for the Vienna Music Festival, this first space-stage is one of Frederick Kiesler's many ingenious projects. The orchestra seats of the Konserthaus were removed for the erection of this center stage, and the audience was seated in the balcony. The different levels of the stage were connected by a wide ramp. Through the center of the stage was built an elevator.... The proscenium opening of the original Konserthaus stage was covered with a white curtain, used as a projection screen during the action on the space-stage. The same construction was later adapted for the production of Wedekind's Francisca in Vienna and Berlin, 1925.[70]

The "Space-Stage" idea like the "Space-Theatre" strove for the elimination of the meeting of any two points. This stage was actually hung or suspended in a theatre which had served the conventional type proscenium theatre. It too was like the peripheral stage arrangement of the Universal theatre in that one stage or playing area blended with that of another.

The space-stage idea was carried forward in a "...project for Meyerhold's new theatre or, as it is called, 'Gostim, The State Theatre in the Name of Meyerhold.'"[71] This theatre followed the suspension and curve principles of the Kiesler design.

Kiesler not only planned and erected buildings embodying his radical ideas, but also was an outspoken critic of existing theatre architecture.

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69. Loc. cit.

70. "First Space-Stage in Europe Designed by Frederick J. Kiesler, 1924", Theatre Arts Monthly. September, 1934, Vol. 18, p. 726.

71. Stepanov, Valerian, "Gostim", Theatre Arts Monthly. September, 1933, Vol. 17, p. 694.

He said of the contemporary theatres in 1934:

> Our theatres are copies of obsolete architectures. Systems of superannuated copies. Copies of copies. Barococo theatres. The actor works without realization to his environment.... He is set down in the middle of things, managerially obligated, coached by the director for his part. He must put life into a grave topped with red, gold, and white masonry, a parquet of mummies in evening dress, decollete jellies, antiquated youths.[72]

One of the main objections Kiesler had of contemporary theatre architecture was the lack of consideration given to sightliness. He maintained that all spectators should have equal uniform clarity of the stage area. He pointed out that the "Peep-show" stage by its very architectural make up could not permit equality of view to each member of the audience.[73] Although he employed this type of theatre architecture in his design for the Universal Theatre, he had reduced this problem to a minimum. In the actor-audience relationship for those stages other than the proscenium, the problem of sight line was negligible.

He also challenged the acoustics and air conditioning of contemporary theatre building. He admitted that there was no set formula which would assure good acoustics. He stated, however, that curved walls and vaulted ceilings should be avoided.[74] His Universal Theatre was a direct application of his beliefs on this subject. He found that the main reasons why a definite formula could not be established were:

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72. Frederick S. Kiesler, "Notes on Improving Theatre Design", Theatre Arts Monthly. September, 1934, Vol. 18, p. 727.

73. Loc. cit.

74. Ibid., p. 730.

1. Diverse building materials used according to building codes of today for theatres, motion-picture houses, and broadcasting studios.

2. The inflexibility of architectural construction today.

3. Commercial interference with scientific layouts---prefering good profit to good services.[75]

Therefore he advised the careful consideration of each particular case.

Frederick J. Kiesler, like Walter Gropius, was one of the first architects to propose a theatre building that could contain within it the several types of stages known to the world of the theatre--a truly multiple theatre. Kiesler went much farther in his architectural considerations than have others. Some of his projected designs may seem fantastic (his space theatre is an example), yet in them he envisioned extreme flexibility. In one instance he had one of these extreme designs actually constructed, namely his space stage. The merit or popularity of these highly "different" projects is not for the author to determine. However, as a critic of theatrical convention, Kiesler has been loyal to his cause and has constantly striven for what he felt was better theatre---through better theatre architecture.

Kiesler gave his theatre even greater flexibility than did Gropius and consequently more utility. Comparing the Space Theatre of Kiesler to the "Totaltheatre" of Gropius, as it was incorporated in the Totalbühne for Piscator, Mordecai Gorelik wrote: "On the whole a conservative project (the Totalbühne) compared with the plans of Kiesler for an oval theatre..." (Space Theatre)[76]

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75. Loc. cit.

76. Gorelik, Op. cit., p. 448.

CHAPTER IV

THEATRE DESIGNS OF NORMAN BEL GEDDES

Other early contributions to Multiple Theatre Architecture were several projected designs of Norman Bel Geddes. Mr. Bel Geddes, like some of his predecessors and contemporaries, was an outspoken critic of existing theatre architecture. Except for the design and reconstruction of the Century Theatre in New York for Max Reinhardt's Miracle (the same producer who practiced in the Grosses Schauspielhaus), Mr. Bel Geddes, like Mr. Kiesler, was unable to realize construction of many of his designs of theatre buildings.

Bel Geddes was commissioned to design a series of buildings for public performance for the Chicago World's Fair of 1929. One of these designs emerged as an example of Multiple Theatre Architecture. Later, in a competition for the Ukranian State Theatre, he designed another theatre building which embodied multiple characteristics. His Flexible Theatre, proposed in 1948, the last of his theatre designs, exemplified most clearly the characteristics of Multiple Theatre Architecture as defined.

Norman Bel Geddes was very active in the theatre as a scene designer. He has been active in art and architecture, but more active in the field of industrial design. Early in his career he drafted ideas for what he believed good theatre architecture to be. Among these buildings, the three cited above constitute his contribution to Multiple Theatre

architecture and therefore shall be the primary concern of the following discussion.[77]

Mr. Bel Geddes designed his theatres all with a specific purpose in mind. He contended that a single theatre style was not applicable to all types of theatre building, and that a series of theatres were necessary to meet the varying demands of theatrical producers. He, like the architects discussed in the previous chapters, also revolted against the "Peep-Hole" theatre.

Of the series of designs which were drafted for the Chicago World's Fair of 1929, the Repertory Theatre, was the example which displayed most clearly multiple theatre characteristics.[78]

> The Repertory Theatre (a development of Theatre Number 6) is one conception of a building to house an industrial theatre on a scale practical for any large city. Since it was designed for the proposed Chicago World Fair, it spreads out over more ground than it would if planned to occupy a portion of a city block. It contains four different types of theatres and every other element necessary for producing, rehearsing and storing productions under one roof.[79]

A central tower of nineteen stories ascended between the four theatre areas. This tower was designed to house rehearsal rooms, work areas, storage space, offices, dressing rooms (the original design called for one hundred) all of which had outside windows and were equipped with showers. This latter convenience, Mr. Bel Geddes pointed out, was not typical of existing theatre buildings.[80]

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77. For a biographical discussion of Norman Bel Geddes, see APPENDIX A, Section 3, Norman Bel Geddes.

78. Norman Bel Geddes, Horizons, Boston: Little, Brown, and Company, 1932. p. 144

79. Loc. cit.

80. Loc. cit.

Radiating from this tower were a roof garden, a cabaret, a children's theatre, a large theatre, and a smaller, more intimate theatre.

> The cabaret and roof garden accomodate two hundred and fifty persons. The main dining room is two stories high, with a balcony around the second floor. Kitchen and pantries are in the basement, with service elevators. Directly across from the entrance is a circular orchestra pit sunk below the level of the dance floor, and from which the dance floor radiates. Behind the orchestra pit is an elevated stage, with steps on either side leading down to the dance floor. A movable screen regulates the depth of the stage. The roof garden is rectangular in plan, with four terraces and a small circular orchestra space. A circular stair and elevator rises from the lobby to the balcony and roof garden.[81]

The children's theatre was the proscenium type. On its main auditorium floor seating was provided for two hundred children; then, a balcony was provided above this area where adults were seated practically invisible to the children on the main floor. The stage was readily convertable for marionette shows. This particular theatre was rectangular in shape and had two side aisles. Directly above the auditorium were rehearsal rooms and above those an outdoor terrace which was available for dance, gymnastics, or rehearsals.[82]

The large theatre and the small theatre were both designed on a similar plan. They had the same stage-auditorium relationships and were different only in size. The smaller auditorium seated seven hundred fifty persons, whereas the larger seated onethousand seven hundred persons. "In both, the main axis of stage and auditorium is on the diagonal of the square."[83]

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81. Ibid., p. 145.

82. Loc. cit.

83. Loc. cit.

Bel Geddes felt very strongly about this architectural principle which he has followed in all of his designs. He contended that given two identical ground plots, the conventional longitudinal plan rendered the stage and auditorium area only fifty-six percent efficient, but the diagonal axis principle made the same area eighty-four percent efficient.[84] This principle was observed in both the adult theatres in the Repertory Theatre group. (See Figure 11).

Both of these theatres were without the traditional proscenium arch, although there was a central area of focus at one corner of the theatre room. There was no curtain and separation was not desired.[85]

> Except for the low flight of steps at the front of the stage and two softly curving side jams which lose themselves in the curve of the ceiling, the stage is undivided from the auditorium. Thus, a sense of unity, intimacy, and audience-participation pervades the theatre, arising in part from the fact that the same great domed ceiling spans actors and audience.[86]

In accordance with such an arrangement the ceiling and walls of the stage proper were made of a great domed cyclorama. There was no fly area nor off stage storage area. This necessitated a completely different method of stage machinery. The entire stage elevation was mounted on a hydraulic lift which was lowered to a basement for scene changes. The stage level, when lowered to the basement, was on an absolute level with the basement floor. The scenery was all mounted on a wagon which in turn was mounted on tracks. To make the change the

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84. Ibid., p. 146.

