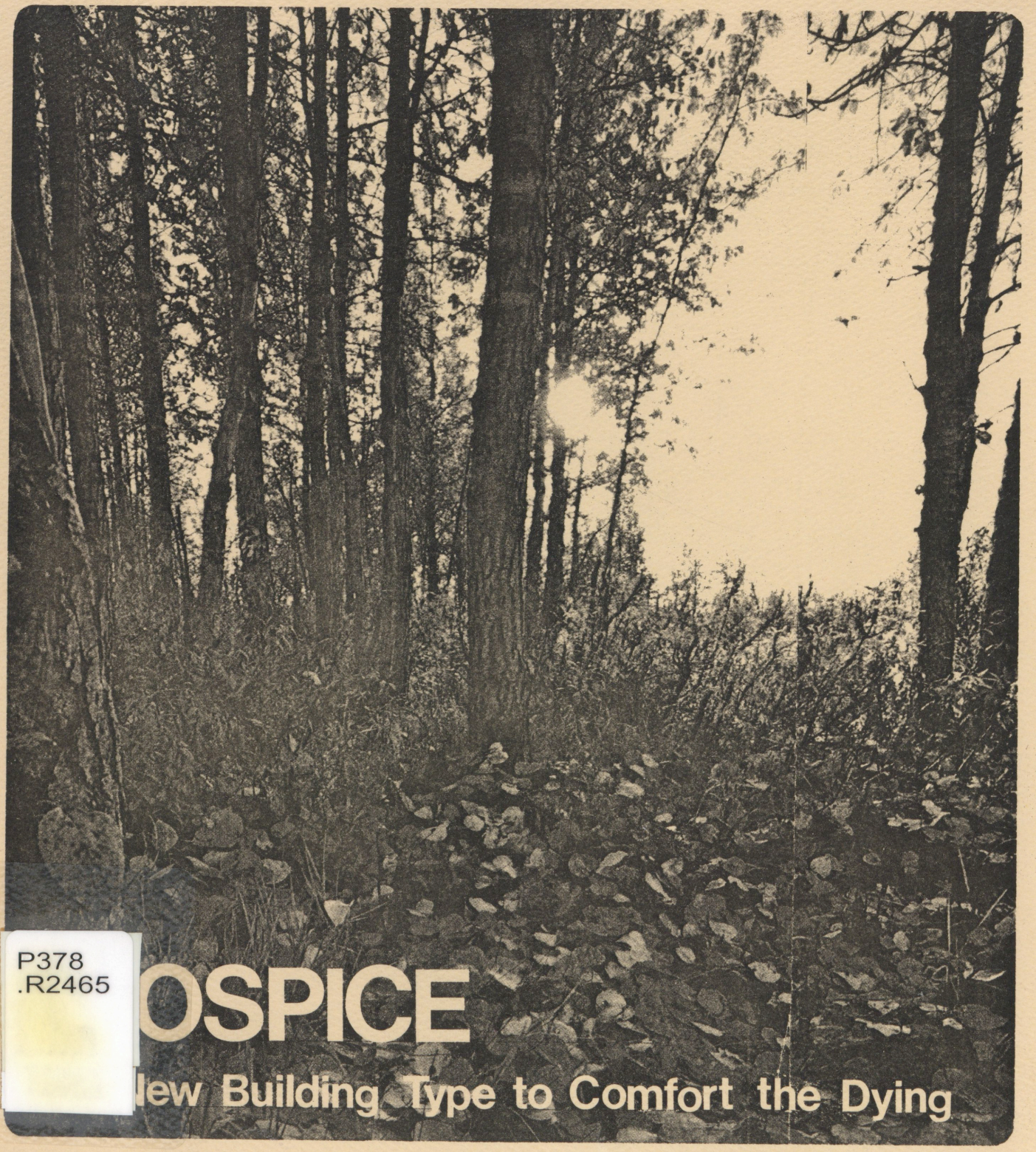
BERGUM III



P378
.R2465

OSPICE

lew Building Type to Comfort the Dying

Montana State University Library, Bozeman

P378
.R2465

TABLE OF CONTENTS - SITE ANALYSIS

Basic Premises . . . . . Pg. 1-4
History of the Area . . . . . Pg. 5-9
Physical Character. . . . . Pg. 10-15
Natural/Physical Data. . . . . Pg. 16-20
Land Use . . . . . Pg. 21-24
Social. . . . . Pg. 25-26
Circulation . . . . . Pg. 27-28
Zoning. . . . . Pg. 29-32
Esthetic and Planning Guidelines . . . . . Pg. 33-34

SITE ANALIZERS

Basic Premises . . . . . Dave Reddish
History Of The Area . . . . . .Carmen Campbell
Physical Character . . . . . .Dean Connie
Natural/Physical Data . . . . . Robert Mud Before
Stewart S. Cardon
Land Use. . . . . .Steve Hanson
Social . . . . . .Jamie Boucher
Circulation. . . . . Glen E. Kanzelmeyer
Zoning . . . . . Dawn Ficke
Esthetic and Planning Guidelines. . . . . Brian Tolsted

notes:

Site Analysis:
TABLE OF CONTENTS

"Mary, I think you need to go to her now." Mary jumped up instantly and quietly went to her small daughter's bedside. She has been gasping for air since dusk and it soon will be impossible to give her any more oxygen. Many hours were spent in sleepless nights and tearful discussions trying to grip the reality that the innocence of a small girl is being painfully consumed by a ravaging disease. This will be the girl's last hours in mortal pain, she will die before the warm light of the dawn melts in her eyes.

Few words are exchanged between them now as they both have been prepared for this moment. They only need each other for strength to face the final totality of death, and in its coming, the tears are from hope and release rather than sorrow or pity.[1]

The ability for Mary and her daughter to overcome the traumatic waves of grief come not from nerves of steel, but from a community of power for the terminally ill called hospice.

Hospice is a word derived from the medieval period which meant a way station for travelers. The hospice becomes then a place for the mortal voyagers to transcend the pettiness of human existence and become at peace with themselves and others before they pass into a new society of the dead.

Therefore the hospice concept is for the dying to live among others similarly facing the realities of being mortal. It is with this realization that one must face death that bonds the people together into a close community. From this closeness, the patient is more likely to reach out for help when he is troubled or going through a depressed state. Once past the point of shyness to ask for the other's help, the patient begins a progression of experiences

---

[1] Resynthesized from an actual death taken from A Hospice Handbook, M. Hamilton and H. Reid (Eerdmans, 1980).

[2] Lo-Yi Chan, AIA, "Hospice: A New Building Type to Comfort the Dying" AIA Journal, December 1976.

that eases the mental anguish that burdens the human psyche. Part of the progression is the exposure to one of the members of the house dying. The patient then can see that death is a natural process without any severe dramatics.

People come to the hospice to die, but this doesn't mean all the anger is past or the wonder lost. He must draw upon the power of harmony found by the intimacy of the group during their short but intense stay. In a way the knowledge of oncoming death is both a blessing and a hell on earth. On one hand, the time left can be joyous and exceptional in quality. But once pain or physical impairment restricts mobility, time can seem to be endless. It is with this seemingly encessant passage of time that the mind as well as the body needs to be consumed in welcomed activities, whether that be physical or intellectual. The hospice's goal is to lift the veil of darkness and fear of time by providing the patients with facilities and staff to ease the ever present pain and to give of themselves in depth when needed. The staff must become a midwife to death by easing each individual's fear and tensions through competent care and love. They then must be utterly devoted to the ideology of a hospice and its ramifications.

An integral part of each staff is the chaplin. He usually receives the hardest questions by patients and relatives and can only cope with their personal hardships through his faith. The chaplin must see through a false facade of strength held up by fear into the fragile and terrified mind of a mortal. Then he must ease those fears through council and prayer. As the final moments approach, he is there for added comfort and to administer the last rights if requested. The chaplin creates another link to the after life that is more concrete to the patient than the abstract support that the hospice as a whole presents.

It was through several encounters with dying patients that one chaplin writes:

> One is filled with awe, as in the presence of holiness, when one

> beholds the radiancy that is so evident in a person who is "dying well". It's as though the spiritual body is free to glow with a minimum of encumbrances when the physical body fades and dissolves. This "glorious" presence is clearly indestructable and a reproach to our frightened clutch on mortal life.

The hospice becomes a community of life unhindered from the sterile environment of a hospital. It is staffed by volunteers and others equally committed toward helping those less fortunate into a peaceful and rewarding transition towards death. The environment is comfortably familiar where people have the time to listen to what you have to say. Therefore the hard, fast-paced atmosphere of confusion that a hospital presents is avoided much to the benefit of both parties. Unlike a hospital there are no IVs, respirators, or artificial life support systems in a hospice. Life is left to expire when it naturally is time. It is only prolonged at the patient's request. The only medication prescribed is to relieve the pain so that the patient can be as comfortable as possible.

People come to a hospice to die and to pass the time before death as best as possible. The hospice concept tries to translate these terrifically complex issues into a simple and natural statement that all can grasp. Simply stated, it is to understand death as an inevitable human reality that must be faced and coped with.

Our problem as designers is to provide a physical as well as spiritual edifice that conveys the hospice ideology of perseverance to our society. It must speak of the celebration of life for all creations, as all life is terminal. We must create the terminus from which life as we know it ceases and the higher order of the unknown begins.

BIBLIOGRAPHY

M. Hamilton and H. Reid, A Hospice Handbook (Eerdmans, 1980).

Elisabeth Kubler-Ross, M. D., On Death and Dying (Collier-Macmillan Ltd.,: London,1969).

Elisabeth Kubler-Ross, M. D., Questions and Answers on Death and Dying (Macmillan Publishing Co., Inc.: New York, 1974).

Elisabeth Kubler-Ross, M. D., To Live Until We Say Good-bye (Prentice-Hall, Inc.: Englewood Cliffs, New Jersey, 1978).

Robert Jay Lifton and Eric Olson, Living and Dying (Praeger Publishers: New York, 1974).

A Hospice in Bozeman

The concept of a hospice emerges as a humanistic idea developed within a community. It takes enthusiasm, effort, and dedication by a community to pursue this goal and confirm the idea that a hospice is an approach whose time has come. This maybe one of the easiest steps involved in the planning of a hospice. There are steps which involve the grim reality of facing the goverment and conforming to the regulations imposed by the authorities.

Most organizations find that there is a transition from an informal to a formal hospice, which usualy involves incoporation. Most hospice organizations are incoporated as a not-for-profit entities, Then articles of incoporation are filed with state officials indicating the nature and purpose of the organization.

Many states have not yet set up special catagories and regulations for the hospice. The new Hospice concept needs to be incoporated into regulatory and licensing guidelines. Consiquently hospices around the country are titled Home Health Agencies, Skilled Nursing Facilities, Chronic Care Institutions and some others.

Site Analysis:
history of the area

There are 67 hospitals in Montana in which only 5 have Hospice facilities @7.5%. The existing Bozeman Deaconess Hospital has 160 beds, 60 of which are in the Long Term Care unit. This criteria is some of which constitutes the need for a hospice movement in Bozeman. There are several of these movements now in proccess in Montana. There are over 200 that exist in the country.

There are some other factors which might hinder the hospice program. Hospitals and nursing homes may oppose the hospice's application for a Certificate of Need. If there is a surplus of hospital beds in the area or the area is supplied with skilled-nursing home care agencies, these groups can put a denial on a hospice under the reasonning of duplicate service causing competition and higher cost for consumer, resulting in the block of a hospice's attempt to secure a Certificate of Need.

Bozeman will be building a new Bozeman Deaconess Hospital soon. It will upgrade the old hospital in all areas. In the B.D.H. project program there are not any specific clauses that provide for a future hospice facility. In the short term future however there will be a surplus of hospital beds. Whether or not the hospital would block plans for a hospice or provide for one remains to be seen.

Site Analysis:
history of the area

The unfamiliarity of a hospice concept by the community, state, insurance agencies, and other individual groups become the biggest obstacles. Gradually the state and federal goverment are accepting the new hospices concept. Several states have adopted legislation that set hospice apart and in a catagory of it's own within the health care system. This will alleviate restrictions and requirements more appropriate to curative nursing services.

Since the fedreal goverment is becoming more involved in the hospice field, hospice planners anticipate that we can expect a more rapid integration of the hospice throughout the system. Aiding to the application for Certificate of Need to Insurance reimbursement.

Factors involved for the regulation, certification, and acceptance of a hospice in the Bozeman area are vast and lengthly. There are some issues and statistics that might be significant for deciding if Bozeman has a definate need for a hospice facility. Some of these statistics and issues were prepared for the planning of the new Bozeman Deaconess Hospital.

This information was gathered for a Executive Summary on "Stategic Planning Retreat on Developing a LongRange- Master Site Plan."

"Planning Information Base."Prepared by the Health Central System to Meet the Health Care Needs of the Greater Bozeman Area.

Demographics:

-During the period 1970-1980, the state of MT grew 13.3% Gallatin county grew 31,9% with the greatest growth in numbers occuring in Bozeman

-A conservative estimate of population growth projects growth of 29.2% for Gallatin County during the period 1980-2000. During this time the Gallatin county will experience

*Little change in percent composition but consistent increasing numbers in the age group of 65+

Health Status Indicators:

-Three leading causes of death in Gallatin county are Heart Disease, Cancer, and Cerebrovascular Disease.

Medical Staff:

-Bozeman Deaconess Hospital active medical staff is quite youthful (age groups of 30-39,40-49)

Finacial Analysis:

-An analysis of finacial ratios indicates that Bozeman Deaconess Hospital is in a strong position with regard to leverage, liquidity, and profitability

*Enviromental Factors of the Hospital Industry:

-Patients

-over 65 continues to increase
-rapid increase in over 75
-needs for long term facilities
-compitition with non-hospital providers will increase
-growth of multi-hospital groups, extension to nursing homes, specialty hospitals

Site Analysis:
history of the area

BIBLIOGRAPHY

A Hospice Handbook;
by Edward M. Kennedy (Sentor)

Hospital Statistics 1981 Edition A.H.A. data 1980 Annual Survey:

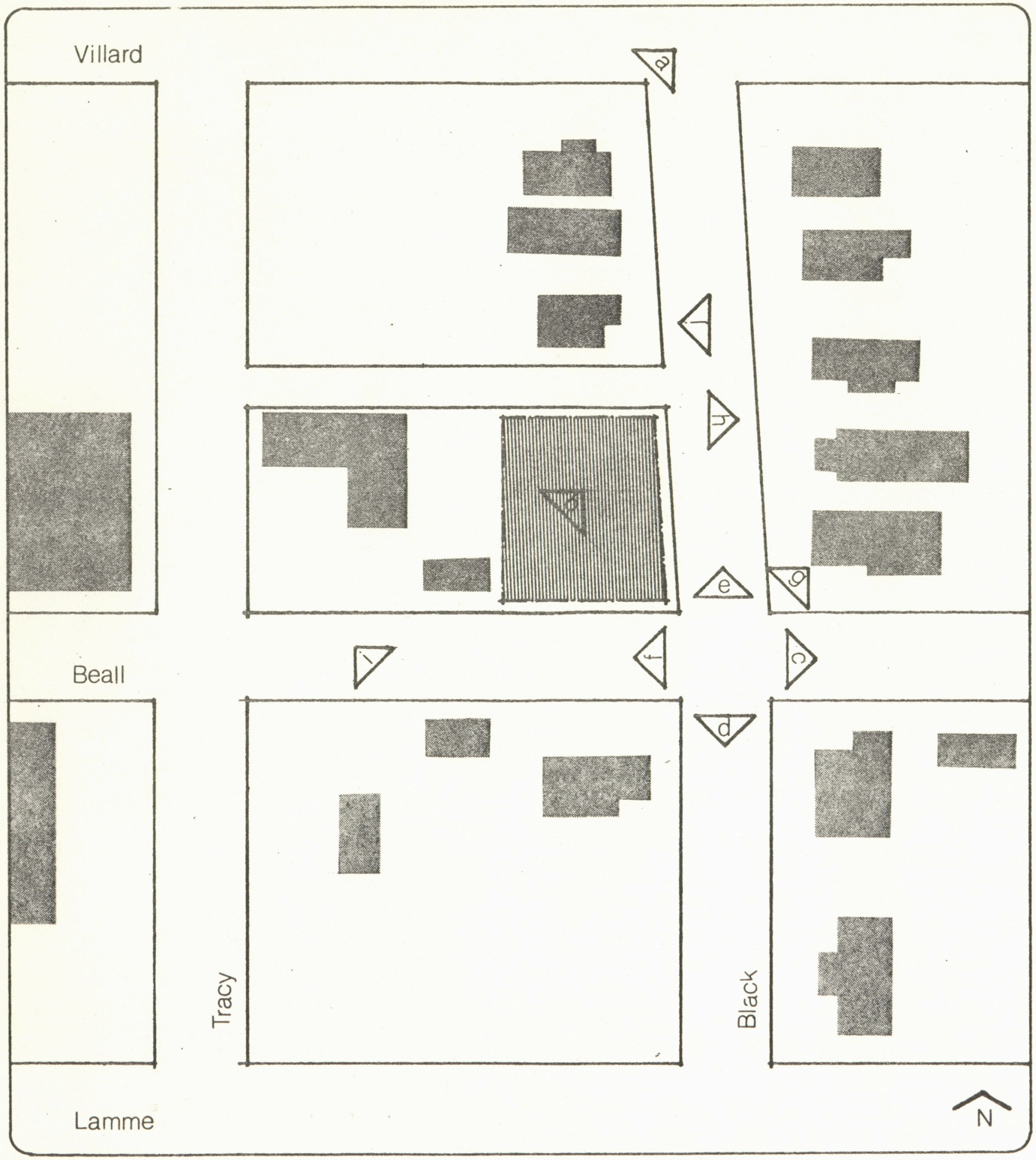
Stategic Planning Retreat on Developing a Long Range Plan-

Master .Site Plan for the Bozeman Deaconess Hospital Foundation

to meet the Health Care Needs of the Greater Bozeman Area
prepared by the Health Central System

Site Analysis:
History of the Area

notes:



