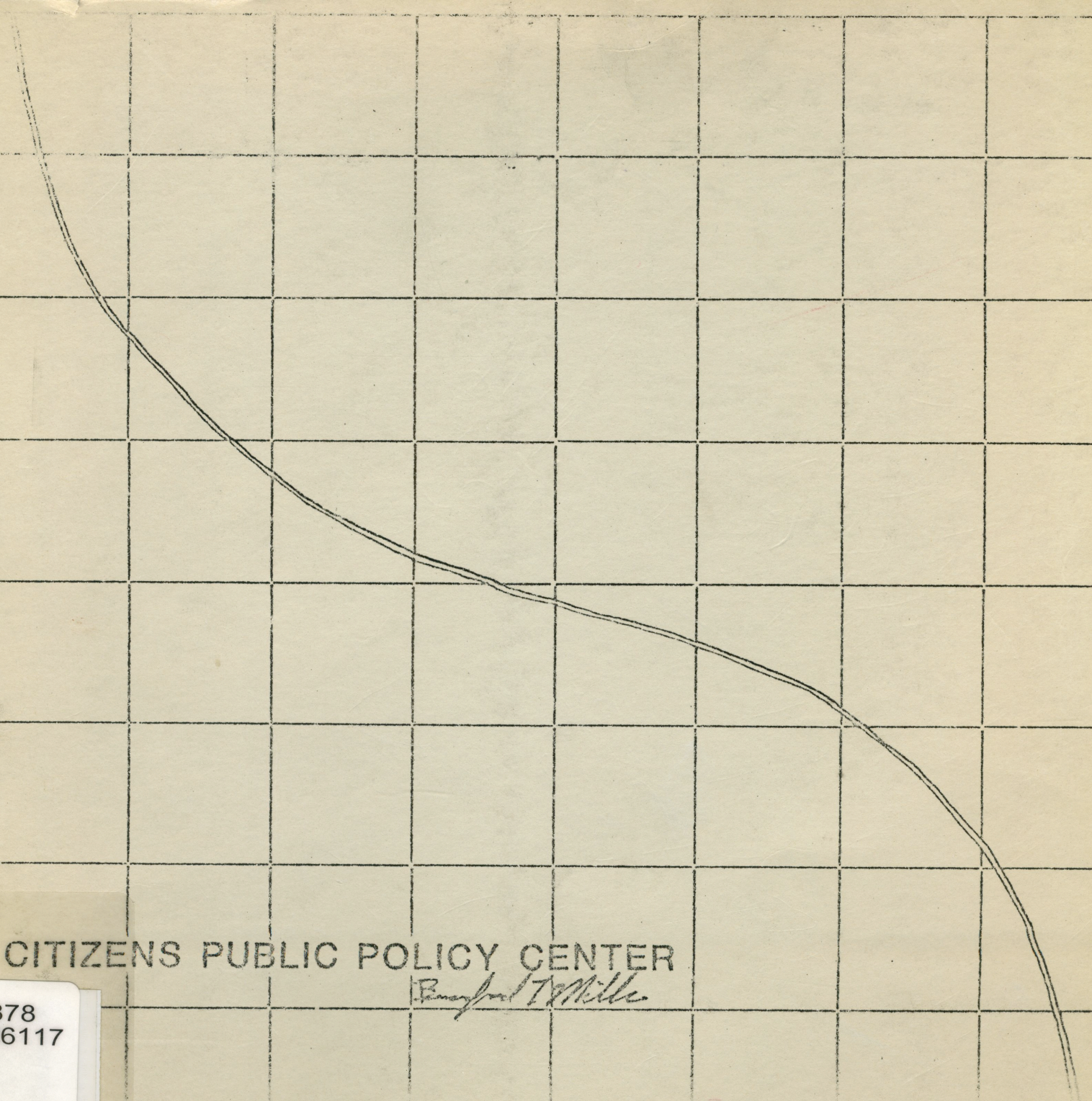


CITIZENS PUBLIC POLICY CENTER
Bruce J. Miller
P378
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A CITIZENS PUBLIC POLICY CENTER

BY

BRAD MILLER

Submitted in partial fulfillment of
the requirements for the degree
of
Bachelor of Architecture

APPROVED

_____
Chairperson

_____
Committee person

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Head, Major Department

MONTANA STATE UNIVERSITY
Bozeman, Montana
June, 1981

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TO

Carol, Roger, Matthew, Kath, Todd, Deedee,
Kirk, Donna, Dean, Ike, Peggy, Gram, Gramp,
Hugo, Dottie and Rye.
As well as all my friends who came out during
this time giving more than I will ever return.

I thank them for their love, support, understanding and most of all inspiration.

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TEXT

INTRODUCTION

Materials, the substance of architecture can be viewed either as a material of science, a material of art or both. The awareness of a materials limitations both from a art standpoint or from a science standpoint effects the manipulation of that material and the resulting product. Through a developed understanding of materials the architect (artist) can create buildings which have meaning in their construction as well as their form. Materials can take on symbolic, historic, and metaphorical meaning.

The study of materials as a scientific material can be found in any number of charts, formulas, graphs and manuals. The selection of a beam can be done through calculations, diagrams and charts. Which define the material, depth, width, bearing and deflection for a given span. The result is an enclosure which has neglected the non-technical aspects of the material, and the effect those will have on the space.

The implications of an open web steel joist system is very different from those of a gluelam system. The steel joist system implies a high tech attitude which the gluelam system does not. These differences are important in the communication of architectural ideas.

An understanding of what a material is, in terms of its relation to man as well as its relation to the culture is important in the conception of architecture. The selection and use of a material should stem from the theme for the project. The decision on what kind of material to use will imply attitudes on the designers part, about man, society and nature.

MATERIALS the MEDIUM

Materials are the solid which gives architecture its form. Much like the painter with paint and the metal-smith with metal, the architect must understand not only the physical limitations of his medium but also the abstract qualities. If brick is chosen for a building it needs to be understood that as masonry it has inherent structural forms, i.e. the arch, the lentil, heavy walls. Brick also implies certain characteristics beyond structural forms, i.e. it is an institutional material, an urban material, with historic and regional overtones.

To be honest with a material requires more than good construction and appropirate forms. A material used honestly will also express ideas about man society and the buildings relation to them. Kahn's Exeter library demonstrates this kind understanding and sensitivity. The brick relates well to the school and its context of a New England town. The material also provides a feeling of historic and cultural awareness which is sen-

sative to the community as well as the students.

> It is important that you honor the material you use you don't bandy it about as though to say well, we have alot of materials, we can do it one way, we can do it another way. Its not true. You must honor and glorify the brick instead of short changing it and giving it an inferior job to do in which it loses its character.
>
> Louis I. Kahn[1]

The medium of architecture is the materials of its construction. As with any art the artist must understand the implications of the medium before that medium can be successfully manipulated. To use a material without fully understanding the implications of its use is to fall short of complete control of the product.

MATERIALS and MAN

> Architecture is the manifestation in
> form of the order of our experience.
> It is a model of our consciousness,
> the fitting of ourselves between
> the earth and the sky.
>
> Louis I. Kahn[2]

Man defines his position in the world with the objects he possess. These objects provide a base for his cultural and spiritual identity. The level of this relationship of mans possession and his spiritual being ranges from the objects he may carry in his pocket to the building he lives in. The objects could be a stone that he carries in his pocket not for its beauty but for its emotional value. The object could also be a city or country which is comfortable for him.