85. Ibid., p. 149.

86. Ibid., pp. 149, 150.

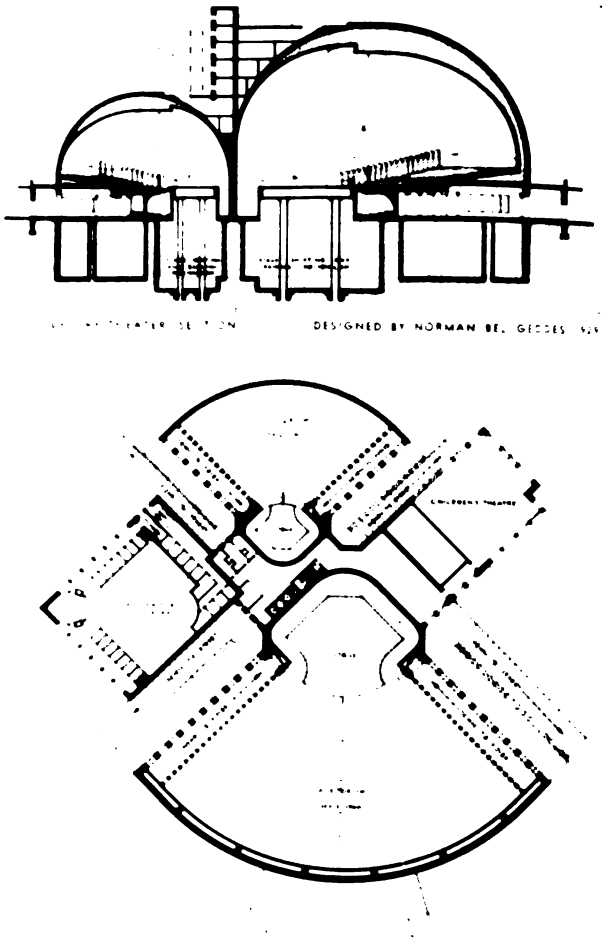

Figure 11

Floor plan and section of Bel Geddes' Repertory Theatre. Note the tower in the middle of the four wings which house the several theatres. Observe the application of the radial axis principle.

scenery to be struck was pushed off the lift and another set of scenery was put in its place. The lift then rose to the stage position for the new scene. Bel Geddes calculated that any sort of scenery change could be accomplished in a shorter time than the customary "quick change" in the conventional theatre. To comply with fire regulations, a great steel door was designed which would roll across the elevator opening in the stage floor. With the stage elevator in the basement all the scenery was thus cut off from the auditorium.[87]

In either auditorium the seats were reached by two side aisles. The rows of seats were so designed that patrons were comfortable and yet others could cross in front of those seated without their rising.[88]

> Light galleries are set into the dome of the auditorium and are controlled from the stage switchboard. The lamps are located above and behind the spectators and concealed from them. The stage switchboard is located as is the orchestra, and the electrician through his periscope has a clear view of the stage and auditorium. One of the outstanding distinctions of modern stagecraft, though very little used, is the extraordinary extent, to which light can be made to intensify any scene, serious or comic, in any type of production. Changes of scene and of people can be made in darkness with no curtain necessary to cut off the auditorium from what is happening on the stage. By a skillful use of light, objects can be revealed or concealed at will. Costumes can be transformed. Convincingly distinctive locals can be suggested without scenery---only a property or two--- entirely by light manipulation. The theatre I propose, with scene and actors thrust forward into the auditorium instead of being kept behind the proscenium picture frame, takes on a still greater value for both actor and audience and becomes desirable and practicable, due largely to the great advance of the last decade in the use and control of artificial light.[89]

Bel Geddes attacked the conventional proscenium theatre as purely a two-dimensional medium. He not only designed his theatres to be

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87. Loc. cit.

88. Ibid., pp. 147, 149.

89. Ibid., pp. 151, 152

adaptable to historical and contemporary forms of drama, but also maintained his theatres would foster new, experimental, and vital forms of dramatic expression.[90]

Another theatre designed by Mr. Bel Geddes, which more accurately can be considered under multiple theatre, was submitted in competition for the Ukrainian State Theatre of Karkow, Union of Soviet Socialist Republics, 1931.[91]

> This building has as its outstanding feature a facade which becomes the stage for a great mass production, with the plaza in front of the building serving as the auditorium. This arrangement was not stipulated in the specifications provided by the Russian Government, but was the result of another idea which they imposed. They required a rostrum from which speakers could address sixty thousand persons assembled in the square. I designed this and, as permitted in the terms of the competition, went further, supplying a stage on which five thousand actors might play for the same audience. The building combines three complete theatres, the Indoor Theatre, and Open-Air Theatre on the roof, and the Outdoor Mass Theatre. In addition, there are complete workshops, rehearsal rooms, storages, offices, and social and dressing quarters for a large acting company.[92]

The indoor auditorium was designed to accommodate four thousand persons. The seats were arranged in three tiers and were banked in a semi-circular radial fashion similar to the seating arrangement in the adult theatres of the Repertory Theatre design. A vast foyer and system of stairways and entrance vestibules were designed to cut the audience traffic problem to a minimum. Bel Geddes estimated that four hundred persons a minute could be seated without the patrons crossing one another. In addition to this general seating plan, four great boxes were provided

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90. Ibid., Passium.

91. Ibid., p. 173.

92. Loc. cit.

in the first two rows of the second tier. They were designed so as to enable private entrance and each was supplied with a private reception room adjacent to the grand foyer.[93]

The lighting system was very similar to the design of the Repertory Theatre.

> All auditorium lighting is indirect, being accomplished by flood light placed in the recesses of the ceiling which follow in plan the curve of the seats. Above and behind these ceiling recesses are located spot lights and bridges for illumination of the stage. The main light bridge is located above and in front of the proscenium. Cinema galleries with attendant rooms are provided in the space above the foyer and behind the auditorium.[94]

The proscenium itselfhad flexible characteristics. It was alterable in size from twenty-seven feet in width to one hundred ninty-six feet. The height was alterable from sixteen feet to fifty-eight feet. Mr. Bel Geddes contended that there was no loss in visibility because of the change.[95]

The stage mechanics were very similar to the Repertory Theatre design. The stage was mounted with a dome cyclorama, and the scenery was changed in the basement from a hydraulic lift system. However, in this design there was a gridiron which extended off stage. This permitted scenery to be stored in the flies but out of the main fly area. Adjacent to the stage area were the construction and assembly rooms. Above these rooms, and readily accessible by stairs and elevators were

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93. Ibid., pp. 174, 175.

94. Loc. cit.

95. Ibid., p. 176.

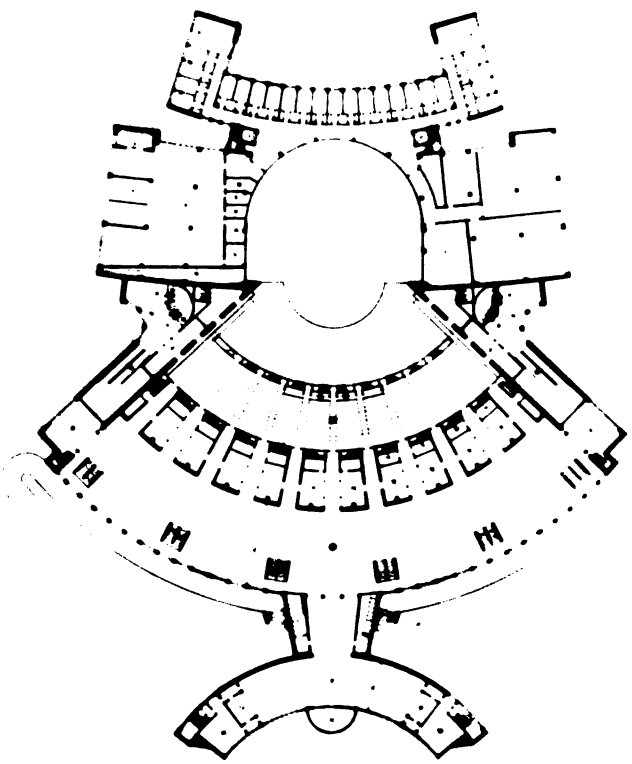

Figure 12

Floor plan of the Ukraninian State Theatre. Note the radial seating plan flaring out from the hugh proscenium stage. The facade at the extreme lower part of the picture served as a stage for the outdoor mass theatre (See Figure 13). The facade at the upper portion of the plan was the main entrance and foyer.

the actors dressing rooms made to accommodate five hundred persons.[96]

The proscenium theatre was transformed into the amphitheatre by a hydraulic system. The apron of the stage which could project to a maximum of fifty feet beyond the proscenium line was controlled "... by merely pressing a button at the stage control board."[97]

The outdoor theatre planned for the roof covering the indoor auditorium, was without a proscenium and was designed with a single bank of seats flaring away from the stage in a radial fashion, accommodating two thousand spectators, the auditorium for this theatre was accessible from outdoor escalators located on either side of the building. It also could be reached from inside the main foyer. In event of inclement weather, two large foyers were designed immediately adjacent to the stage and auditorium. This theatre used the working rooms that were designed for the indoor theatre, and the stage was situated so these rooms were available for use by actors and technicians alike. Mr. Bel Geddes intended this theatre to be used for plays and concerts when a somewhat smaller theatre was desirable.[98]

The outdoor mass theatre accommodated as many as sixty thousand persons. They could be seated or could stand. The facade of the building formed a raised stage at one end of the vast spectator area where great groups of actors could perform before the assembly. Also there was a central arena which was located below this facade and which

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96. Loc. cit.

97. Ibid., p. 178.

98. Ibid., p. 180.

could be surrounded by spectators. (See Figure 13) This theatre was not circular but rather ellipsoidal with the stage placed toward one edge, yet allowing the spectators to surround this area.[99] (See Figure 13).

Located on the perimeter of this vast theatre were six tower-like pylons from which the lighting and sound amplification was projected. A speaker's platform was located on the foyer level facing the theatre, and a speaker facing a multitude of up to sixty thousand persons could be heard by the entire audience without raising his voice.[100]

Another theatre building, and one which was truly a multiple theatre, was Bel Geddes' Flexible Theatre. This design was an extension of the Intimate Theatre designed in the Chicago World's Fair group. Originally titled Theatre Number 14, the design called for only a central stage. When revised as the Flexible Theatre, it allowed several actor-audience relationships.

