DAVID CHRISTY THOMPSON
DIALOGUE IN ARCHITECTURE
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Dialogue in Architecture
by
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An undergraduate thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Architecture

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This work is dedicated to my Grandfather, Mathew Jacob Christy and to my Father, Burton Eugene Thompson. From them I have learned to search for ever higher ideals.
Architectural phenomena involve a range of properties—from the subtle and elusive features of symbolism and sensual qualities at one end to the utilitarian qualities of measurable space and ambient conditions at the other—and all of these properties must be kept in view if one is to achieve a comprehensive understanding of the effect of the built environment on man and society.

Sensitivity to the totality of buildings and environment implies, in turn, recognition of the fact that architecture connects with the full range of human qualities, capacities, instincts, feelings, needs, and dispositions including the needs for light and air, the experimentally observable functions of seeing and hearing, and the experimentally observable demands for communication and group membership, as well as a cultural need for strong integrative symbols and the individual need for a sense of place. The latter requirements cannot probably be directly observed or measured, but they can be inferentially determined from the study of human actions and the linguistic and symbolic products of society.

Robert Gutman
People and Buildings
The force behind the selection of this topic lies in the work and thought of George Herbert Mead. A pragmatic philosopher at the University of Chicago, and the father of much thought concerning the study of interhuman relationships that we call sociology, Mead put forth the idea that "mind" and "self" are not things but forms of activity and relationships that emerge from, and are products of, social interaction. He stressed that through "shared significant symbols", or language in its abstract sense, man is capable of thought concerning himself and the world around him. Mead also taught that man lives in a social world of his own creation. This position, known as symbolic interactionism, has far reaching implications for us as designers of buildings.

The meaningful implication of the symbolic interaction theory is that the study of language as a system may help us determine a means of significant communication through our buildings. Furthermore, the theory suggests that our possibilities of exchange are not limited to the existing symbols of language or to established topics of the intellect: it is through the myriad complexities of language and the society which it fosters, that new ideas and objects of thought are created. The position of the symbolic interactionist provides us with a means of dealing with reality as well as probing into the realm of ideas. It is a humanistic view of the condition of man.

The search for the ability to communicate through built form is reinforced in the belief that a building must, in some way, illustrate the forces that caused it to take shape before it can be considered architecture. The forms, sizes, materials, markings, and functions of a building or its parts all provide signs that, when properly designed, may make a statement of pertinence concerning the human condition as well as suggest the purpose and use of the structure. To this end, architecture can serve the same purpose in society as does literature, drama, or art and also provide shelter. Architecture is on a level above mere construction: it concerns the meaningful exchange of ideas through built form.
This topic is not new. It concerns the stuff that we, as designers, deal with on a continual basis. Often we assume that we are satisfactorily versed in the art of effective communication with any small degree of success that we achieve. This complacency can only leave the majority of those that use our buildings confused and unfulfilled. To proceed into higher endeavors in architecture requires more than an understanding of an idea, it requires a knowledge of how to illustrate it to an observer in terms that he/she can grasp.

The concepts contained herein are in certain aspects, difficult, and to some will be distasteful. The achievement of their understanding lies in close personal commitment and attention. The realization of the workings of language in architectural terms is not easy. But, for me this study concerns what is necessary for architecture now and may be important if we are to have architecture into the future.

I would, at this time, like to acknowledge the following people for their assistance in my thesis endeavor: Professor John N. DeHaas Jr.—Thesis Advisor, Paul Fellers—architectural design, Dr. George S. McClure Jr.—structural systems, Jerry Anderson—friend and critic, Brad Lamoreux—assistant and promising young designer, and M. R. Torpey—cement contractor. A special thank you to Kathi Ann Kernick Thompson.
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Introduction

When I was searching for a topic for this thesis and its resulting design project I came across an artifact that impressed me very much. The artifact of which I write is an advertisement in the Revised Building Ordinances, City of Butte (Montana) which is dated 1917. It read:

AN APPEAL TO
REASON

If you will take a walk about the city of Butte, you will find hundreds of samples of my cement and foundation work. They have stood up under twenty years of service in cases, and are about as indestructible as any work in this class can be.

Cement and plaster work of all kinds—Foundations, Sidewalks, Etc.

No Job is Too Small or Large to Be Handled Satisfactorily and Quickly

M. R. TORPEY
Phone 2652-J
712 Utah Ave.
Butte, Montana
After having read this, 62 years after its publication, I admired the directness, surity, and conviction that I had witnessed in its words. It seemed to me that I had found a bit of continuity between the Butte of the past and the Butte of the present. For even today, despite the economical downfall that has befallen this city, these same attributes can be found in its inhabitants.

It also occurred to me that this little advertisement had accomplished with me, that which I would like to accomplish through my buildings—the exchange of ideas. I believe that this is the basis for all architecture. With this in mind, I have written my thesis statement:

In order for an individual act of building to elevate itself to architecture, it is necessary for the designer to develop a dialogue between it, the people it serves, and the place in which it exists.

This statement can be seen as a composition of two interdependent parts. The initial portion of the statement suggests that all buildings are not architecture. This position is based upon the belief that architecture occurs when a building effectively supports life and elevates the spirit of its inhabitant(s). The second portion directly states that it is the designer's responsibility to achieve architecture through the way that his/her building illustrates its existence, use, and place to those for whom it is built. This charges the designer with the task of identifying and illustrating meaning in built form. Once combined, these parts place a direct emphasis on the importance of significant communication in architecture. In most specific terms, however, this statement concerns the active exchange of ideas between the designer and the inhabitant(s) or viewer(s) of a building through the building itself that is so necessary for it to be seen as architecture. Dialogue, then, is the topic of this paper.

As a word, "dialogue", has several connotations from which it is defined and understood. In the analysis or preparation of literature, drama, music, speech, etc., the word "dialogue" is used to designate a conversational element in a prepared script or plan that describes an exchange of words, symbols, or behavior (hereafter referred to as "words") between people and things. In terms of human intention, it is descriptive of the actual exchange of those "words" between people when the mutual
The purpose is one of the conveyance of ideas or information. And, in the reality of human experience, the word 'dialogue' indicates the accomplishment of exchanged meaning between people through 'words'. While these differences in interpretation show variation, there is a consistency of definition throughout that will be useful in the examination of the word as an idea. The definition of "dialogue" that will be used in this study is: an exchange of meaningful 'words' between people.

Several areas of inquiry will be necessary so that an understanding of the topic can be achieved. On the basis that "dialogue" concerns communication between people the study of language becomes important. Within this smaller topic a special emphasis should be placed on the role of language in human existence; how man places meaning upon his linguistic terms; and how language is used in society (especially in terms of built form). Upon a firm understanding of language, a more in depth inquiry into the subject of dialogue can be made. For this writing that inquiry will be through the application of the idea in a hypothetical building project. In this manner the validity of the thesis statement can be tested.

The following sections of this paper contain a series of essays whose combined topics form a concentrated examination of the subject matter. By separating the topic into its separate parts it is hoped that the knowledge gained will be more comprehensive and precise. Through the true understanding of these basic concepts a more meaningful reality is possible.
Language and Man
a social psychologist's point of view

In order to make buildings that are both useful and meaningful to the people who will use them it is necessary to learn about the people themselves, their values, and the reasons for their behavior. Not being social scientists we are in the precarious position of having only a partial knowledge of how and why people think and behave as they do. Depending upon the source of information we have about a fifty percent chance of being informed that human behavior is biologically based and about a fifty percent chance of being told that it is environmentally influenced. By investigation we find that the case for biological determinism in human behavior exists mostly as a holdover concept by the misinformed public and has, for some time, been dispelled as a possible determinant of social behavior by the academic community. This residual belief that man behaves according to biological influences is, in fact, quite adequately explained within the alternative theory of learned human response through social interaction.

The predominant contemporary approach is symbolic interactionism. This theory found its roots in the work of George Herbert Mead, a philosopher at the University of Chicago in the early 1920's. It was Mead's contention that man finds meaning in his life through the exchange of ideas with other men and that it is through

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1 The reference to biologically influenced human behavior is not intended to refer to the stimulus-response type situations but to the notion that behavior is innate and due to hereditary physiological constructs.
Architecture is a legitimate topic of inquiry for the social sciences. It is an element in human culture and social organization to which all people are responding even when they are unaware of it.