Man desires comfort emotional as well as physical. In choosing his environment he is making a statement as to what is comfortable for him. It is through these collections that we can begin to know who this person is or wants to be.

Materials have an effect on the way we perceive a form, in that they also send out messages. This can be seen in the taste of different subcultures within our culture. The rancher with his mud caked boots and decripit hat would find little comfort in a high-rise concrete apartment in Manhattan, in the same way the New Yorker would find little comfort in wood framed farm house. Their ability to find comfort in the others environment is based to some extent on the materials which make up that environment.

The rancher may find comfort in natural fibers, wood, stone, and soil. The New Yorker on the other hand could find comfort in polyesters, concrete, steel and glass. Neither is more right or wrong they merely represent a different point of reference.

In architecture the materials, forms and spaces need to relate to the personal, social, and cultural point of reference. By reinforcing this point the architecture

can provide a stronger sense of unity. The manipulation of materials is mans way of communicating his ideas and desires.

MATERIALS/SPACE

Materials are the means through which space is defined. The effect a given material has on a space is dependent on the materials visual characteristics, structural qualities and symbolic imagery. Space is often described with terms which relate more to the materials and construction than to the actual space itself.

The use of 'warm' 'cold' 'slick' are used in relating to the visual character of the materials 'light', aerie solid are used in relating the structural qualities of the construction and "highteck" or "organic" in relation to the symbolic imagery of a material. Through the use of these terms it could be deduced that architecture is an art on materials and forms. This I feel is a misconception and is so because of the language we use to define architecture. If it was possible to find expressive terms to define the void and give it meaning the terms would have more meaning.

The use of either set of terms would however neglect the whole of architecture. For it is an art of solids and voids, which work together to give meaning and expression.

If we look at two spaces of similar function and conceptual bases it can be seen that materials effect the space on several levels. The Gothic Cathedral Noter Dame of Paris started in 1163 by Bishop Maurise de Sully[3] is a good example to compare with Johnson and Burgee's crystal cathedral in Garden Grove, California[4]. Both as conceptual spaces were dealing with the heavens and the overwhelming presence of God.

Noter Dame is visually warm, ornate and refined. The stone has a texture and irregularity which appeals to the eye and senses of man. There is a visual comfort in blocks which are carved from the raw material. The Crystal Cathedral on the other hand is stark, cold and removed. The steel is totally regular in its construction. There is no variation in consistancy

or color. As a whole the material neglects the subject of man and his sensual desires, Its concern is with the spacial only.

The structural character of the two buildings is of greater diviation. In both cases there was a desire to let light, and space pass through freely. The masonry construction of Noter Dame encloses space controling it for the most part and allowing only minimal movement around and through the structural. To describe Noter Dame one would use puncture, heavy (relative) solid. The Crystal Cathedral on the other hand would be described as light, airy, and flowing. The steel and glass framework does allow for the open space and visual passage of sight the structure has been minimized leaving only sky and earth.

As for the symbolic reference both buildings were relating to man and our relation to God. The difference stands in the cultural bases of the two works as well as in the technologies of the day. Stone has

historic conotations which relate to man on a very base level. The method of manipulating stone will inherantly effect mans preception of it. The hand laid stone wall has some human identity built in to it. The material also represents a recognizable part of the earth, it is of nature.

The steel tubular frame work on the other hand, was mass produced with the latest in power tools, jigs and technology. Mans envolvement with the material was more one of a machine than an artist. Every joint fitted just like a thousand others. Nothing left to the producer but nut and bolt connections. The steel and glass walls have rejected nature and become of man, a part from nature.

Both buildings express their cultural base and their time frame. They are representational of the different views of mans relation to the spiritual.

MATERIALS AND IDEAS

"We can in our thought
and imagination contrive
perfect forms of buildings
entirely separate" Alberti

With the first line of graphite on paper the idea has lost some of its perfection and taken on a compromise. This compromise is between the idea and the construction. As with all arts the need to express an idea must be present yet, unlike others, architecture has many restraints and functional requirements which hinders the expression of pure ideas. The idea has no dimension or physical presence, it exists only in terms of the imagination.

With the ideas transcription, through various stages of design development, the idea will direct and guide the development of forms. Through a prior understanding of materials and construction, the developing idea can be sensative to the possible forms which will express it.

L. Kahn expresses this progression from idea to building in his typically poetic fashion.

"A great building, in my opinion,
must begin with the unmeasurable,
must go through measurable means
when it is being designed and
in the end must be unmeasurable. .
The only way you can build the
only way you can get the building
into being is through the measurable
you must follow the laws of nature
and use quantities of brick,
methods of construction and
engineering. But in the end, when
the building becomes part of
the living, it evokes unmeasurable
qualities, and the spirit of its
existence takes over"

Kahn[6]

To understand the materials and consruction methods provides a base from which the idea can take form. To lack a comprehension of materials and their nature is to lack the tools to effectively manipulate materials and forms to express the idea.

PROGRAM

CITIZENS PUBLIC POLICY CENTER:

A place for the research, dialogue, debate and rebuttal of relavent issues by various interest groups from a region.

Goal:

To improve the responsiveness of the regions governmental policy to the desirers of the various interest groups of the region.

To provide responsible information to the public in a comprehensible form.

Means:

Provide base information on issues concerning the region i.e. library.

Provide space for research.

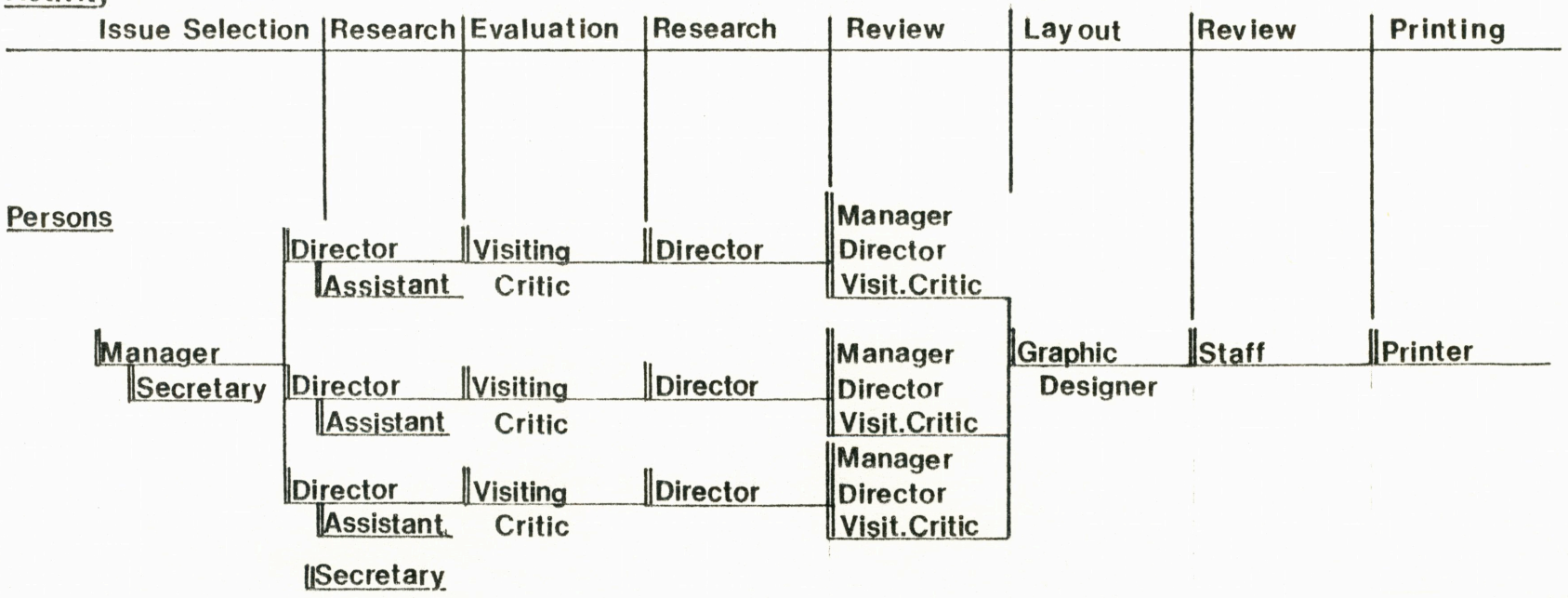
Provide space for dialogue.

