

THE OVERLOOK CLUB

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THE OVERLOOK ATHLETIC CLUB
BRECKENRIDGE, COLORADO

By John G. Sanderson

MONTANA STATE UNIVERSITY
Bozeman, Montana

March 10, 1989

A thesis paper submitted in partial fulfillment
of the requirements for the degree

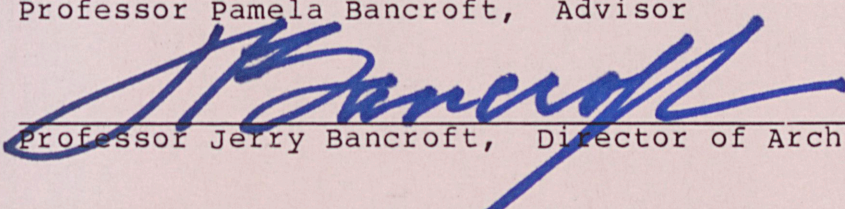
of

BACHELOR OF ARCHITECTURE

Approved:

Professor Ron Hess, Advisor

Professor Pamela Bancroft, Advisor



Professor Jerry Bancroft, Director of Architecture

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INTRODUCTION

INTRODUCTION

The thesis project I have chosen to design is an Athletic Facility located in the small Victorian town of Breckenridge, Colorado. This club will incorporate many areas that are needed for a facility of this nature to function in both summer and winter seasons. The facility will have large areas, ranging from a multi-purpose gymnasium to indoor tennis courts, along with small intimate areas, such as a bar/lounge and a nursery room.

There are many different aspects of this project that need to be considered. First, located in the Rocky Mountains at an elevation of 10,100 feet, the site has an extreme slope and elevation difference of approximately 175+ feet. Second, the topography is covered with pine and aspen trees, along with the rocky terrain, that gives the site its own natural context. Last, the extreme weather conditions of Colorado's mountainous climate tend to be considered a disadvantage, but when combined with the previous two points, the weather will become an advantage. These three issues, when combined together, present many opportunities to express architecture in a very dynamic manner.