Robert Gutman
"People and Buildings"

Language and Man
a social psychologist's point of view

In order to make buildings that are both useful and meaningful to the people who will use them it is necessary to learn about the people themselves, their values, and the reasons for their behavior. Not being social scientists we are in the precarious position of having only a partial knowledge of how and why people think and behave as they do. Depending upon the source of information we have about a fifty percent chance of being informed that human behavior is biologically based and about a fifty percent chance of being told that it is environmentally influenced. By investigation we find that the case for biological determinism in human behavior exists mostly as a holdover concept by the misinformed public and has, for some time, been dispelled as a possible determinant of social behavior by the academic community. This residual belief that man behaves according to biological influences is in fact, quite adequately explained within the alternative theory of learned human response through social interaction.

The predominant contemporary approach to human behavior is called symbolic interactionism. This theory found its roots in the work of George Herbert Mead, a philosopher at the University of Chicago in the early 1920's. It was Mead's contention that man finds meaning in his life through the exchange of ideas with other men and that it is through
his language, or commonly shared symbols, that this is achieved. For Mead, these shared symbols "also become the stuff of human thought" for, "mind and intelligence [is] possible only through his internalized conversation of gestures". Simply stated, this concept of human behavior implies that it is man's language that gives him his human-ness (place in the social world): out of a ceaseless bombardment of physical stimulus man learns to isolate and manipulate socially important signs and symbols in order to affect both his own life and the life of others. In society the acceptability of one man's behavior is, then, judged on the basis of the consensual behavior of other men.

Mead does not attempt to explain human behavior quite this simply, however. The symbolic interactionist viewpoint carefully integrates the full range of human response, both sociological and biological, in order that a comprehensive understanding of behavior might be attained. The influence of biological determinants is approached through its measureable qualities and in pragmatic terms. Unlike Freud, who attempted to place the responsibility for characteristic human behavior upon some mystical inborn biological qualities, recent social psychologists have determined that human development is achieved through learned traditional social behavior within which biological responses play a small part. Present day statistics stand to support Mead's principles.

To many, this position could be considered personally threatening. Most people have been taught that they are entirely independent thinkers, and that their children--like they were from their parents--will be influenced to behave according to biological heredity. By suggesting that this is not true, social psychologists have often caused violent reactions: to question a truth upon which basic assumptions are made is to threaten a man's opinion of his place in the world. This reaction need not occur, however. Through a careful and rational approach the symbolic interaction theory can be shown as merely an adjustment to prior beliefs and not a threat. It was Mead's belief that man's only limitation in thinking is the inability to understand his current symbols or to make new ones. In turn, we also know today that a child is quite likely to behave as its parent does through learning in a role model situation. This, it would

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seem, might be a much more important role for a parent to fill than that of a "perpetuator" of a blood line. In the final analysis we find the symbolic interaction theory to be a basically humanistic view of man.

As building designers it is important that we realize that meaning in built form is not inherent. We must acknowledge as well, the responsibility that we have towards maintaining a certain consistency of architectural language. If we are to neglect these things, architecture may disappear from our ability to conceive of it.

A System of Rules for Meaningful Symbolic Construction

As a system, language operates in a basically logical and orderly manner. By isolating and examining its individual rules, a basic knowledge of its workings can be attained. The following paragraphs discuss nine points of information that concern the acquisition, use, and limitations of language.

Acquisition

The most important of all information on language is that it is a learned activity. We are told that the human infant is born with little more than the functional organism that is its body and the ability to acquire knowledge. There are no innate symbols in man's vocabulary. It is from the occurrences that take place all around us that we learn to isolate and manipulate the symbols that form language. Upon this basis, the remaining rules of language become valid.

Second in importance, is the means through which we acquire meaningful symbols. Typical of the infant and running concurrently throughout our lives, we find the most meaning in things that are consistently repetitive. With an understanding that repetition suggests sameness, we are assured of consistent meaning. This property of language control is manifest in many forms, examples of which include such diverse entities as the dictionary, brainwashing, or in an architectural context, the consistency of fabric in an urban business core.

On the next level of complexity, meaning can be found in the slight adjustment or contradiction of an existing symbol to alter its meaning. This requires that the original symbol had meaning prior to its changed

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IBID. p. 30.
form, and its resulting definition. By using this method of signification of isolating things as different, a man begins to isolate his 'self' from other objects in the world. It is this property that is used to create the all important exception through which meaning is enhanced.

With these primary skills, man is able to achieve the third level of meaning acquisition: Abstraction, or the isolation of the general case. In the instance of a man's experience, this first occurs when he discovers that he is like other things while still being an individual entity. Abstraction serves to isolate general principles upon which elaboration can take place. Some good examples of this in built form are the socially learned images of house, office, or factory.

The final and most sophisticated form of language acquisition is that of construction. This is a process form of signification. Construction relies on an interrelationship of parts to create meaning. On various levels, this category includes composition forms like the English language, art, or parts of architecture.

These forms of language acquisition have been presented in the order of their complexity. As one form becomes pressed to the limits of its definition, it relies upon previously established form to achieve its meaning and effectiveness. Construction, for example, cannot exist meaningfully without the existence of abstraction which in turn cannot occur without the existence of adapted meaning. I must reiterate, here, that none of these forms would exist without man's society to propagate them. All of these occurrences are social acts upon which man signifies his place in that society.

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5 IBID. pp. 140-143.
Use

This leads us into the examination of how language is used. While the number of topics that language can signify is virtually without end, the approach to them through language lies in two areas.

The primary use of language is informational in nature. We use symbols to denote things that we need to respond to. The common door can serve as an example of denotation. To a person who is familiar with the operations of a door, he is aware of its function and how it works through its visual properties. The same holds true for a window or an elevator, etc.

The second form of language use is directed at suggesting ideas that may have little to do with function. The connotative aspects of language concern the exchange of spiritual ideas. Examples of connotation can be found where symbols form to suggest such concepts as 'enclosure', 'scale' or 'power'. It is usually most helpful if the audience to a connotative symbol composition had a previous concept of the idea or thing that is indicated, but it is not always necessary.

Limitations

While the system of significant symbols that societies do develop have virtually endless possibilities, they also have their limitations. We must consider that through the system of symbol exchange we come to look at things on the basis of the limited definitions that we place on our symbols. From this we develop a certain inability to conceive of things in terms other than those we have definitions for. This situation is vividly apparent between age groups within a single society where differences in values have occurred through changing learning situations.

8 IBID. p. 84.
We will also find vast differences in interpretation of the same occurrence from one social world to another. An example of this is the philosophical approach to space between our culture and the Islamic culture. As a social world, we tend to think of space as occurring by the construction of walls. Anything outside of those walls is often given little consideration as space. The Islams, on the other hand, hold firmly to the belief that space exists all around and that the builder only indicates the boundaries of inside and outside.9

Society and its language are inseparable—one propagates the other and even though we exist with what is true for us now, absolute meaning might only be attainable through time and sensitivity, if it is attainable at all.

It was a specifically human intelligence which did not limit itself to gravity and climate but created architecture by modifying that which is inherited and transforming that which is given.

Sibyl Moholy-Nagy
"Native Genius in Anonymous Architecture"

On Dialogue

If we are to utilize the idea of dialogue as a basis for architecture, we must become aware of the things that define and facilitate the exchange that is connotated by the idea and the reality of dialogue. On an exper­iential level, we can isolate four properties that are inherent in the nature of a dialogue: A common basis of understanding, a common interest in an exchange, a question (or a statement), and a response to inquiry that results. When speaking verbally to a friend or an acquaintance, a dialogue is not difficult to achieve. But, when speaking to a stranger through the form or applied symbols of a building, the task becomes increasingly difficult. Careful consideration must be given to each property of a dialogue if one is to take place.