Site Analysis:
physical character

a



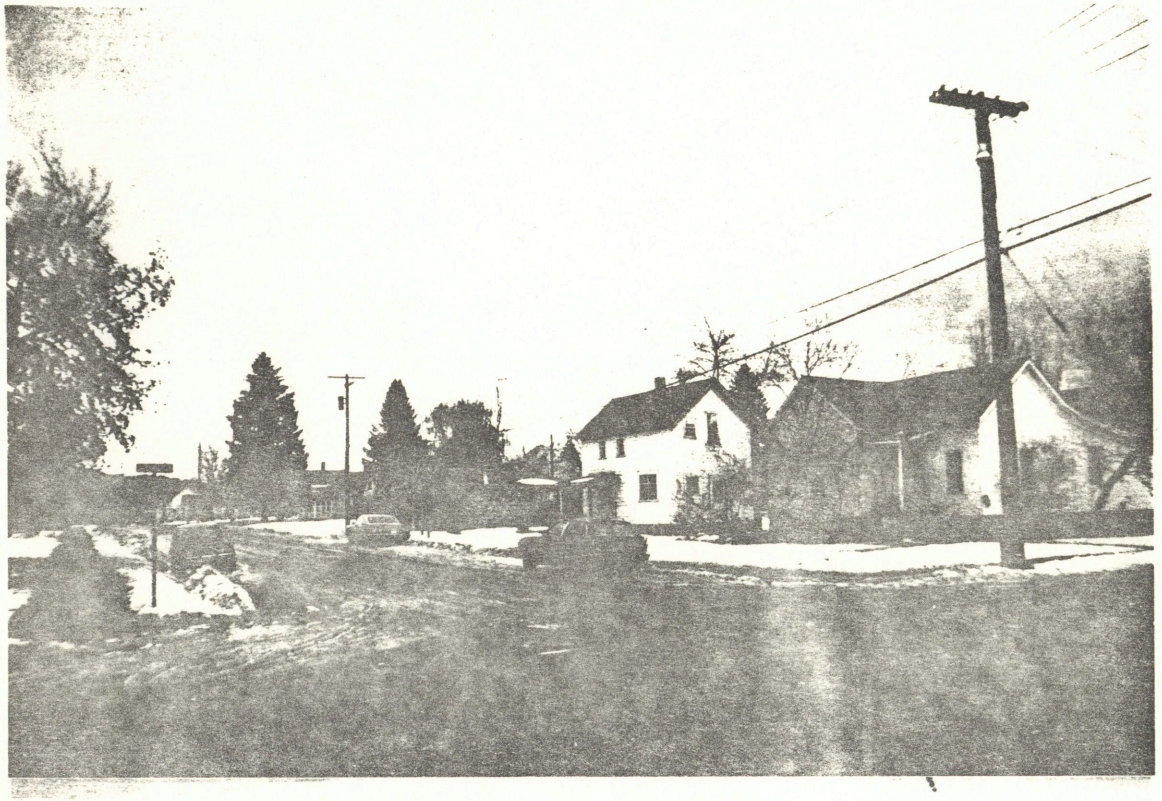
b



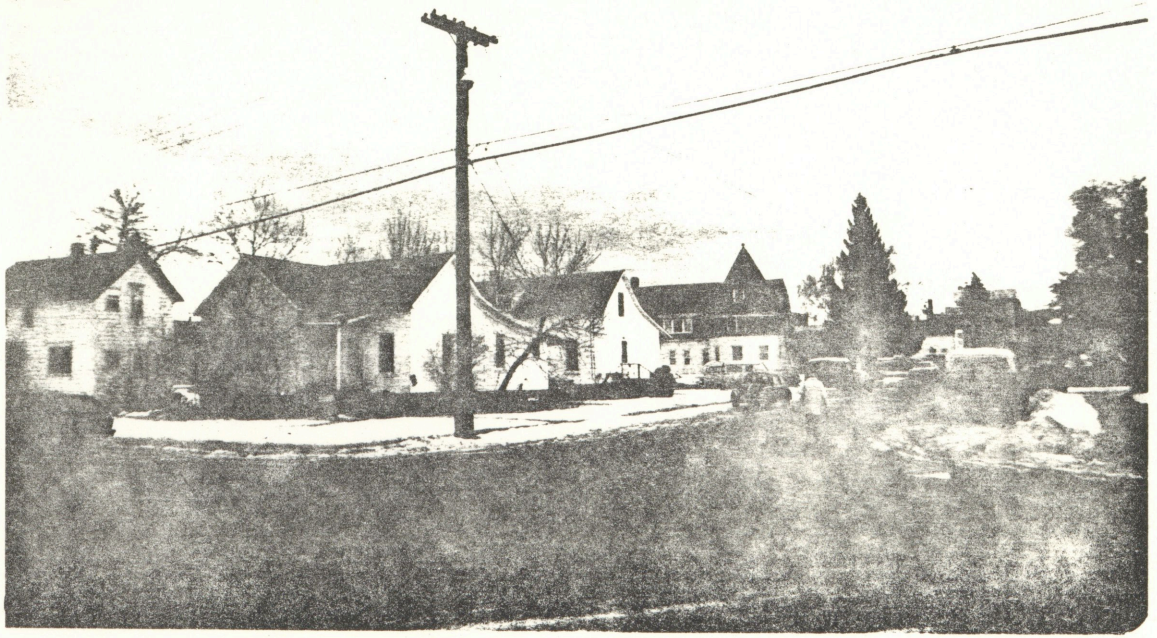
Site Analysis:

physical character

c



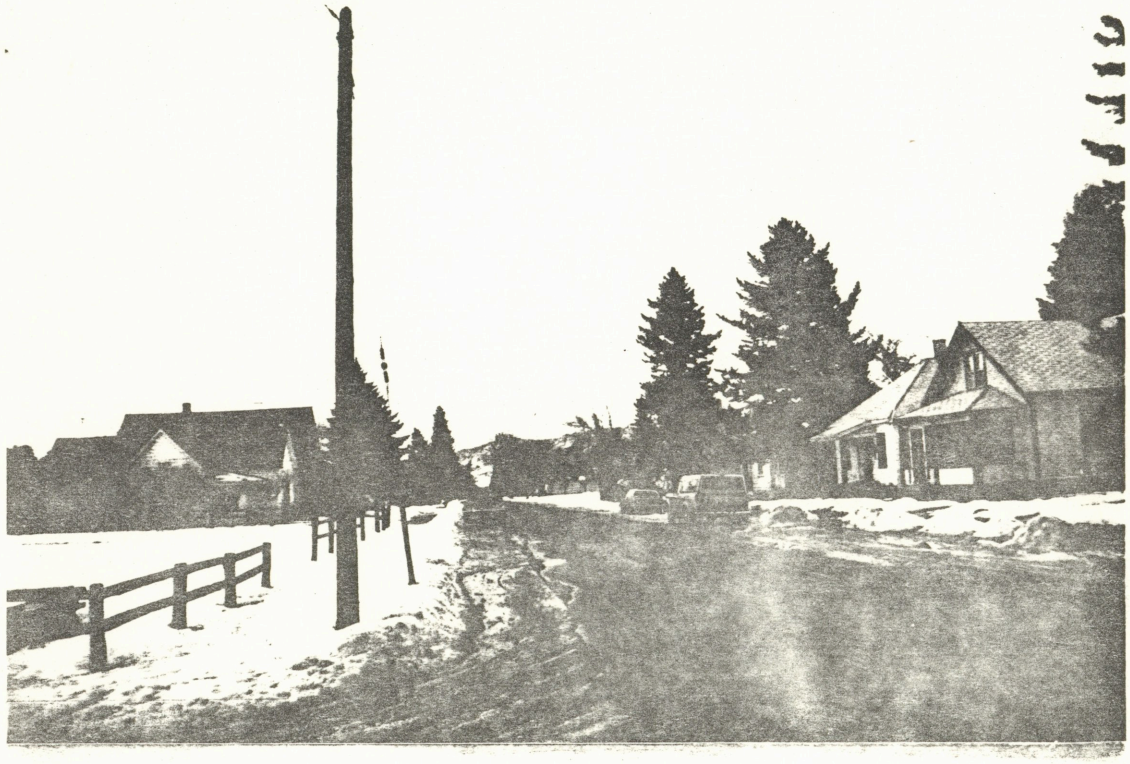
d



Site Analysis:

physical character

e.



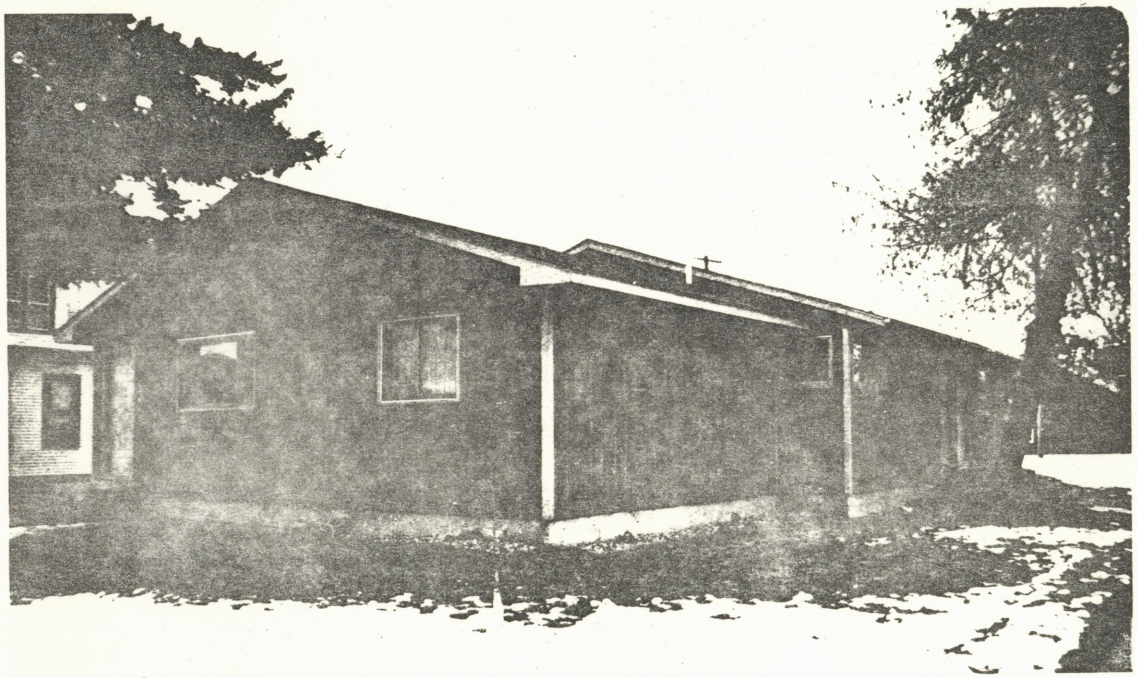
f

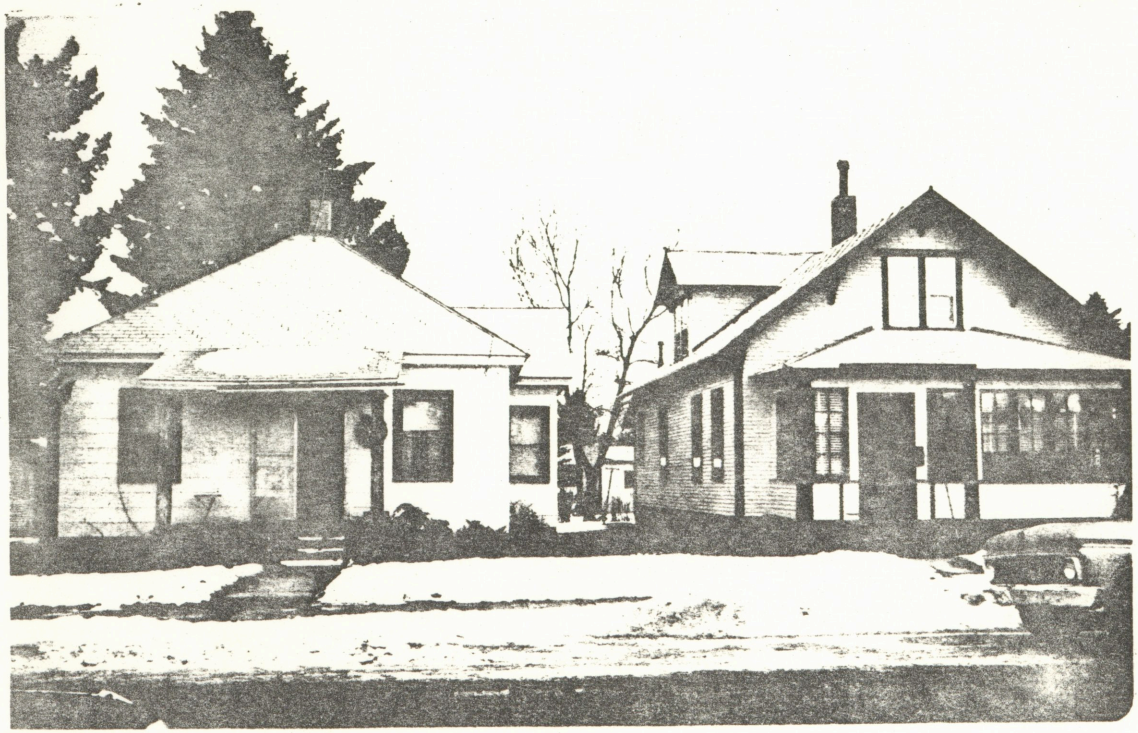


Site Analysis:

Physical character

g





h

Site Analysis:

physical character

i

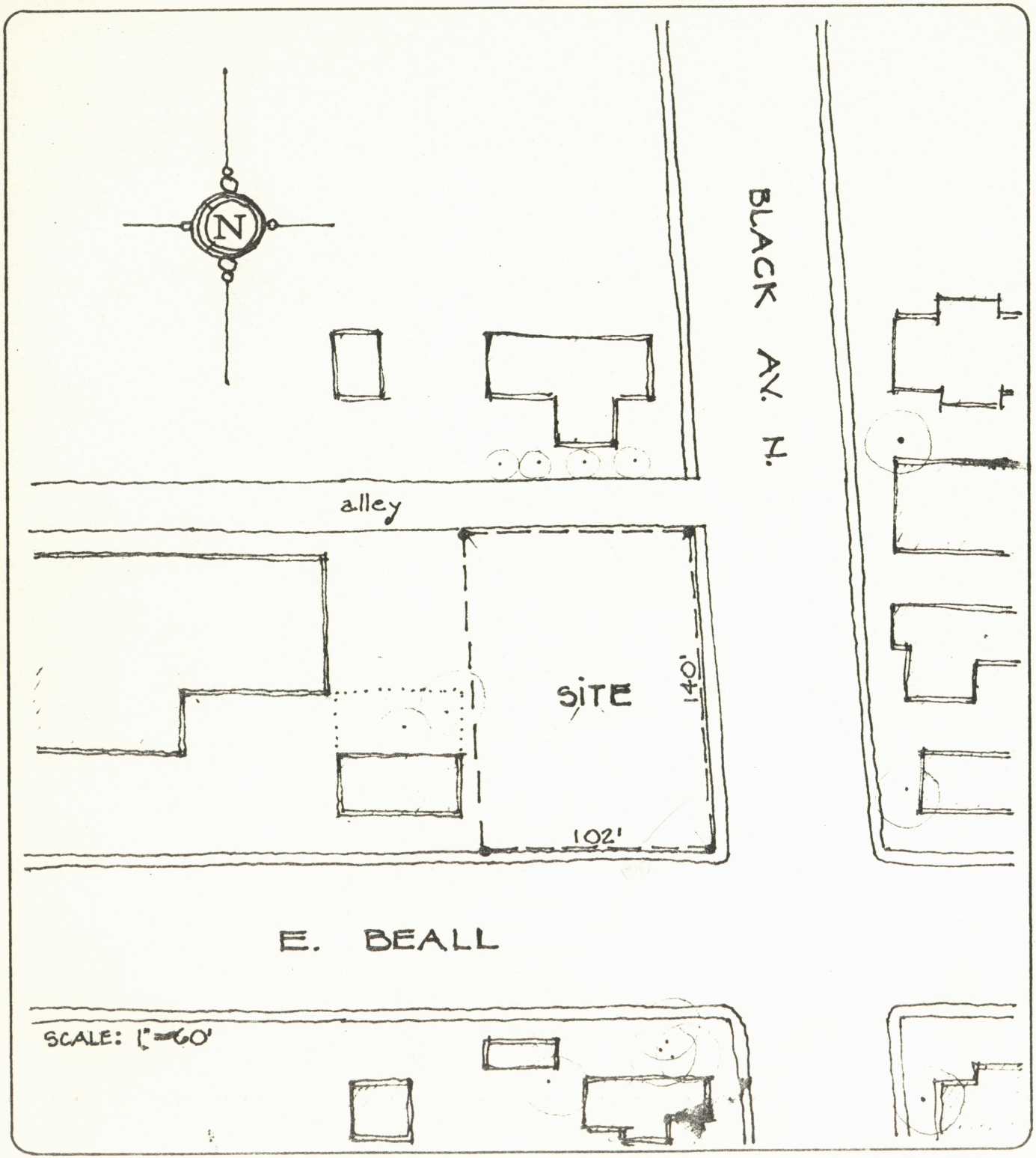


j



Site Analysis:

physical character



Site Analysis:
natural/physical data

CLIMATE

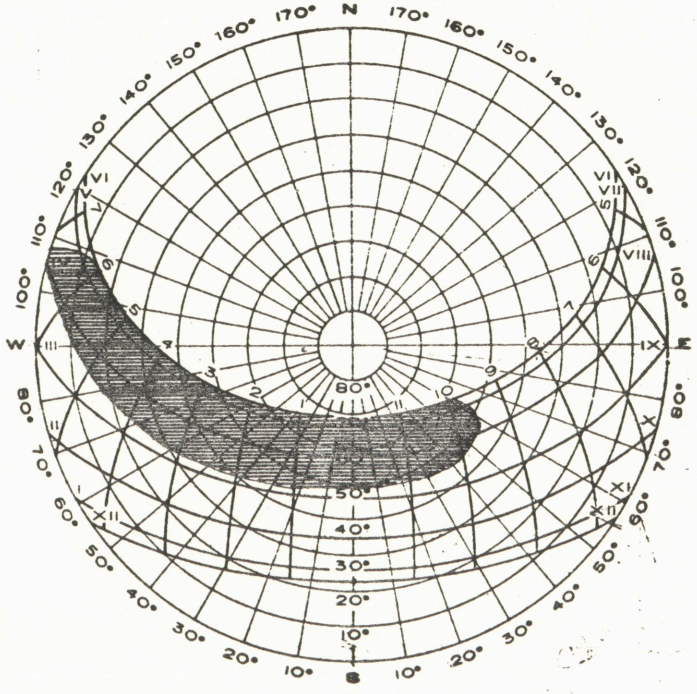
The climate of the Gallatin Valley in general is similar to that of other intermountain valleys of the Northwest. It is continental in character and is subject to wide extremes of seasonal and daily temperatures, a difference of 30 degrees F. sometimes occurring within 24 hours. Winds are variable in both movement and direction; in the daytime the winds may be prevailingly from the west or southwest, and at night they very often shift to the southeast. During the winter, warm "chinook" winds are also of variable occurrence, at times causing the sudden disappearance of snow by direct evaporation.

The mean annual temperature at the agricultural college at Bozeman is 41.4 degrees F., Extreme periods of cold weather (-20 to -30 degrees F.) are seldom of a weeks duration. Although very hot days occur frequently during the summer, the nights are invariably cool and pleasant. The temperatures of either the hot days of summer or the intense cold periods of winter are not so severe as the same temperatures in the more humid parts of the United States, probably because of differences in atmospheric pressure, humidity, or both.