Bel Geddes designed the theatre with educational institutions in mind. He said in discussing this theatre:

> The present day proscenium theatre is the most limiting form of structure the theatre has ever known. The gradual disintegration of the theatre is in direct ratio to lack of change in this restricting form.
>
> The dramatic departments of our educational institutions should be aware of this Theatre's limitations to present day playwriting and production. They should be open minded to ideas towards release from this limitation. They should bring attention to the great possibilities of today's and tomorrow's theatres. They should point the way to the people who will work in it. They should be inspirational leaders. Some are, but too many are not.[101]

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99. Ibid., pp. 180, 181.

100. Loc. cit.

101. Norman Bel Geddes, "Flexible Theatre", Theatre Arts, Summer, 1948. Vol. 32, p. 49.

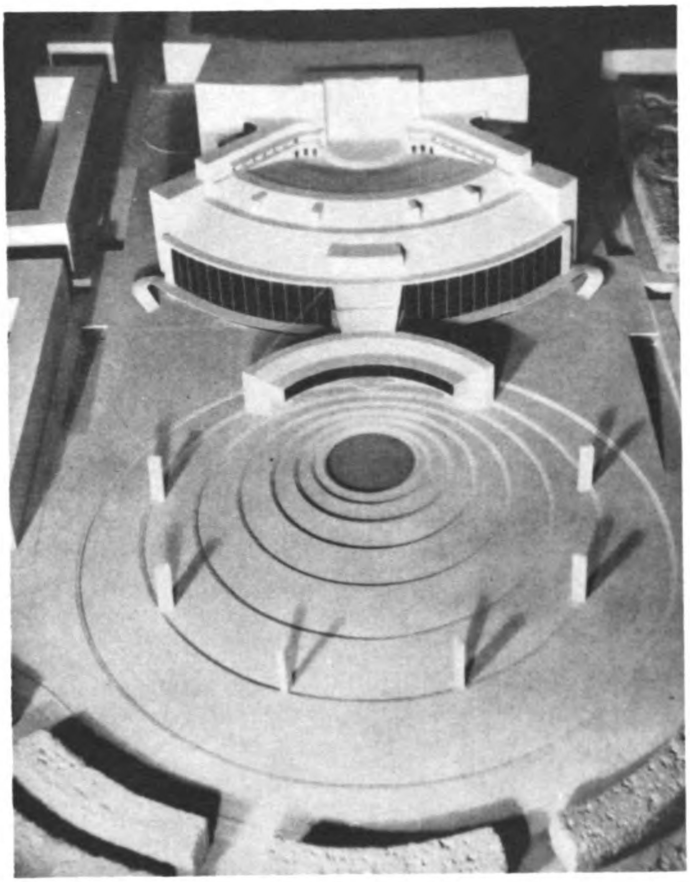

Figure 13

Airplane view of the Ukranian State Theatre looking over the mass theatre. Note the central arena and facade stage with the lighting and amplification pylons. Note the outdoor theatre atop the building proper.

To overcome the restrictions of the proscenium theatre as he saw them, Bel Geddes contended that a theatre should be developed that would strengthen the expressive media of the theatre---writing, designing, directing, acting, and management. He maintained that the contemporary theatre was centered about the playwright. While not blaming the dramatists, he wanted a theatre that could provide not only for the best expression of the drmatic form of the past, present, and future, but also for the other arts of dramatic production.[102]

The Flexible Theatre was constructed so that a stage could be located anywhere within it. The seating was designed so as not to involve mechanical problems. The entire cost of construction was not to exceed that of a conventional proscenium theatre.[103]

The theatre provided the conventional proscenium stage, a central stage (See Figure 14), the Greek or Elizabethian amphitheatre, or any other combination that might have been desired.

> The flexible theatre can have the stage in the center and the audience surrounding it; the stage can run across the center of the space from wall to wall, with the audience sitting on two sides. And again, it can be returned to a standard, proscenium theatre.[104]

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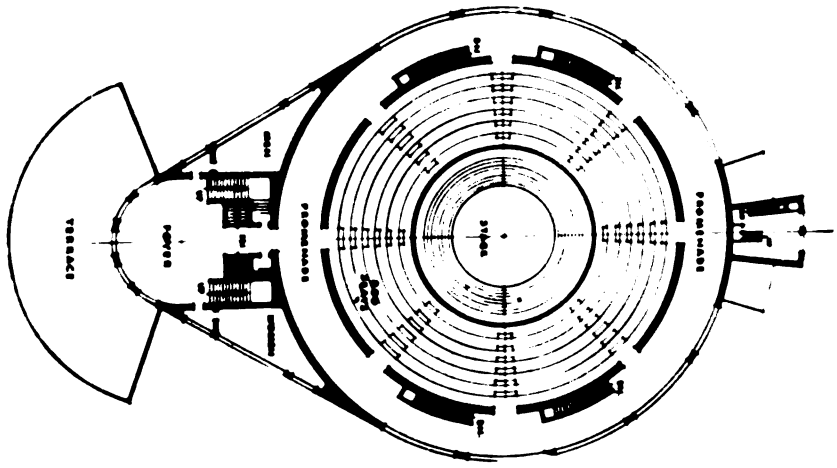
102. Loc. cit.

103. Loc. cit.

104. Loc. cit. Mr. Bel Geddes' discussion of his proposed flexible theatre had no indication of method of transformation from one stage arrangement to another. His ideas were obviously an extension of his plan for an Intimate Theatre which he designed in 1929. His article, Flexible Theatre, was accompanied by line drawings of that same theatre. The author has submitted for the reader's inspection the ground plan line drawing for this theatre in Figure 14.



AUDITORIUM PLAN

Figure 14

The Flexible Theatre floor plan representing the central stage.

Howard Lindsay wrote in appraisal of Mr. Bel Geddes' Flexible Theatre:

> The 'realism' we have attained is now blocking the road along our path to truth. It has been 'off Broadway'---in the Community Theatres and in those of the Universities---that we have seen efforts made to break down the conventions of the professional theatre, to make a demand upon the imagination of the audience, to search out the heart of the mystery. It seems to me that Norman Bel Geddes' design is well adapted for this purpose.[105]

Another project of Bel Geddes', although more of a stage design than an architectural plan, was his design for Max Reinhardt's production of the Miracle, which was produced at the Century Theatre in New York in 1924.[106] Although the reconstruction of the Century Theatre was not an architectural development of multiple theatre as defined, it indicated Mr. Bel Geddes' and Mr. Reinhardt's dissatisfaction with existing theatre building, and exemplified Mr. Bel Geddes' contention that flexibility in theatre architecture was necessary to satisfy the varied demands of new and experimental forms of theatrical production. In essence Mr. Bel Geddes made a flexible theatre out of a conventional proscenium theatre. The Miracle design was indicative of Mr. Bel Geddes' philosophy that anything can be accomplished in the theatre. Bel Geddes actually transformed a conventional New York proscenium theatre into such a cathedral for the Miracle.

> The large proscenium of the Century Theatre was thrown open to its full width and height. The stage became the apse and the auditorium itself took on the appearance of a transept. ....you had the sense of standing in the nave and looking through the transept into the apse. To accomplish this result, the entire auditorium as

105. Howard Lindsay, (An untitled critique), Theatre Arts, Summer, 1948. Vol. 32, p. 49.

106. Geddes, Horizons, Op. cit., p. 182.

> well as the stage was completely covered with architectural scenery. The scenery was not painted on canvas but was built of wood and covered with rectangular pieces of asbestos slate which, under foot, sounded and looked like stone. The seats were converted into pews. The boxes on each side of the auditorium were removed and rebuilt into cloisters. But the feature that really achieved the result was the manner in which the whole structure was illuminated; or perhaps it should be stated in the opposite: the manner in which it was not illuminated. Except for the tremendous light that came through the enormous stained-glass window (eighty feet high) at the sides of the transept and around the apse, there was scarecely any illumination at all. The entire structure was painted dull black. Consequently, you had the feeling of being in the musty dark atmosphere of an old continental cathedral.[107]

In addition to this vast architectural setting, the lighting was equally complex. Bel Geddes literally rewired the Century. He installed a system that required five switchboards all of which were centrally controlled by telephone from a central location in the gallery.[108]

In discussing the venture, Claude Bragdon said:

> The whole thing cost an unconscionable amount of money: more than it could possibly be worth, either from the standpoint of art or of economics, but then, 'what a gesture!'---as Cyrano said when he threw away his purse.[109]

Bel Geddes, unlike Walter Gropius and Frederick Kiesler, designed numerous other theatre buildings and buildings for public performance. Several are worthy of comment in this discussion, because of their anti-proscenium characteristics and because some of them have multiple characteristics of their own.

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107. Ibid., pp. 182, 183, 184.

108. Vernon Grenville, "Bel Geddes--Master of the Scenic Art", Theatre Magazine, April, 1924. Vol. 39, p. 20.

109. Claude Bragdon, "A Theatre Transformed", The Architectural Record, April, 1924. Vol. 55, p. 389.

Theatre Number 6 was Bel Geddes' application of the diagonal axis principle. This theatre was the embryonic beginning of the Repertory Theatre. It had the radial type seating arrangement with a non-proscenium stage located at one end of the diagonal axis of the building. It also employed the hydraulic lift system of raising and lowering the stage for scenery changes.[110] He evolved this design in 1914.[111]

The six theatre projects designed for the Chicago World's Fair, which failed to be constructed because of the economic depression which began in 1929, included more than the Repertory Theatre. The first of these designs was titled, Theatre Number 14. It was a circular dome-shaped building which housed a central stage. This stage, like nearly all his other projects, was mounted on a hydraulic lift and could be set at varying levels.[112] It was this particular design that he later reworked which evolved into his Flexible Theatre.