It is the opinion of this author that simple human consideration is the basis upon which a dialogue in architecture is achieved. (1) In order to reach a user/observer of a building on the level of a common understanding, it becomes important to satisfy the learned attributes that may be associated with it by its type, size, and location. By achieving this, the designer has allowed for his/her building to be dealt with on a firm and established basis. While it is still possible to achieve communication through the deviation from these established qualities, it may only serve to reduce the ultimate number of people that can initially relate to the building. (2) A common interest in the exchange of ideas through built form may be achieved by the satisfaction of all of the physical requirements that a person might have in the use of the building. By showing care for the

sensibilities of the user, a designer can be assured that the user will be more likely to look into the building with interest. (3) A well planned deviation or contrast to the established pattern, either within or without a building, can help to make a statement or pose a question that may stimulate the imagination of the building user to investigate his/her own ideas of similar things. While it is this kind of manipulation of building form that begins to separate a building from others as architecture, great care must be taken to avoid the destruction of the regularity that allows the deviation to become special. (see (1) above). (4) In the case that a question is aroused within the user of a building that concerns the nature of a deviation from what he/she considers normal or expected, it is important that there be a resolution that helps to make the deviation understandable. A failure in this endeavor on the part of the designer may mean the failure of his/her building as architecture.

It can be seen that successful communication through built form can be difficult to achieve. This is especially true of buildings with complex programmatic requirements because of their use and physical associations. Some cases will require that the designer place his/her egocentric design ideals to the side. Very few design projects will meet those ideals in terms of matching communicational networks and their corresponding values between the designer and the user. If the building is to be meaningful to its users the designer should work from their symbols and values.

It is from successfully meeting this challenge, that I believe real architecture comes. Without the ability to work within the confines of existing values and language it is possible that we are only fooling ourselves about the effectiveness of our buildings. In the very least, standing on supremist architectural design policies will show a marked disregard towards those for whom we design.
Three Cases

Dialogue in architectural terms will, in the end result, be judged from the built artifact and not from the verbiage that is involved in its creation. As a necessary step in the process of this examination, it becomes important to look at buildings that have been judged to be architecture by our peers. In this regard, I have chosen to review three existing buildings that, each in their own way, have been seen as significant. These buildings are: The Kimball Art Museum by Louis I. Kahn, The Carl Tucker III House by Robert Venturi, and House II by Peter Eisenman. In each case, the discussion will be restricted to what my knowledge of architectural communication indicates are the major points of related information. At no time is the assumption made that these are complete building analyses.

The Kimball Art Museum
Fort Worth, Texas
Louis I. Kahn, Architect

The properties of repetition and construction figure formidably into the making of meaning in The Kimball Art Museum. Dealing with a semi-isolated structure, the architect makes use of a cartesian grid upon which he first places a grove of trees and then the structural elements of the building. This is done so that he might bring order to the design: it is upon this gridwork that man can mentally orient himself within the space by what exists in front and in back of him; to either side; or above and below. Working within the strength of this construction, Kahn locates his circulation devices upon the grid so that their location can be known. As a system, this application of geometry serves to reach the most basic of learned behavior in man.

The integration of enclosure and structure also has important connotations in regard to the manner in which the building is understood by the people who see and use it. By simplifying the structure into its most...
basic terms, Kahn has established the opportunity for a wide range of thought to occur. Through a carefully devised monolithic expression, the forms and spaces are reminiscent of historical places and ideas while also relating to the scale of man and the function of a museum. The artifact promotes the expansion of ideas to take place through its abstract nature.

As a means of expanding upon the nature of the building, Kahn selectively removes portions of the structure and its partitions. These breaks in the continuity serve to illustrate the connections that make the building whole and to control the perspective of how it is viewed in certain situations. The guidance and control that the architect exercises in this action has a great deal to do with the animation of his role in the architectural dialogue.

In relation to basic human understanding, this building approaches the quality of timelessness. There are no markings of culture upon its surfaces or in its forms. Building use is, for the most part only restricted by the limitations of its size or volume. As a place of human signification, The Kimball Art Museum responds to the sensibilities of man to discover his basic qualities through reflection. It is a primal construction.
On the most significant level of understanding, the Carl Tucker III house is a result of connotative intentions in which Venturi has utilized the culturally learned attributes of "house" to convey his message. On the exterior, the building appears as the drawing of a child with exaggerated eaves, central chimney, and oversized window detailing. On the interior, Venturi has taken the typical layout of a house and jumbled it up by recombining interior spaces into unlikely combinations. By this format, the architect poses questions concerning the nature of a house in society and the learned qualities that it represents.

The architect poses questions of perception and quality on another level that may lead to other forms of thought. These things include a tightly composed geometry in which the perceptual properties of vision and movement are exercised and a balanced scheme of color and surface that animates the building into a touchable entity.

As a communicative architecture, this building is quite likely to be significant to a large portion of society. In theme and execution, it concerns itself with many populist ideals that would make it so. Function, materials and form all play roles in this context. Man in society seems to be the basis of its design.

In this light, it is most certain that the average person would have no real chance of understanding House II as it was intended. To gain such an understanding would necessitate the acquisition of the architect's own values. This is very unlikely to occur.

12. ISID, p. 46.
Peter Eisenman has approached the design of House II with the same intentions that he has used to approach the design of all of his other early "houses". That intention is to negate the learned perception of any given space or building. To do this, Eisenman places the importance of his design in the relationship between objects rather than in the objects themselves. By doing so, he claims to "rid himself of past ideology", which allows him to "shift the focus to the consideration of form as a signal of notation which can provide a range of formal information".  

Concerning House II, Mario Gandelsonas says this of Eisenman's design: "He positions the observer in a perfect state of alienation from the real, an alienation which corresponds to the absolute divorce from themselves."  

While this may be true in the pure state of the object, I would have to disagree when considering the artifact. It is true that the composition of the forms appear as different from our experience. As such, the building might have led us to new spatial understandings. But, in order to make the composition function as a "house" the designer is forced into applying window frames, cabinets, and shelves as in any other house. It is my observation that these things remove the understanding of the building from one of form to one of function. As a "house", the building fails. This places the observer in the position of looking upon the building with his/her own learned values and not from the level of freedom of thought that was intended.

In this light, it is most certain that the average person would have no real chance of understanding House II as it was intended. To gain such an understanding would necessitate the acquisition of the architect's own values. This is very unlikely to occur.

12 IBID. p. 46.
A Heritage Center for a Mining City

In response to my mentor's prior request to illustrate my knowledge of the concept of "context" in the design of a cultural heritage center for Butte, Montana, this building is to include a performance arts theater, display space for art, a chapter of commercial offices, and public meeting rooms for groups of 100 or smaller. The building is to be located within the central business district of Butte.

As a public preservation facility, it is my intention to maintain the historic structure in the arts of a space thriving urban culture by manifesting an attention that is in keeping with the context of a large urban. In addition, I am aware of the importance of the historical context, whether real or imagined, that such a concept embodies in that it is a metaphor for the idea of design in architecture.

The selection of "Ogden" Suite 205 was made from several considerations. It was to be a centrally located shop that is established since the "Ogden" suite was a part of the "established" pattern of language and a restricted social context. Further, I was looking for a unique social atmosphere which in turn on the building would become more readily discoverable as a new language to its inhabitants. The third problem was one of logistics. I had to travel to the project site on a frequent basis for the data to be just experienced the place in which the building was to exist. Finally, I also realized that a previous experience with the locality would be invaluable in the preparation of a complete solution. In these forms, Butte is both a true city and a unique society. It is 90 miles west-southwest of Bozeman, and I have both lived and worked in Butte on and off over my 34 years.

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PART 2: Application
The fact remains, however, that the basic task of the builder, the task which distinguishes him from the engineer and contractor, is still the sheltering of man, his work, and his possessions in structures that provide spiritual as well as material gratifications.

Sibyl Moholy-Nagy
"Native Genius in Anonymous Architecture"

A Heritage Center for a Mining City

In response to my research I have chosen to illustrate my knowledge of the concept of "dialogue" in the design of a cultural heritage center for Butte, Montana. This building is to include a performance arts theatre, display space for art, a chamber of commerce office, and public meeting rooms for groups of 100 or smaller. The building is to be located within the central business district of Butte.