Provide a printing and graphics facilities.

"Good decisions can only come from good information".

PROGRAM ISSUE DEVELOPMENT / Magazine

Activity



Space

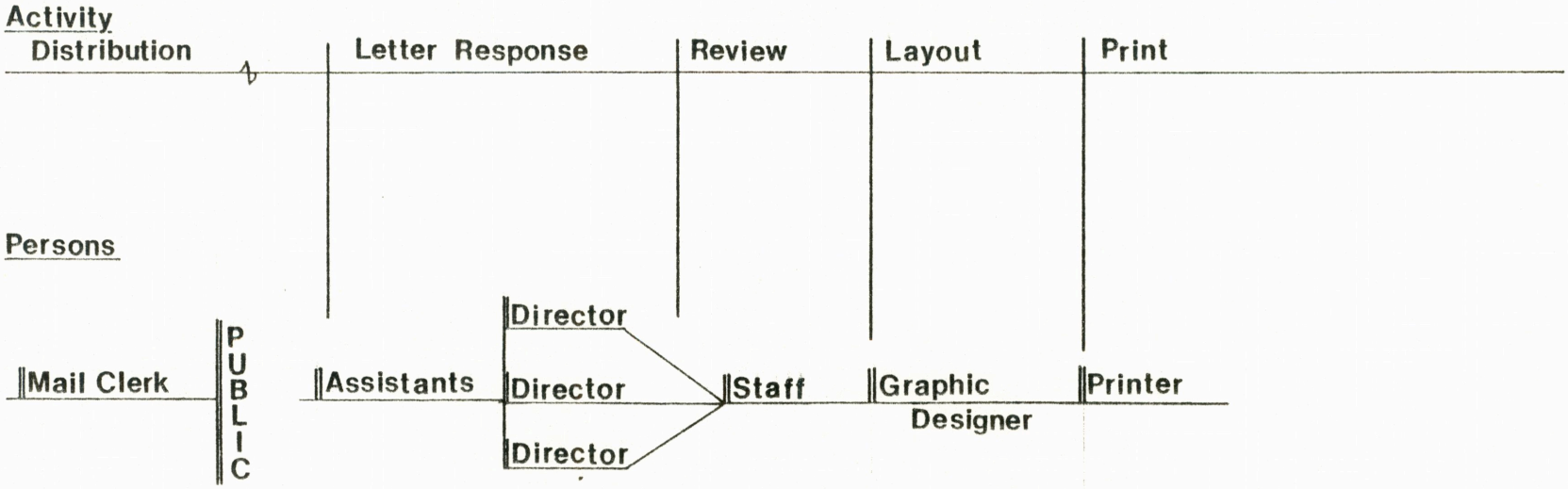
Office 1
Secretaries
Pool 2

Office 3
Workroom 3
Lounge

Office 3
Conference
Room sm 3
Housing 3
Dining
Kitchen

Layout Room
Conference
Room lg

PROGRAM ISSUE DEVELOPMENT / Magazine



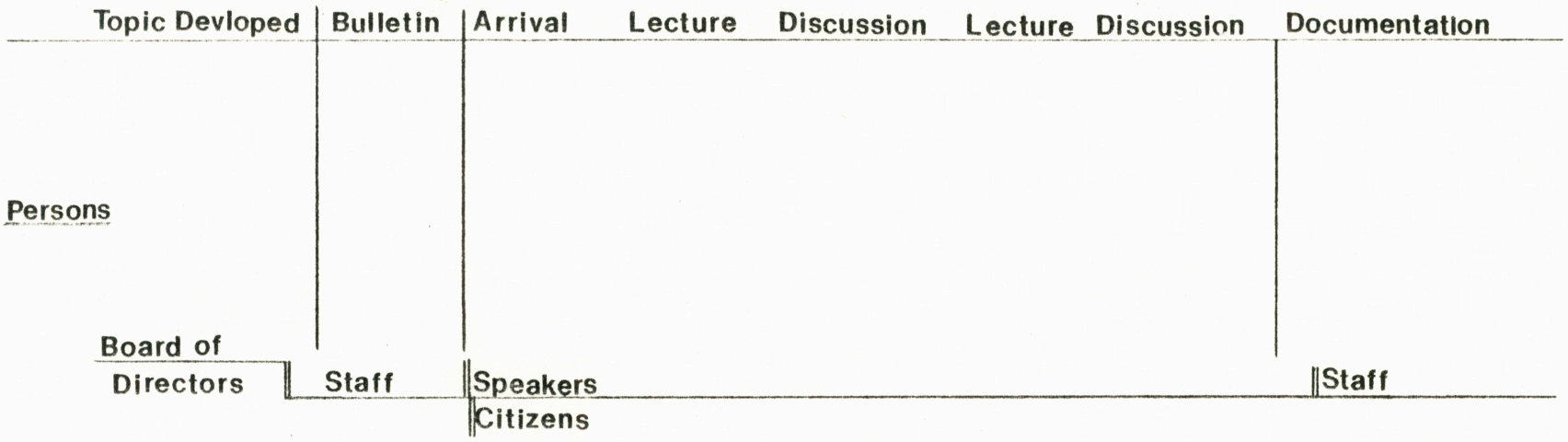
Space

Mail Room

General Office

PROGRAM CITIZEN CENTER

Activity

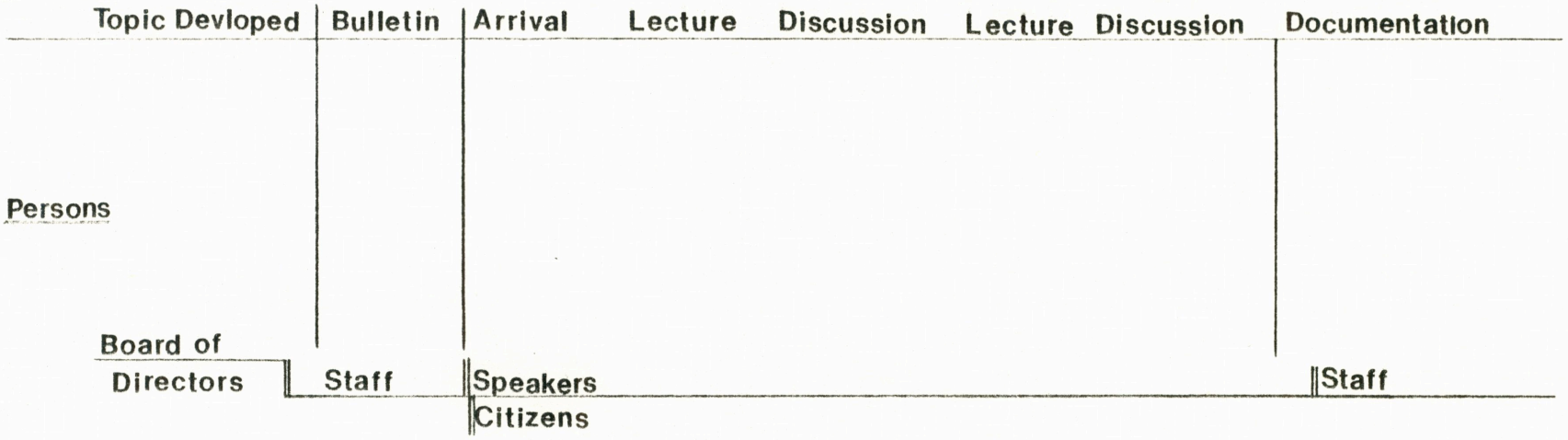


Space

Housing 20

PROGRAM CITIZEN CENTER

Activity

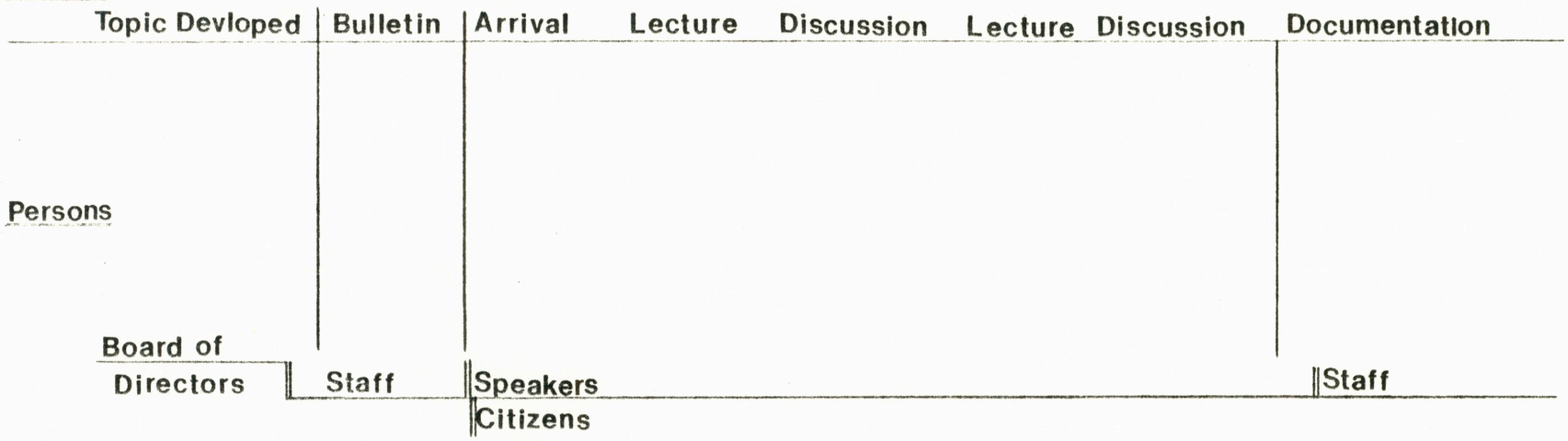


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Housing 20