Another in this series of designs was the Water Pageant Theatre. It was "An open air theatre for water pageants built on a group of anchored barges in a lake, with the stage separated from the auditorium and entirely surrounded by water.[113] The auditorium was semi-circular and with additional docks for canoes rendered a seating capacity of three thousand five hundred persons. Across a body of water which was

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110. Claude Bragdon, "Towards a New Theatre", The Architectural Record, September, 1922. Vol. 52, p. 171.

111. Geddes, Horizons, Op. cit., p. 146.

112. "Six Theatre Projects", Theatre Arts Monthly, September, 1930 Vol. 14, p. 762.

113. Ibid., p. 773.

used for performances was a great floating architectural stage.[114]

The Temple of Music, one of the series, had four adjoining domed auditoriums which could be made one by a device which rolled the separate domes away and brought the four aduitoriums together as one gigantic outdoor theatre. The four auditoriums were built in a radial fashion away from another and larger dome which housed the stage. Behind this stage was a tower used for working rooms.[115]

The Divine Comedy Theatre, the last in this series, was a gigantic auditorium and stage which Bel Geddes designed solely for the production of Dante's Divine Comedy. The auditorium had a seating capacity of five thousand people. The stage was without the proscenium and the huge seating area curved away from the semi-circular stage. Except for the roof, this theatre looked much like the Greek Theatre of ancient times.[116]

Bel Geddes, like many of his contemporaries, sought a new and what he deemed, a vital form of theatre architecture. Most of his projects were unrealized, yet Futurama[117] and the Miracle became reality. His interests have been so diversified that he does not remain champion of any single industrial field. He has been a successful stage designer, and for this he is known in the theatre. His more recent activity has been in industrial design.

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114. Loc. cit.

115. Ibid., p. 774.

116. Ibid., p. 776. For a discussion of these projects consult Ibid., pp. 761-779.

117. For a discussion of Futurama see Appendix A, Section 3, Norman Bel Geddes.

CHAPTER V

LATER DEVELOPMENTS IN MULTIPLE THEATRE

Several significant developments have been made in multiple theatre since Gropius, Kiesler, and Bel Geddes presented their planning in this field of theatrical architecture.

In the same competition in which Bel Geddes submitted his designs for the Ukrainian State Theatre, another design was submitted which was also a multiple theatre. This plan, the winning design came from the Russian architectural team of A. A., B. A., and L. A. Vesnine and was called the Ukrainian Theatre of Musical Action of the Masses.[118] The grand scale on which this theatre was designed was not unlike Bel Geddes' design for the same competition. The theatre was ellipsoidal in shape with considerably more attention paid to breadth than height

> The architects have used the architectural masses simply and wisely, with the same calm rhythm felt in the design for the interior of the theatre. The main auditorium, with seats for 4000 persons, has the same capacity as the entrance hall and foyer. The semi-circular stage, a continuation of the auditorium, has an inner and outer revolving stage. Ample space is provided for storage and so forth behind the last drop, in the wings and above and below the stage.[119]

Mechanical transformations gave the theatre its multiplicity. In addition to the conventional stage, mentioned above, the stage proper could be transformed into a series of platform areas, "...allowing the

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118. Valerian Stepanov, "New Russian Theatres", Theatre Arts Monthly, September, 1934. Vol. 18, pp. 675, 678.

119. Ibid., pp. 678, 683.

presentation of so-called space productions."[120]

The central stage arrangement was achieved by converting the proscenium stage into auditorium area. By this arrangement the audience then surrounded a group of revolving circles on which the action took place. (See Figure 15). The transformation to this type of actor-audience space relationship increased the seating capacity to five thousand two hundred persons.[121]

The device employed to transform the theatre to the amphitheatre type was very similar to Hans Poelizig's Grosses Schauspielhaus. The auditorium area immediately adjacent to the stage was cleared and a series of elevators were raised. By such an arrangement "...the stage can also become an amphitheatre, thus increasing the seating capacity to 6000."[122]

> The Vesnines have allowed for various mechanical devices to facilitate change of scene, such as traveling cranes with trolleys both overhead and below the stage floor, carriage elevators for both wings, space below stage to conceal the fireproof curtain when it is lowered, and ramps which will connect the stage with the street.[123]

Another multiple theatre project discussed in the Architectural Record, September, 1939, was the Project For the Infinidome, in Springfield, Massachusetts. Its co-sponsors were Michael M. Hare, designer, Walter Prokosch, architect, and Blanding Sloane, consulting theatre artist.[124]

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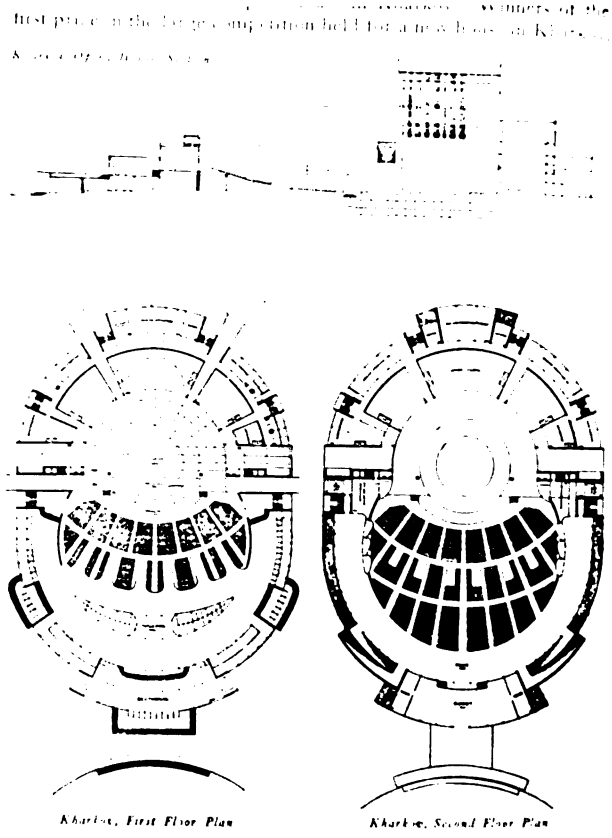
120. Ibid., p. 683.

121. Loc. cit.

122. Loc. cit.

123. Loc. cit.

124. "Basis of Design for Community Theatres," Architectural Record, October, 1939. Vol. 86, p. 83.



sical Action of the Masses, like Gorky's Theatre, grows in space, not

Figure 15

Floor plans and section of the Ukranian Theatre of Musical Action of the Masses. In the section drawing note the elevator, between the stage and auditorium, which was used for the central stage, and the risers on the proscenium stage which provided one side of the seating area for the central stage.

> The Infinidome was originally conceived by Blanding Sloane, former Director of Theatre Projects of the Eastern States. In essence, it is an extremely flexible combination of theatre and planetarium. Several elevator-equipped portions of the auditorium floor permit variations in seating and acting space to suit almost any type of production. The stage can accomodate both 'road' shows and other dramatic forms and has multiple proscenium openings.[125]

The auditorium for the proscenium type productions was constructed within a circle. The stage was located at a point on the circumference of this circular house. It was a fully trapped stage equipped with a standard gridiron system. Behind this stage area were all the working rooms: shop, stage manager's office, dressing rooms, rehearsal area, green room, director's office, electrician's office, storage, and stacking. Directly opposite the stage and behind the auditorium were the business offices and foyer. All of these auxiliary rooms were built around the curved wall of the auditorium, thus enlarging the circular construction which the auditorium had established. By this arrangement the exterior of the building was also circular in design.[126] (See Figure 16).

The transformation of the auditorium enabled multiple-actor-audience relationships. Aisles divided the auditorium into several sections of seats. One aisle, running from left to right, formed an arc through the middle of the house. That area farthest from the stage was then divided into four parts by a center aisle and two side aisles. This area of the auditorium remained stationary despite the stage arrangement of the

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125. Loc. cit.

126. Loc. cit.

theatre. For the proscenium stage type the lower portion of the auditorium was divided into three sections by two aisles. (See Figure 16) With this entire area used for seating, the theatre could accommodate nine hundred seventy-five patrons. The proscenium stage itself had an overall width of one hundred feet and a depth of forty feet. The grid height was sixty feet. The proscenium opening had a variable flexibility of sixteen to thirty-four feet in width and could be raised to ninety feet inheight.[127]

For the amphitheatre arrangement the seats on the area most adjacent to the proscenium stage were removed. This area had several adjustable heights which were accomplished by elevators mounted beneath the floor. The Planetarium device was used when the auditorium was in this position. It was a projection system whereby planetary constellations were projected onto the domed inner ceiling.[128]

The central stage arrangement was accomplished by reversing the seats which had been placed in the lower part of the auditorium for the proscenium type production. The central stage was then between the permanent seats of the auditorium and a smaller section of seats which was backed by the proscenium stage. Seating for the central stage could be expanded by placing three additional tiers of seats on the proscenium stage facing the central stage area. This provided a seating capacity for one thousand three hundred twenty-five spectators.[129] (See Figure 17)

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127. Loc. cit.