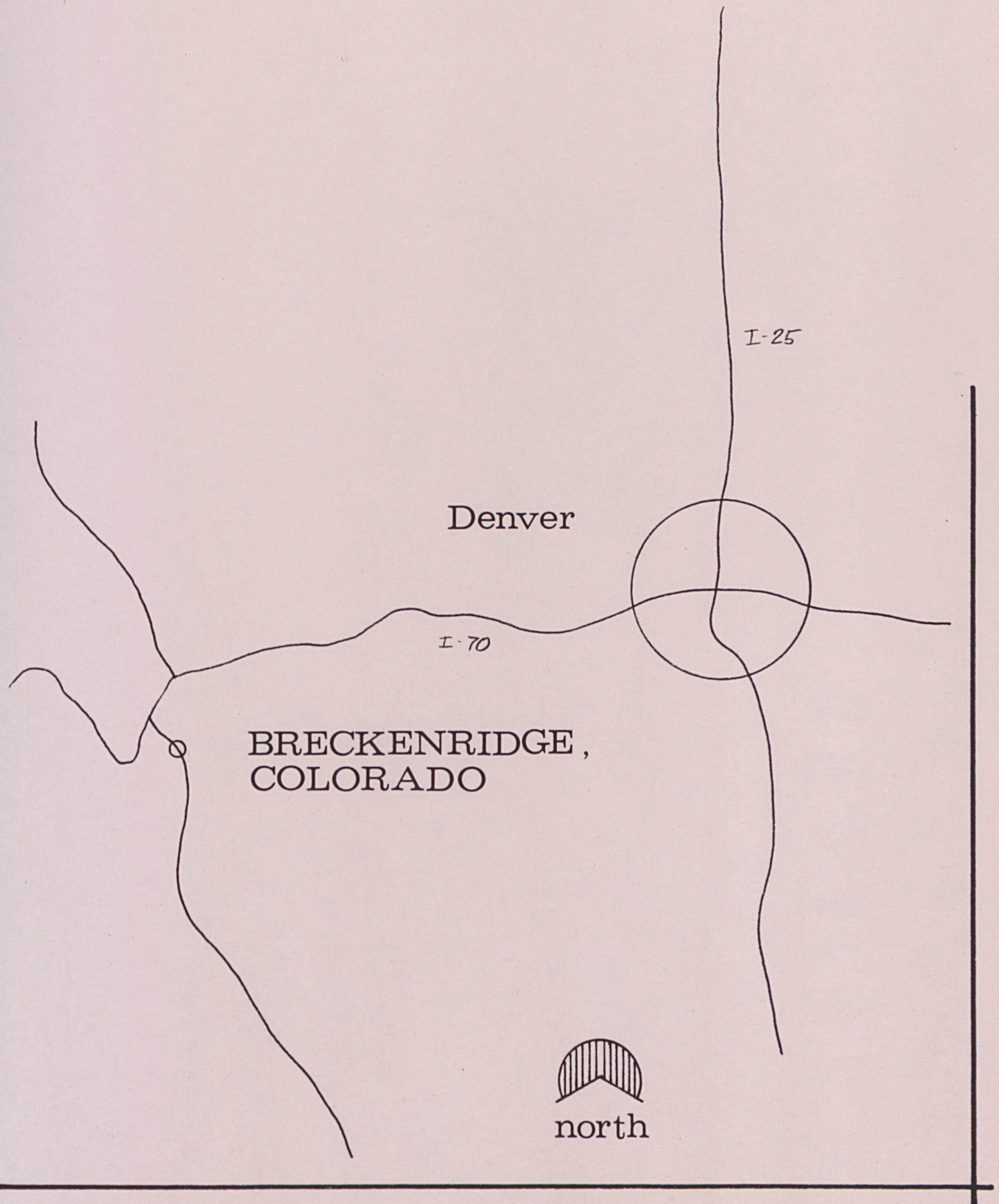
PERSONAL GOALS

- TO BUDGET TIME PROPERLY AND EFFICIENTLY WHILE MEETING EXPECTED DEADLINES.
 - TO STRENGTHEN THE RELATIONSHIPS WITH MY ADVISOR AND COMMITTEE PERSON AND USE THEIR KNOWLEDGE TO THE FULLEST.
 - TO SUCCESSFULLY INTEGRATE A FACILITY THAT ENHANCES AND COMPLIMENTS THE NATURAL ENVIRONMENT.
 - TO HAVE AN OPEN MIND AND LISTEN TO IDEAS OF OTHER PROFESSORS AND CLASSMATES.
 - TO DEVELOP BETTER RESEARCH AND EXPLORATION ABILITIES AND TO PRESENT AND EXPRESS THEM WELL IN ALL PHASES OF MY PROJECT.
-

PROJECT GOALS

- ☐ TO TAKE FULL ADVANTAGE OF THE TOPOGRAPHY FOR MAXIMIZING POTENTIAL VIEWS TO AND FROM SITE.
 - ☐ FOR THE FACILITY TO BE ABLE TO MAKE A STATEMENT ON THE SITE AND COMPLIMENT THE SURROUNDING ARCHITECTURE.
 - ☐ TO TAKE ADVANTAGE OF THE HARSH WINTERS AND COOL SUMMERS IN DESIGN POTENTIAL.
 - ☐ TO PROVIDE A FACILITY FOR A WIDE VARIETY OF USERS.
 - ☐ TO ALLOW EXCITEMENT OF EXTERIOR FORMS.
 - ☐ TO CREATE A CONSTANT ATMOSPHERE THROUGHOUT THE EXTERIOR AND INTERIOR OF THE FACILITY.
-

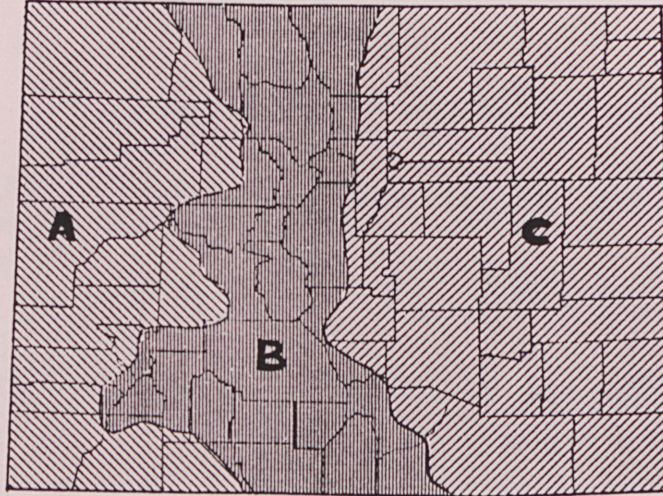
VICINITY MAP



CLIMATE ANALYSIS

INTRODUCTION

SOURCE: BUILDING IN COLORADO'S CLIMATE



The state of Colorado can be divided, geographically and climatically, into three general sections: The Eastern Plains (c) which extend from the Kansas stateline into the foothills of the Medicine Bow and Park Ranges; The Mountains (b), including all the mountain ranges and the three high park areas surrounded by mountains - North Park, South Park, and the San Luis Valley; and the Western Plateau (a), sloping from the western foothills to the Utah state line.

A few climatic features are common to all three regions of the state. All the areas receive too much sunlight, and all record some extremely low winter temperatures. The average relative humidity is low throughout the state.

Other features vary greatly from one section to another. The climates merge together, so that there is actually no sharply defined boundary line corresponding to the divisions on the map above. However, large differences exist between the sections in such factors as mean temperature, amounts of precipitation, and length of the frost-free season.

With large daily temperature variations a prominent climatic characteristic throughout the state, design should be aimed at diminishing the thermal fluctuations in buildings.