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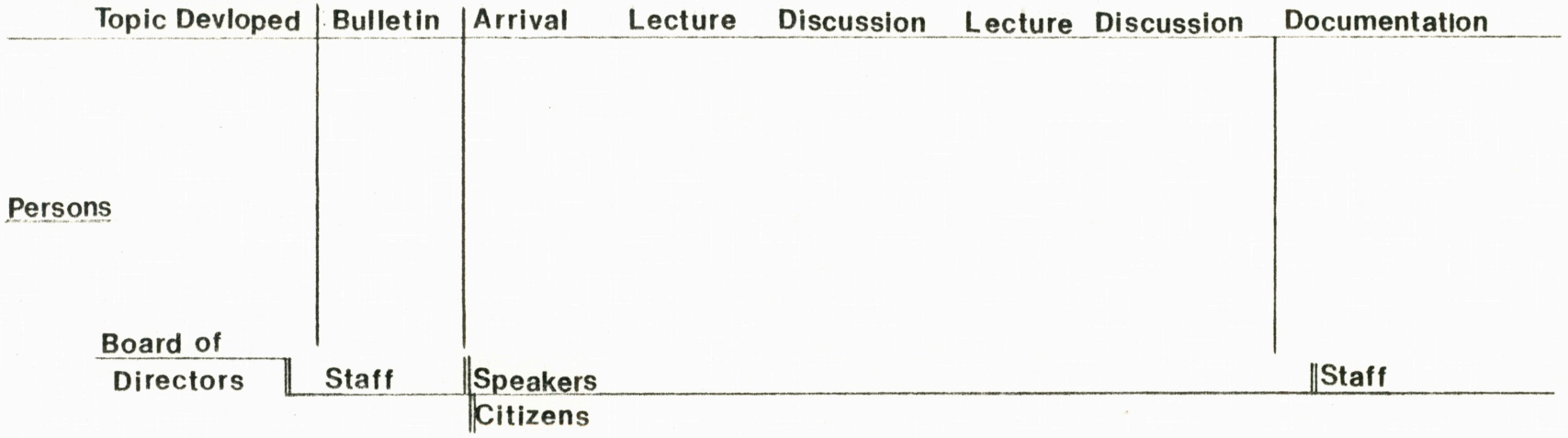


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Housing 20

PROGRAM CITIZEN CENTER

Activity

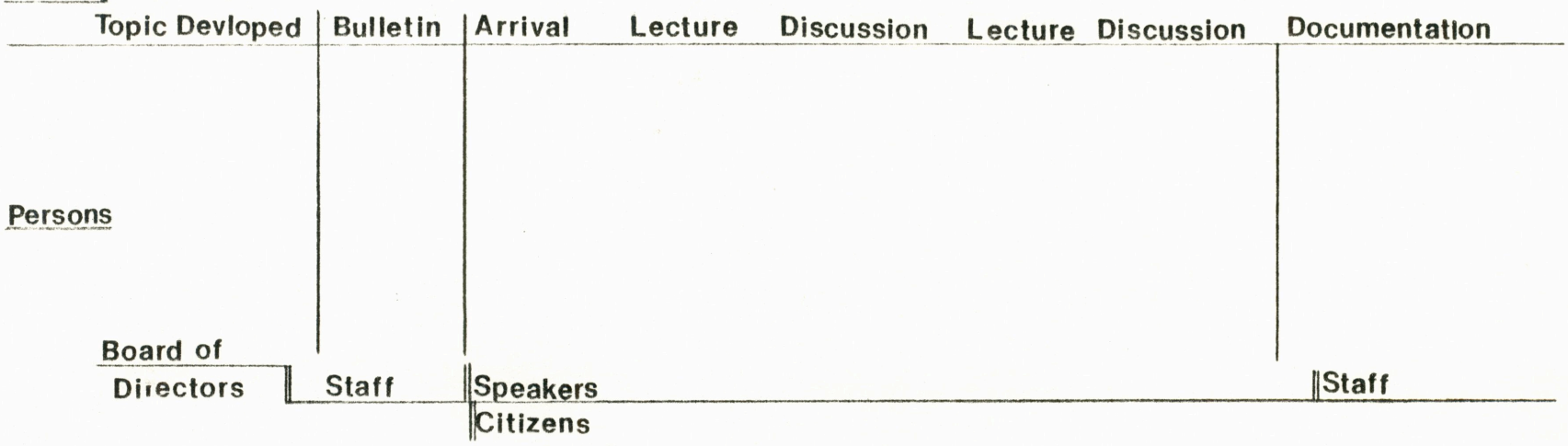


Space

Housing 20

PROGRAM CITIZEN CENTER

Activity



Space

Housing 20

PROGRAM CITIZEN CENTER

Activity	Review	Layout	Printing
Persons	Staff	Graphic Designer	Printer
Space			

PROGRAM

A. Public Spaces

1a	Lobby	600 ft.
b	Dinning - Auditorium	1500 ft.
c	toilets-2	400 ft.
d	Parking	40 spaces
e	Court Yard	

B. Citizens Center

1a	Housing-20@300 ft	6000 ft.
b	Kitchen	500 ft.
c	Lounge	500 ft.