Latitude 45.67

Longitude 111.03

Elevation 4754 ft.



OVERHEATED PERIOD

Site Analysis:

natural/physical data

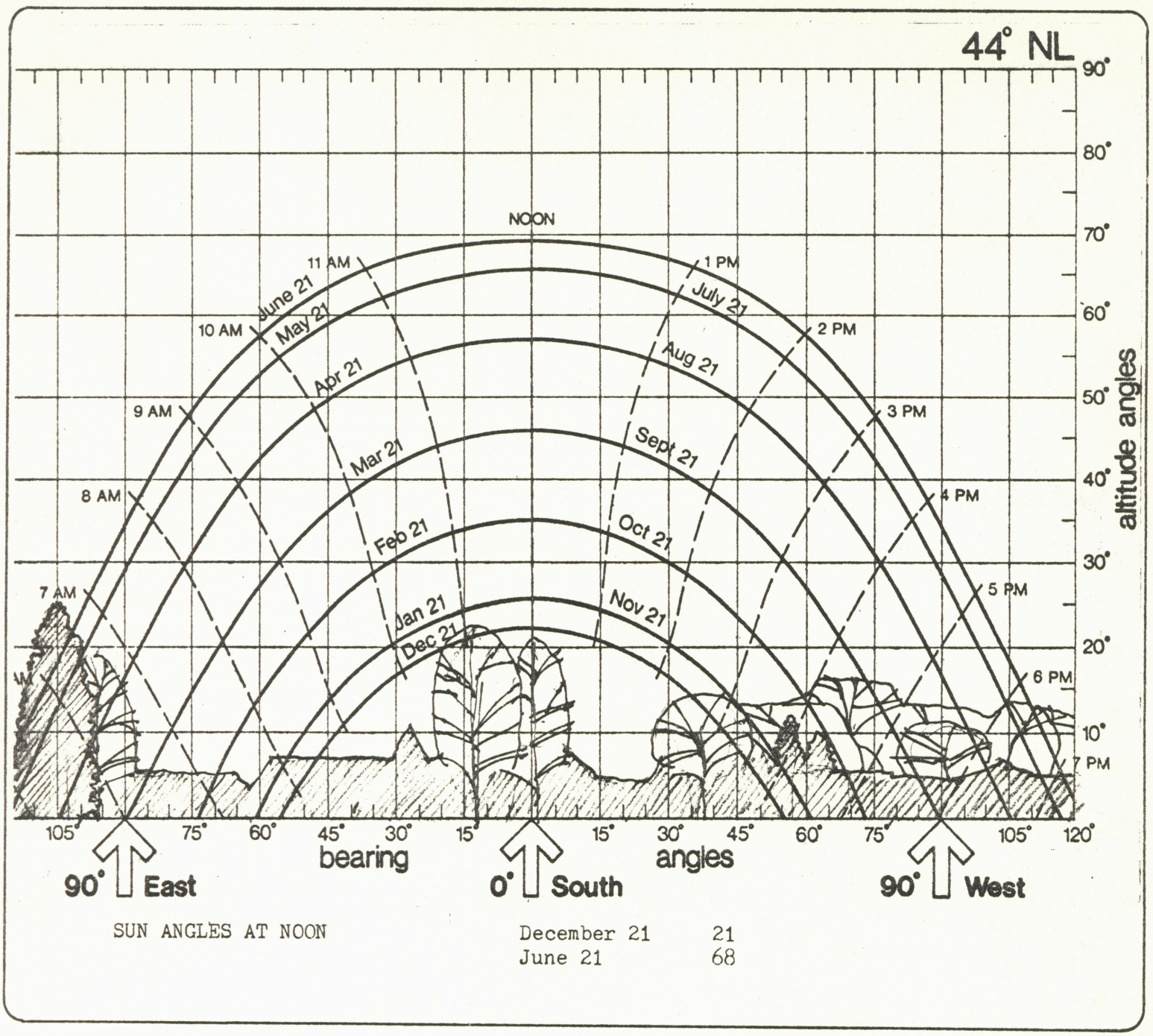
Climate:

LAT. = 45.67° LONG. = 111.3 ° ELEV. = 4754 ft.

DEGREES °F	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
DAILY AVERAGE TEMPERATURE	20.4	25.9	30.2	42.1	50.9	57.6	66.3	64.9	55.6	46.1	32.2	25.2
DAILY MAXIMUM TEMPERATURE	30.7	35.8	41.0	53.7	63.3	70.2	81.5	80.3	69.5	58.7	42.4	34.9
DAILY MININUM TEMPERATURE	10.1	15.8	19.2	30.4	38.5	44.8	51.1	49.4	41.5	33.4	21.9	15.5
EXTREME MAXIMUM TEMPERATURE	58.0	62.0	70.0	81.0	89.0	91.0	93.0	99.0	93.0	82.0	70.0	59.0
HEATING DEGREE DAYS 65°	1372	1106	1074	680	429	232	45	70	288	581	976	1229
COOLING DEGREE DAYS	0	0	0	0	0	25	125	100	25	0	0	0
AVE. HIGH % RELATIVE HUMIDITY	65	65	61	60	59	59	48	47	57	58	63	65
% POSSIBLE SUNSHINE	49	57	68	63	64	65	81	78	67	61	46	46
MEAN CLOUD COVER (0-10)	7.3	7.4	7.2	7.4	6.9	6.5	4.0	4.6	5.7	6.3	7.2	7.2
TOTAL HORIZONTAL INSOLATION btu/sf/day	421	720	1170	1847	2101	2329	1933	1379	925	498	336	330
TOTAL SOUTH WALL INSOLATION btu/sf/day	981	880	1122	902	805	770	882	1032	1129	1186	827	561
EXTREME MINIMUM TEMPERATURE	-36	-29	-23	2.0	16.0	26	32	29	16.0	9.0	-26	-29

Site Analysis:

natural / physical data



SUN ANGLES AT NOON

December 21	21
June 21	68

Site Analysis:
natural/physical data

notes:

SOIL

The soil in this area is Huffine silt loam. This soil is on broad fan terraces with slopes of 0 to 5 percent. the dark colored silt loam surface layer is about 8 inches thick. The silty clay loam subsoil is 8 to 14 inches thick. Depth to calcareous material varies from 16 to 22 inches. This soil is characteristic of poorly drained areas. The seasonal ground water in this soil varies between 3 and 10 feet.

Loading for this type of soil is 1-2 K/ft^2.

VEGETATION

Large trees (greater than 50')
deciduous- sugar maple, green ash, weeping,birch
evergreen- norway spruce, western yellow pine

Medium trees (25'-50')
deciduous- mountain ash, black walnut
evergreen- colorado spruce, white fur

Large shrubs (greater than 8')
honeysuckle, lilacs, highbush cranberry

Medium shrubs (3'-5')
deciduous- red leaf barberry, pygmy peachrub
evergreen- mugho pine, maney juniper

Small shrubs (less than 3')
creeping cottoneaster, february daphne

LAND USE

The site is located three blocks north of mainstreet. This puts it right on the edge of the downtown business district. Located one block west is the hospital and medical arts center. It should be mentioned that there is the possibility that the hospital could be extended east to right next door. the site is surrounded, on the remaining three sides, by older style residential neighborhoods. (see other sections for more information on styles of vernacular residences)

Site Analysis:

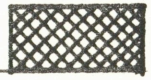
LAND USE

MAP I _____ Districts as zoned

MAP II _____ Districts as they exist

KEY

RESIDENTIAL _____ 

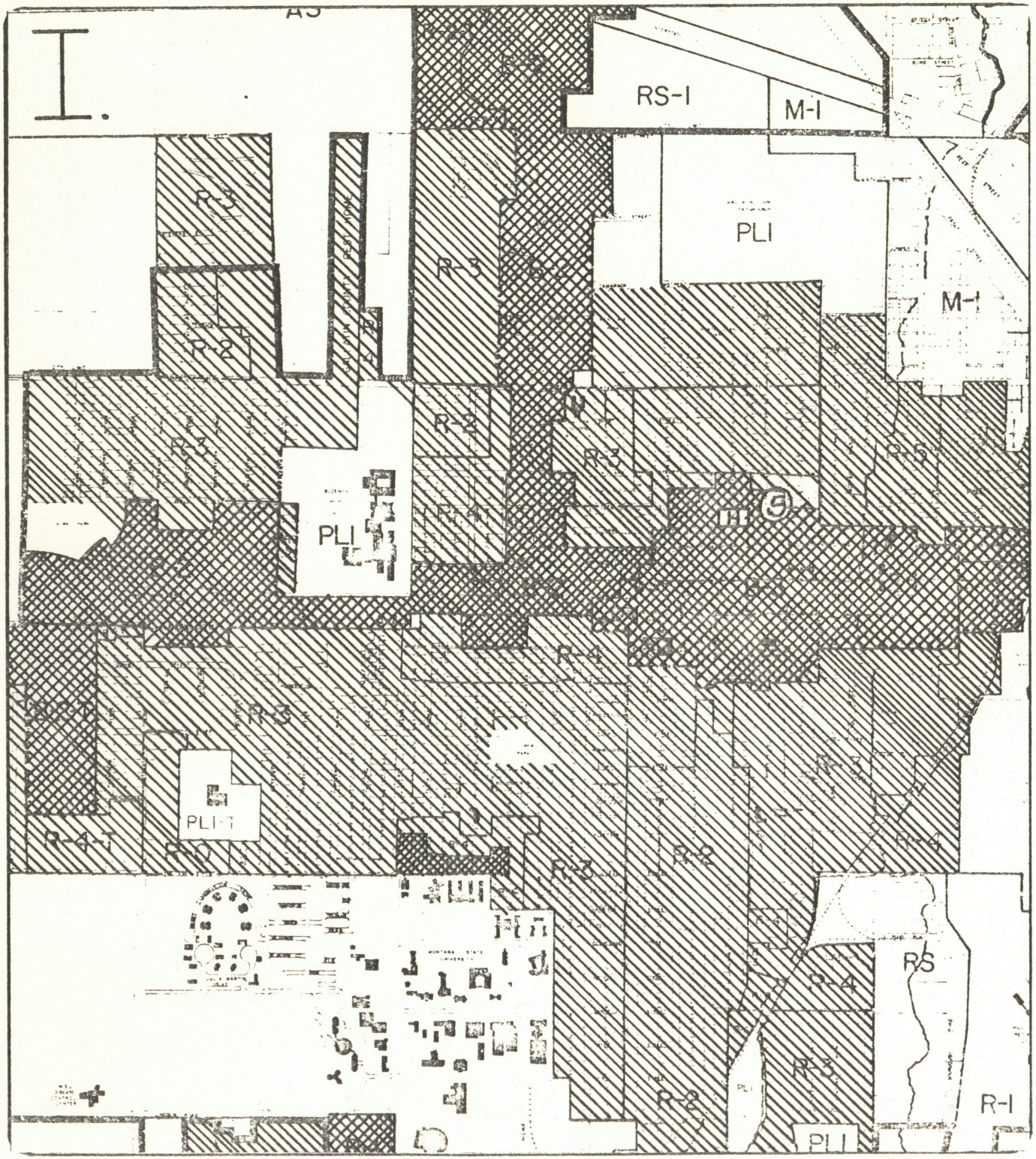
BUSINESS _____ 

PUBLIC _____ 

SITE _____ 

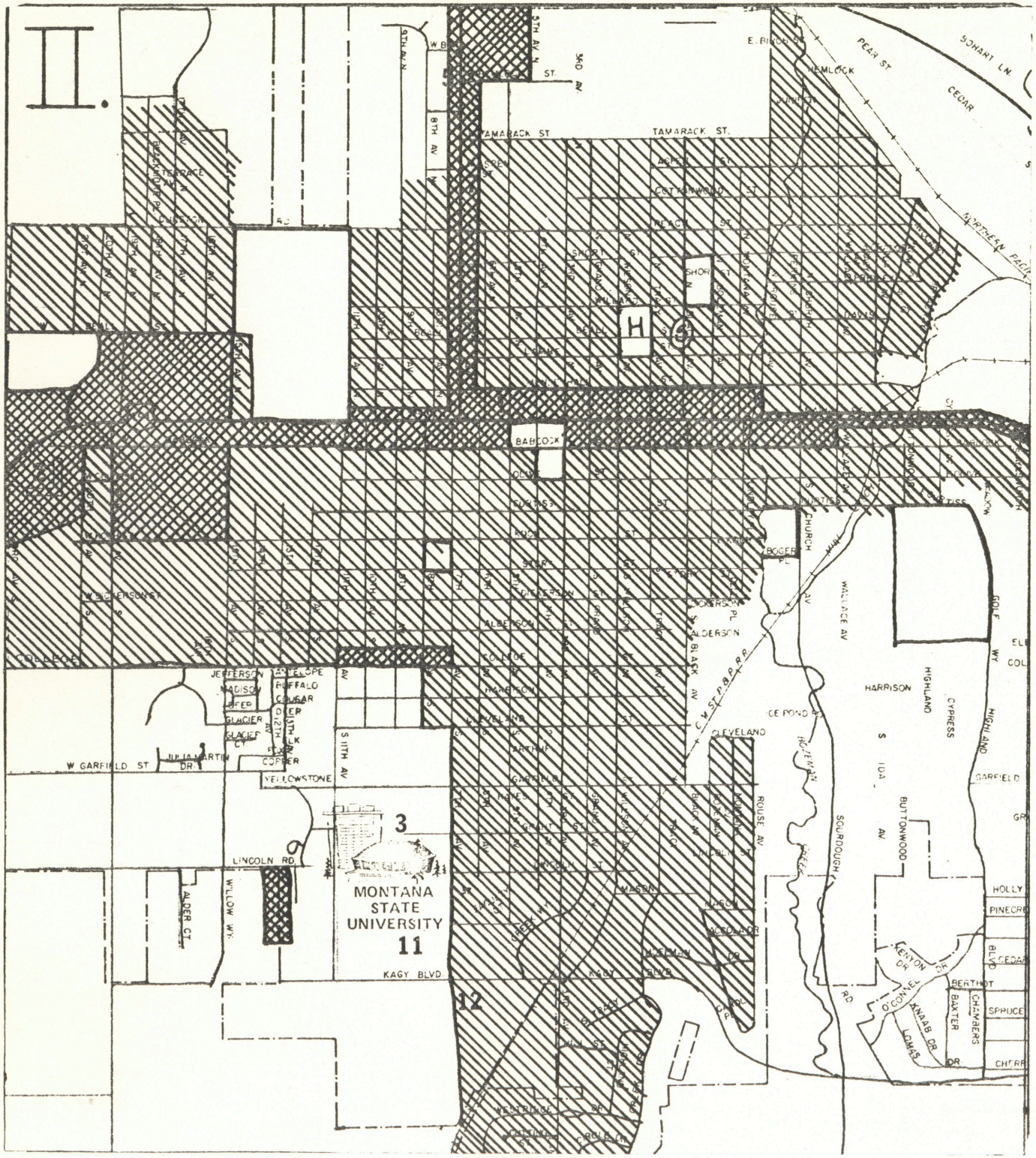
HOSPITAL _____ 

Site Analysis:
LAND USE



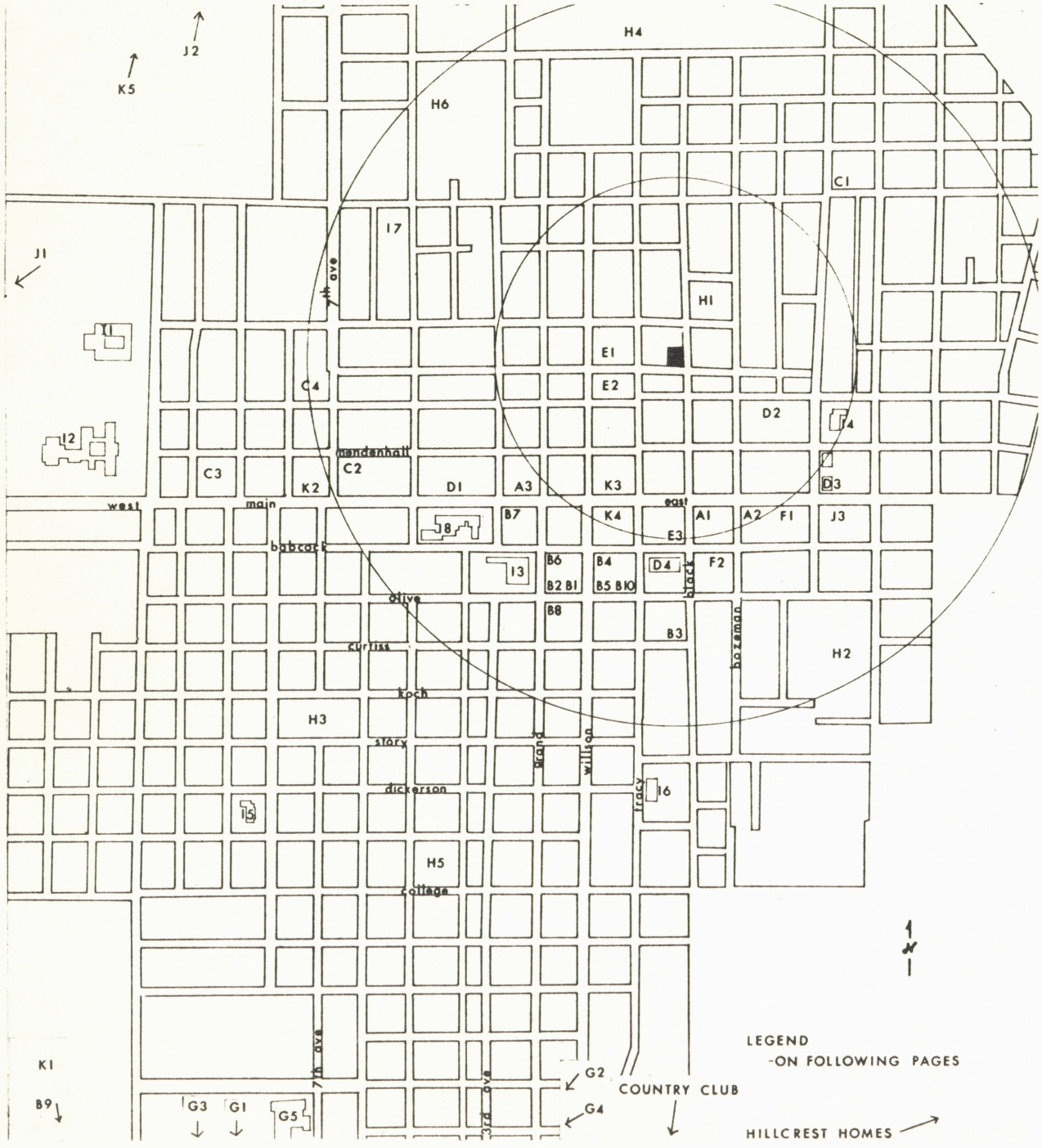
Site Analysis:

LAND USE



Site Analysis:

LAND USE



Site Analysis:

SOCIAL

LEGEND

BANKS
A1 - First Bank Bozeman
A2 - First Security Bank of Bozeman
A3 - Montana Bank of Bozeman

CHURCHES
B1 - United Methodist Church
B2 - First Baptist Church
B3 - First Luthern Church
B4 - First Presbyterian Church
B5 - Grace Baptist Church
B6 - Grand Ave. Christian Church
B7 - Holy Rosary Catholic Church
B8 - Hope Luthern Church
B9 - Resurrection Parish
B10- St. James Episcopal Church

CONVENIENCE STORES
C1 - Kwik Way
C2 - Me & Jans Mini Mart II
C3 - Safeway Store Inc.
C4 - Super America

GOVERNMENT SERVICES
D1 - Court House
D2 - Bozeman Public Library
D3 - Police Station & Municipal Bldg.
D4 - Post Office

HEALTH SERVICES
E1 - Bozeman Clinic
E2 - Bozeman Deaconess Hospital & Extended Care Facility
E3 - Medical Associates

LODGES
F1 - Eagles Lodge
F2 - Elks Club

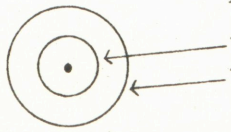
M.S.U. CAMPUS
G1 - Field House
G2 - Museum of the Rockies
G3 - P. E. Complex (Gym)
G4 - R. H. S. Stadium
G5 - Theatre

PARKS
H1 - Black Park
H2 - Bogert Park
H3 - Cooper Park
H4 - Gallatin County Fairgrounds
H5 - South Side Park
H6 - West Lake Park

SCHOOLS
I1 - Bozeman Junior High
I2 - Bozeman Senior High
I3 - Emerson Elementary
I4 - Hawthorne Elementary
I5 - Irving Elementary
I6 - Longfellow Elementary
I7 - Whittier Elementary
I8 - Wilson Elementary w/ Auditorium

SOCIAL ENTERTAINMENT
J1 - Country Lanes Bowling Alley
J2 - Skateland
J3 - The Bowl
J4 - Senior Citizen Center

THEATRES
K1 - Campus Square
K2 - Cinemas
K3 - Ellen Theatre
K4 - Rialto Theatre
K5 - Starlite Drive In



Site Analysis:
SOCIAL

TRAFFIC ANALYSIS

Major access to the site should occure along Black St. since Mendenhall, Main, Babcock, and Peach are all given access.