128. Loc. cit.

129. Loc. cit.

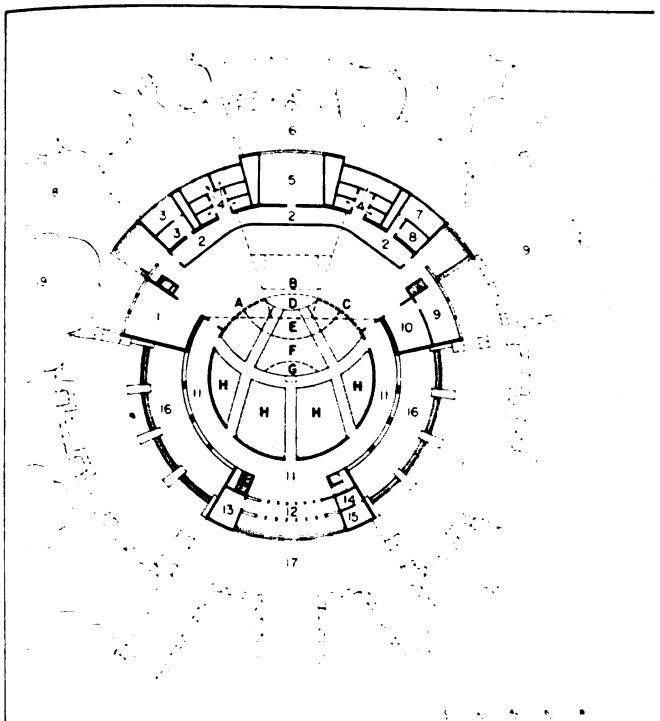

Figure 16

Floor plan of The Infinidome. Note the circular construction. The areas labeled "H" were those tiers of seats which were premanent. The other shaded area held seats for the proscenium stage arrangement, but were removed for the amphitheatre.

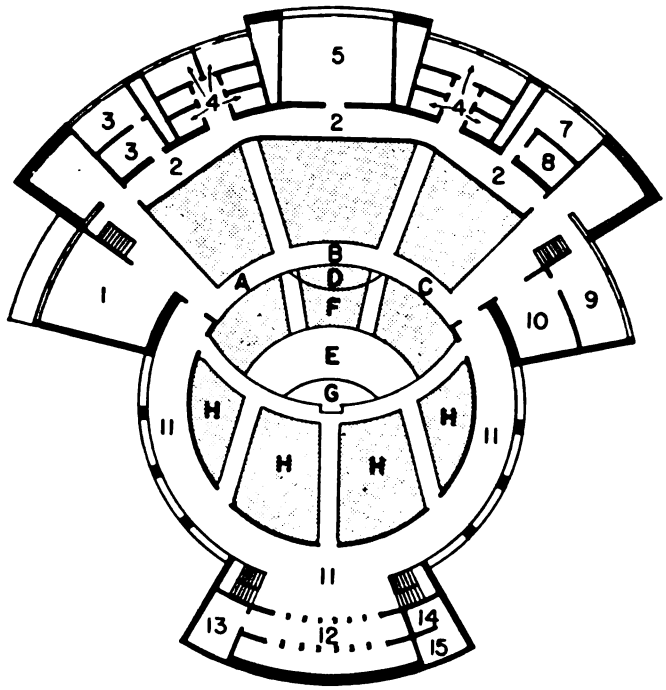

Figure 17

Floor plan of The Infinidome arranged for the central stage. Sections lettered "E" and "G" were adjustable in height by using an elevator mounted beneath this floor area.

Another innovation of multiple theatre architecture was the projected plan of Stone, Haralson, and Mott, architects for the University of Arkansas Theatre.[130] This design provided for the adaptation of a conventional proscenium stage into a central stage. The exterior of the theatre building was square in its construction. One end provided for the traditional proscenium stage with a fully trapped area and gridiron. The proscenium arch was centered, thus leaving equal offstage area on either side. In front of the proscenium arch was a conventional rectangular auditorium which accommodated three hundred spectators. Behind the walls on either side of the auditorium were rooms for a shop, green room, lavatories, and dressing rooms.[131] The proscenium stage provided the acting area for the central stage. Four portable tiers of seats, each accommodating fifty persons became the auditorium. They all had an arc shape and when placed, formed a circle with four aisles between the four tiers. The curve of the tiers was shaped exactly like the apron of the proscenium stage and one of these tiers was placed directly on the apron. The other three tiers were appropriately arranged from this to form the central stage. By this arrangement the mechanical paraphenalia for the proscenium stage was used for the central stage. The trapped area, the lighting circuits, and the fly area were readily adaptable to the needs of the central stage.[132]

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130. Harold Burris-Meyer, and Edward C. Cole, Theatres and Auditoriums. New York: Reinhold, 1949. p. 212.

131. Loc. cit.

132. Loc. cit.

To take their seats the spectators entered the conventional auditorium, climbed a small set of stairs to the proscenium stage, and were seated on the tiers of seats then mounted on the stage. (See Figure 18) The tiers of seats for the central stage were portable. The architects provided a garden where these seats could be placed to provide an outdoor arena theatre.[133]

The University Theatre of the Department of Theatre Arts, University of California at Los Angeles, operates a Flexible Theatre which has quite a different system of multiplicity from those mentioned above.

> In the last few years--following many critical theories, as well as designs by Norman Bel Geddes, and the practical experiments of Gilmor Brown in Pasadena, Glenn Hughes in Seattle, and Ralph Freud in Los Angeles--there have come into being a number of playhouses that are variously named arena theatre, theatres in the round, and central staging theatres. In most, the audience surrounds the actors. In one at least--which Freud made out of a classroom at UCLA--the scheme is highly flexible. The banks of seats, on nine-inch risers, can be freely rearranged. The theatre is made over, as Appia once said it should be, to suit each play. For one there may be "end staging" in somewhat the style of the proscenium theatre. For another the acting area may be in the center--where it has served Chehov's realistic plays admirably. The stage may be diagonal, logitudinal, or lateral, with the audience on both sides. Or a "horse shoe" stage is possible, turned into a Shakespearean theatre if the need arises. Such theatres as these of "central stageing" can be created where no facilities or funds exist for the building of conventional theatres. They present fresh problems in directing and lighting, as well as fresh stimulus to the audience. Such a theatre deserves consideration as an adjunct to any ambitious and inclusive plan in theatre building for a university or a well established community theatre.[134]

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133. Loc. cit. The date of this design could not be found. The date of publication of Theaters and Auditoriums must serve to place it in a chronology.

134. Kenneth Macgowan, "Architecture for the Theatre", from an address delivered at the Eighth Ann Arbor Conference of the Theatre. Ann Arbor: University of Michigan, April 14 and 15, 1950, College of Architecture and Design.

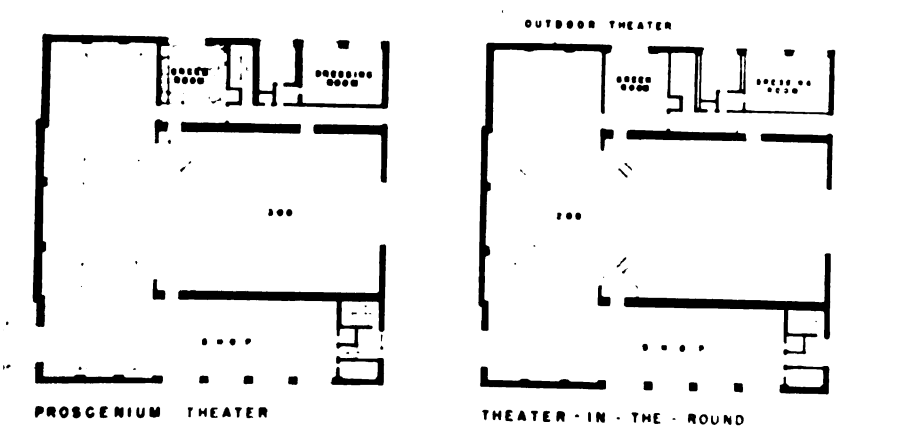

Figure 18

Theatre design proposed for the University of Arkansas. Note how the curvature of the apron on the proscenium stage matches that of the tiers of seats used for the central stage.

The room which houses the theatre at the University of California at Los Angeles is rectangular in shape. The ceiling is mounted with a criss-cross grid system which contains lighting circuits. It can be used for lighting battens in any of the many stage arrangements, and also serves as a grid on which scenery may be hung. The nine-inch platforms (mentioned above) serve not only the varied audience positions, but also may be used to form a platform stage. A portable flat-scenery proscenium may be introduced for that type of production. Complete light dimming control is provided, and operator observation of any type of production is permitted from an elevated booth in one wall of the room.[135]

Very similar to the plan used for the theatre at the University of California at Los Angeles, was that used at Robert Braun's Hillbarn Theatre in San Mateo, California. In this theatre a series of portable platforms comprise the stage. These platforms may be placed in varying arrangements on the barn floor with the audience seated facing any particular stage. A series of draperies, hung from the ceiling, enable the director to vary the size of the auditorium.[136]

Probably the latest consideration in the field of multiple theatre has been The All-Purpose Theatre at Antioch College, Antioch, Ohio. The audience-stage relationships in this theatre assume even greater

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135. From an interview the author had with Mr. Harold Nivin, Instructor in Speech, Michigan State College, July 2,1953. Mr. Nivin has seen productions in both the theatres cited.

136. Mr. Nivin.

flexibility than those theatres which offer the three standard types of stages.[137]

> The plan for the new theatre incorporates four features: Movable seat sections and platforms; a coverable pit; an asbestos curtain opening the full width of the house; and a traveling crane.
>
> The seat sections contain fifteen to thirty standard theatre seats each, mounted permanently in rows five deep, on thirty-inch platforms rising row by row. There are 530 seats altogether. Seat sections can be placed directly on the floor, in the pit, or on platforms of varying height.
>
> The function of the pit, when open and containing seats, is to put the front row of the house in a traditional relationship to a proscenium theatre. When the pit is covered, the entire stage and audience floors are of one level.[138] (See Figure 19).

The floor plan of the theatre is "T" shaped. For the proscenium type production the seats are located in the staff of the "T"; the stage is set in the "cross" of the "T".[139] (See Figure 19).

The portability of the seats and a series of platforms provide for the many multiple theatre relationships. For example, the lower sections of seats can be placed at either side of a rectangular platform stage with the higher tiers of seats positioned at the ends. This provides a central theatre arrangement.[140] (See Figure 20).