C. Administration

1a	Managers Office	300 ft.
b	Secretarial	300 ft.
c	Supplies and Services	200 ft.

D. Research

1a	Library	750 ft.
b	Computer Terminals	200 ft.
c	Visiting Cities - 3	200 ft.
d	Directors of Research - 3	200 ft,
e	Assistants of Research - 3	150 ft.
f	Conference Rooms - 3	150 ft.

E. Layout and Printing

1a	Studio	400 ft.
b	Distributio	100 ft.

PROGRAM

G. Over all

1a	Mechanical	500 ft.
b	Janitors	200 ft.
c	General Storage	200 ft.

Total. . . . . 13,350 ft.

SITE

SITE

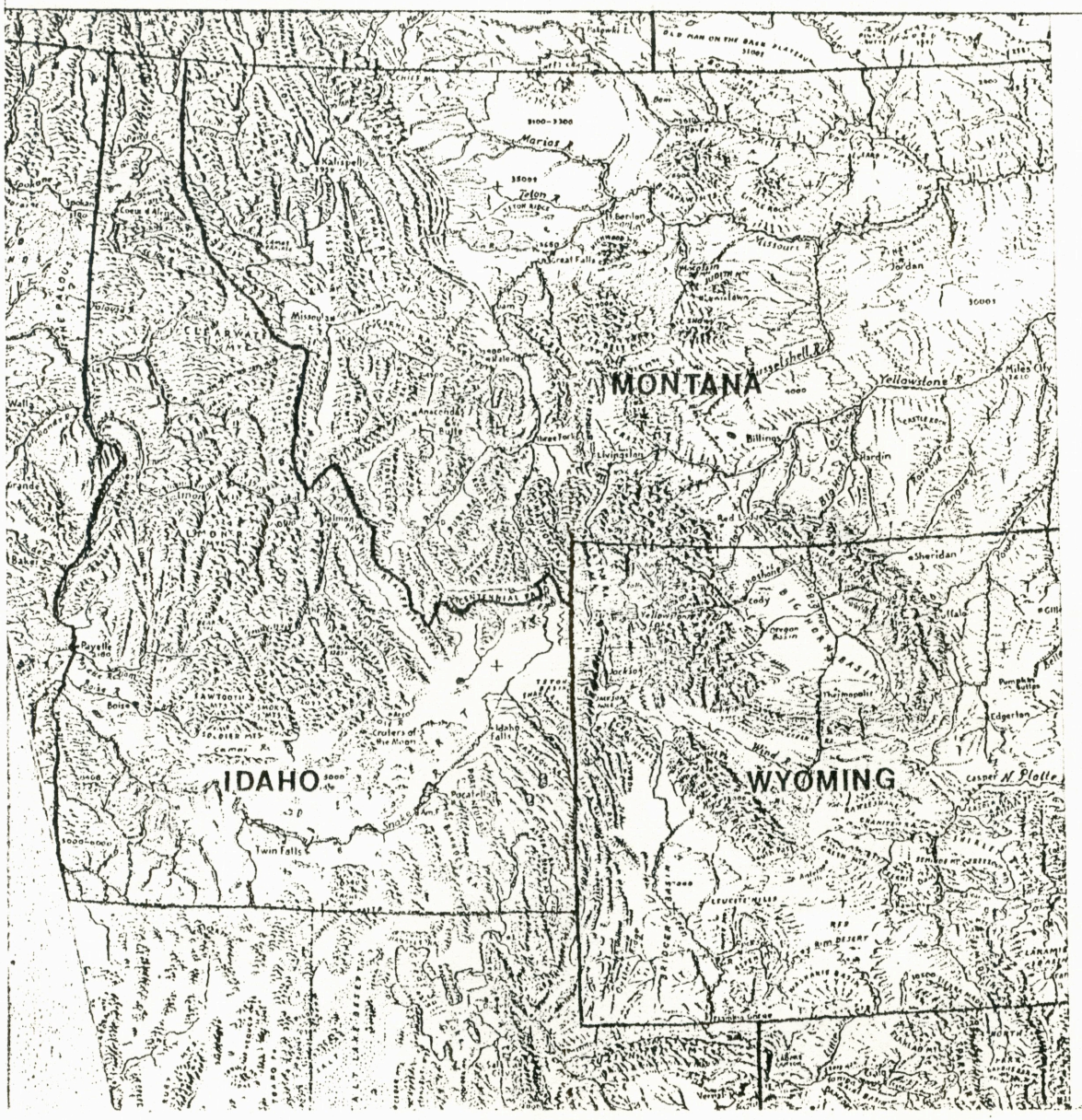


The region Idaho, Montana, Wyoming.

The resources of the Northern rockies will continue to create conflicts between the desirers of the developer and the citizens of the region.

The Gallatin valley is the geographic center of the region, The land forms and population of the valley represent a typical cross section of the region.

SITE



The rocky mountain region has developed a distinct character both as a physical place and as a population. The region contains a reservoir of resources which the country desirers.