As a public oriented facility, it is my intention to satisfy the waning interest in the arts of a once thriving urban culture by supplying an attraction that calls for social interaction on a large scale. In addition, I am hopeful of utilizing the properties of the individual arts, commerce, visitor orientation, historical recognition, and documentation—each a symbol system in their own right—to enhance the idea of dialogue in architecture.

The selection of 'uptown' Butte as a building site was based upon several considerations. It was my desire to work within a strongly established urban geometry so that the building had to respond to 'established' patterns of language and a restricted social context. Further, I was looking for a unique social atmosphere in which to work so that the building would become more readily discernible as a true response to its inhabitants. The third problem was one of logistics: I had to be able to travel to the project site on a frequent basis for site data or to just experience the place in which the building was to 'exist'. Finally, I also realized that a previous experience with the locality would be invaluable in the preparation of a complete solution. In these terms, Butte is both a true city and a unique society, it is 90 miles west-northwest of Bozeman, and I have both lived and worked in Butte on and off over my 24 years.
Building Program and Site Analysis

The building program is an important device in the solution of this design problem. Through a careful and exacting itemization of the functional requirements of a building, the designer has begun to satisfy his obligation towards encouraging both a common understanding of the building and a common interest in an exchange of ideas through that building, with the people who will use it. A comprehensive site analysis is also necessary if a realistic solution of the building is to be obtained. The following documents are submitted in this regard.

Program

This structure is to be intentionally designed as a place of social interaction and individual orientation. The final product should display indigenous, economical, historical, and thematic values that can be derived from the people of Butte, in specific, and of people and places everywhere, in general.

Proposed Structure: A Cultural Heritage Center

Location: A vacant lot, previously occupied by the "Pennsylvania Block" building, 36-60 West Park Street/19-59 West Galena Street, Butte, Montana.

The Building Will Include: An 750 seat, fully functional, performance arts theatre. Chamber of Commerce facilities with meeting room for a group of 100 people, and two meeting rooms for groups of 35 people each. These meeting rooms will be equipped for banquet service. Public space for permanent display of art. Public space for changing displays of art. Public space for circulation between Park and Galena Streets.

Required Spaces:
Public Entrance--Park Street/Galena Street
The main entrance of the building should be located in an
easily recognizable position in relation to the principal approaching routes of the public. The entrance should have self-closing doors. A vestibule should be provided to reduce noise and draught into the main lobby.

Auditorium Offices--

Auditorium manager's office
Secretarial area
Box Office
This is where tickets to the shows are sold. It should be so designed that the theatre-goer does not have to suffer the inconvenience of a inclimate weather. Tickets sold in advance should be available at this location as well.

Vertical Transportation for the Handicapped if Required
Use of the center should not be limited to the able-bodied. All parts of the building should be accessible to the physically handicapped on an integral basis.

"Back corner" ramps or lifts are not acceptable solutions.

Lobby--

The principal function of the lobby is to provide access to all parts of the building. In the case of auditorium use, it is to be the transitional zone between the performance and the street. The lobby should also provide relaxation areas to sit, talk, and walk about and also accommodate the refreshments and smoking spaces. The lavatories and cloakrooms should be located in this area also. The entrance to the lobby should be broad enough to allow for the people to stand and wait for friends before going into the building.

Permanent Display Area
Non-permanent Display Area
Toilets
In coordination with local codes and requirements, at least the minimum number of toilets and restroom area should be provided. These restrooms should be located as to furnish convenience for the patron. For easy accessibility, the lavatories should be near the point of entry to the auditorium and close to the refreshment areas.

Cloakroom
The cloakrooms should be attended during any staged
performance. The location of these cloakrooms should be directly off the main circulation pattern and should be on every level of the center.

Refreshment Areas
These should be conveniently located near the entry to the auditorium. Refreshment areas could be open but preferably self-contained areas will not interfere with circulation patterns. The type of refreshments provided should be determined by the managerial staff of the center.

Auditorium Area--

Foyer
A buffer should be provided between the auditorium and the lobby foyer so the noise and light from the foyer need not interfere with any performance.

Auditorium
The auditorium will be required to perform well under very diverse conditions. Differences between the spoken word and musical performances require different qualities in an auditorium space. Steps should be taken to accommodate these differences.

Production Control

Dressing Rooms (See addendums for more specific requirements)
Rooms for actors and other performers who require provision for applying make-up as well as changing into costumes. It is necessary to accommodate all the performers in any given production and offer to them comfortable spaces for changing and make-up purposes. These rooms should be equipped with adequate furniture. The number of rooms should be dependent on the production staged. The number of performers in individual rooms is to be determined by the status of the performer in the company. These dressing rooms should be conveniently located for the proper access to the stage. There should also be reasonable separation between male and female performers with respect to the toilet and shower facilities. Some of the dressing rooms will have private toilets and showers, others will not. Performers accommodated in those dressing rooms where the toilet provision is not included will be able to use a common one located adjacent to the dressing rooms.
Changing Rooms (see addendums for more specific requirements)
These rooms are for performers who do not require extensive make-up applications in which they may change from street clothes into costumes or evening dress. These rooms are typically used by musicians.

Green Room
The green room is a place for public reception and the relaxation of the performers. Its location should be at stage level somewhere between the public spaces and the backstage area with access to both.

Orchestra Assembly
An area large enough to accommodate the entire orchestra should be provided for the musicians to assemble before they come on the stage or into the orchestra pit.

Instrument Storage
Sufficient area should be provided in the orchestra assembly area for the storage of musical instruments.

Orchestra Pit
The orchestra pit is located directly below the stage area and is used by the orchestra for performance during an opera or operetta. The conductor should have a direct view of the stage so he can coordinate the music with the progressing plot on the stage. There should also be access for the conductor from the orchestra pit onto the stage during the curtain call.

Rehearsal Spaces
Spaces below the stage should be available for rehearsal both prior to and during a performance. Rehearsal rooms should be sound proof in order to avoid interfering with the live performance in the auditorium. There should be a certain amount of flexibility in these rooms to accommodate each of the performance types.

Stage
Stagework Areas
Besides all the performers who are visibly present during a presentation, there are many more people engaged in support activities in the backstage area. Sufficient area is required for the stagehands, electricians, carpenters,
Basic Designing Criteria For Auditorium:

**Sight lines**

Human sight is subject to limitations which should be taken into consideration when designing an auditorium. The horizontal angle of polychromatic vision (no eye movement) is approximately 40 degrees. The horizontal angle to the center line at which objects on stage, upstage of the curtain line, cease to bear intended relationship to other objects onstage and to the background is approximately 60 degrees.

**Stage visibility**

In order to achieve a greater visibility for the audience, the seats in the house should be staggered.

The vertical angle above which the ability to recognize familiar shapes falls off rapidly in 30 degrees.

**Seating curvature**

Seating curvature is determined by the indicated layout.

**Depth of the House**

Normal human vision can perceive a minimum dimension or separation equal to one minute of visual arc. Translated into space measurement, this means that at ten feet a normal eye can perceive a dimension of 0.035 inches, at 50 feet - 0.175 inches and at 100 feet - 0.35 inches. Details of make-up and facial expression of the actors is not clearly recognizable at a distance of 50 feet from the stage.
The Basic Dimensions For Plotting Floor Slope

The auditorium floor slope should be laid out as indicated.