The amphitheatre arrangement was set in much the same way as the central stage. The higher sections of seats were placed on either side of a square platform stage and the smaller sections of seats were set at one end. (See Figure 20). By experimenting with the model, the

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137. Paul F. Treichler, "The All-Purpose Theatre", Theatre Arts, July, 1952, p. 74. The date of this design couldnot be found. The date of publication of "The All-Purpose Theatre", must serve to place this project chronologically.

138. Ibid., p. 75.

139. Loc. cit.

140. Loc. cit.

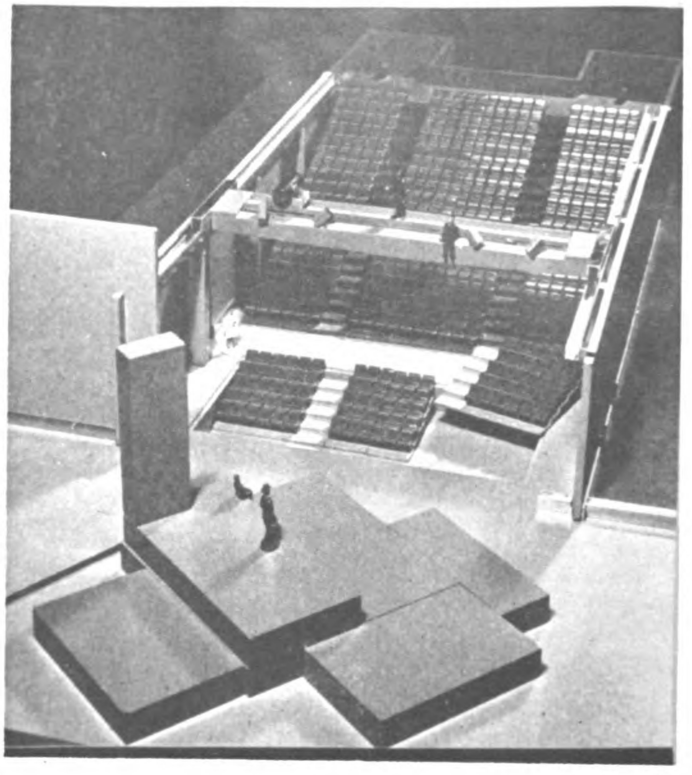

Figure 19

Looking into The All-Purpose Theatre of Antioch College from behind the proscenium stage. Note the overhead crane suspended from the walls of the auditorium.

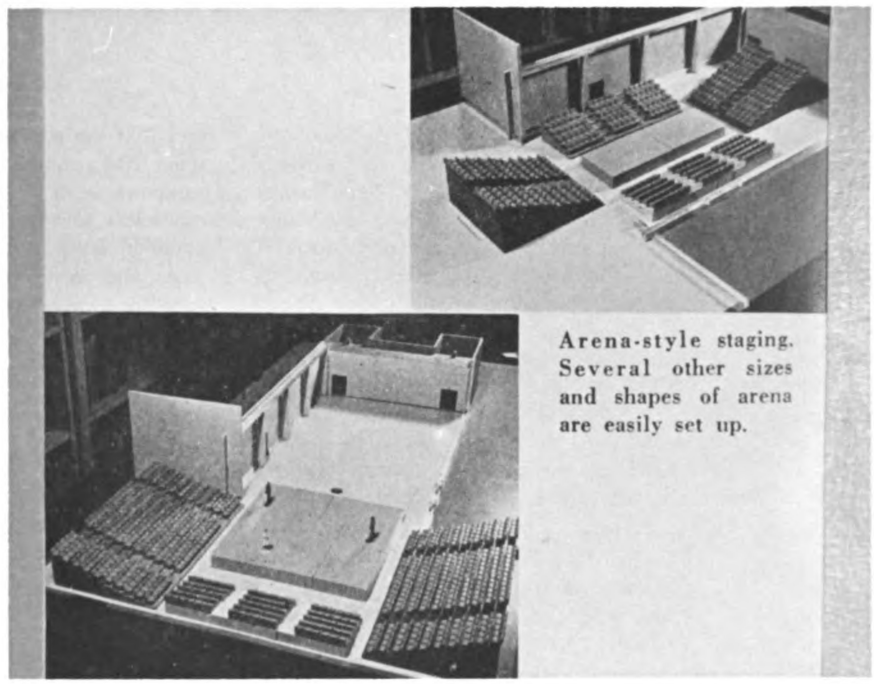

Figure 20

Airplane view of the Antioch College All-Purpose Theatre in the arena stage arrangement (upper right picture) and a three sided audience arrangement (lower left picture). Contrast the flexibility of these arrangements with that shown in Figure 18.

staff of Antioch College maintained they had discovered two-hundred different positions in which the theatre could be set.[141]

The theatre was equipped with an overhead crane which was used to move the sections of seats. The gridiron, with special lines accomplished this movement of the seat section on the proscenium stage area.[142]

> At the same time, (while experimenting with the model) in the informal schedule of workshop plays in the college assembly hall and gymnasium with folding chairs, the staff began to experiment with different stage shapes. We built eight large platform and stair units; a few months later we were amazed to realize that more than twenty full-length and one-act plays had been staged by a least a dozen different students and staff directors without a single repetition of the same stage-audience shape. Two of these plays, a three-sided-house production of The Devil's Disciple..., and an arena production... had been so full of discoveries that a return to exclusively traditional staging was unthinkable.[143]

The above seven theatres are, the best illustrations of multiple theatres which have been proposed or constructed since the early innovations of Walter Gropius, Frederick Kiesler, and Norman Bel Geddes.

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141. Ibid., p. 76.

142. Ibid., p. 75.

143. Ibid., p. 76.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Multiple theatre architecture in the beginning was an outgrowth of the revolt against existing theatre conventions. The earliest evidence of this revolt against theatre architecture is to be found in the theories and practices of Johann Wolfgang von Goethe and his architectural colleague, Fredrick Schinkle. In the early Nineteenth Century they were searching for a theatre building somewhat in the motif of the Shakespearian playhouse. They were unsuccessful in their attempts to establish this theatre. A half century later Richard Wagner in conjunction with the architect Gottfried Semper expressed a view opposed to that of Goethe's, and established the theory of the "Mystic Gulf", i.e., a divorcement of actor and audience.

This philosophy of the "Mystic Gulf" prevailed in the theatre until the beginning of the Twentieth Century when the Munich Artist's Theatre was constructed in 1908. This theatre abolished the proscenium arch and again reunited the stage and auditorium.

In 1914, the architect Van de Velde had the Werkbundtheatre at Cologne constructed. It was very similar in plan to the Munich Artist's Theatre. This theatre however, offered three distinct acting areas on its tri-fold stage. The Werkbundtheatre may be designated as the first of a series of theatres which ultimately led to the development of Gropius' "Totaltheatre".

A. and G. Perret, for the Paris Exposition of 1925, exhibited the plans for a theatre which employed much the same actor-audience relationship as did the Werkbundtheatre. It, too, had a tri-fold stage, but in this design the three acting areas were even more definite and the audience was brought into even closer contact with the actors.

In 1919 another theatre was constructed that broke the conventions of the proscenium stage. Designed by Hans Poelizig for producer Max Reinheardt, the famed Grosses Schauspielhaus was completely unlike the "three-area" theatres. Embodying the proscenium principle and the Greek chorus arena style, it was a large theatre seating five-thousand persons, whereas the others were small intimate playhouses. This theatre, unlike the multiple theatres, was designed as a single theatre type and not in terms of adaptability to different and distinct actor-audience relationships.

Still another tangent in the revolt against the proscenium stage convention was the circus theatre. This theatre had its roots in two different mediums of public performance: the traditional animal circus on one hand and the theatre on the other. A permanent enclosed structure for the circus formed the beginning of a central theatre. The Circus-Renz in 1880, the Circus-Apollo in 1898, the Circus-Schumann in 1910, were early buildings which housed theatrical offerings. The productions in these buildings stemmed both from the circus presentations and the currents of revolt against the proscenium theatre.

The United States, like Europe, was cognizant of the circus type production, and as early as 1914 the Teachers College of Columbia University produced a play in the tradition of the circus.

Still another tangent and answer to the revolt against "Peep-hole-ism" was the construction of the Theatre du Vieux-Colombier of Jacques Copeau in Paris in 1913. Unlike all the other theatres, this playhouse had an adaptable architectural stage setting at one end of a small auditorium, but had no proscenium arch.

Walter Gropius, following the style of his friend and colleague, Henry Van de Velde, architect of the Werkbundtheatre, designed, in 1927, what he called his "Totaltheatre". This building incorporated the three-fold stage, but used it much in the same fashion as the traditional proscenium. Going much farther than his predecessors, Gropius designed his building not only to meet the specification of a proscenium stage, but also provided within the single theatre house a central stage, an amphitheatre stage, and a network of peripheral stages. He realized many of his projected ideas exemplified in the "Totaltheatre" in the re-modeling of the Piscator Theatre in Berlin.

In 1935, a Finnish designer, P. E. Blomstedt, designed the Peoples Theatre or Kansanteatteri, in Helsingfors, Finland. This theatre, with its revolving floor which permitted several types of stage-auditorium relationships, was very similar to Gropius' "Totaltheatre", and has been considered a direct outgrowth of the Gropius contribution to Multiple Theatre Architecture.