Major flows of traffic within three blocks of the site are Wilson and Mendenhall. Both of these streets are listed as collectors by the 1981 Bozeman City Planning Guide. The traffic counts listed in the guide for these streets are:

Wilson	1900 vpd	(vehicles per day or
Mendenhall	5200 vpd	annual average daily traffic.)

Traffic counts were listed for neither Black nor Beall; however, by hand counting the traffic during an average hour of the day and comparing it to the counts of Wilson and Mendenhall, counts for Black and Beall were assigned as:

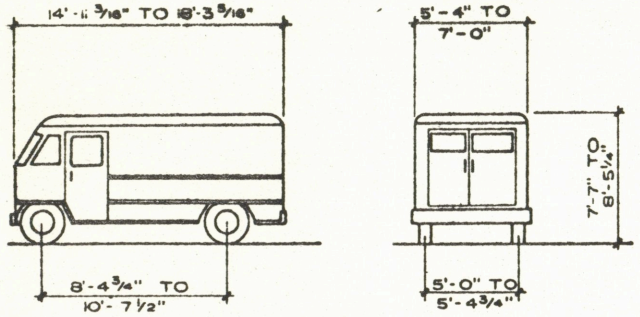
Black	700 vpd
Beall	400 vpd

Other Considerations

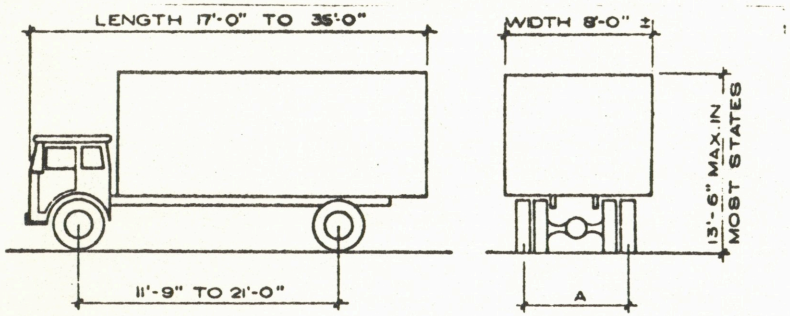
The most noticeable traffic from the site is to the south along Lamme and Mendenhall.

The intersection of Black and Lamme, which is considered a high accident intersection, averages aproximately 25 accidents a year.

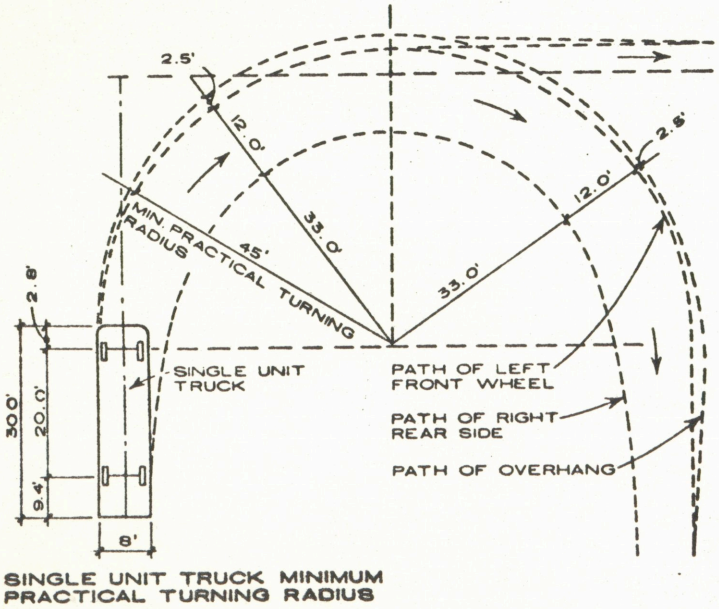
Beall will most likely be the emergency transportation route to the hospital.



DELIVERY TRUCK



VAN TYPE TRUCK



SINGLE UNIT TRUCK MINIMUM PRACTICAL TURNING RADIUS

Requirements

Parking for visitors and residents.

A bus stop on site for the Senior Transport Service.

Entry approach ramp.

Service approach (seperate from entry)

Emergency approach (seperate from entry)

PEDESTRIAN

Pedestrian traffic on or around the site could be as high as 200 people per day, but is probably closer as 100-150 people.

Major pedestrian paths are along Black and Beall.

There is a park one block north of the site which may at times attract many people.

Site Analysis:

CIRCULATION

Zoning Title "Central Buisness District", B-3.

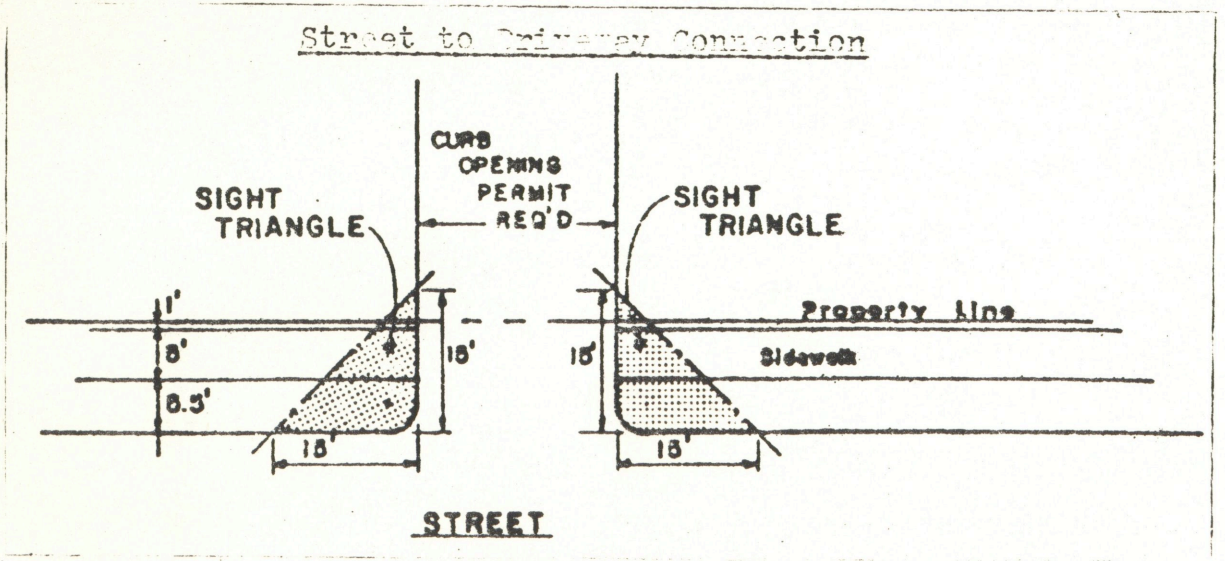
Building Requirements

Since the City of Bozeman does not provide for a boarding house type of institution that provides for more than 5 occupants the zoning official for the City of Bozeman recommended that we classify the hospice as a hotel (which is permitted in the B-3 district). The Buildings in this district are allowed to cover the entire lot provided all other requirements are met.

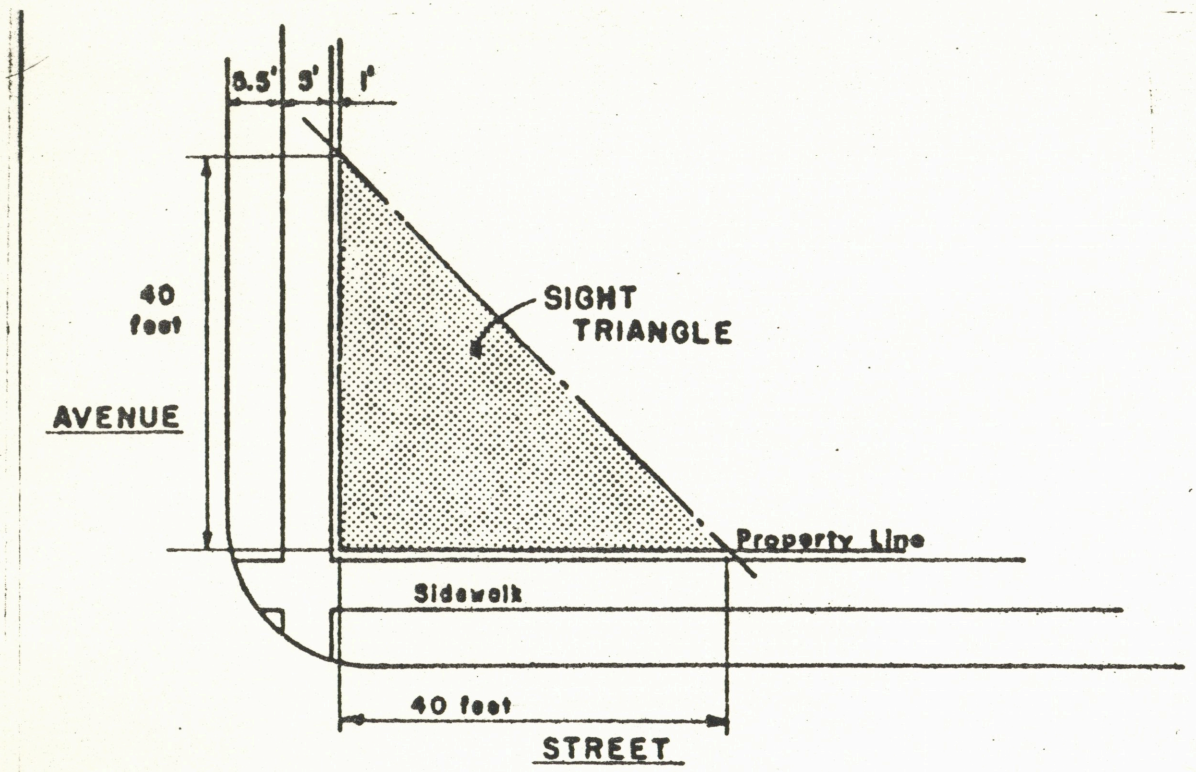
Setbacks No minimum yards are prescribed in the B-3 districts.

Corner Lot Restrictions

The Bozeman Zoning Code requires that nothing over two and one half feet above centerline grades, that will impede vision shall fall within the sight triangles as shown.



Site Analysis:
Zoning



Street to Avenue connection

(diagrams taken from Bozeman Zoning ordinance 1073)

The zoning code also requires that there be a minimum of 30 feet from the corner to any other opening such as a driveway or loading area.

Parking Requirements

One space for each of the beds shall be provided or an equivalent cash-in-lieu payment to the city is possible in the B-3 districts as set forth in chapter 18.84 of the Bozeman City Zoning Code. If parking is provided it must be within 100 feet of the use to be served and meet the parking stall requirements of the City.

Screening

Any Parking lot with more than five cars adjacent to a resedential district must be screened by a wall or solid fence not less than six feet nor more than eight feet in height.

There is a minimum requirement of one tree for every three parking spaces. Some of these trees must be placed such that there is at least one tree every 15 lateral feet along the outside of the parking area.
It is also stated in the zoning ordinance that no single design element shall comprise more than 50% of the screening.

Loading Area Requirements

Number of loading areas

One loading area is required for 10,000 to 100,000 square feet, plus one additional loading area for every 250,000 square feet over that.

Size of loading areas

The minimum size required for a loading area is 12 feet by 35 feet with a clearance of 18 feet.

Location of loading areas

The Bozeman Zoning Code does not allow any loading areas in the front yard. Loading areas are required to be at least 50 feet from residential property unless the berth area is enclosed or screened by a solid fence or wall at least six feet in height, and meets all building setback requirements.

Snow Removal

A snow removal area is required to eliminate damage to landscape.

Service, Storage, and Refuse Areas

Service, storage, and refuse areas must be screened from all residential

areas and public streets. Screening should generally be one foot greater than the structure, but after eight feet there is no requirement.

Fire Codes

There are no special restrictions that pertain to Bozeman.

Seismic Zone

Bozeman is in the third and highest seismic zone.

Flood Zone

The lot being considered is not in the flood plain.

Signage

There is no present restrictions pertaining to the size or type of signage in Bozeman.

In the intrest of being concise, and concerning the present state of "city planning" in Bozeman, breifly stated: there are no stipulations or written guidlines which must be followed to insure an aesthetically feasible building. To a limited extent this frees the architect from designing in a certain presupposed style, and leaves the question open to one's creative ingenuity. However, this does not imply that a person should ignore the incessant burden of site context both present and future.

As the city planning director points out, new building in Bozeman is not subject to an architectural review committee unfortunatly, except in the residential districts south of the city. And, a project has only to pass a review board concerned with city zoning regulations and codes. However they do give recomendations which cover the obvious aspects of screening mechanical equipment and service areas, as well as provisions for ease in performance of city services such as waste disposal, snow removal and security. Another point which he mentioned, although not so applicable on such a small scale, is the possibility of waiving some of the zonig regulations through planned unit development. Although this process opens paths to the creativity of the architect, one, must be careful not to impinge upon the rights of the individuals who will live adjacent to the property, and be aware that a final proposal will be under public scrutiny.

To obtain better understanding of site context and the aesthetic possibilities of contextural architecture one must be aware of the character of the site and become personally acquainted with the surroundings. Addmitedly there are no major architectural monuments adjacent to the site and the surrounding properties to the north, south, and east are predominantly residential. These small one and two story residences are primarily popular level middle class adptations of a style advocated by Alexander Jackson Davis, in the Gothic cottage and the bungalow style advocated by the craftsman magazine. Whith this is the more recent style exhibited in the dublex

Site Analysis:
Aesthetics and
Planning Guidlines

immediately across Black. Although there is no singular predominate style, as a person approaches the site from the west along Beall the area seems to be a transition zone between the instituional and imposing frontages of Bozeman Deaconess and the Medical Arts Center to a more residential atmosphere. The Medical Associates building, then attempts to make that transition from institutional to residential through building setback and site openness, choice of materials and building form. The only other building in the area of any significance is the Bozeman Nursery School in which the ~~open~~ site is probably a more important factor than the building itself.

Certainly the aesthetic appearance and functional planning of a building should be credible, however the users are of primary importance. Therefore, this complex should enhance the physical and phsycological needs of the users as first consideration and then attempt to compliment the surrounding context.

notes:

TABLE OF CONTENTS - PROGRAMMING

Facility Users . . . . . Pg. 1-8

Facility Functions. . . . . Pg. 9-11

Space Interrelationships. . . . . Pg. 12-17

Space Program . . . . . Pg. 18-47

Special Considerations . . . . . Pg. 48-61

Energy Considerations. . . . . Pg. 62-64

Codes. . . . . Pg. 65-68

Project Budget . . . . . Pg. 69

FACILITY PROGRAMMERS

Facility Users . . . . . Carmen Montgomery
Tim Abell

Facility Functions. . . . . Jeane McDonald

Space Interrelationships. . . . . Bob Robinson

Space Program . . . . . .Bill Nerison
Scott Farkas

Special Considerations . . . . . Eddie Driscoll
Mansoureh Karimian

Energy Considerations. . . . . Mike Flemming

Codes . . . . . Mike MacDonald

Project Budget . . . . . Jeff Kestle

Program:

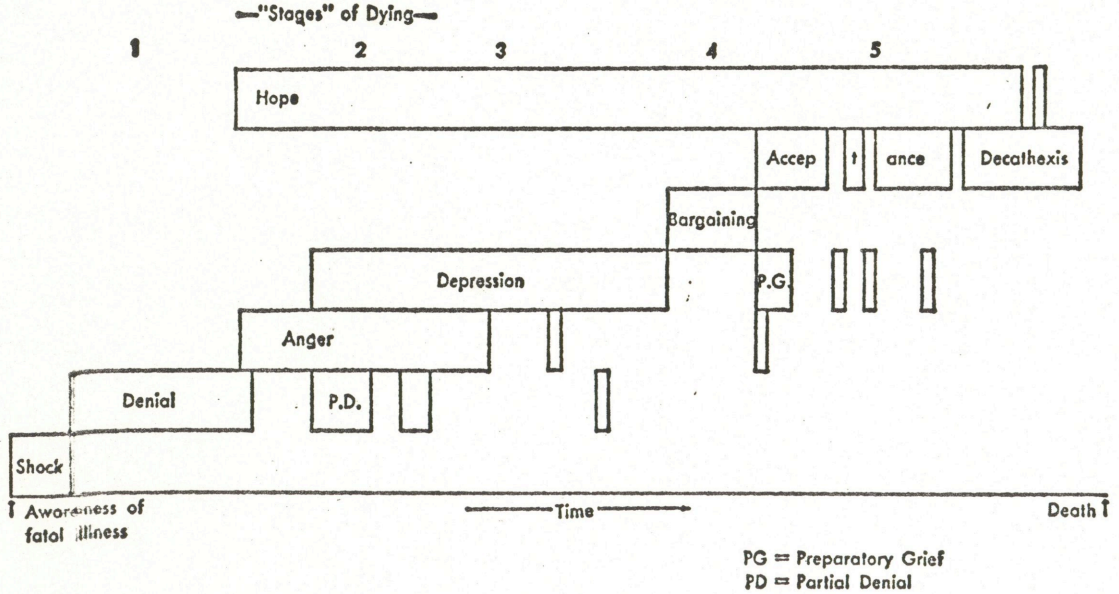
TABLE OF CONTENTS

notes:

PATIENTS:

The average stay of the 12-14 patients will be between 2 and 5 weeks long. 60-70% of these will be 60 years or older, while the remaining 30-40% will be children, young adults, and middle aged. The hospice should provide an envronment for these people to live productively until they die, a "final home of peace". Emphasis should be placed on the quality of life, not the quantity.