Chamber of Commerce Facilities

Office of the Manager
Office of the Assistant Manager
Secretarial Office Space
Office Machine Room
Coat Closet
Public Toilets
Storage Room
Large Meeting Room (100 persons)
Small Meeting Rooms (2 at 35 persons each)
Service Kitchen
Janitor Closet
Art Display Area

OPERA: Changing Rooms

Type of Establishment: Opera
Audience or Group: Performing Arts Groups
Associated Areas: Dietary Facilities

Seating

[Table and diagram related to opera changing rooms]
## OPERA: Dressing Rooms

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Principals</td>
<td>2</td>
<td>Single</td>
<td>Must be at stage level</td>
<td>Preperformance practice-room necessary if piano not provided in dressing-room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Piano in at least one room</td>
<td>Waiting area for visitors and dressers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Direct access to wc and shower desirable</td>
<td>Wig store Provision for making hot drinks</td>
</tr>
<tr>
<td>Female Principals</td>
<td>2</td>
<td>Single</td>
<td>As above</td>
<td></td>
</tr>
<tr>
<td>Male Minor Principals</td>
<td>10</td>
<td>Shared, 2 or 3 per room</td>
<td>Quick access to stage level required Rooms planned for 2 occupants should be adaptable for a single occupant</td>
<td></td>
</tr>
<tr>
<td>Female Minor Principals</td>
<td>10</td>
<td>Shared, 2 or 3 per room</td>
<td>As above</td>
<td></td>
</tr>
<tr>
<td>Male Chorus</td>
<td>15</td>
<td>Communal (maximum 20 per room)</td>
<td>Communal dressing-rooms should be planned so that they can be subdivided into smaller spaces if required. It is necessary to segregate the sexes.</td>
<td>Green room for use of all performers except children Specialist make-up rooms necessary if make-up is not self-applied</td>
</tr>
<tr>
<td>Female Chorus</td>
<td>15</td>
<td>As above</td>
<td>Number of performers of each sex vary from time to time.</td>
<td></td>
</tr>
<tr>
<td>Extra</td>
<td>15</td>
<td>As above</td>
<td>Number of performers of each sex vary from time to time.</td>
<td></td>
</tr>
<tr>
<td>Male Opera/Ballet</td>
<td>7</td>
<td>As above</td>
<td>Direct access to wc and shower. Room should be large enough to accommodate an ensemble of 6 musicians for rehearsal during a performance These rooms are for the use of performance conductors as distinct from facilities for the resident conductor</td>
<td></td>
</tr>
<tr>
<td>Female Opera/Ballet</td>
<td>7</td>
<td>As above</td>
<td>Number of chorus members, supernumeraries, etc depend on scale of opera and size of stage</td>
<td></td>
</tr>
<tr>
<td>Supernumeraries, Male</td>
<td>20</td>
<td>As above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supernumeraries, Female</td>
<td>9</td>
<td>As above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Children</td>
<td>10</td>
<td>As above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## OPERA: Changing Rooms

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductors (1 Performance)</td>
<td>2</td>
<td>Single</td>
<td>Direct access to wc and shower. Room should be large enough to accommodate an ensemble of 6 musicians for rehearsal during a performance These rooms are for the use of performance conductors as distinct from facilities for the resident conductor</td>
<td>Supervisor's office</td>
</tr>
<tr>
<td>Orchester Leader</td>
<td>1</td>
<td>Single</td>
<td>Desirable to have direct access to wc and shower</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
<td>--------</td>
<td>-----------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Section Leader</td>
<td>5</td>
<td>Shared, 3 per room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Musicians</td>
<td>120</td>
<td>Communal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Communal changing-rooms should be planned so that they can be subdivided into smaller spaces if required. The sexes should be segregated. Numbers of performers of each sex varies from time to time.

| Chorus           | 60 | Communal, 3 rooms |

The number of performers depends on the type of production and size of stage. Figures given are for average requirements.

| Children         | Variable | May be accommodated in one of the above rooms |

The number of performers depends on the type of production and size of stage. Figures given are for average requirements.

---

**BALLET: Dressing Rooms**

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male Principals</td>
<td>2</td>
<td>Single</td>
<td>Must be at stage level. Direct access to wc and shower desirable</td>
<td>Waiting area for visitors and dressers</td>
</tr>
<tr>
<td>Female Principals</td>
<td>3</td>
<td>Single</td>
<td>Must be at stage level. Direct access to wc and shower desirable</td>
<td>Provision for making hot drinks</td>
</tr>
<tr>
<td>Soloists</td>
<td>24</td>
<td>Shared</td>
<td>Must be at stage level. Rooms planned for 2 occupants should be adaptable for a single occupant. Number per room depends on seniority of soloists and is peculiar to each company</td>
<td></td>
</tr>
<tr>
<td>Male Corps de Ballet</td>
<td>25</td>
<td>Communal</td>
<td>Numbers of soloists and corps de ballet depend on the scale of ballet and size of stage</td>
<td>Green room</td>
</tr>
<tr>
<td>Female Corps de Ballet</td>
<td>25</td>
<td>Communal</td>
<td>Green room</td>
<td></td>
</tr>
<tr>
<td>Supernumeraries</td>
<td></td>
<td>Communal</td>
<td>Kiosks with GPO outside line telephones</td>
<td></td>
</tr>
</tbody>
</table>

Specialist make-up room

Supervisor's office

Instrument store

Two practice-rooms

Orchestra assembly area

Common-room

Kiosks with GPO outside line telephones
<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>2</td>
<td>Single</td>
<td>Direct access to wc and shower. Room should be large enough to accommodate an ensemble of 6 musicians for rehearsal during a performance. These rooms are for the use of performance conductors as distinct from facilities for the resident conductor.</td>
<td></td>
</tr>
<tr>
<td>Orchestra Leader</td>
<td>1</td>
<td>Single</td>
<td>Desirable to have direct access to wc and shower.</td>
<td></td>
</tr>
<tr>
<td>Section Leaders</td>
<td>6</td>
<td>Shared, 3 per room</td>
<td>Communal changing-rooms should be planned so that they can be subdivided into smaller spaces if required. The sexes should be segregated. Number of performers of each sex varies from time to time.</td>
<td></td>
</tr>
<tr>
<td>Musicians</td>
<td>100</td>
<td>Communal</td>
<td>Instrument store</td>
<td>Practice-room</td>
</tr>
</tbody>
</table>

**VARIETY, MUSICALS, SPECTACLES: Dressing Rooms**

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principals</td>
<td>4</td>
<td>Single</td>
<td>Should be adaptable for 2 occupants</td>
<td>Provision for making hot drinks</td>
</tr>
<tr>
<td>Minor Principals</td>
<td>30</td>
<td>Shared, 4 or 6</td>
<td>Some of the 4-occupant rooms should be able to be subdivided into single rooms. At least 4 of the rooms for principals and minor principals should be at stage level.</td>
<td></td>
</tr>
<tr>
<td>Chorus</td>
<td>60</td>
<td>Communal, 3 rooms accommodating 20 each</td>
<td>The number of performers depends on the type of production and size of stage. Figures given are for average requirements</td>
<td>Green room (available to all performers other than children), which can be used as a communal dressing room if necessary. Kiosks with GPO outside line telephones</td>
</tr>
<tr>
<td>Children</td>
<td>Variable</td>
<td>May be accommodated in one of the above rooms</td>
<td></td>
<td>Specialist make-up room Supervisor's office</td>
</tr>
</tbody>
</table>

**VARIETY, MUSICALS, SPECTACLES: Changing Rooms**

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor</td>
<td>1</td>
<td>Single</td>
<td>Room should be large enough to hold auditions and recording sessions. Direct access to wc and shower.</td>
<td>Instrument store Practice-room Kiosks with GPO outside line telephones</td>
</tr>
<tr>
<td>Musicians</td>
<td>30</td>
<td>Communal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### DRAMA: Dressing Rooms

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBER*</th>
<th>OCCUPANCY OF ROOM</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principals</td>
<td>2(6)</td>
<td>Single</td>
<td>Must be at stage level.</td>
<td>Green room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Should be adaptable for 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>occupants if necessary.</td>
<td>Laundry (desirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Desirable to have access</td>
<td>to be accessible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to shower and wc.</td>
<td>to all performers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Kiosks with GPO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>outside line</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>telephones</td>
</tr>
<tr>
<td>Minor Principals</td>
<td>16(16)</td>
<td>Shared, 2, 4 or 6</td>
<td>Majority of rooms should</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>per room</td>
<td>be at stage level</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Occupancy of 4 per room</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>preferred</td>
<td></td>
</tr>
<tr>
<td>Supporting cast</td>
<td>20(40)</td>
<td>Communal, 2 (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>rooms accommodating 10 each</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figures in brackets are for large-scale productions