Only two years after the presentation of the "Totaltheatre", Norman Bel Geddes in the United States was commissioned by the Chicago World's Fair to design a series of theatre and public performance buildings. He had already become an outspoken critic of the conventions of the

proscenium theatre. This was evidenced in his early theatre design called Theatre Number 6 (designed on the diagonal axis principle), and in his design for Max Reinhardt's production of the Miracle. The Repertory Theatre, one of the Chicago World's Fair group, was the first of Mr. Bel Geddes' designs for theatre buildings which had multiple theatre characteristics. In 1931, in an architectural competition for the Ukranian State Theatre, he designed a mass theatre which was truly a multiple theatre. Later in 1948, he redesigned his Intimate Theatre or Theatre Number 14, which had been a central stage theatre, into the Flexible Theatre. This theatre, too, had varied actor-audience relationships. Where his other theatres had different permanent areas which housed the varied types of stage arrangements, this theatre provided for a transformation of a single auditorium into the several stage types.

Although The Temple of Music, The Divine Comedy Theatre, and the Water Pageant Theatre, all of which were designed for the Chicago World's Fair series, were not multiple theatres as defined in the introduction, they did embody flexible characteristics and indicate the far reaching scope of Bel Geddes ideas on the flexibility and multiplicity of theatre architecture.

In 1933, prior to Bel Geddes' design for the Flexible Theatre, which most clearly may be considered his contribution to multiple theatre architecture, another architect, Frederick Kiesler, publisized his design for the Universal Theatre. This theatre design, like that of Gropius' "Totaltheatre" and Bel Geddes' Flexible Theatre, provided several stage-auditorium relationships within one auditorium room.

Another design submitted to the Ukranian State Theatre Competition, by the Russian architectural team of A. A., B. A., and L. A. Vesnine, was also a multiple theatre. (This was the same competition Bel Geddes entered.) Unlike Bel Geddes' design, however, this plan made provision for the several stage relationships within a single auditorium.

Although the revolt against the conventions of the proscenium theatre, of which multiple theatre was an outgrowth, had its roots and probably its greatest activity in continental Europe, America was not long in following suit. The beginnings of the arena movement have been mentioned. Except for Walter Gropius' "Totaltheatre" design, P. E. Blomstedt's Kansanteatteri, and the Ukranian Theatre of Musical Action of the Masses, most of the activity in the considerations of multiple theatre has been in the United States. Both Kiesler's and Bel Geddes' designs were products of the United States. In 1939, The Infinidome was added to this very selective field of theatrical architecture. Still another design, but one which was not as radical as most, was for the Theatre at the University of Arkansas. Here a purely conventional proscenium theatre was provided with a central stage.

In more recent years three theatres have been proposed, two of which are in actual operation, which are truly multiple theatres. The University of California at Los Angeles operates a flexible platform system of multiple theatre as does the Hillbarn Theatre in San Mateo, California. Although these theatres may be quite different from the mechanically complicated theatre designs which preceeded them, they none the less are multiple theatres and unlike some of the forerunners,

were actually constructed. The most recent proposal in multiple staging, The All-Purpose Theatre at Antioch College, incorporates elements of both the platform style theatre and the mechanically complicated theatre designs.

Two questions might have risen in the mind of the reader during the persual of this thesis. First, why were many of the projected designs left unconstructed; second, what has been done to achieve the different stage types without the mechanical complexity of the multiple theatre?

Edith J. R. Isaacs maintained that until recently building codes have hampered all types of theatre building in New York, the center of the professional theatre. Although many of the handicaps that building codes have placed on new theatre architecture have been removed, other obstacles have hindered building projects. The high cost of real estate in the borough of Manhatten, New York City, has been one of the major obstacles. The real estate broker has found that the theatre has not been as financially rewarding as other types of business. However, Mrs. Isaacs attributed the failure of theatre construction to still another factor.[144]

> The cause of most of the evils in the present theatre set-up lies definitely in theatre leadership of past generations. Yet the present turmoil among labor groups, themselves acknowledging no common leadership, is of all things the most damaging to the art and to the industry today. A few smash hits a year can survive on the present basis but they will not make a living for many men at any wage. Nor do feather-bedding and stand-ins all to final security.[145]

144. Edith J. R. Isaacs, "Post-War Preambles, II. The New Plant," Theatre Arts, July, 1944. Vol. 28, p. 405.

145. Loc. cit.

Nearly all of the designs discussed in this thesis would have required considerable ground area for construction; probably more than the traditional proscenium theatre. If any type of theatre building had been unable to be constructed in New York in the past twenty years, a multiple theatre with even greater complexity would have had little opportunity to be constructed.

Because funds have been available, the educational theatre on the other hand has been able to construct new theatres. In some instances the educational theatre has felt the need for different types of stages, but has accomplished this without a multiple theatre. The University of Minnesota, the University of Oregon, and the University of Washington have incorporated into their new theatre plants not only the conventional proscenium theatre, but also an arena or central stage. In all of these cases, however, this central theatre has been completely separate from the proscenium theatre. The University of Washington, for example, has a completely different building for the central theatre. The same building serves both theatres at the University of Oregon, but the central theatre was made from an old class room. The proscenium theatre was built onto this old building; however, the two theatres are in no way connected as were the multiple theatres here discussed.

Thus by building separate theatres within one theatre plant, many of the needs fostered by multiple theatre design have been met.

The reader may note a lack of continuity or the lack of a trend in the relationship of the several theatre proposals. Obviously there is a thread of dissatisfaction in existing theatre building which formed a

common stimulus. But, more important than this, all of the designs seemed to have their stimuli produced through individual problems. Gropius, although caught up in the revolt against the proscenium, desired a theatre where all forms could exist in their proper architectural relationships; Kiesler, too, was dissatisfied with existing forms, but more particularly desired utility in his design; Bel Geddes had considerable disdain for existing forms, but he sought the individual needs of each producing organization, and into this incorporated seemingly fantastic ideas of adaptability; the University of Californis at Los Angeles produced a flexible theatre because of a lack of funds.

Because of the varied nature of the multiple theatre designs and because they comprise contributions to a very small and specialized area within a broader subject field, the author has concluded that Multiple Theatre was not a movement or a trend, but the result of individual contributions within the greater fields of architecture and the theatre.

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APPENDIX A

Biographical Information

APPENDIX A

Section 1

WALTER GROPIUS

Walter Adolf Gropius was born in Berlin, May 18, 1883. He was born into a family tradition of art and architecture. He was educated at the Leibnitz Gymnasium in Charlottenberg and the Kaiserin Augusta Gymnasium in Berlin. Later he studied at the Technische Hochschule in Munich. He had planned to become an architect early in his life, and when the opportunity presented itself, he volunteered to work in the studio of Professors Solf and Wichards in Berlin. This experience was cut short by a call to the military in 1905.[146]

His return to civilian status brought with it a commission to design workingmen's houses on his uncle's estate. After this he traveled in Spain, Italy, and England. Returning to Berlin in 1908, he received an appointment as assistant to Professor Peter Behrens, with whom he designed low-cost housing units for workmen at Janikow. After this project he designed many buildings, mostly factories, and then he left Behrens to begin his own practice. He was not limited to building construction. During these early independent years he designed furniture, interiors, and a benzol-driven locomotive. He received a gold medal at the World exhibition in Ghent, in 1914, for a series of designs.

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146. Current Biography. H. W. Wilson Company, New York, March, 1952. pp. 29 and 30. This text served as a source for this entire biographical discussion. Foot notes of recognition will be omitted from this point forward.

In this year his career was again stopped for he returned to military service. He served as adjutant to his regiment for the German Army in the First World War.

> Invited in 1918 to succeed Henry van der Velde [the same Henry van de Velde who designed the Werkbundtheatre at Cologne in 1914; discussion can be found in Chapter II, of this thesis] as director of the Grand Ducal Saxon School of Arts and the Grand Ducal Saxon Institute for Education in Art at Weimar, Gropius brought about the amalgamation of the two schools under the name of Staatliches Bauhaus. 'The foundation and the development of the Bauhaus,' Gropius has stated, 'aimed at the introduction of a new educational method in art and a new artistic conception that derived development of all artistic form from the vital functions of life and from modern technical means of construction.'

Gropius remained director of his famed "Bauhaus" until his voluntary exile from Nazi Germany in 1934. During this time he designed and aided in the design of many buildings in Germany. He designed for the "Bauhaus" (a school of art and architecture founded by Gropius) the buildings that were to house the school. The Reich commissioned him to design a 316 home experimental housing project in Dassau-Torten, 1926-1928. This mass production project was followed by his "Totaltheatre" project in 1927.

His designs and projects, while in Germany, were far too numerous to mention here. He did, however, make three significant contributions to theatre architecture: a theatre building in Karov, Russia; re-construction of the Municipal Theatre at Jena, Germany;[147] re-construction of the Piscator Theatre in Berlin, Germany.[148]

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147. Walter Gropius, The New Architecture and the Bauhaus, Trans. P. Morton Shand, Faber and Faber, Ltd., 1935. p. 24.

148. Ibid., p. 18.

He went to England after leaving Germany in 1934, and worked with Maxwell Fry on house architecture. In 1937, he came to the United States where he became a permanent resident.

His first work in the United States was residential construction as it had been in England. His first big commission was to design the Pennsylvania State exhibition at the 1939 New York World's Fair. In 1938, he was named senior professor and head of the Department of Architecture of Harvard University Graduate School of Design.

He has been very active in design for low-cost residential dwellings. In 1941, he was commissioned to design Aluminum City, in Kensington, Pennsylvania. Since that time he has been a proponent of this type of architecture. The General Panel Corporation of New York is, at the time of this writing, carrying forward a plan of fabricated plywood panels for low-cost house construction that was originally drafted by Gropius.

In addition to residential architecture, he was also engaged in industrial building design. The Michael Reese Hospital in Chicago was a Gropius product. Probably his biggest single building project, done in the United States, was the $3,000,000.00 Harvard Graduate Center. His entire staff and students participated in this design.

He has held many honors in the architectural profession.