SITE



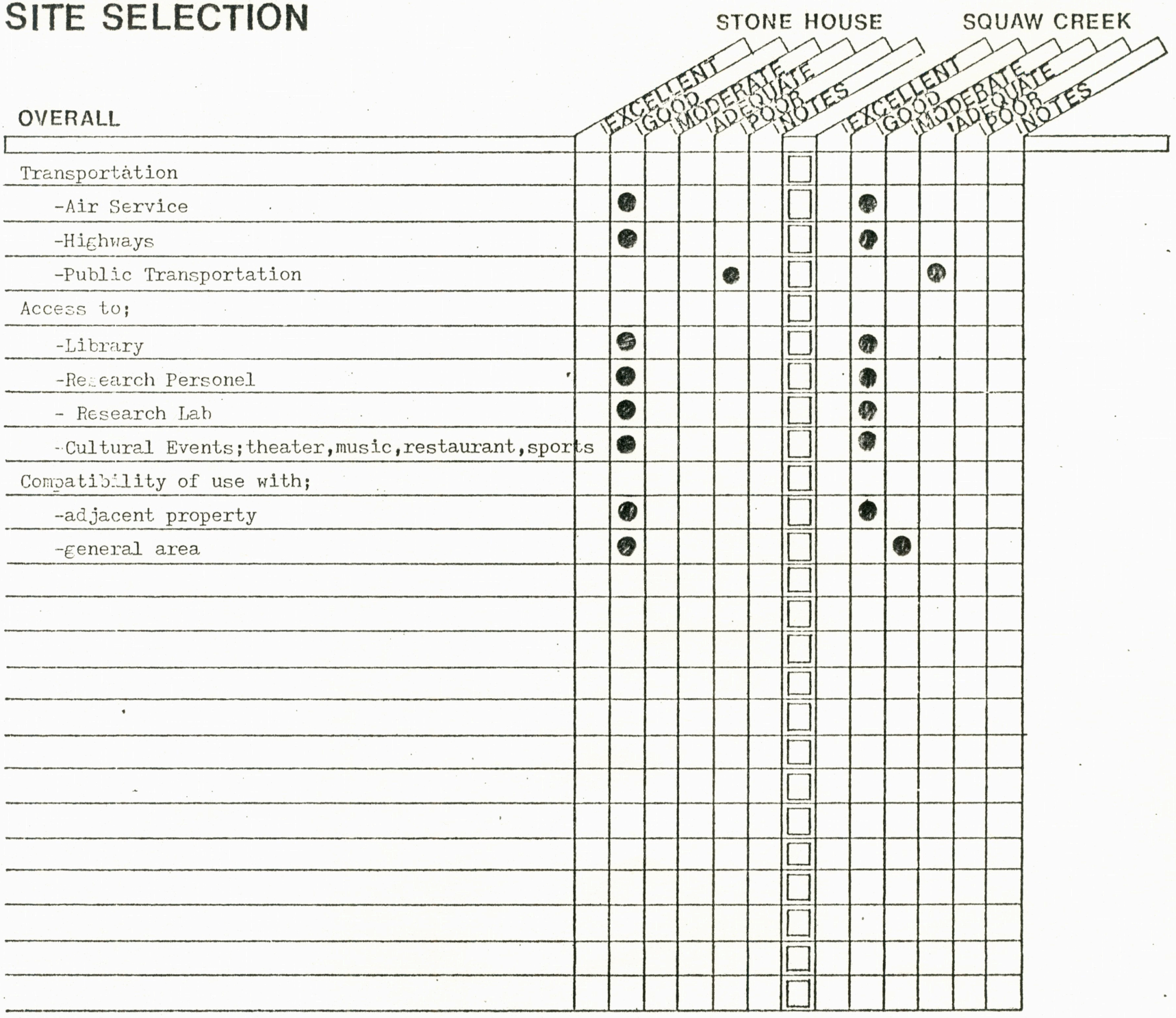
STONE HOUSE

The site lies in a small open valley on the gallatin river,with views of the Bridger mountaians an the gallatin range

SQUAW CREEK

The site sits on a bench above the Gallatin river, with views being restricted mostly to the canyon and its walls.

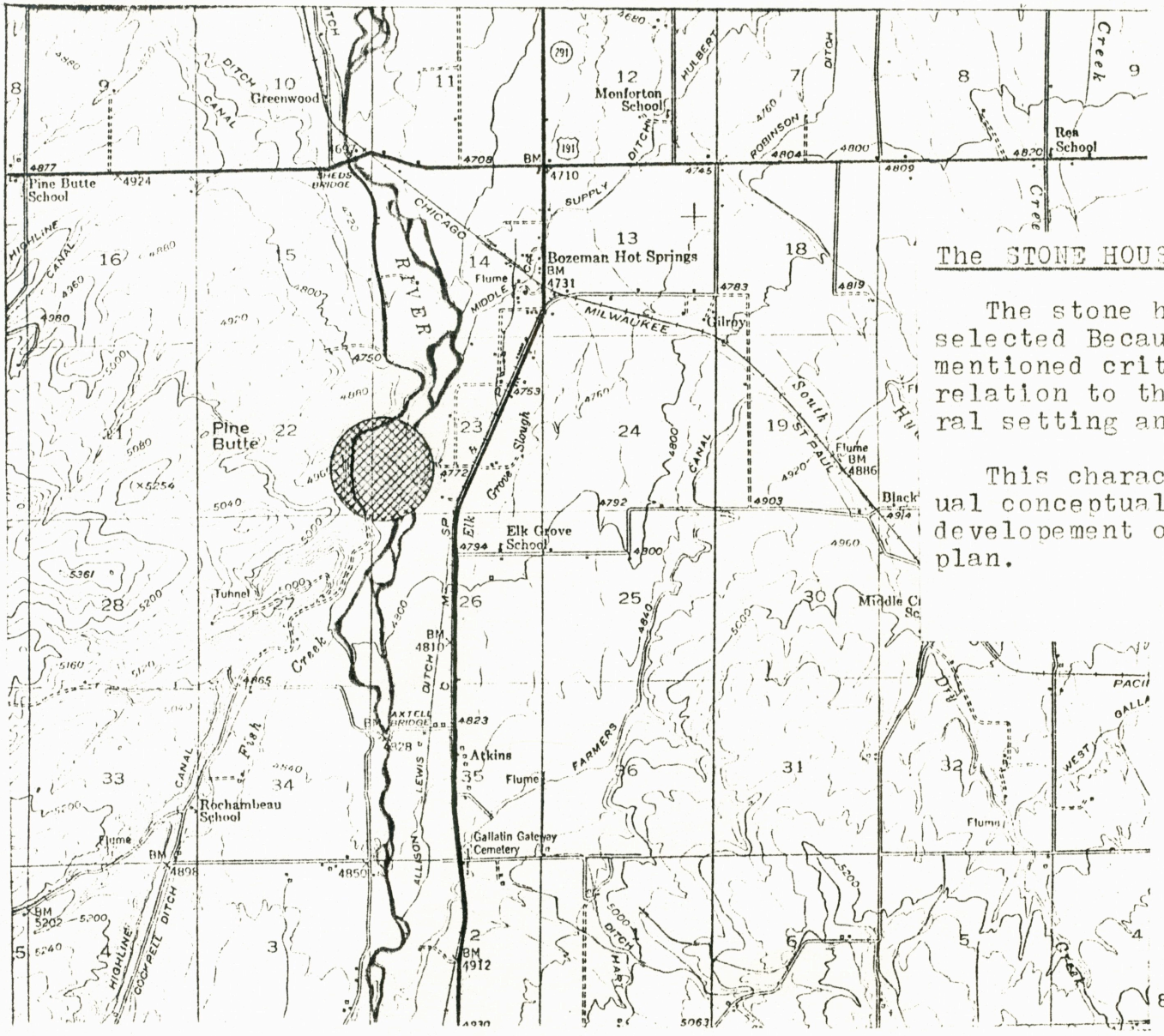
SITE SELECTION



SITE SELECTION

ON SITE	STONE HOUSE							SQUAW CREEK						
	EXCELLENT	GOOD	MODERATE	ADEQUATE	POOR	NOTES		EXCELLENT	GOOD	MODERATE	ADEQUATE	POOR	NOTES	
Size of site	●							●						
Configuration	●								●					
Sun Exposure		●									●			
Soil Compatiblity		●							●					
Utilities- Access			●						●					
Water- potable	●							●						
flowing		●							●					
Picturesqueness														
-distant views	●								●					
-on site views	●							●						
Seclusion														
-sound	●										●			
visual	●								●					

SITE



The STONE HOUSE FARM

The stone house farm was selected Because of the afre mentioned criteria,and its relation to the agricultu- ral setting and character

This character is a vis- ual conceptual base for the developement of forms and a plan.