### CONCERTS: Changing Rooms

<table>
<thead>
<tr>
<th>TYPE OF PERFORMER</th>
<th>NUMBERS</th>
<th>OCCUPANCY</th>
<th>REQUIREMENTS AND COMMENTS</th>
<th>ASSOCIATED AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductors</td>
<td>2</td>
<td>Single</td>
<td>Piano in at least one room</td>
<td>Conductor's green</td>
</tr>
<tr>
<td>Soloists(musicians)</td>
<td>4</td>
<td>Single</td>
<td>Desirable to have direct access to shower and wc</td>
<td>room</td>
</tr>
<tr>
<td>Leader of orchestra</td>
<td>1</td>
<td>Single</td>
<td></td>
<td>Instrument store</td>
</tr>
<tr>
<td>Musicians</td>
<td>120</td>
<td>Communal</td>
<td></td>
<td>Practice-room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Communal changing-rooms</td>
<td>Orchestra assembly</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>should be planned so that</td>
<td>area</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>they can be subdivided into</td>
<td>Musicians' common-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>smaller spaces if required.</td>
<td>room</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The sexes should be</td>
<td>Kiosks with GPO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>segregated. Number of</td>
<td>outside line</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>female musicians in an</td>
<td>telephones</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>orchestra varies from</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>time to time</td>
<td></td>
</tr>
<tr>
<td>Soloists(singers)</td>
<td>4</td>
<td>Single</td>
<td>Provision for make-up must</td>
<td>Choir assembly area</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>be included</td>
<td>Rehearsal room if</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Desirable to have direct</td>
<td>choir is a</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>access to shower and wc</td>
<td>resident professional</td>
</tr>
<tr>
<td>Choristers</td>
<td>50</td>
<td>Communal</td>
<td>Communal changing-rooms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>should be planned so that</td>
<td></td>
</tr>
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<td></td>
<td>they can be subdivided into</td>
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<td></td>
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<td></td>
<td>smaller spaces if required.</td>
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<td>The sexes should be</td>
<td></td>
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<td></td>
<td></td>
<td>segregated. Number of</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>female musicians in an</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>orchestra varies from</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>time to time</td>
<td></td>
</tr>
<tr>
<td>TYPE OF PERFORMER</td>
<td>NUMBERS</td>
<td>OCCUPANCY</td>
<td>REQUIREMENTS AND COMMENTS</td>
<td>ASSOCIATED AREAS</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------</td>
<td>-----------</td>
<td>---------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Conductors</td>
<td>2</td>
<td>Single</td>
<td>Piano in at least one room</td>
<td>Conductor's green room</td>
</tr>
<tr>
<td>Soloists (musicians)</td>
<td>2</td>
<td>Single</td>
<td>Desirable to have direct access to shower and wc</td>
<td></td>
</tr>
<tr>
<td>Musicians</td>
<td>40</td>
<td>Communal</td>
<td>Communal changing-rooms should be planned so that they can be subdivided into smaller spaces if required. The sexes should be segregated. Number of female musicians in an orchestra varies from time to time</td>
<td>Instrument store, Practice-room, Orchestra assembly area, Musicians' common-room, Kiosks with GPO outside line, telephone</td>
</tr>
<tr>
<td>Soloists (singers)</td>
<td>2</td>
<td>Single</td>
<td>Desirable to have direct access to shower and wc</td>
<td></td>
</tr>
<tr>
<td>Choristers</td>
<td>40</td>
<td>Communal</td>
<td>Communal changing-rooms should be planned so that they can be subdivided into smaller spaces if required. The sexes should be segregated. Number of female musicians in an orchestra varies from time to time</td>
<td>Choir assembly area.</td>
</tr>
<tr>
<td>Staff Function</td>
<td>Staff Requirements</td>
<td>Space Requirements (sq ft)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------</td>
<td>----------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage manager Organization of the stage for and during a performance; interviewing</td>
<td>Desk, chair, filing cabinets, plan chest, shelves, pin-up board, easy chair, bed</td>
<td>120-150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deputy stage manager</td>
<td>As above</td>
<td>120-150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secretary (may be personal to one executive or shared by a number; does most of the administrative and paper work; may share an office with the person for whom she works or have a separate office)</td>
<td>Secretarial Desk with provision for typing, chair</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master carpenter Responsible for providing scenery for the stage and for maintaining it</td>
<td>Drawing board, stool, plan chest, filing cabinets, space for models, pin-up board</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property master Responsible for providing properties for use on the stage and for maintaining them</td>
<td>As above</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wardrobe mistress/master Responsible for providing costumes for the performers and for maintaining them</td>
<td>As above</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief Electrician Responsible for lighting, sound equipment and stage machinery</td>
<td>Desk, chair, filing cabinet</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricians Operation of lighting, sound equipment and stage machinery for and during a performance</td>
<td>Provision for changing and resting, lockers table, chairs, easy chairs, bunk beds, (1 per 3 persons), shelves</td>
<td>30 per person (minimum)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage hands Movement of scenery</td>
<td>As above</td>
<td>30 per person (minimum)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
THEATER ORGANIZATION

- PERFORMER SPACES
  - REHEARSAL ROOM
  - WORKSHOP
  - WARDROBE & COSTUME
  - SCENERY CHANGE
  - SOUND BUFFERS
  - ORCH. PIT
  - PRODUCTION MGR.
- AUDITORIUM
- PUBLIC SPACE
- ENTRY

- CUSTODIANS
Architectural Design

1. Entrance and Exit:
   - Stage
   - Sound Buffers
   - Rehearsal

2. Storage:
   - Green Room
   - Manager

3. Toilet:
   - Dressing Room
   - Toilets

4. Shower:
   - Dressing Room
   - Showers

5. Wardrobe:
   - Dressing Room
   - Workshop

6. Delivery:
   - Dressing Room

PERFORMERS' SPACES
SITE ANALYSIS

Architectural Thesis Site
Between 30 and 60 West Park Street/19 and 59 West Galena Street
Butte, Montana 59701

A. Climate Conditions

1. Temperature range $\Delta T +110^\circ-50^\circ F$

2. Prevailing Wind Conditions
   a. Storm (winter) wind - north to northwest
   b. Chinook (warm) breeze - south to southwest

3. Wind velocity - Average 5 to 8 m.p.h., gusts to 45 m.p.h., occasional 60 m.p.h. gusts

4. Snowfall - Varies, one foot to two feet during average winter. Occasional snow drifting to four feet.

5. Frost line - Three feet below grade. Four feet in unusually moist soil and drainage.


7. Tornado or Hurricane Area - Does not apply.

8. Unusual local condition - Proximity to underground mining and open pit mining.
9. Lightening protection - Very applicable.

B. Physical Condition - Realizability

1. Type of contractors - all types: large, small, union some (very few) non-union.

2. Type of manufacturers of building materials - wood frame, masonry, concrete, steel or iron.

3. General technical construction capabilities - skilled, semi-skilled, unskilled and advanced.

4. Availability of technical personnel - limited.

5. Materials:
   a. Steel - Yes (if imported).
   b. Concrete Regular - Yes.
   c. Concrete, light weight aggregate - Yes.
   d. Precast concrete plant - Yes, but limited.
   e. Prestress concrete plant - Yes (if imported).
   g. Wood - Yes.
   h. Masonry - Yes.

C. Soil and Ground Conditions

1. Test Bore Data
   a. 1'-2' topsoil sandy loam.
   b. 6'-7' decomposed granite.

2. Any unusual amount of fill required - No.

3. Any water problem - Nothing below grade, caution should be exercised to note above grade drainage.

4. Location of water table - 1st water near 43'-0''.

5. Any large body of water near by - No.
6. Any irrigation easements or ditches - No.

7. Is soil bad enough to warrant a mat foundation - No.

8. Is soil bad enough to warrant use of a pier (caisson) foundation - No.

9. Testing with boring log, backhoe and visual inspection - see previous page.

10. Expertise available for soil work - Yes.

D. **Adjacent Structures**

1. Any basement in existing buildings - Yes.

2. Any underground structures in area - Yes, underground horizontal branches of mine shafts.

3. Will driving of piles adversely affect or damage adjacent structures - Possibly so, due to age and construction.

4. Any tall buildings in the area - Yes.

5. Will surrounding buildings affect wind loading - possibly.

6. Noise control necessary - As appropriate for central business district.

E. **Legal Considerations**

1. Will utilize Uniform Building Code and other locally accepted and/or adopted codes.

2. What are the zoning requirements - Currently zones C-2 and C-3.
3. What are set back requirements - None.
4. Height restriction - None.
5. Building area/open space @ each lot - 100% cover max.
6. Building shape restriction - None.
7. Building materials restriction - None.
8. Appearance codes or design criteria approval - None.
9. "Style"/character approval - None.
10. Parking requirements on site - CID member...Parking provided in lots to southeast and west.
11. If nonconforming
   Variance - is possible.
   Zoning change - is not possible.
12. Local covenants - None.