The terminally ill patient experiences the following "stages" of dying:



SHOCK --The first reaction of a person diagnosed as being terminally ill. This usually transgresses into a denial stage.

DENIAL--The patient nees a period of denial and isolation to give himself time to cope more realistically with dying. A patient entering a hospice has resolved this phase, but it may manifest itself later as unrealistic hope. During this phase, there is a great need for communication with family and others of a similiar situation. It is also important for the patient to surround himself with familiar objects.

-private space to be with family
-space to be with other patients
-storage and display space

Program:

USERS: Patients

ANGER--Temper outbursts are a demonstration of the vitality remaining within him. The release of anger quickens the patient's acceptance of his impending death. Companionship and community are needed to talk out his feelings. Occupational therapy may help by creating something that will carry on after he dies.

BARGAINING--An attempt to postpone the inevitable, waiting until a wish or a goal is fulfilled.

GRIEVING/DEPRESSION--The patient faces the loss of not one, but all his loved ones and all the things that are important to him. Often increased by a lack of mobility, work, strength, and deteriorating appearance.

ACCEPTANCE--After working through the other phases, he is neither depressed nor angry and he contemplates his coming end with a certain degree of quiet expectation. The patient sleeps frequently, taking life in short intervals.

DECATHEXIS--The final stage in which the patient gradually seperates himself from those around him. In a hospice though, nobody dies alone.

HOPE--A continual stage, it is a form of denial, hope for a miracle cure. When this hope is relinquished, the final stage is attained. Often coupled with fear. Fear of the unknown and how the family will cope and continue.

-crafts room
-some control of his environment in terms of views, passage of time, and mobility

-appearance of mobility through observation of traffic, etc.
-area to enhance personal appearance.

-spaces for quiet and privacy

-sunshine, fresh air, flowers.

-sense of community.
-sense of continuity and transition

TYPES OF PATIENTS

CHILDREN: In an attempt to shield them from death, children have been told that "Grandma went away" or "Daddy is in Heaven", giving rise to their belief that dead people have "gone on a trip" and might return. Attempts to hide the fact a child is dying are futile, since they can pick up on changes in behavior of the people around them. The following poem shows a child's view of death, making it evident that they can't be fooled by evasion, lies or pampering.

Program:

USERS: Patients

RAIN:

He's gone now,
I guess we really didn't care.
He left without us even knowing he was there.
He liked the rain,
I don't know why.
I guess he just liked,
the color of the sky.
When all the rain
would come pouring
down and he would
love to watch it clinging
to the window pane.
He would get a feeling
of comfort in his bones.
Why did he have to go,
when. . . drip, drip oh no
not now he must be
up there now he's crying.
I can feel it.
I'll think of him every time it rains.
Well, goodbye now
pop, I wish you
would stop you
know I can't stand
to see a grown man
cry.

by Susan Thomas

THERAPY: is a good way to get children to open up their lines of communication.

1) Comic Strips--By putting his own words in the mouths of comic strips, he can reveal his feelings.
2) Playing with dolls--Families of dolls make it easier to act out fears, wishes, etc.
3) Poetry --as seen above.

YOUNG ADULTS: Because they are dying just when their life's ambitions are being realized, their lifestyles tend not to change.

OLD AGE: The older person is usually cheerful, looking at the future, and trying to make his dying more compfortable for those around him.

PHYSICAL ASPECTS

1) 60% are elderly
   --have common impairments of senses and mobility

Program:

USERS: Patients

2) Variety of diseases
--Cancer, heart, respritory, muscular dystrophy, etc.

3) Mobility
--Most will be partially or totally bedridden
--some able to move with wheelchairs
--few will be ambitory

4) Pain
--Many will experience great pain. This is relieved by powerful drugs.
--Side effects:
-Hallucianations
-Lapse between reality and dreams
-Lapse between consciousness and unconsciousness
-Altered behavior and attitude
-Reduced balance and mobility.

4) Smell
--Many cancers and consuming diseases have odors
-Air pressure can control this
-Bathroom should be easily accessable
-Bedside commodes
-Shower rooms and bath tubs.

FAMILY

The family is an important element in Hospice care. Children under 14 are no longer denied access, but are encouraged to visit. It is also important to realize that the family goes through the same stages of dying that the patient does.

DENIAL--Counseling for the patient is important if his family is going through this stage, so his need to "talk it through" doesn't cut him off from the people he loves.

ANGER--The family expresses fear and anger. The patient must realize that some of the fear when facing loved ones may be attributed to the feeling that facing a loved one is like facing the reality of imminent loss.

BARGINING--Usually done in private. A clergyman is ofter appreciated.

--private rooms
-"motel" rooms and places to rest for the family
-24 hr visitation means a smaller lobby than in a hospital

-chapel or other quiet area

Program:

USER: Patients/Family

GRIEF--The usual emotions and reactions associated with the loss of a loved one. It can be theraputic when used in a pre-grieving period.

DECATHEXIS--The family feels rejected and needs support.

-chapel

-space is needed for interaction with other families

ARCHITECTUAL SOLUTIONS

The prime goal of a Hospice is to enable both the patient and family to live effectively in the face of impending death. Ways in which a building can accomplish this:

-By creating a community of patients, family and staff
-By creating transitions
-By encouraging mobility or the appearance of mobility
-By illuminating the passage of time
-By confronting the meaning of death

COMMUNITY--It is important because fear of abandonment is a major source of anxiety to those near death. By bringing people together, this fear can be eased.

To accomplish this, us a wide variety of gathering spaces: the library, kitchen table, lounge, garden, ect. Multi-bed wards are also useful, but but provide single rooms for those who need to face dying in private. Roommates should be close enough to communicate with each other, yet still have some semi-private space when the family stops by. This arrangement also lends itself to a type of informal group therapy for those "talking things through". When one member of the group dies, hopefully the others will realize that dying isn't too frightening and horrible.

TRANSITIONS--Fear of the unknown is a great source of distress for the dying.

A building can help with the inclusion of anterooms, almost as if one is moving through relief valves so they can confront the unknown gradually, with space to pause and reflect.

Transitions start with the site, allowing entering patients to hold back, and current residents an opportuninty to observe life outside.

MOBILITY--There is a fear of loss of personal control, mainly the loss of mobility.

A hospice needs several layers of circulation, on a scale from public to private. Patients should be encouraged to move around and be able to watch others walking by.

Program:

USERS: Patient/family

TIME--Time takes on a new dimension at the close of life. Patients talk about it constantly.

A building can reveal the passage of time by allowing the observation of daily patterns, (staff, children, etc.) and the sunrises, sunsets and weather conditions.

MEANING OF DEATH--Design an environment that meets the previous conditions. Create a place of beauty, freedom, a supportive building with familiar materials and patterns. Wood and wall paper give a warm feeling. The patients need a stimulating attractive enviroment to utilize and personalize as they wish.

1) ENTRANCE
   -definable
   -not intimidating
   -inviting

2) CHAPEL
   -for reflection, solitude
   -prayer
   -memorial space

3) LOUNGE AREAS
   -interaction with patient and patient
   -interaction with patient and family
   -interaction with patient and staff
   -interaction with family and staff
   -interaction with family and family

STAFF

The terminally ill have needs ranging the physical, emotional and psycological spectrum. Physically, physicians and staff are reduced to providing and maintaining comfprt, usually with drugs, injections and transfusions. Providing comfort should be the foremost of the designer's concerns.

NURSES--About the same number of nurses as used in an acute care ward are needed, about 1 nurse per patient. (includes day and night nurses, on and off duty)

The nurse is probably the person most likely to help a patient through some of the stages described earlier. Just as family and friends of the patient suffer from loss and the feelings surrounding loss, so the nurse also may suffer bereavment.

Program:

USERS: Patient/family/staff

Because of this, it is very important to have a place for them to get away, a "scream room". This space should provide casual 24 hour service (coaches, coffee, etc.)

DOCTORS--A doctor's office on a small, intimate scale to facilitate counciling would be best, with a seperate "procedural" room for the actual medical care and examinations.

We are assuming that a doctor would come in for rounds and appointed office hours, and that one would be on call 24 hours a day. A converence room may be useful for staff meetings.

NURSES AIDS/ORDERLIES--As many as needed. A system could be set up to share these services with the hospital.

VOLUNTEER AND SUPPORT TEAM--Counciling space should be provided for the following. (Space may be shared)

- -psycologist
- -psychiratist
- -socialogist
- -clergymen
- -volunteers
- -bereavement co-ordinator
- -legal matters, will, etc.

ADMINISTRATION--The hospice program is basically an outreach program in which families are helped at home. However, in rural Montana it will be more of an in-house program than in an urban area. The administration must be adaquate to co-oridinate the outreach program and council the families for up to 13 months after the death. There should be space provided for:

- -Director of Administration
- -Medical Director
- -Finances and fundraisers
- -Book-keeping
- -Secretary and clerical
- -Community education
- -Storage

PHYSICAL THERAPY--A room is need to provide for a wide variety of machines and physical activities.

OCCUPATIONAL THERAPY--1 therapist can accommodate 15 patients. Space is needed for bench work, table work, loom work, functional equipment, storage, etc. Work with the children at the day care center, and access to the kitchen and greenhouse may also work as occupational therapy.

Program:

USERS: Staff

DAY CARE CENTER--One teacher is needed for 15-20 children. An assistant teacher is also required, but we are assuming that the patients themselves will help out. The nursery school should consist of a series of well-defined, interrelated spaces. The classroom's arrangement should contribute to the child's concept of order and space.

KITCHEN STAFF--These people should come in to cook and serve "family style" meals, with special provisions for immobile patients or those with special diets.

MISC.--Someone will have to be in charge of maintainance and there is a need for a groundskeeper. Arrangements could be made with the hospial to share these services.

SOURCES:

Lo-Yi Chan, "Hospice: A New Building type to Comfort the Dying", AIA Journal, December, 1976.

Charlotte Epstein, Nursing the Dying Patient, 1975

Elisabeth Kubler-Ross, M.D., On Death and Dying, MacMillan Co.,1969.

Richard Lamerton, Care of the Dying, 1976

William M Markel, M.D., and Virginia B. Simon, The Hospice Concept, American Cancer Society Professional Education Publicarion, 1978.

Marjorie McCoy, To Die With Style, Abingdon Press, 1974.

Sandol Stoddard, The Hospice Movement, Stein and Day Publishers, 1980.

INTERVIEWS:

Shirly Cudney, Instructor of Gerentology, School of Nursing, Montana State University

Adel Jenney, Administrator of Hospice of Virginia Incorporate

Jane McCrory, Member of the Hospice Movement of Bozeman

Dr. Frank Newman, Director of Montana State University WAMI Medical School Program

Program:

USERS: Staff/ Sources

After a designer has analized the site he or she has chosen for a building, and the people who are to be using the building, the next step is to define in some manner the function of this building/facility that he or she will design.

In our case we are designing a hospice. This type of facility originates from a medieval term meaning a way station for travelers. Dr. Elizabeth Kubler-Ross defines a hospice as a place to provide the special care needed to help the mortally ill live until they die. Dr. Robert Kavanaugh states," A dying human being deserves more than efficient care from strangers, more than machines and antiseptic hands, more than a mouth full of pills, arms full of tubes, and a rump full of needles.

Our hospice should be designed keeping the criteria mentioned above in mind, as well as the issue of preserving human dignity, as our main functional priorities.

As Lo-Yi Chan explains, our facility should function through the use of transitional spaces emphasizing mobility-how this is carried out depends on the designer's personal judgement. The following information is meant to be used as guidelines as we make our own personal decisions about defining these transitional spaces as living areas and as the integral functions of this facility. If we can keep this in mind and the following question asked of Elizabeth Kubler-Ross, we should be able to design this Shanti-Nilaya-the final home of peace, much more successfully.

****

"Do all patients desire a specific kind of environment at the time of death? And the family?"

"Not all patients are conscious. Not all patients are able to express their views at the time of their dying. This is why it is so important that we all make our arrangements and express our wishes in terms of our final care when we are young and healthy. The majority of our patients would have liked to die at home. A very few patients, especially parents of young children, prefer to die in the hospital, out of a need to protect their children from a sad reality. In our opinion this deprives the children of a very important part or working through the death of a parent, thus making it more difficult to accept."

Elizabeth Kubler-Ross

Program:

Facility Functions

Public Functional Spaces

1. Parking
2. Chapel
3. Entry
4. Administration
5. Playground
6. Daycare
7. Crafts
8. Greenhouse
9. Lounge/TV room
10. Library
11. Dining

Semi-Private Functional Spaces

12. Patient rooms
13. Kitchen
14. Nurses station
15. Dr.'s office
16. Viewing room

Private Functional Spaces

17. Patient's private rooms
18. Visitor's guest rooms
19. Patient bathrooms
20. Visitor's bathrooms
21. Staff bunkroom
22. Physical therapy room
23. Dr.'s exam room
24. Staff scream room
25. Deceased storage
26. Linen storage
27. Food storage
28. Facility and general storage
29. Patient's storage area
30. Maintenance
31. Pharmacy

****

Feeling and Form

"But "living" itself is a process, a continous change; if it stands still the form disintegrates - for the permanence is a pattern of changes.

Nothing, therefore is as fundamental in the fabric of our feeling as the sense of permanence and change and their intimate unity."

Program:
Facility Functions

Function-Time Chart

Function #	12:00–6:00 a.m.	8:00	10:00	12:00 p.m.	2:00	4:00	6:00	8:00	10:00
1.	*	*	*	*	*	*	*	*	*
2.		*	*	*	*	*	*	*	
3.	*	*	*	*	*	*	*	*	*
4.		*	*	*	*	*	*		
5.		*	*	*	*	*	*	*	
6.		*	*	*	*	*	*		
7.		*	*	*	*	*	*	*	
8.	*	*	*	*	*	*	*	*	*
9.	*	*	*	*	*	*	*	*	*
10.		*	*	*	*	*	*	*	*
11.		*		*			*		
12.	*	*	*	*	*	*	*	*	*
13.	*	*	*	*	*	*	*	*	
14.	*	*	*	*	*	*	*	*	*
15.		*	*	*	*	*	*		
16.		*	*	*	*	*	*	*	
17.	*	*	*	*	*	*	*	*	*
18.	*	*	*	*	*	*	*	*	*
19.	*	*	*	*	*	*	*	*	*
20.	*	*	*	*	*	*	*	*	*
21.	*	*	*	*	*	*	*	*	*
22.		*	*	*	*	*	*		
23.		*	*	*	*	*	*		
24.	*	*	*	*	*	*	*	*	*
31.	*	*	*	*	*	*	*	*	*
25–30.	*	*	*	*	*	*	*	*	*

Program:
Facility Functions

SPACE INTERRELATIONSHIP GRAPHS

The following three graphs present the degree of relationship desirable between the spaces and environmental factors.

Program:

SPACE INTERRELATIONSHIP

notes:

LIVING SPACES	natural light required	natural light undesirable	noise	requires quiet	requires view	view undesirable	security measures necessary	odor control necessary	resident view undesirable	resident view desirable
Library	◑		●	●				●		
Lounge	●		●	◑	●			●		●
T.V. Room	◑		◑					●		
Dining	●		●		●			●		
Foyer	◑		●	◑	◑	○	●	●		●
Daycare										
Crafts	◑			●						○
Rooms	●		●	●	●		●			
Greenhouse	●				●					●
Heat/ Vent.			●			●		●	●	
Storage		●						●	●	

CONSIDERATIONS

- ● important
- ◑ moderate
- ○ slight
- none

Program:

SPACE INTERRELATIONSHIP

	natural light required	natural light undesirable	noise	required quiet	required view	view undesirable	security measures necessary	odor control necessary	resident view undesirable	resident view desirable
MEDICAL/ STAFF										
Physical Therapy	◐			●			○	○		○
Pharmacy	◐						●	◐		◐
Nurce Station	◐		●		●		●			●
Deceaced Room										
Lounge	◐		●	◐	○	○	●	●		●
SERVICE										
Kitchen			●					●	●	
Linen									●	
Chapel	◐			●		○				○
Greenhouse	●				●					●

Program:

SPACE INTERRELATIONSHIP

The following two graphs deal with information on traffic flow, proximity of spaces and access and circulation.

TRAFFIC FLOW

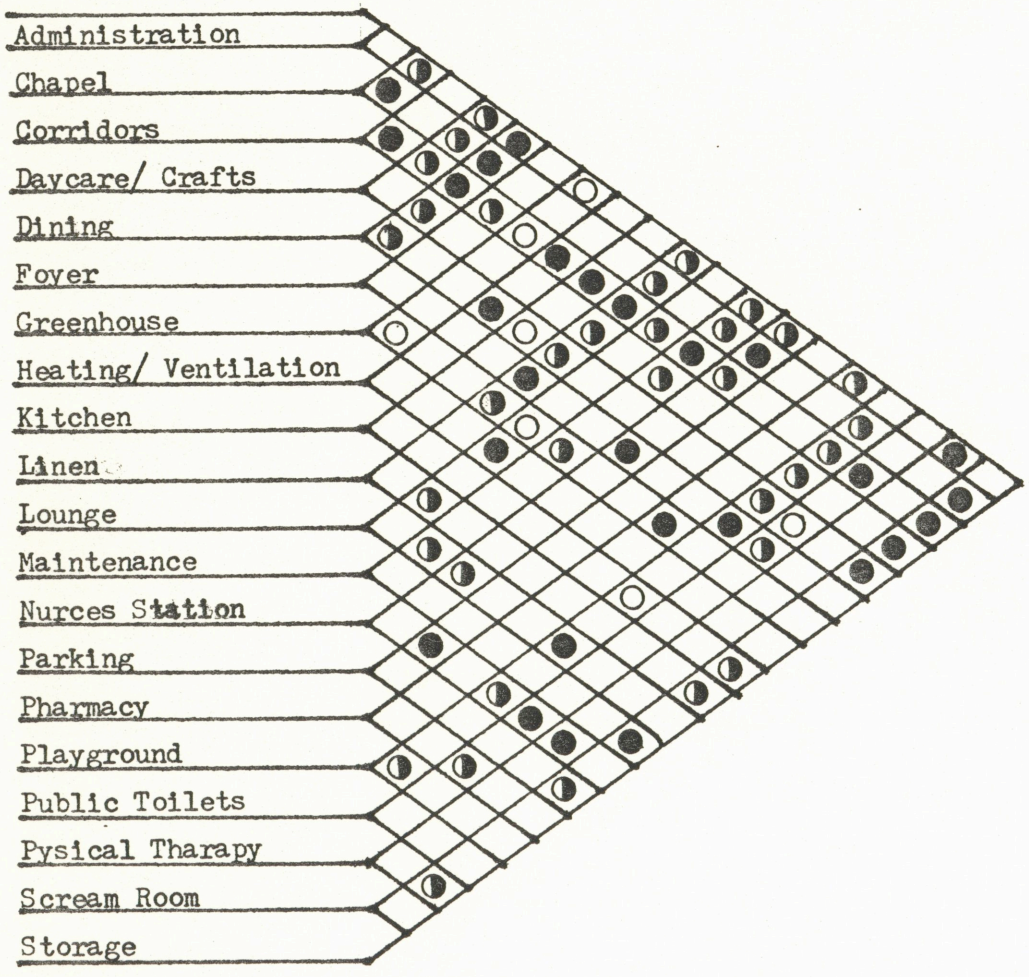
Pedestrian traffic will be relitively small, due to the small number of residents, but must be carefully thought out in order to achieve the proper space interrelationships. The chart shows the major areas and their linkage to one another. Each major area has its own traffic patterns that must be considered.