> Prior to leaving Germany, Gropius was a member of the board of experts of the Reich Research Institute for Economy in building (1928), an honorary member of the Kokusai-Kenschiku-Kiokai (Tokyo, 1928), a member of the Bund Deutscher Architekten Board (1928), the German Acadamy of City Planning (1928), The Comite Permanent International des Architectes (1928), Vice President and German delegate of the International Congresses for New Building (1931). He was named corresponding member of the Sociedad de Arquitectos del Uruguay and of the Societe Belge des Urbanistes et Architectes Modernistes in 1932. While he was residing in England he was elected in 1937 vice-

president of the Institute of Sociology in London, and that same year, was made an honorary member of the Royal Institute of British Architects.

Honorary degrees have been bestowed upon the architect by the Technische Hochschule in Hannover (Dr. Ing., honoris causa, 1929) and by Harvard University (M.A., 1942). He was given honorary membership in Phi Beta Kappa in 1942 and was made a fellow of the American Academy of Arts and Sciences in 1944....the Royal Society of Arts in 1948 named him "honorary royal designer for industry." Three years later, he was the first recipient of the Howard Myers Memorial Award of $500 given by the Architectural League of Architects and the American Society of Planners and Architects.

Walter Adolf Gropius is at this writing still living and holds his position as Chairman of the Department of Architecture, Graduate School of Design, Harvard University. He is an active teacher, author, and practioner in the field of contemporary art and architecture.

APPENDIX A

Section 2

FREDERICK JOHN KIESLER

Frederick J. Kiesler, was born in Vienna, September 22, 1892. He was educated at the Technische Hochschule in Vienna from which he received an M.A. degree. He later studied at the Akademie der Bildenden Kunste (Academy of Plastic Arts) where he won prizes for exhibition. He began his career as an architect working for Adolf Loos on one of the first slum clearance projects in Vienna.[149]

In 1922, he devised a system of projected motion pictures to take the place of the traditional painted backdrop. This was for a production of Karel Capek's R. U. R.[150] With Eugene O'Neil's The Emperor Jones, he introduced the "Space Stage". This entailed a continuous movement of the scenery which was to be coordinated with the acting, speech and lighting. Later at the International Theatre and Music Festival, held in Vienna, 1924, he exhibited a functional model of his "Space Stage". He was director and architect for that festival, and designed for the exhibits the "Leger and Trager". The "Leger and Trager" was a device based on a suspension principle. It enabled the several exhibits to be hung from the ceiling of the gallery rather

149. Current Biography, H. W. Wilson Company, New York, 1944, p. 338. This text served as a source for this entire biographical discussion. Footnotes of recognition will be omitted from this point forward.

150. This technique of scenic projection was introduced as early as 1922. At the time of this writing of this thesis, it has again become a much used technique in theatre and television.

than being placed on the walls or screens. He applied this principle to house construction in a model planned community at the Paris World's Fair of 1925. In addition to his directorial duties for the festival at large, he was named director of the theatre and film sections of the Austrian exhibit.

Kiesler came to the United States at the invitation of the Theatre Guild, the Provincetown Playhouse, and the Little Review in 1926, to create an exhibition of international theatre techniques for the opening of Steinway Hall in New York. In the same year he was commissioned to design the famous Museum of Modern Art.

Following his commission for the Museum of Modern Art, he entered a competition for the design of a community theatre at Woodstock, New York. He won with his design for the "Universal Theatre".

In 1928, he planned a new type of motion picture theatre for the Film Guild Cinema. He removed the curtains, platforms, and proscenium which were customary in the legitimate theatre and replaced them with what he called a "Screen-o-scope".

For the next six years he was engaged in many diversified projects. He built display windows for Saks Fifth Avenue, remodeled a bookstore, constructed an exhibition for the Association of American Designers, served as consultant architect for the National Public Housing Conference, developed ideas in home lighting, built a full-size model of his "Space-House" in New York City, and became a faculty member at Juilliard as director of scenic design in 1935. Here he returned to the theatre and designed scenery not only for Juilliard, but also for the Metropolitan Opera Company. He was able to produce scenery for these institutions

far more cheaply than other designers who had preceeded him.

In addition to these positions, he joined the staff at the School of Architecture at Columbia University as director of the laboratory for design correlation, which was "...the coordination of paint, sculpture, industrial furnishing, and building structure into a hetrogeneous unity called architecture."

Kiesler felt that scene design was good discipline for architects. In relation to this subject he believed that, "...not only do architects make first-rate stage designers, but that stage design [sic] makes better architects. The reason is that in a few weeks the architect must meet and solve a myriad of problems involving both people and esthetic considerations. He must create a setting that permits every action of the singers to be properly carried out, take care of all mechanical requirements of lighting and scene-shifting, and produce a suitable atmosphere.

In the midst of all this activity he designed display exhibitions for the Museum of Modern Art, built Exhibition Hall for the School of Architecture at Columbia, and published articles on a more useful building at a lower cost.

Frederick John Kiesler, at this writing, is still living, still holds his positions at Juilliard and Columbia, and remains an active figure in contemporary art and architecture.

APPENDIX A

Section 3

NORMAN BEL GEDDES

> Those who know anything about Norman Bel Geddes know that nearly all his life the famous designer had been trying to create a world of tomorrow---today. For the New York World's Fair of 1939 and 1940, he designed the General Motors' Futurama, but the exhibit by itself is a toy. This pioneer of the streamline is not content merely to make predictions; what really interests him is seeing that his own predictions come true. And, since he has shown himself to be an amazingly persistent person, it seems probable that some of them will.[160]

Norman Bel Geddes was born in Adrian, Michigan, April 27, 1893. He was educated irregularly in public schools in Michigan, Ohio, Pennsylvania, Illinois, and Indiana. In the ninth grade he was expelled from school for drawing a cartoon caricature of the superintendent. For a time he supported himself with any odd job that came his way. Later he decided to study art; he enrolled at the Cleveland School of Art for the brief duration of seven weeks. Later at the Chicago Art Institute, while supporting himself as a bus boy, he received recognition as a portrait painter and was offered a job at three dollars a week. He remained with the firm until he was receiving $125.00 per week plus commissions. In addition to this he had written and sold an original play.

In 1916, he married Helen Belle Schneider. A year later he gave up his comfortable job and moved to Los Angeles to produce his and five other plays for the Los Angeles Little Theatre. While in Los Angeles,

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160. Current Biography. H. W. Wilson Company, New York, 1940. p. 328. This text served as a source for this entire biographical discussion. Footnotes of recognition will be omitted from this point forward.

he was contracted with Universal Studios and wrote and directed Nathan Hale. He discovered he did not like making movies and in six weeks he quit.

> Sitting on a Los Angeles park bench one hot summer afternoon in 1918, he was counting his diminishing worldly possessions (at this point, a wife, a daughter, and $5.83) when a newspaper headline caught his attention. "Millionaries Should Help Young Artists," it said flatly. This interesting statement led to an interview with Otto Kahn, the banker patron of the opera and the stage. After paying for a two-page telegram asking Mr. Kahn to lend him enough money for two weeks in New York while he looked for a job as a stage director, Geddes had four cents left over. Twenty-four hours later he received $400 by cable, the following Saturday he arrived in Mr. Kahn's office with a soapbox full of sketches for novel theatrical sets, and within a week he was stage designer for the Metropolitan Opera. What he did with the four cents is unknown.

The above statement may indicate to the reader the temperment of Mr. Bel Geddes.

For several years he remained active in theatrical design. During his career he has been in charge of over two hundred productions. Two of his most famous designs were for The Miracle, produced by Max Reinhardt, and Sidney Kingsley's Dead End. Of this latter design the critic Stark Young said:

> By force of emphasis it becomes more convincing than actuality. And, though few persons there might know it, the gasps and applause of the audience when this setting is first revealed, are not so much that the scene is so like any actual scene as that so many actual scenes appear to be swept up into and expressed in this scene. It could not be any actual place, but any actual place could be it.

In 1927, while still active in the theatre, he branched out into industrial design. Later, in 1935, he entered into partnership with the architect George Howe. Under this alliance he created, "...radio cabinets, furniture, refrigerators, office, restaurant and airplane interiors,

a medal to commemorate the silver anniversary of General Motors,... Gas stoves, window displays, automobile tires, gasoline service stations .... He designed the first combined focus and flood lamp for stage lighting, the first streamlined ocean liner, the first streamlined ocean-going yacht."

During this same period, he was the architect of the Ukranian State Theatre of the U.S.S.R. This was one of his several multiple theatre designs. In 1922, he designed the Repertory Theatre, and in 1929, he designed Theatre Number 14. Both of these were contributions to multiple theatre architecture.

In 1938, he received probably his greatest single commission with General Motors to design their World's Fair exhibit, Futurama. Futurama was Bel Geddes conception of the industrial world of 1960 with particular emphasis on the highway system. Along these same lines, he has been a strong advocate of functional traffic systems. In the Futurama his traffic system provided highways where cars moved at different speeds, were segregated into several lanes, and all were controlled from observation towers. In the hope that the government would adapt safer and more functional highways, he wrote a book, Magic Motorways, and submitted it to Washington. He criticized present conditions and maintained that modern motorways should be designed for the future and for the automobile. In the midst of all this activity, he had also designed a pre-fabricated house for low income families and has since done extensive experimentation in this field. To indicate the diversity of his considerations, he was commissioned to redesign the Ringling Brothers Circus in 1940.

Geddes' philosophy of design which has done so much to change at least the expression of part of the face of the modern world has been summed up in a paragraph:

'For every given set of conditions there is an ideal form which does not need to be ornamented or decorated to make it beautiful. The preamble to finding the successful solution is to master first all the facts which may properly condition that solution. This done, the designer must pursue his research for the right form with every bit of ability and honesty he possesses. The acceptance of traditional things which have been outdated is evidence of mental laziness. Think things out fundamentally. Then express them--- in the same terms.'