F. Movement - Pedestrian and Vehicular

1. Site access - From Park Street
   From Galena Street
   From Dakota Street via alley through Phoenix Building

2. On site storage limits - pedestrian activity and eventual construction

3. Unusual craft vehicle conditions
   Surrounding site - Must allow clearance for deeded alley to Ben Franklin Store.
   Adequate for 65' tractor/trailer combination.

   On site - Must allow access for trucks carrying
production equipment for traveling shows and maintenance equipment.

4. Pedestrian circulation - Important to maintain passage between Park and Galena Streets.

5. Vehicular circulation - One-way traffic on Park and Galena Streets with room for parallel parking, both sides of street. One-way, westbound traffic in alley.

G. Solar Orientation

1. Differential expansion - Possibilities if masonry is used.

2. General direct light exposure - Excellent.

3. Any structures blocking sunlight to site - Yes, in late afternoon and early morning.

4. Exposure intensities generally -
   North - Moderate (for daylight only)
   South - Excellent
   East - Poor (near complete obstruction with six story structure)
   West - Satisfactory (partial obstruction with Phoenix Building to northwest)

5. Moonlight consideration - Excellent possibilities for view and use of light.

H. Local, State, Federal Government Special Design Requirements

1. Land use, land grant situation - Not applicable.


3. External illumination level - Normal for latitude and elevation.
4. Pedestrian/vehicular circulation during the construction — Limited to Park and Galena Streets.

5. Air rights — OK.


7. Pollution control — Normal as limited by local law.

8. Lot splits — Not applicable.

9. Utility access/availability — Unimpeded. All services (gas, electric, T.V., phone) along Galena Street.

10. Movement and vibration limitations — Normal as limited by success of adjacent structures. Design to conform to codes.

11. Other code or ordinance required — None.

12. Union policies — Very applicable. Consult with unions.

13. Wages — Subject to current union rates.

14. Construction methods — As is the accepted trade practice and procedure.


16. Overtime — Normally applicable.

17. Working Conditions — As is normal in area good to excellent in non-winter weather. Site OK.

I. Fire and Safety

1. Fire Zone — High to medium in relationship to city.

2. Occupancy group — Type IA Fire Resistant
3. Construction type - Masonry bearing wall with steel frame partitions.

4. Availability of hose bib on site - No.

5. Fire protection from city
   a. Hose bib - Yes.
   b. Truck/hook and ladder - Yes.

6. Location on property for fire protection - OK.

7. Special fire setbacks - None.

8. Special allowable floor area - Not applicable.

9. Maximum height or number of stories - Covered by local codes, see E.


11. Sprinkler system - Required.

12. Set back from front property line - Not applicable.


J. Utilities

1. Septic field (State Board of Health approval) - Not applicable. City will provide hook-up to city metro/sewer.

2. Availability of services -
   a. Gas - OK.
   b. Phone - OK.
   c. Electricity - OK.
   d. Water or well - Water OK.
K. **Budget Considerations**

1. **Budget Limit** - Not applicable.
2. **No. budget limit** - Not applicable.
3. **Architects fee** - Not applicable.

L. **Consultants**

1. **Electrical** - Required.
2. **Mechanical** - Required.
3. **Structural** - Required.
4. **Soils** - Required.
5. **Plant Ecologist** - Probably not applicable with expected work.
6. **Landscaping** - Probably not applicable with expected work.
7. **Interior Design** - Required.
8. **Other Architectural Expertise** - Acoustics consultant required with expected work.
9. **Sociologists/psychologists** - Probably not applicable with expected work.
10. **Scientific technicians** - Probably not applicable with expected work.

M. **View Axis**

1. Excellent view of highlands, would be even better from 2nd or 3rd story. (due south).
2. Minor view axis of Rocky Mountains and divide (due east).
3. Street view to north and south.

N. Sensory Stimulants
1. Olfactory - Not applicable (nothing of special interest).
2. Tactile - Not applicable (nothing of special interest).
3. Gustatory - Not applicable (nothing of special interest).
4. Auditory - Not applicable (nothing of special interest).
5. Visual - See Section M.

O. Vegetation/landscape (not applicable)

P. Prevailing Architectural Vocabulary
1. Rural - No.
2. Urban - Yes.
   a. Predominant style - very eclectic and varied.
   b. Neighborhood style - predominantly 'storefront' structures with strong Midwest facade features.
   c. Strong design elements - rhythm/proportion/scale/texture/massing/voids/complexity/usualness.

Q. Character of Adjacent Environment
1. Natural - No.
2. Artificial - Yes.
3. Dilapidated - Slight.
5. Stagnant - No.
6. Renewable - Yes.
1. Park Street basement level, Galena Street ground level.
2. Possibility of partial basement/partial column footers.
3. Business district location.
4. Drainage on site.
5. Hill and street relation.
6. "Passage" idea.
7. "Facade" idea.
The city is not simply a legal entity, it is primarily a state of mind. It is not merely a collection of people or social conveniences, or of administrative arrangements. It is a body of customs and traditions and of the organized attitudes and sentiments that (are inherent within) these customs and (that) are transmitted with these traditions. The city is not merely a physical mechanism and an artificial construction. It is involved in the vital processes of the people who compose it; it is a product of nature and particularly of human nature.

Robert Ezra Park

City

Butte, Montana, or more precisely, uptown Butte, Montana, is a city. I do not say this because there are tall buildings in Butte, nor do I say it because of the size of the population that resides there--time has taken a toll on both of those things. I speak of uptown Butte as a city because the people who live there know that it is a city. And, until those people either die, or leave and forget, Butte will remain a city.

This prevailing attitude owes its origins to the perseverant nature of the miners who made Butte what it is. The first miners, long since forgotten, began to build Butte around and on top of the simple plots that marked claim to the rich ore deposits that lay below the surface of what was to become known as "the richest hill on earth". Following them came such ambitious men as William D. Clark, Marcus Daly, and F. Augustus Heinze--the "copper kings". Under their colorful influence came the rise of much of what we know as Butte, today.

As artifacts of lifestyle, history, and tradition, the buildings that comprise uptown Butte tell the story of their existence. By isolating the location of the headframes that mark the entrances to the no longer used subterranean mining operations, one can plot the growth of Butte. It was around these mines, that the homes of the miners who worked them sprang up. Between the mining claims grew a central business district that served to provide the miners with both the necessities and the pleasures of life. Stores and businesses of all kinds thrived in Butte because of the richness of its surrounding claims and the free spending nature of
the miners. The most patronized businesses were the taverns and gambling halls. Almost equally popular were the cafes and places of public entertainment. Brothels, too, were considered good business and Butte boasted the world's best along its "Venus Alley". Almost everywhere one looks in Butte, this free spending and extravagant attitude can be seen in the layout and detailing of the city's buildings.

In his recent book entitled Historic Uptown Butte, John N. DeHaas, Jr. has provided a historical analysis of the buildings. In his evaluation, there are over fifty buildings within a five square city block area of the central business district that are of "primary historic significance". This determination is based upon a building's "association with notable people or events", or that it is a "building of distinct architectural character." In the residential districts of uptown Butte, there is an equal proportion of fine houses. A review of the buildings in the entire uptown district shows an intense concentration of classically designed buildings that rely on a given order both within and without for their meaning and existence. This order provides the backdrop for activity within the city.