PROXIMITY MATRIX

The matrix relates the various areas and rooms of the complex with respect to location of each other. Many considerations must be considered when determining proximities. These inclued noise levels, pedestrian patterns, function of spaces, ect. It also must be considered that rooms and areas may take on new functions and purposes as a result of expantion.

Program:

SPACE INTERRELATIONSHIP

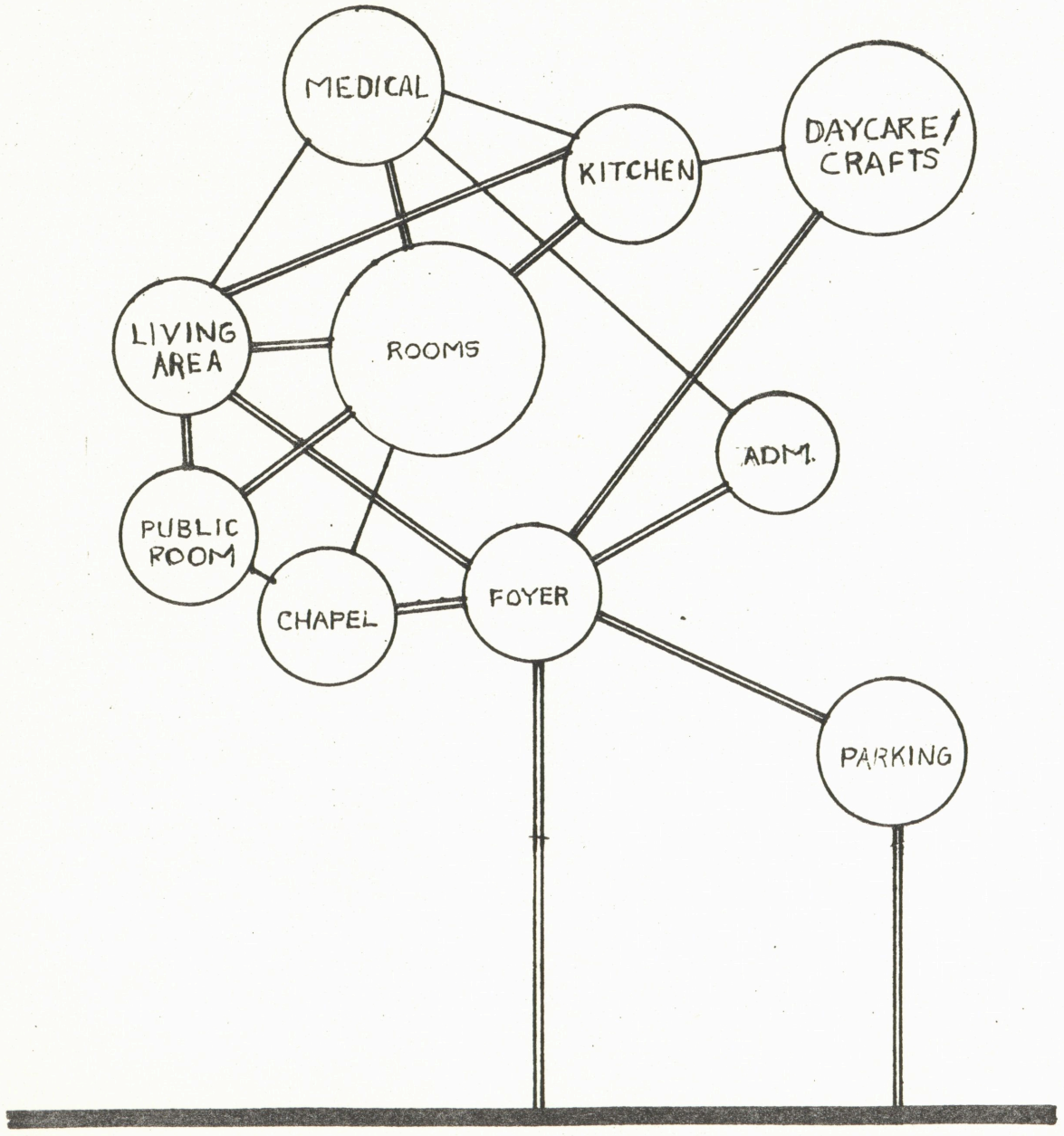


PROXIMITY MATRIX

- ● Primary Proxity
- ◑ Secondary Proximity
- ○ Seperation Desirable
- No Relationship or Seperation Necessary

Program:

SPACE INTERRELATIONSHIP



MINOR LINK

MAJOR LINK

Program:

SPACE INTERRELATIONSHIP

Space Program

The arrangement of the spaces in this program is in need of very careful planning. We have broken the entire project into four main sectors: residential space, public space, circulation and mechanical systems, and staff. The first part of the space program includes the square footage of the project. As a comparison to which spaces are dominant over the other, we have given the percent for each basic function of the four modes that we've discussed earlier in this statement. We now have a rough estimate of how much space we can give to the residents and public who will be present in this project. We have presented the largest amount of space for residential functions and have tried to keep down the medical staff and areas that they need to a minimum. When you have studied the program, take into account the organization of spaces, the requirements and above all, the special considerations involved to propose a design that will satisfy all functional needs. Keep in mind this is a general guide and not a set of rules. Each designer will combine or seperate spaces by the criteria he or she feels is most important to each individual design.

1. BEDROOMS:

Resident Rooms 3 - 4 Bed Units		1670 Ea
Resident Rooms 2 - 1 Bed Units		300 Ea
Visitor 2 - 2 Bed Units		350 Ea
	Total	5650 sq. ft.

2. PUBLIC SPACES:

Resident Baths		300
Physical Therapy		350
Library		400
Lounge / TV Room		400
Dining Room		600
Day Care / Crafts Room		400
Occupational Therapy		250
Chapel		400
Public Bath/Lounge		500
Green House		300
	Total	3900 sq. ft.

3. STAFF:		
Pharmacy		100
Nurses Station		300
Scream Room		300
Bunk Room		300
Doctors Office (Exam)		250
Administration		400
	Total	1650 sq.ft.
4. CIRCULATION, MECHANICAL:		
Main Entrance		300
Clean Linen		50
Soiled Linen		50
Maintenance/Resident Storage		300
Kitchen / Food Storage		500
Janitorial		250
Space for Deceased		150
Mechanical		350
	Total	1900 sq.ft.

Program:
Space Program

SUMMARY OF AREAS

		%	Sq. Ft.
1.	Resident Rooms	47 %	5650
2.	Public Spaces	25 %	3900
3.	Staff	8 %	1650
4.	Circulation, Mechanical	10 %	1900
		Total	13,100

Program:
Space Program

Functional Unit: Resident Rooms

User Description, Activity Description:

Four residents, This area will be thier main living space and should be large enough for four beds. They will interact with each other here in their room and hopefully help each other in their time of need.

Proximity Requirements:

This space should be adjacent to the Nurses station, circulation paths and multi-purpose areas.

Furnishings and Fixtures:

4 Beds
4 Dressers
2 Closets
Night Tables
Curtains
Reading Lamps

Requirements:

100 f.c. of lighting
4 Nurse Buzzers
Central heating and air conditioning
No changes in ground planes, unless they are very, very gradual.

Considerations:

Exterior lighting and veiws. Views to porches and main entrance.

Functional Unit: Visitors Room with Bath

User Description, Activity Description:

Family, Friends of Residents, Visiting phychologists, Councelors, Ministers, Etc.

Should accomodate stays of varying length.

Proximity Requirements:

Close to Residents Rooms

Furnishings and Fixtures:

Same as resident room furnishings

Requirements:

Adequate day and night lighting.

Bath and/or Shower

Considerations:

Natural light, views

Program:
Space Program

Functional Unit: Resident Bath

User Description, Activity Description:

Residents.

This area will be for the residents private use in bathing. If they are immobile a special bath area and lifts will be used.

Proximity Requirements:

In the residents room.

Furnishings and Fixtures:

Special handicapped railings
Toilet
Sink
Tubs
Mirrors
Storage shelves

Requirements:

100 f.c. of lighting
Heat lamp
Nurse buzzer

Considerations:

A door that can be unlocked from both ways in case of an emergency.

Program:
Space Program

Functional Unit: Physical Therapy / Dr. Exam Room

User Description, Activity Description:

Residents

This area will be for examination of the residents as well as a therapy area for their physical defects.

Proximity Requirements:

Nurses Station
Doctors Office
Nurses Bunk Room
Linen areas (soiled/clean)
Residential Lounge area

Furnishings and Fixtures:

Acoustical treatment
100 f.c. of light
STorage for linen and supplies
Various small tubs 3' x 5'

Considerations:

Exterior views (optional)
Non - slip floors
Easily Accessible

Program:
Space Program

Functional Unit: Library

User Description, Activity Description:

Visitors
Staff
Residences

Proximity Requirements:

Should be near the residential lounge and T.V. room as well as being near the administrator and doctors offices.

Circulation areas.

Furnishings and Fixtures:

Shelves
Tables
Chairs

Requirements:

110 - 100 f.c.
Lock on door

Considerations:

Exterior Views

Accessibility to Residents and visitors.

Functional Unit: Lounge and T.V. Room

User Description, Activity Description:

Up to 10 people at a time, some handicapped.

Day and night lounging, socializing and some home movies. This space provides a place to enjoy T.V. and socialize outside of private rooms.

Proximity Requirements:

Centralized location for all residents.

Furnishings and Fixtures:

Lounge chairs, counches and space for wheelchaires.

Big screen T.V. and cable.

Requirements:

40 - 80 f.c. general lighting with good sound seperation from hallway and adjacent rooms. Room proportion should facilitate good viewing.

Tables for games or food are desirable.

Considerations:

Atmosphere should be relaxed.

Functional Unit: Dining Room

User Description, Activity Description:

Seating for up to 20 people and residents, staff, family and friends.

Serving of breakfast, lunch, dinner with special considerations for occasional banquet.

Proximity Requirements:

Should be adjacent to kitchen and centrally located.

Furnishings and Fixtures:

Tables and chairs with some high chairs for children and tray chairs for immobile residents.

Requirements:

40 - 80 f.c. general lighting or dimmers.

Good acoustics with P.A. system.

Considerations:

All attempts should be made to create the atmosphere of "Home" rather than the institutional feeling of a hospital.

Functional Unit: Day Care / Crafts Room

User Description, Activity Description:

Residents and instructor for up to 10 - 12 children.

Activities to include hobbies and recreation involving residents and children.

Proximity Requirements:

This space should adjoin public and circulation areas and remain separate from resident rooms.

Furnishings and Fixtures:

Counter and sink and storage for supplies and toys.

Requirements:

80 f.c. general lighting, good sound seperation 65 S.T.C., good exhaust system.

Considerations:

Natural light and ventilation desirable.

Program:
Space Program

Functional Unit: Occupational Therapy

User Description, Activity Description:

Residents and relatives.

A qualified therapist and one of the nurses.

This space will be used for reinforcement and continuation of their present knowledge and skills.

Proximity Requirements:

Circulation areas and residential lounge.

Furnishings and Fixtures:

Tables
Chairs
Shelves

Requirements:

Accoustically sound
Good visual separations

Considerations:

Use a warm, working atmosphere with an optional exterior view.

Program:
Space Program

Functional Unit: Chapel

User Description, Activity Description:

Residents, Visotors, Staff. Up to 25 - 30 people.

Regular services and special services for memorial services, also for quiet meditation of residents.

Proximity Requirements:

Near vehicular entrance and parking

Centralized location desirable

Furnishings and Fixtures:

Platform or stage for viewing, P.A. system, organ or piano, special lighting.

Requirements:

Lecturn or pulpit, stage lighting, good circulation.

Consideration:

Multi purpose space design is desirable.

Functional Unit: Public Bath and Lounge

User Description, Activity Description:

This space will be for the visitors to the hospice as wll as a residents greeting area. This space will be used for a waiting area with views of all circulation routes.

Proximity Requirements:

This space should adjoin the Adminstration space and visitors rooms. It may also adjoin the doctors office and the multipurpose area. It should directly adjoin the main entrance.

Furnishings and Fixtures:

Bathrooms
Couches
Tables
Public telephones
Drinking fountains

Requirements:

2 bathrooms
A seating area away from pedestrian traffic.

Considerations:

A pleasing exterior view as well as views of the main circulation areas.

Program:
Space Program

Functional Unit: Green House

User Description, Activity Description:

Any and all residents incorporated into all residential and public space.

Proximity Requirements:

According to the discretion of the designer.

Furnishings and Fixtures:

OPen to design criteria.

Requirements:

Winter sunshine, summer shade.

Considerations:

To be visually pleasing and comforable to the users.

Program:
Space Program

Functional Unit: Pharmacy

User Description, Activity Description:

Pharmacist or Doctor and Head Nurse.

This spce will be used to share the drugs, mix and distribute them to the residents.

Proximity Requirements:

Doctors Office
Nurses Station
Nurses Bunk room
Lavoratory

Furnishings and Fixtures:

Counters at least five linear feet.
Storage below and above
A small refrigerator

Requirements:

Locks on the door
100 f.c.
files
sinks

Considerations:

Bars on windows (optional)

Program:
Space Program

Functional Unit: Nurses Station

User Description, Activity Description:

Two nurses and a registered nurse.

This area is the nurses central work area.

They will monitor the activities in all multi-purpose areas, as well as, residents rooms and circulation areas.

Proximity Requirements:

Immediately adjacent to residents lounge.

It is the center of all operations. The area should be accessible from the bunk room, pharmacy, scream room, doctors office, exam rooms, administration, utility areas and all residential rooms.

Furnishings and Fixtures:

Counter space
Chart board
Microwave
Sinks
Refrigerator
Clock
Chairs
Waste receptacle
Buzzer Switch Board

Requirements:

80 - 100 f.c.
Intercom connection with all rooms and exam areas.
Shelving for reference books.
Storage files

Considerations:

Visual contact with circulation areas and lounges

Program:
Space Program

Functional Unit: Staff Scream Room

User Description, Activity Description:

This space will be used for the nursing staff.

This area will be for releasing emotional strains and to discuss policies and procedures.

Proximity Requirements:

This space will be near the nurses station, nurses bunk room and doctors office.

Furnishings and Fixtures:

Sink
Couch
Shelves
Tables and Chairs

Requirements:

Very good accoustical and visual seperation

Considerations:

A pleasing exterior view.

Functional Unit: Staff Bunk Room

User Description, Activity Description:

This space will be for the nusring staffs own personal use.

It will be used as storage for their personal belongings as well as a rest area.

Proximity Requirements:

This space should adjoin the staff scream room, nurses station, pharmacy, and doctors office.

Furnishings and Fixtures:

Lockers
Bed
A small bathroom (optional)

Requirements:

Good accoustical treatment, visual seperation, and a emergency call.

Considerations:

Exterior views and a relaxing atmosphere.

Program:
Space Program

Functional Unit: Doctors Office

User Description, Activity Description:

This space will be used for the doctors own relaxation purposes as well as a small conference space for the doctor and residents relatives.

Proximity Requirements:

Space should adjoin nurses station and pharmacy.

Furnishings and Fixtures:

Desk
Files
Couch
Shelves

Requirements:

Good accoustical treatment, good visual seperation, and an emergency call.

Considerations:

Exterior views desireable.

Program:
Space Program

Functional Unit: Administration

User Description, Activity Description:

One administrator with a secretary.

Administration will expidite all hospice business.

Proximity Requirements:

Mian entrance and public lounge with a good view of entrance activities.

Furnishings and Fixtures:

Desks
File cabinets
Office equipment

Requirements:

Good accoustical control joining rooms at least S.T.C. 45.

Storage

Considerations:

Views desireable

Visual seperation from public lounge

Program:
Space Program

Functional Unit: Main Entry Vestibule

User Description, Activity Description:

Residents, general public, visitors.

Orientation for incoming visitors and residents, baggage control, as well as a transportation terminal.

Proximity Requirements:

Lobby, lounge, administration, loading and unloading area.

Furnishings and Fixtures:

Lounge furniture
Parlor furnishings

Requirements:

Sheltered Entrance
Drinking fountain and public phone

Considerations:

Lobby should have a comfortable, relaxed atmosphere, and provide a transitional zone from outdoors.

Program:
Space Program

Functional Unit: Clean Linen

User Description, Activity Description:

Two nurses will be working at one time.

This area will be used for the disposal and starage point for clean and sterile linen.

Proximity Requirements:

Adjacent to soiled linen
Should be near nurses station, therapy rooms and exam room.

Furnishings and Fixtures:

Work counter with storage above and below waste receptacle
Parking space for carts
Shelves and cabinets
Sewing machine

Requirements:

Work counter
Need a positive pressure differential
Tackboards
Shelving
100 f.c. of lighting

Considerations:

STorage for tissue paper and facial towels.

Program:
Space Program

Functional Unit: Storage (Maintenance/Residence)

User Description, Activity Description:

Maintenance
Residence

This area will be a storage area for mechanical equipment as well as storage for residential belongings.

Proximity Requirements:

Circulation areas
Garbage area
Unloading and loading areas

Furnishings and Fixtures:

Shelves

Requirements:

Locks on doors and these two storage areas should be separated.
Very good accoustical treatment

Considerations:

Easily accessible

Program:
Space Program

Functional Unit: Kitchen / Food Storage

User Description, Activity Description:

Cook, residents and nurses will use this facility.

Food prep, starage and dishwashing.

Proximity Requirements:

Adjacent to dining room and service entrance.