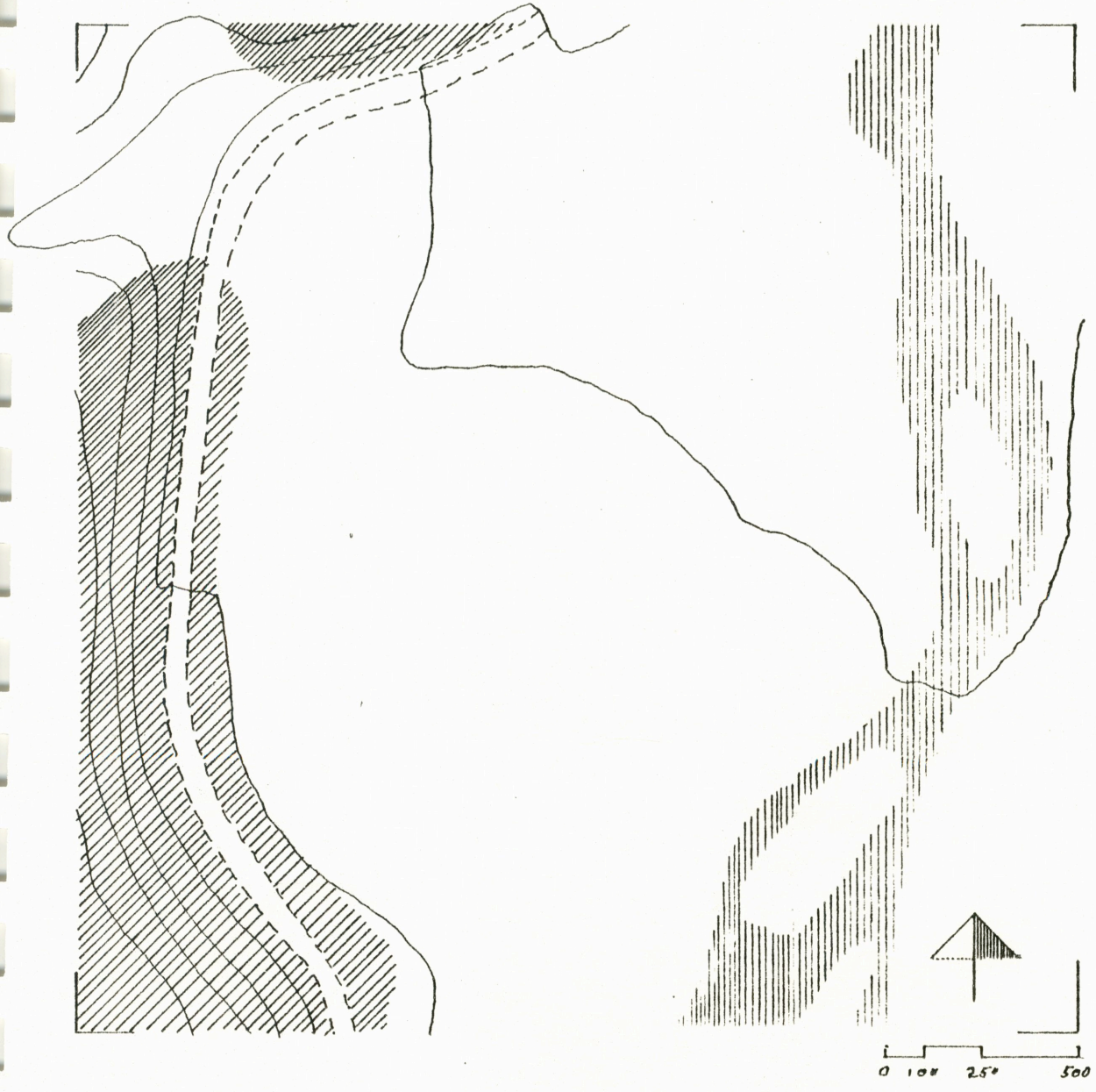
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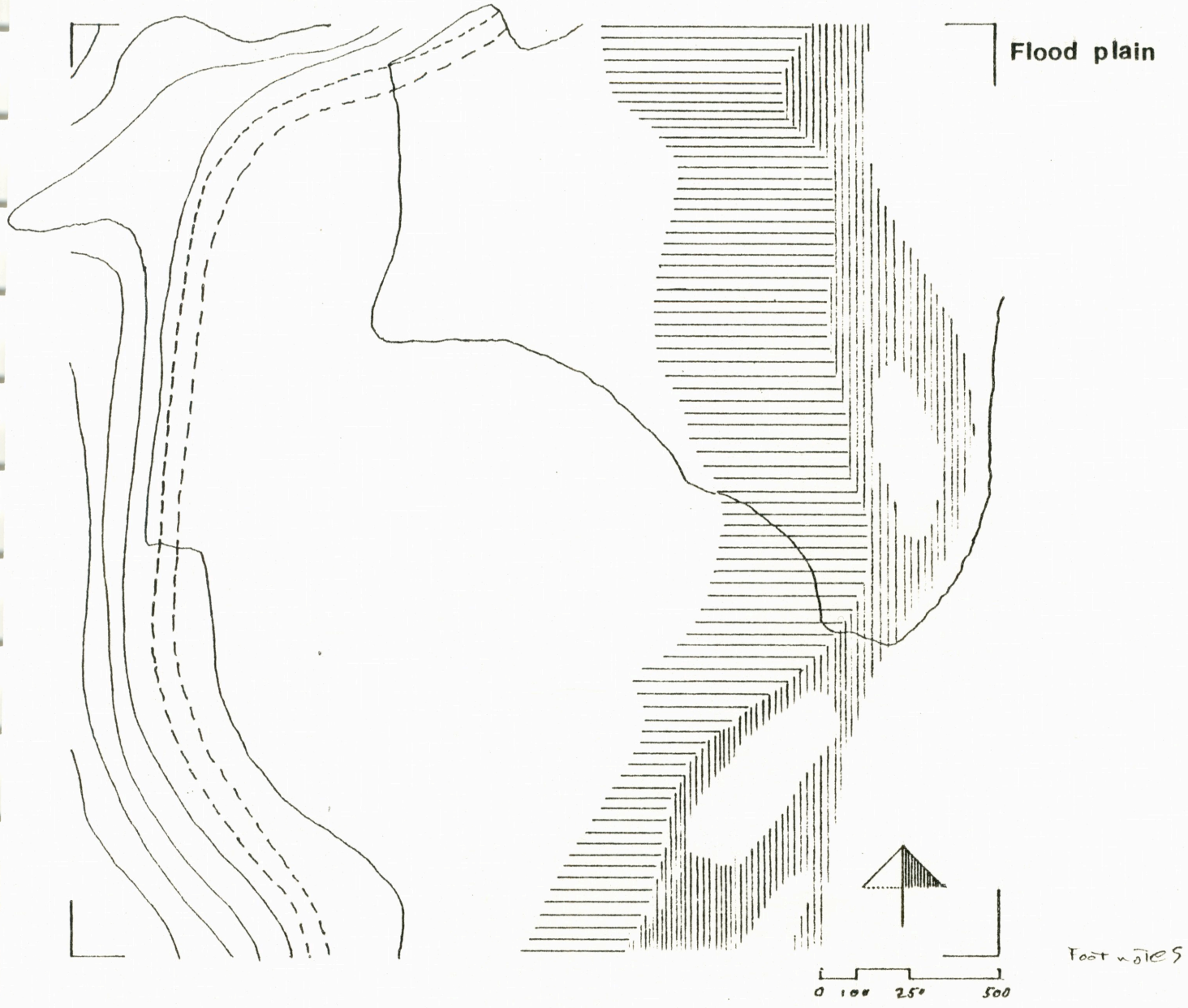
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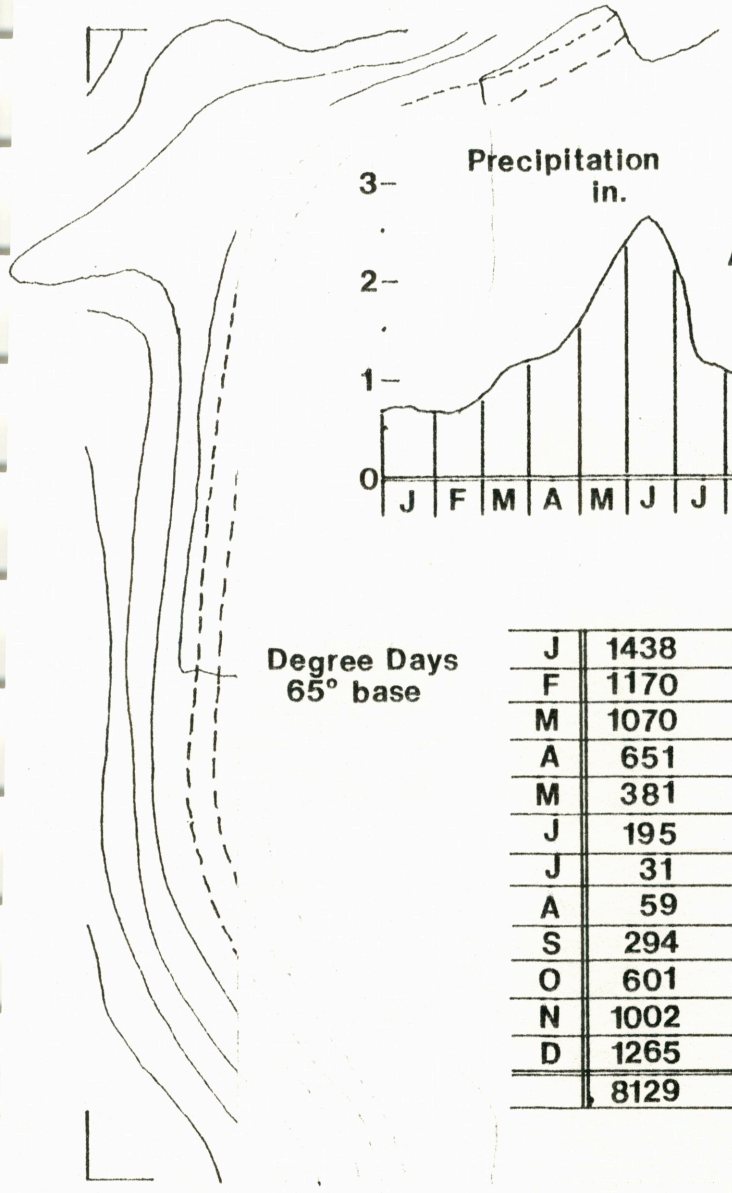
SITE