As has been mentioned, the social and financial climate of Butte played a major role in its development. It is important here to illustrate even further the uniqueness of that social setting. As a boom town, Butte became the home of many recent European immigrants who were looking for work and a home in this country. By nationality, these immigrants seemed to locate themselves within the same neighborhoods and to work the same mines. As such, many of their native traditions and behavioral patterns were preserved within their communities. Some examples of these are:

Meaderville—Italian; Dublin Gulch—Irish; German Town—German; Fintown—Scandinavian; McQueen—Austrian, Yugoslavian, Hungarian; Centerville—English; China Town—Oriental; West Side—upperclass; East Side—workingclass, and so on. This ethnic purity was accepted cross-culturally within the city as a matter of life. Between the groups there existed a measure of respect and a good deal of humor. For many years, it was neither unusual nor disrespectful to refer to members of different ethnic groups by their slang nicknames. Such names as "Mick", "Cousin Jack", "Cousin Ginny",

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12 John N. DeHaas Jr., Historic Uptown Butte, p. 5.
"Wop", "Dago", "Bohunk", or "Kike" were accepted with no affront taken. In Butte, the brotherhood of hard rock miners was supreme.

This comradery has caused the development of other unique behavior patterns in Butte. As a symbol, the miner has been known as a strong man. As such, it was important to maintain that image. For this reason, both drinking and fighting have played important roles in Butte social life. It was not unusual for two men to draw down on one another until either could barely stand and then step up to the bar and buy each other a drink. Still today, the man who can both drink and fight to excess is known as a man worthy of respect. The wisdom of this standard has never been questioned.

With the mines in 24-hour operation and the shifts changing throughout the day, there was constant activity on the streets. For this reason, the streets became a vital element of the society. In fact, there developed a ritual about "going uptown" that centered around the street. In order to go uptown one must first prepare himself by bathing, shaving, or perfuming and then dressing in a fine suit of clothes. (In Butte, no one was completely dressed without a hat). Once prepared, the common mode of transportation to the CBD was pedestrian. This afforded the opportunity to meet others who were "going uptown" in either their going or returning trip. Once uptown, the rounds were made. Each person had a certain number of stops to make in order to either make purchases or to pay respects. For this reason, the cafes, markets, brokerage houses, and civic buildings served as hubs of social interaction, while the streets served as connectors. Often, "going uptown" could be an all day affair. Despite the slow decline of this practice, the activity has greatly preserved the social climate of personal respect and mutual admiration among the inhabitants of Butte. This, perhaps more than anything else, has helped keep Butte a city.

For many years, the confines of Butte remained fairly close to the mines for the convenience of transportation. During the hot summer months, the inhabitants of Butte looked to the outlying rural areas for physical relief and social recreation. There was no place more enjoyable to the city's inhabitants than the Columbia Gardens. Providing for the pleasures of rural experience and the joys of society, "The Gardens" was a popular retreat from the hot city. The connection between the city and the country...
was gained by an axial link along Butte's Main Street to the location of "The Gardens" at the base of the Continental Divide. This amazing facility provided a gay atmosphere for both social events and private parties. There were accommodations for picnics or just lounging in the shade as well, the continuity of life never seemed to falter.

We find today that much of this is only memory. Because of the change to open pit mining operations, fire, or the passage of time, many of these things no longer exist. With these changes came a drop in the economy and the reduced need for personnel to maintain the mining operations. As Butte now exists, there is little new construction in the uptown district. The rich culture of the past holds tenuously to the presence of a seriously decaying central business district, a vital tourist trade that is interested in the town's history, and some residential districts that cater to a variety of living conditions.

The major problem lies in the mining operation and the economy. As an open pit mine, the Anaconda Copper Mining (ACM) Company operation poses a formidable threat in terms of dirt and the uncertainty as to whether it will literally consume the uptown. Businessmen who have operated for years do not improve or maintain their property and, as their retirement grows near, do little in the way of marketing. Fire insurance rates and non-resident landlords do their best to discourage improvement as well. The lending institutions hide their money from those interested in the rejuvenation of the CBD. These are bad signs for Butte.

Like a magnet, though, the town holds families that do not move despite the fact that their father's father's home has long since been bought out from under them by the ACM. In many cases, there is a dependency upon the tradition of employment by The Company, or by a business that is in some way reliant upon it. But, more often than not, a person from Butte finds it difficult to live anywhere but Butte. The city is in the people.

The solution to these problems then lies in finding the ability to live with the knowledge that the pit will grow and planning around that eventuality so that the people of Butte can live in a manner that befits them.

Recent planning studies have suggested a phased withdrawal of the CBD to another location while revitalizing the uptown into a small shopping district complete with potted plants in the roadways, integrated trash
recepticles and cliche' banners hanging from every window. Other plans concern the alteration of traffic flow. I believe that the city needs much more than new plans for automobile movement and a suggestion that a new CBD would be better. The city also needs more architecture than the overworked and inappropriate California-type mall, which has been contrived out of a once thriving streetscape in uptown Butte. These types of proposals show very little sensitivity to the existence of a unique culture and assumes that a massive "blanket" treatment of the city fabric will cure all of its ills when history has proved it wrong.

Design

As the building is intended to include the tools of both the idea of "dialogue" and the situation of Butte, it is desirable, if not necessary, in determining how this is to be achieved. We have learned that it is the "exchange of words" that gives man his humanness and, we have also learned that, in Butte, this exchange has predominantly occurred throughout the years upon the streets and in the public places. It seems, then, that these items should provide the metaphors, in building form, for this design.
Speaking to Butte

Philosophy

As has been observed, Butte, Montana is a unique place with its own unique characteristics. As a site for a building project, Butte poses some inherent difficulties in design. Among the principal problems is the rigid and somewhat parochial attitude of the Butte people towards things and ideas. The depressed economy is equally important when considering the type of structure that should be built. The building should also respond to the environmental extremes that are native to the area. Finally, it is necessary to establish the building in its own historical time frame. While each of these items listed above are unique, they are hardly separate. The building must resolve their demands in a manner that is befitting of the special qualities that they all bring to the design.

As each of the above mentioned topics have to do with the results of human interaction or in some way affect the quality of that interaction, the theme of the building will be that concern. In speaking to the city of Butte this building will attempt to become part of the city. The processes of repetition, modification, abstraction, and construction will be the means of this inclusion. The building, while monumental, will not strive to become a monument. Upon this building will be the marks of the Butte people of today, in recognition of the Butte people of the past, in hopes for the Butte people of the future.

Design

As the building is intended to include the whole of both the idea of "dialogue" and the situation of Butte, it is desirable, if not necessary, to determine how this is to be achieved. We have learned that it is the "exchange of words" that gives man his humanness and, we have also learned that, in Butte, this exchange has predominantly occurred throughout the years upon the streets and in the public places. It seems, then, that these items should provide the metaphors, in building form, for this design.
In terms of site response, the building shall make use of the differences between Park and Galena Streets to develop both circulation axes and physical proximities to suggest "streets" and "public spaces". Off of Park Street, the building will be open and freely associative. Based upon the nature of Park Street as the "main" street, both in terms of vehicular and pedestrian traffic, this side of the building will draw upon the social aspects of "street". The Galena Street elevation will, in holding with its properties of vehicular and pedestrian activities, address the topics of direction and delivery.

Within the building, the metaphorical associations of "public space" and "street" will be likened to "hub" and "connector" respectively. The "hub" locations will be developed in gathering spaces like the theatre lobby or the exhibition space. Circulation spaces between these "hubs" will be the "connectors". In keeping with the social heritage of Butte, the "connector" spaces will also be wide enough for exchange to occur without the creation of blockage within passageways.

The utilization of the "public space" and "street" metaphors will also serve to divide the building into sectors. This system in terms of the street metaphor can be likened to the "blocks" that streets create. These sectors will provide the proper area for the satisfaction of the functional aspects of the building complex. It should be noted here that each area must and will function completely if it is to be included within the building.

Material selection in design will be based upon the function, economy and message that it is to satisfy. In terms of general attributes, both scale and modularization are desirable in most materials that will be used. The application of these materials should also be true to their nature.
PLAN LEVEL 4753/4760
1/8" - 1' 0"
NORTH

• Chamber of Commerce • Auditorium • Open to Below • Changing Room • Toilets • Dressing Room • Stage Loft • Side Loft • Changing Room • Back Loft
Bibliography

List of Sources Used

Books


Bibliography

List of Sources Used

Books


Revised Building Ordinances, City of Butte. 1917.


Periodicals


Theses


Additional Reading—Books


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The Montana Standard.