Central location is desirable.

Furnishings and Fixtures:

Limited commercial kitchen equipment, meal carts and cart storage.
Refrigeration equipment, pantry and utensil storage.

Requirements:

Separate ventilating equipment.
80 - 100 f.c. general lighting
Clearance for cart traffic

Considerations:

Accoustical control and natural light desirable

Program:
Space Program

Functional Unit: Janitorial

User Description, Activity Description:

One janitor to pick up laundry, garbage and to do cleaning outside of the residents room.

Proximity Requirements:

The space should be close to the linen areas, and exterior garbage area.

Furnishings and Fixtures:

Sinks
Shelves

Requirements:

Storage for equipment
Accoustically sound
Visual separations

Considerations:

Storage for cleaning compounds and a variety of equipment. This space should be brightly lit.

Functional Unit: Space for the Deceased

User Description, Activity Description:

Use for temporary wait till arrival of funeral director.

Viewing of deceased.

Proximity Requirements:

Close to Chapel or integrated

Furnishings and Fixtures:

Flower stands
Pews for prayer

Requirements:

Should be accessible for viewing by family and friends

Considerations:

Quiet area seperate from circulation and areas of activity.

Adequate light either natural or artificial.

Program:
Space Program

Functional Unit: Mechanical Room

User Description, Activity Description:

Maintenance individual(s)

Heat supply, aire handling system, electrical control, security system, hot water.

Proximity Requirements:

Close to service entrance

Furnishings and Fixtures:

All mechanical equipment required for the specific design.

Requirements:

Adaquate light and ventilation

Considerations:

Location is physically important but low on the design criteria list.

Program:
Space Program

notes:

Functional Unit: Soiled Linen Area

User Description, Activity Description:

Two nurses will be working at one time.

The area which is continually in use, will be for rinsing, sorting, and collection of the linen which will be sent to the laundry to be cleaned.

Proximity Requirements:

Adjacent to clean linen room.
It should be near the nurses station, the thereapy, and exam rooms.

Furnishings and Fixtures:

Counters
Waste receptacles
Space for carts

Requirements:

Good general lighting.
One deep hopper
2 sinks
Should be a ventilated area with a slight differential negative pressure
Counter at least 5' long
One wast receptacle

Considerations:

Visual Separation
Some storage

Program:
Space Program

I - Attitudes Toward Death

In response to the question,"What does death mean to you?" two outlooks dominate. One views death in a philosophical veiw as the natural end process of life. The other is of a religeous nature, perceiving death as the dissolution of bodily lifeand, in reality, the beginning of a new life. This finding in a sense, broadly mirrors the interpretation of death in the history of western thought. From these two poles, Herbert Marcuse has suggested, two contrasting ethics may be derived. "On the one hand the attitude toward death is the stoic or skeptic acceptance of the inevitable, or even the repression of the thought of death by life; on the other, the idealistic glorification of death is that which gives'meaning' to life, or is the precondition for the 'true'life of man."

The philosophical outlook is primarily in all groups except the group of normal young people. It is noteworthy that in all groups, particularily that of mentally ill patients, some find thinking about death so anxiety provoking as to deny having any ideas at all about it. One aspect of the patients' concept of death is also worthy of comment: this is their frequent depiction of death as occuring by violent means. The conjecture is that a violent conception of death mirrors self-held feelings of agressiveness toward others as well as toward oneself.

According to a study made by Herman Feifel, it was found that the patients and older people select the age period of the seventies and beyond as the time when people most fear death because, "you are closer to it then";"you're at the end of your rope." Certain older people fear idleness and uselessness inold age more than they do death. One of the reasons why we tend to neglect the aged is because they remind us of death.

The age periods of the forties and fifties, however, are the ones chosen by the normal group because "death is now a definite possibility and you cannot brush it away"; and "your achivement and productive life is ending." Interestingly, the patients rank childhood second to the seventies in this respect. Their frequent choice of childhood as a time when people most fear death is somewhat surprising. Many times children's connotations of death revolve around the idea of deprivation. Indications show that attitudes towards death are strongly influenced by experiences of early life. Another examination of data along the lines of sex show that women tend to think more frequently about death than do men. We should not forget however that there is no necessary releationship between thinking about death and fear of death.

When dying patients are asked to express their preference as to the "manner, place, and time" of death, an overwhelming majority in all the groups want to die quitely and quickly with little suffering--"peacefully in your sleep" as most put it or "having a coronary." The remainder want to have plenty of time in order to make farewells to family and friends. "At home" and "bed" are specifically mentioned by the majority as the

prefered place of death. There are, naturally, personal idiosyncracies--"in the garden"; "overlooking the ocean"; "in a hammock on a spring day." About 15% to 20% in each group say that it really doesn't make much difference to them where they die. A sense of guilt, which our cultural pattern seemingly fosters in most of us, is extended into the dying patient because of being placed into a dependant role.

In perspective of the religeous nature, Feifel points out that the religeous person, when compared to the nonreligeous person, is personally more affraid of death. The stress for the religeous person is the concern for the afterlife matters "I may go to hell"; "I have sins to expiate yet" and concerns of this nature. A person of this nature deals more with the spiritual realm and seeks understanding in dealing with the realization of coming face to face with God upon leaving this life. Depending upon each persons understanding of God will dictate as to what orientation towards death that each individual will hold.

One important insight that Feifel points out is the serious mistake we commit in treating terminally ill patients is erecting a psychological barrier between the living and the dying. Some think and say that it is cruel and traumatic to talk to dying patients about death. Actually, indications show they want very much to talk about their feelings and thoughts about death but feel that we, the living, close off the avenues for their accomplishing this.

Our concern for death is not the sign of a cult of indifference to life or a denial of it. Rather, in gaining awareness of life. Saint Augustine in his 'confessions' implies that it is only in the facing of death that man's self is born.

Source

Feifel, Herman: The Meaning of Death, McGraw-Hill Book Company, Inc., New York, 1959: pp. 114-128.

Program:
SPECIAL CONSIDERATIONS

II - Encompasing human needs

A- Physical needs

1. providing private rooms for married patients.
2. providing spaces where patients can persue their hobbies and art work so they could feel that they are still physically active. ie . cooking , painting , gardening , music .
3. Jacussi , massage room , swimming pool .
4. recreation spaces .
5. Easy accesibility , limited stairs as possible .
6. Providing ramps, hand rails, handicap facilities : bed service bell, elevator, light switches, bathrooms .
7. Window hight sould be lowered for patients confined to bed .

B- Mental and emotional needs

A better understanding of a mental & emotional needs of users (patients, families, and staff) we are better able to provide an environment more suitable to the needs of these users .

1. Group sessions

a. talk, sharing : helping the families of patients in groups by talking about thier feelings & counceling them .

Program:

SPECIAL CONSIDERATION

b. Group talking of patients is not agood idia; because not all patients feel to talk about death at the same time & experience shows that this method is not effective .

c. Encouragement of patients for regular therapy in order to slow down physical deterioration .

d. Encouragement of community functions for it'ss theraputical quality .

C- Intellectual needs

1. For the given patient who persue the understanding of death through a philosophical, and intellectual means the following criteria should be provided :

a. place of research. ie. library .

b. place of contemplation ie. private nitches, etc.... this places should allow privacy without disturbance.

c. places of discussion which allows for spontanious interactions. ie. lounge, discussion rooms .

d. providing spaces for students to come for help & also gaining profesional experience .

d. designing a total environement which would stimulate intellectual interest by means of :

- creating natural environement of ordinary living condition rather than institutional.

Program:

SPECIAL CONSIDERATIONS

D- Spiritual needs

The sence of living is based up on movement, change, and acting related to one's environement and idea of moving forward through time toward a future containing purpouse and a goal .

For the given patients who pursue thier own purpose of being, through faith and religous attitudes, these people may find it easier to deal with the misfortunates of life by better understanding of thier spiritual needs. In providing for spiritual growth the following could be considered:

1. place of worship ie. chapel, this chapel should service the diffrent denominations & facilitate the community involvement in religous functions.
2. spiritual counseling ie. clergy which you may consider having office for that purpose.
3. support of family relationships in order to get spiritual strenth. spaces could be provided to support this relationships.
4. considering personal spaces for meditation.

III- Achiving hospice needs in an architectural perspective

A- Transitional spaces

Program:

SPECIAL CONSIDERATIONS

a. Public spaces : lounge, corridors, ...

b. Semipublic spaces : outdoor with tables and chairs, green house, ...

c. Semi private spaces : loungates, viewing balconies, atrium.

d. Private spaces : subspaces designed within spaces, private rooms.

e. Relief spaces : Outdoor or personal spaces, green spaces, screem rooms.

B- Visual images

1. Exterior

a. building should reflect more residencial image rather than institutional.

b. cosiousness of various user groups, residents, staff, public, visitor.

c. consideration of contextural issues.

d. response to the site consideration by using the existing situation in the positive way on your design.

e. Use of materials with minimum maintainance & maximum durability for exterior.

f. Special attention should be given for enterance.

2. interior

a. Different spaces for different users must be provided.

b. provide a seperate extt for deceased.

Program:

SPECIAL CONSIDERATIONS

c. provide aviewing room.

d. location of deceased room should be so when he is being taken away other patients could see him but not all the time.

3. Color

Most elderly people suffer from multitude of visual disabilities. The use of right colors would help the visual comfort. Also some colors would help the patient emotionally, chear them up & provide comfort & happiness.

Color	General psychological response
Blue	peacefull, comforting, contemplative, restfull
Black	Despondent, ominous, powerfull, strong
White	cool, pure, clean
Yellow	cheerfull, inspiring, vital
purple	Dignified, mournful
Red	stimulating, hot, active, happy
Orange	lively, energetic, exuberent
Green	severe, quiet, refreshing
pastel	neutral, non respondent, southing

a. use of warm & luminous colors encourages the alertness & moscular activity, and action. Use of these colors in physical activity spaces will encourage the patients for physical exercises which will lead to their well being

Program:
SPECIAL CONSIDWRATIONS

b. designer should try to be sympathetic with the users emotional state rather than try to change it.

c. surface size considerations

- for large surfaces the use of pastel and soft color.
- for small surfaces the use of strong, bright color.

4. Texture and pattern

The sense of touch is very important especially for elderly people. This sense rarely fails when others have long been expired.

a. walls should have a variety of textures and patterns increasing diffusion of light and thus reduce glare & also to provide an interesting and pleasing surface -sight and touch.

b. handrails and corners should be rounded.

c. Materials used for handrails should be chosen that will feel warm and familiar, not cold like steel.

d. floors should be warm and resilient

e. furnishing textures should feel comfortable according to users taste.

5. Rythem

a. avoid rythem which give institutional images.

b. proper use of rythem will provide relief and movement within a space.

6. Space and qualities of materials

materials have considerable effect on the quality of a space. ie. concrete gives a cold unfamiliar feeling; wood gives a much warmer, intimate feeling.

7. Graphics

a. special attention to graphics where needed to not give a feeling of institution.

b. three-dimensional graphics may decrease confussion.

8. Symbolism

a. encouragement of hope and life by use of symbols ie. appropiate posters and statues and graphics in public and private spaces.

b. by exhibiting artifacts created by users of arts and crafts facilities.

c. proper use of building and space forms can help the designer to achieve symbolic meaning. scale, form.

C- Concept of 'passage of time'

It is very important for the patients to be aware that despite their illness, life as we know it will continue on. By allowing the awareness of the passage of time, patients will better be able to accept their own passage of time.

1. Architectural Considerations

   a. by use of full windows or by bringing the window height down to bed level, patients confined to bed may view the changing seasons and outdoor activity.

   b. by having special calenders in semi-public spaces with special reminders of occasions. ie. birthdays,...

   c. by having the nursery nearby the residential area where patients could spend time observing children.

   d. by having flower gardens and greenhouses, patients could take part in gardening or simply observe and experience the esthetics that a garden creates.

D- Lighting Lighting is a very important technique in improving the visual aspects of the design. Correct lighting increases both safety and aesthetic qualities of spaces.

1. Natural lighting

   a. providing natural light will provide and create liveliness and a more pleasant space to be in .

   b. economy in daylight hours

   c. natural light is therapeutic for the relief of stress and depression.

2. Artificial lighting

   a. design artificial lighting in proper intensities,

where older people need more light than the norm.

b. Proper choice of artificial lighting will enhance the aesthetic qualities of a space.

c. choose proper lighting colors. ie. flourescent lights tend to cause a dying person look worse because of the chalky color that is reflected from skin.

3. Glare control

a. avoid blinding, direct or reflected glare by

- reducing source output
- sensitivity to light source placement
- increasing background output

b. transitional lighting is suggested to avoid blinding brightness or darkness.

E- Accoustics

1. General

a. avoid background noise

b. encourage comforting sounds. ie. waterfalling, etc.

c. sensitivity to large, open areas.

2. Exterior sounds

a. locate residential area from high noise area.

b. minimize unpleasant exterior noises by use of good site planning.

c. encourage pleasing sounds. ie. children, birds.

Program:
SPECIAL CONSIDERATIONS

3. Interior sounds

a. mechanical room should be isolated from residental area.

b. use of acoustical tiling and finishes.

c. segregation of pleasant and nonpleasant sounds both horizontaly and verticaly.

F- Olfactory

The sense smell and taste could be very persuasive towards sugesting responses, the design should deal with odor good and bad in the proper ways :

a. using kitchen cooking odors to float into residental area may increas appetite and thus health in som cases.

b. By preventing unpleasant odors from spreading, a more personable and enjoyable atmosphear is created.

c. By use of good quality odor control we can prevent the building from from smelling like an institution.

d. By creating negative pressure we can preyent odors from escaping, and positive preassure will prevent the odor from an entering the space.

E- Safety factos

The visual aspects of security and safety systems are important to give assurance to the patirnts and provide peace of the mind.

Program:

SPECIAL CONSIDERATION

a. fire alarm system

b. fire extinguishing

c. smoke detection

d. sprinklers system

e. panic hadware

f. locks on drawers & cabinets

g. lockers for employees

h. absence of suspicious figurs

i. security guard may either be employee or contract service.

j. keep main and residental enterances in near well traveled streets.

k. well lit parking area, walk ways, and entry.

l. Non slip surfaces where needed.

Program:

SPECIAL CONSIDERATIONS

BIBLIOGRAPHY

Carp, Frances March, A future for the aged, by the hogg foundation for mental health, 1966.

Epstein, Charlotte, Nursing the dying patient, Reton publishing company, Inc., Reston, Virginia, 1975.

Dorroh, Thelma lee, Between patient and health worker, McGraw-Hill book company, 1974.

Herman, Feifel, The meaning of death, MacGraw-Hill book company, 1959.

Talking to a nurse.

Hand out materials.

ENERGY CONSIDERATIONS:

1. BOZEMAN CLIMATE:

During the winter months the sun is very low in the sky, and the days tendto be very short. In summer months the sun is very high and the days are much longer. Fall is typically shorter than spring and spring seems to bring the most moisture in this area. It is not uncommon to have some snow fall ten months out of the year. The summer months are of a moderate temperature with occasionally very hot periods. The temperature range between summer and winter is (-30 to 90) while in the winter months the extreme cold is a small percentage.

2. DESIRABLE SITE CHARACTERISTICS:

Site should be protected from cold winter winds which blow from the northwest. There should be ample sunlight obtained from the morning and south sun for the most part of the year. Shading can be provided on the west and northwest but is not that crucial, since the Bozeman area is not an overheated area. If you do provide shading on these sides, the use of deciduous trees should be taken into account, so the winter sun can filter through to the building. Other points to ponder, in winter, evergreen windbreaks can reduce the heat loss from buildings and discourage drifting snow. In summer, the surface of grass and leaves absorb radiation, and their evaporation processes can cool air temperature.

3. EARLY DESIGN RESPONSES:

Attention should be taken to protection from winter winds. Minimal window areas to the north. Social areas and widely used areas should be kept on the sunny side of the building and the least important areas on the north side.

Program:
ENERGY CONSERVATION

4. SHELTER DESIGN: (one house type)

A. Residential structures, two-story houses or arrangements under one roof are preferable for compactness.

B. General arrangement - Conservation and economy of heating is about three times as important as provision for summer comfort. The extreme conditions both in winter and summer suggest solutions of separated zones for this dual role of the structure. Entrance spaces with storage of clothing is desirable. Avoid exterior steps and steep drives.

C. Plan - Design mainly determined by conditions prevailing in cool and cold months. Indoor living period represents 70% of annual hours. As plan aims to satisy those conditions through compactness, provision for summer comfort with additional living areas and/or utilization of outdoor spaces is essential.

D. Form and Volume - Structures shall be compact with minimum exterior surface. Volume effect is highly desirable. Proportion 1:1.1 - 1.3 elongated on east-west axis gives optimum effects.

E. Orientation - Optimum sun orientation lies 18 degrees east of south. The prevailing wind pattern northwest.

F. Color - Sun exposed surfaces in medium colors; recessed surfaces can be of dark absorbant colors if shade in summer can be provided.

5. BUILDING ELEMENTS:

A. Openings and Windows - Sun windows will provide good auxiliary heat sources. Windows should be shade protected during over heated times. Heavy draperies or shutters are desirable to reduce heat loss duing cool periods. Double glazing is essential. Triple glazing for north windows. Controlled ventilation is a primary requirement (max. 20 fpm air movement) weatherstripping. At over heated times, cross ventilation is desirable.

B. Walls - Exterior surfaces of smooth non-absorbent materials are preferable. Low thermal capacity insulation.

C. Roof - A sloping roof is desirable to encourage snow removal by wind action. Summer solar gain is about twice as great as east or west wall. Steep pitch to south optimum for solar gain. Simple roof formation is desirable to prevent moisture penetration and ice-filled gutters.

6. MATERIALS:

A. Low thermal capacity insulation should be designed to resist a winter thermal gradient of 88°F; required insulation value relative to south is: east - 1.2; west - 1.2; north - 1.3; roof - 1.4.

B. High heat capacity mass in the interior to balance extreme heat variations is desirable; west wall material with 6 hour time lag balances internal heat distribution.

C. Vapor seal on warm (interior) side of outer walls is important.

D. Avoid exterior materials that are absorptive and subject to freeze-thaw damage. Extreme temperature ranges create necessity for avoiding materials subject to stress from expansion, contraction, and excessive dryness.

E. Shading is summer is desirable, but should not interfere with solar impact during under heated times.

7. FOUNDATION AND BASEMENT:

Basement should receive sunlight in summer or have artificial dehumidification to prevent condensation resulting from earth temperatures.

8. MECHANICAL EQUIPMENT:

Water and sewer pipes should be kept out of exterior walls, particularly northwest and southeast walls.

9. GENERAL OBJECTIVES:

Increase heat production. Increase radiation absorption, and decrease radiation loss. Reduce conduction and evaporation loss.