SITE



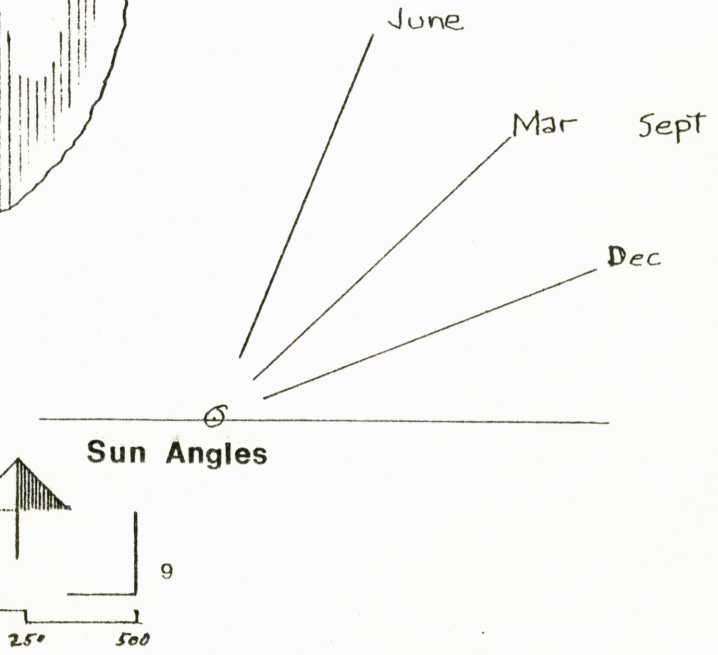
SITE





Degree Days
65° base

J	1438
F	1170
M	1070
A	651
M	381
J	195
J	31
A	59
S	294
O	601
N	1002
D	1265
	8129



PROJECT

Forms are the diagrams of forces.

unknown

Natural growth is the diagram of the interface between the desire of cells to multiply and the limits of their environment. Architecture could be defined in this same way with added constraints. The interface is between the desire of the idea to manifest pure forms and the limits established by its physical environment, contextual environment and the means of construction. The paper represents a base from which to work with materials in the development of art. The project on the other hand had to go beyond just materials and dealt with a broader spectrum of influences. The following is a list of some of the forces which affected the design. The list could be broken down into categories, such as the physical environment, the emotional, the historic, and the cultural, the symbolic and the abstract. They are presented here in a single block to provide images working together to form new

images. Some of the words work alone as well as with the words that follow. They have no order other than they came from my head in a single sitting. There are many more images, words and ideas which are not recorded here but affected the design.

stonehousestoneridgegrassridgemeadow
irragationspringstreamtreeriverforest
wintersnowsummersunspringflowersfarm
stoneslogstinconcretefencelinessecti-
onlinesquadrantlinesmansocietycultur
esubculturemontanaamericabozemanmoun
taiansnatureorderpartswholeskyonesam
erainflowgrasscowsfoodnutrientthough
tcomunicationdisceptionpointviewinto
lerencetimespacemoonlovehatecompassi
ontalkargueyelltrustfriendshipaliess
smelltouchseetastecommunionkinshipho
pefearknowledgebeliefwhysowhattalkco
ompareanylizebreathcontrolcontroleda
propagandagridmannaturemanagecoralat
edeceivefightpersauedartcomforttoler
ance;acorperatenewsagencycomitytalk
preceptionlanguageselfgroupsoutsider
insidertogetheroneplacecomprimiseund
erstandbeyoundtheboundriesregionunit
woodwaterstone

Originally, I saw the site as a separate "place" isolated from all that surrounds it, existing apart from the region, the culture it is apart of. The context of the site was limited to the visual and emotional aspects of the place. This line of thought is similar to the attitudes the Center was reacting against. Those being the isolation and separation of parts from the whole. With the development of the ideas for the Center my thinking on what the site was changed, its context was related more to the formal established patterns of man than to the organic forms of nature.

Man's understanding of his environment is based on the overlaying of an understandable order over the unknown. This order allowed man to segregate and define the American West. Unaware of natural boundaries it is laid over the plains, and defines one use from another, one man's land from another. The tendence with such a plan is to lose track of the whole for its

parts. The earth is no longer seen as a whole but as a series of parts. The farmer, the developer, the industrialist as well as the home owner sees his part as singular.

I used this framework as a base in the development of the Center. It establishes an order within nature, providing the user a cultural base for understanding the relationship of man and nature. The building is a simple cross axis extending into the natural environment. The built environment is rigid and fixed yet allows nature to pass through and become a part of that place. The rigid order of the Center is a symbol of culture and mans relation to nature. The extension of that order into nature provides a point of departure from the order of man to the order of nature.

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