Program:
ENERGY CONSERVATION

TABLE NO. 5-A—WALL AND OPENING PROTECTION OF OCCUPANCIES BASED ON LOCATION ON PROPERTY

TYPES II ONE-HOUR, II-N AND V CONSTRUCTION: For exterior wall and opening protection of Types II One-hour, II-N and V buildings, see table below. Exceptions to limitation for Types II One-hour, II-N and Type V Construction, as provided in Sections 709, 1903 and 2203 apply. For Types I, II-F.R., III and IV Construction, see Sections 1803, 1903, 2003 and 2103.

GROUP	DESCRIPTION OF OCCUPANCY	FIRE RESISTANCE OF EXTERIOR WALLS	OPENINGS IN EXTERIOR WALLS
	5—Aircraft repair hangars	1 hour less than 60 feet	Protected less than 60 feet
I See also Section 1002	1—Nurseries for full-time care of children under the age of six (each accommodating more than five persons). Hospitals, sanitariums, nursing homes with nonambulatory patients and similar buildings (each accommodating more than five persons)	2 hours less than 5 feet, 1 hour elsewhere	Not permitted less than 5 feet Protected less than 10 feet
	2—Nursing homes for ambulatory patients, homes for children six years of age or over (each accommodating more than five persons)	1 hour	
	3—Mental hospitals, mental sanitariums, jails, prisons, reformatories and buildings where personal liberties of inmates are similarly restrained	Permitted in Types I and II-F.R. buildings only [See Section 902 (b)]	
M[2]	1—Private garages, carports, sheds and agricultural buildings	1 hour less than 3 feet (or may be protected on the exterior with materials approved for 1-hour fire-resistive construction)	Not permitted less than 3 feet
	2—Fences over 6 feet high, tanks and towers	Not regulated for fire resistance	

TABLE NO. 5-C—BASIC ALLOWABLE FLOOR AREA FOR BUILDINGS ONE STORY IN HEIGHT
(In Square Feet)

	TYPES OF CONSTRUCTION								
	I	II			III		IV	V	
OCCUPANCY	F.R.	F.R.	ONE-HOUR	N	ONE-HOUR	N	H.T.	ONE-HOUR	N
A-1	Unlimited	29,900	Not Permitted						
A) 2-2.1	Unlimited	29,900	13,500	Not Permitted	13,500	Not Permitted	13,500	10,500	Not Permitted
A) 3-4	Unlimited	29,900	13,500	9,100	13,500	9,100	13,500	10,500	6,000
B) 1-2-3[1]	Unlimited	39,900	18,000	12,000	18,000	12,000	18,000	14,000	8,000
B-4	Unlimited	59,900	27,000	18,000	27,000	18,000	27,000	21,000	12,000
E	Unlimited	45,200	20,200	13,500	20,200	13,500	20,200	15,700	9,100
H) 1-2[2]	15,000	12,400	5,600	3,700	5,600	3,700	5,600	4,400	2,500
H) 3-4-5	Unlimited	24,800	11,200	7,500	11,200	7,500	11,200	8,800	5,100
I) 1-2	Unlimited	15,100	6,800	Not Permitted	6,800	Not Permitted	6,800	5,200	Not Permitted
I-3	Unlimited	15,100	Not Permitted[3]						
M[4]	See Chapter 11								
R-1	Unlimited	29,900	13,500	9,100[5]	13,500	9,100[5]	13,500	10,500	6,000[5]
R-3	Unlimited								

N—No requirement for fire resistance
F.R.—Fire Resistive
H.T.—Heavy Timber

Occupancy Group-

We must first determine the occupancy group which the use of the building most nearly resembles. There are seven of these groups. A Hospice falls within Group 1 as is shown in Table No. 5-A (page 56, U.B.C.)

The type of construction of the building is determined by the materials used and the fire resistance of the building. Type 1 attains the highest standards and Type 5 the lowest standards. Table No. 5-C (page 59, U.B.C.) lists the amount of floor area you may have in a single story structure using the five types of construction. Our allowable floor area may be tripled in a one story building or doubled in a multi-story building if we install an automatic sprinkler system. We may then increase the building to three stories if we choose. Table No. 5-D (page 60, U.B.C.) lists the heights and number of stories allowable relative to the occupancy group and types of construction. Table No. 17-A (page 102, U.B.C.) lists the fire resistive requirements for each of the five types of construction.

Location on property- openings in exterior walls are not permitted less than five feet from the property line or protected less than ten feet from the property line.

Program:

Building Codes

TABLE NO. 17-A—TYPES OF CONSTRUCTION—FIRE-RESISTIVE REQUIREMENTS
(In Hours)

For Details see Chapters under Occupancy and Types of Construction and for Exceptions see Section 1705.

BUILDING ELEMENT	TYPE I	TYPE II			TYPE III		TYPE IV	TYPE V	
	NONCOMBUSTIBLE				COMBUSTIBLE				
	Fire-Resistive	Fire-Resistive	1-Hr.	N	1-Hr.	N	H.T.	1-Hr.	N
Exterior Bearing Walls	4 Sec. 1803 (a)	4 1903 (a)	1	N	4 2003 (a)	4 2003 (a)	4 2103 (a)	1	N
Interior Bearing Walls	3	2	1	N	1	N	1	1	N
Exterior Nonbearing Walls	4 Sec. 1803 (a)	4 1903 (a)	1	N	4 2003 (a)	4 2003 (a)	4 2103 (a)	1	N
Structural Frame[1]	3	2	1	N	1	N	1 or H.T.	1	N
Partitions – Permanent	1[2]	1[2]	1[2]	N	1	N	1 or H.T.	1	N
Shaft Enclosures	2	2	1	1	1	1	1	1 1706	1 1706
Floors	2	2	1	N	1	N	H.T.	1	N
Roofs	2 Sec. 1806	1 1906	1 1906	N	1	N	H.T.	1	N
Exterior Doors and Windows	Sec. 1803 (b)	1903 (b)	1903 (b)	1903(b)	2003 (b)	2003 (b)	2103 (b)	2203	2203

N—No general requirements for fire resistance. H.T.—Heavy Timber.

TABLE NO. 5-D—MAXIMUM HEIGHT OF BUILDINGS

OCCUPANCY	TYPES OF CONSTRUCTION								
	I	II			III		IV	V	
	F.R.	F.R.	ONE-HOUR	N	ONE-HOUR	N	H.T.	ONE-HOUR	N
	MAXIMUM HEIGHT IN FEET								
	Unlimited	160	65	55	65	55	65	50	40
	MAXIMUM HEIGHT IN STORIES								
A-1	Unlimited	4	Not Permitted						
A) 2-2.1	Unlimited	4	2	Not Permitted	2	Not Permitted	2	2	Not Permitted
A) 3-4	Unlimited	12	2	1	1	1	2	2	1
B) 1-2-3[1]	Unlimited	12	4	2	4	2	4	3	2
B-4	Unlimited	12	4	2	4	2	4	3	2
E[2]	Unlimited	4	2[2]	1	2[2]	1	2[2]	2[2]	1
H-1	Unlimited	2	1	1	1	1	1	1	1
H) 2-3-4-5	Unlimited	5	2	1	2	1	2	2	1
I-1	Unlimited	3	1	Not Permitted	1	Not Permitted	1	1	Not Permitted
I-2	Unlimited	3	2	Not Permitted	2	Not Permitted	2	2	Not Permitted
I-3	Unlimited	2	Not Permitted[3]						
M[4]	See Chapter 11								
R-1	Unlimited	12	4	2[3]	4	2[3]	4	3	2[3]
R-3	Unlimited	3	3	3	3	3	3	3	3

N—No requirement for fire resistance
F.R.—Fire Resistive
H.T.—Heavy Timber

More detailed information on Occupancy Group 1 is located on pages 80-82 (U.B.C.) and construction types are further discussed on pages 91 - 119 (U.B.C.).

Exits - Two are required as shown in Table No. 33-A (page 524, U.B.C.) and shall be located a reasonable distance apart so that if one becomes blocked the other will be available. Maximum travel distance shall not exceed 150' or 200' in an automatic sprinklered building (page 500, U.B.C.). Each exit shall have a clear width of not less than 44" (page 517, U.B.C. and exit dorrs shall swing in the direction of exit travil. Exits may not pass through kitchens, storerooms, or restrooms. (page 501, U.B.C.)

Doors- Minimum clear width of doors (excluding exits) is 32". (page 33, A.N.S.I.)

Corridors- Corridors shall not be less than 8' in width. (page 517, U.B.C.). Dead end corridors shall not exceed 30' in length.

Ramps- The maximum slope of any ramp is 1:12, and the maximum rise for any ramp is 30". The minimum width is 36". Level landings are required at the top and bottom of each run. Handrails are required on each side of the ramp.(page 26, ANSI).

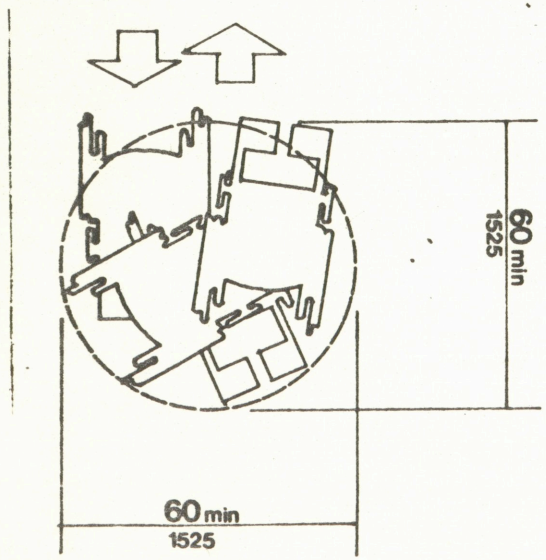
Stairways- They must be 36" minimum width with a maximum rise per step of 7½" and a minimum tread

Program:

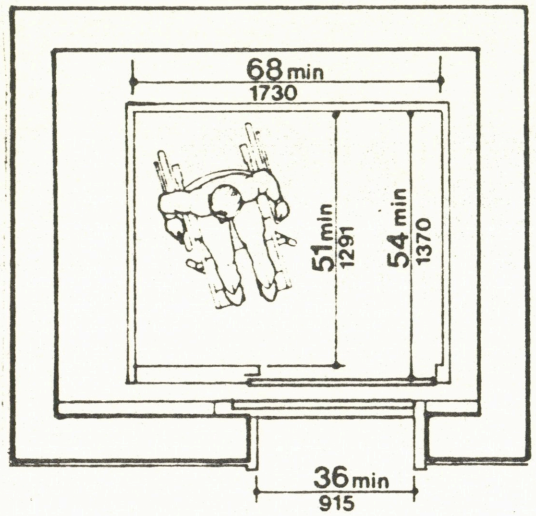
Building Codes

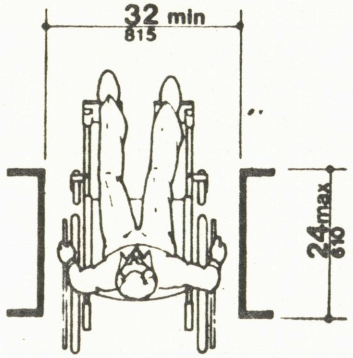
TABLE NO. 33-A—MINIMUM EGRESS AND ACCESS REQUIREMENTS

USE[1]	MINIMUM OF TWO EXITS OTHER THAN ELEVATORS ARE REQUIRED WHERE NUMBER OF OCCUPANTS IS OVER	SQUARE FEET PER OCCUPANT[2]	ACCESS BY MEANS OF A RAMP OR AN ELEVATOR MUST BE PROVIDED FOR THE PHYSICALLY HANDICAPPED AS INDICATED[2]
1. Aircraft Hangars (No Repair)	10	500	Yes
2. Auction Rooms	30	7	Yes
3. Assembly Areas, Concentrated Use (without fixed seats) Auditoriums Bowling Alleys (Assembly areas) Churches and Chapels Dance Floors Lodge Rooms Reviewing Stands Stadiums	50	7	Yes[3,4]
4. Assembly Areas, Less-concentrated Use Conference Rooms Dining Rooms Drinking Establishments Exhibit Rooms Gymnasiums Lounges Stages	50	15	Yes[3]
5. Children's Homes and Homes for the Aged	5	80	Yes[5]



(a)
60-in (1525-mm) -Diameter Space





(e)
Maximum Doorway Depth

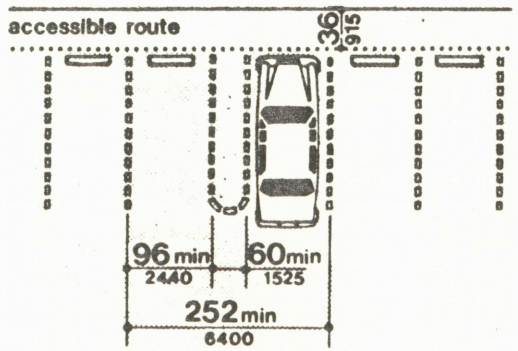


Fig. 9
Dimensions of Parking Spaces

lengths of 10". Maximum height between landings is 12' and the minimum headroom is 6'-6" (page 504, U.B.C.)

Elevators- They shall have a minimum clear opening (door) width of 42" and a minimum inside platform of 6'-8" wide by 4'-3" deep.

Sleeping Rooms- Each sleeping room shall have at least one operable window or exterior door for emergency egress or rescue, with a minimum clear width dimension of 20". Finished sill heights of windows are to be not more than 44" above the floor (page 85, U.B.C.)

Toilet Rooms- Toilet rooms need a clear floor space of 5' diameter for turning around of wheel chairs (page 97, U.B.C.). Each toilet room (excluding the public toilet room) shall include at least one water closet, one lavatory, and one bath tub or shower (page 43, ANSI). Bath tubs need 30" minimum clear floor space in front of them (page 40, ANSI). The minimum shower size allowable is 3' by 3'.

Parking- A reasonable number to be provided as close to the building as possible. Size of each space is to be 8' wide by 19' long with a 5' wide access aisle to one side. Adjacent parking spaces may share a common access aisle. (page 22 ANSI).

Program:

Building Codes

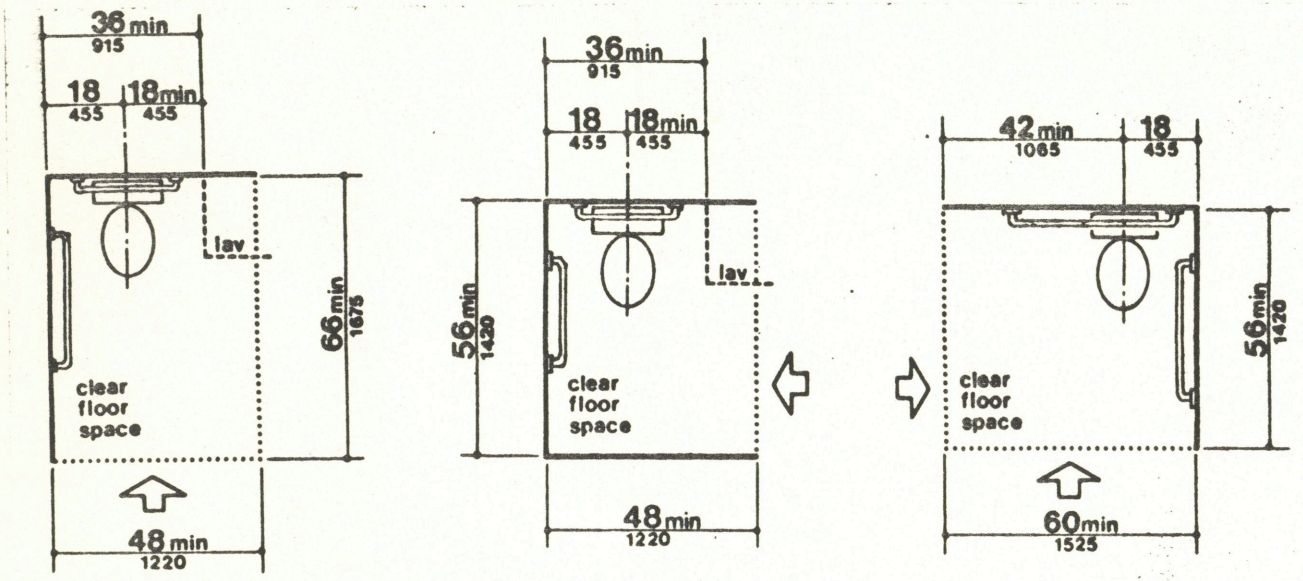
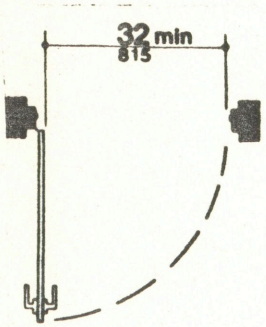
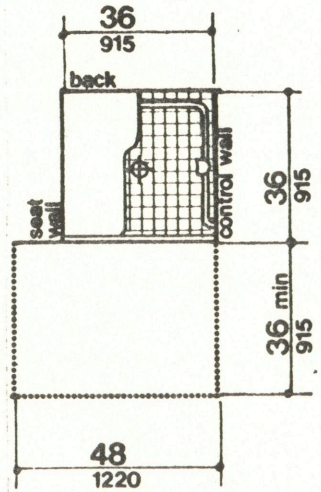


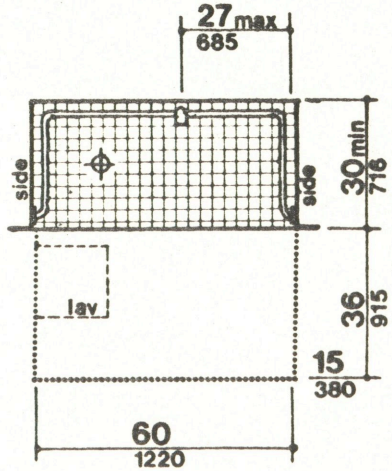
Fig. 28
Clear Floor Space at Water Closets



(b)
Hinged Door



(a)
36-in by 36-in
(915-mm by 915-mm) Stall



(b)
30-in by 60-in
(760-mm by 1525-mm) Stall

Fig. 35
Shower Size and Clearances

Seismic Design- We are in area 3. Every structure shall be designed and constructed to resist stresses produced by lateral forces as in Section 2312 (pages 126-147, U.B.C.)

Information Sources:
Uniform Building Code (U.B.C.)
Life Safety Code
American National Standard (ANSI

Program:
Building Codes

This budget estimate represents what would be calculated at the very beginning of a project. However, this complete program assumes that the initial project stages are well along--an actual site and other major decisions have been made. Therefore, this budget includes only an analysis of actual construction costs. Site procurement, and income - expense costs are not of major concern and were not included.

Building - 13,100sq.ft.@ $60/sq.ft.	$786,000
Separate Furnishings and Equipment	$50,000
Architectural Fees - 15% of above	$125,400
Contingencies - 10% of above	$96,100
Plan Check and Building Permit	$2,000
TOTAL CONSTRUCTION COSTS	$1,059,500

Program:

PROJECT BUDGET

MONTANA STATE UNIVERSITY LIBRARIES
3 1762 10059511 3