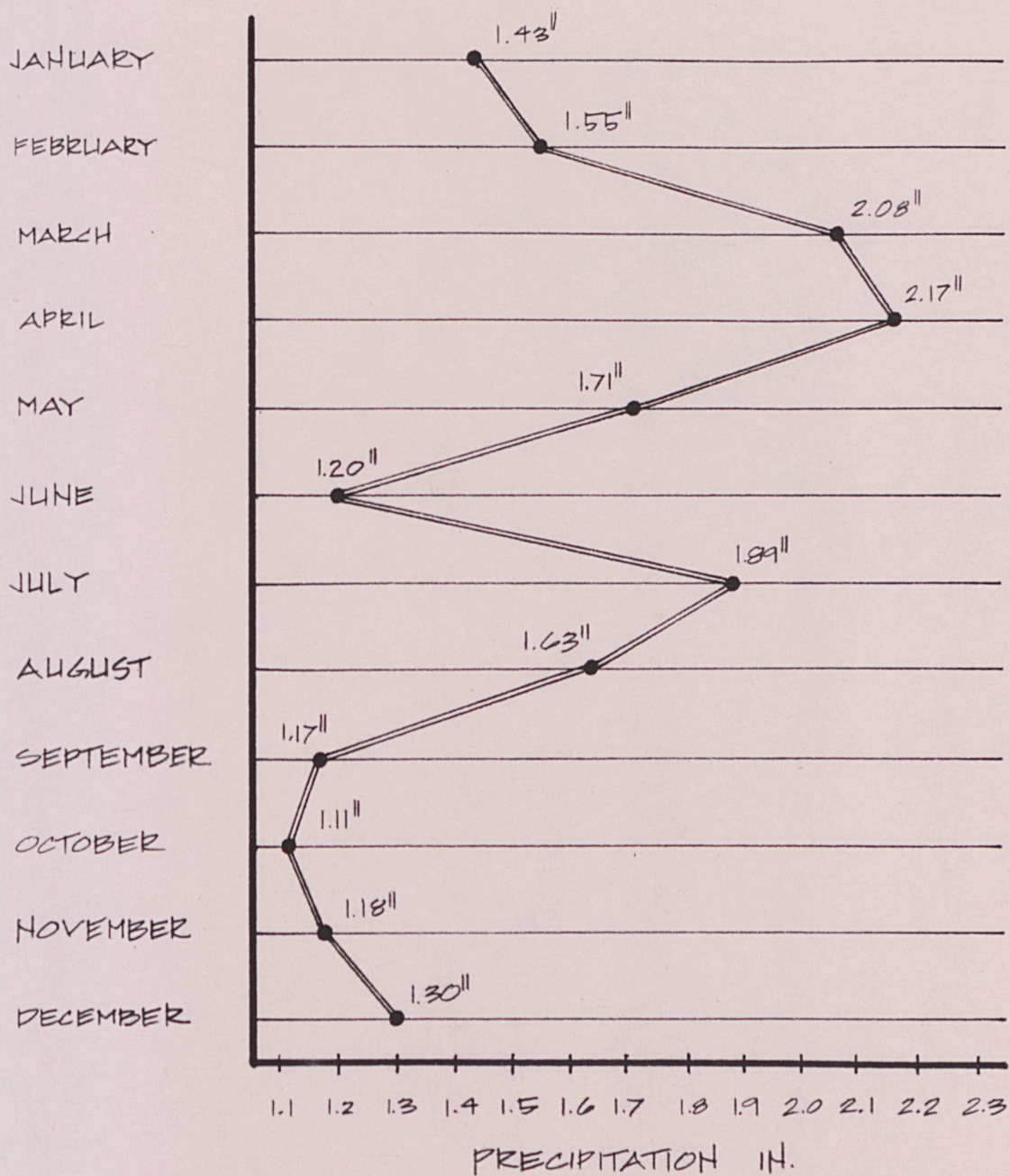
Below grade walls reduce the daily variation since they do not receive any radiation by day or lose heat rapidly at night. In residences and other small buildings, a full or partial basement is recommended not only for its effect on the daily temperature range, but also because it helps to level out the yearly extremes. The ground temperature a short distance below the surface remains fairly constant throughout the year - cooler than air temperature in the summer and warmer than outdoor air in the winter - so there is some summer heat loss through basement walls, yet less winter heat loss than through walls exposed to the cold exterior air. Floor slabs on grade utilize the constancy of ground temperature, too, but to a lesser degree. And, as mentioned before, capacity materials aid in decreasing the daily range of temperature in the summer.

Building insulation is important everywhere in Colorado, not only to decrease winter heat losses, but also to lower summer heat gain through the walls and roof.

Much of the summer heat gain is due to the solar radiation on the walls and roof. This solar heat gain can be prevented by the use of tall deciduous trees that shade the roof or light colored roofing materials that reflect much of the incident radiation.

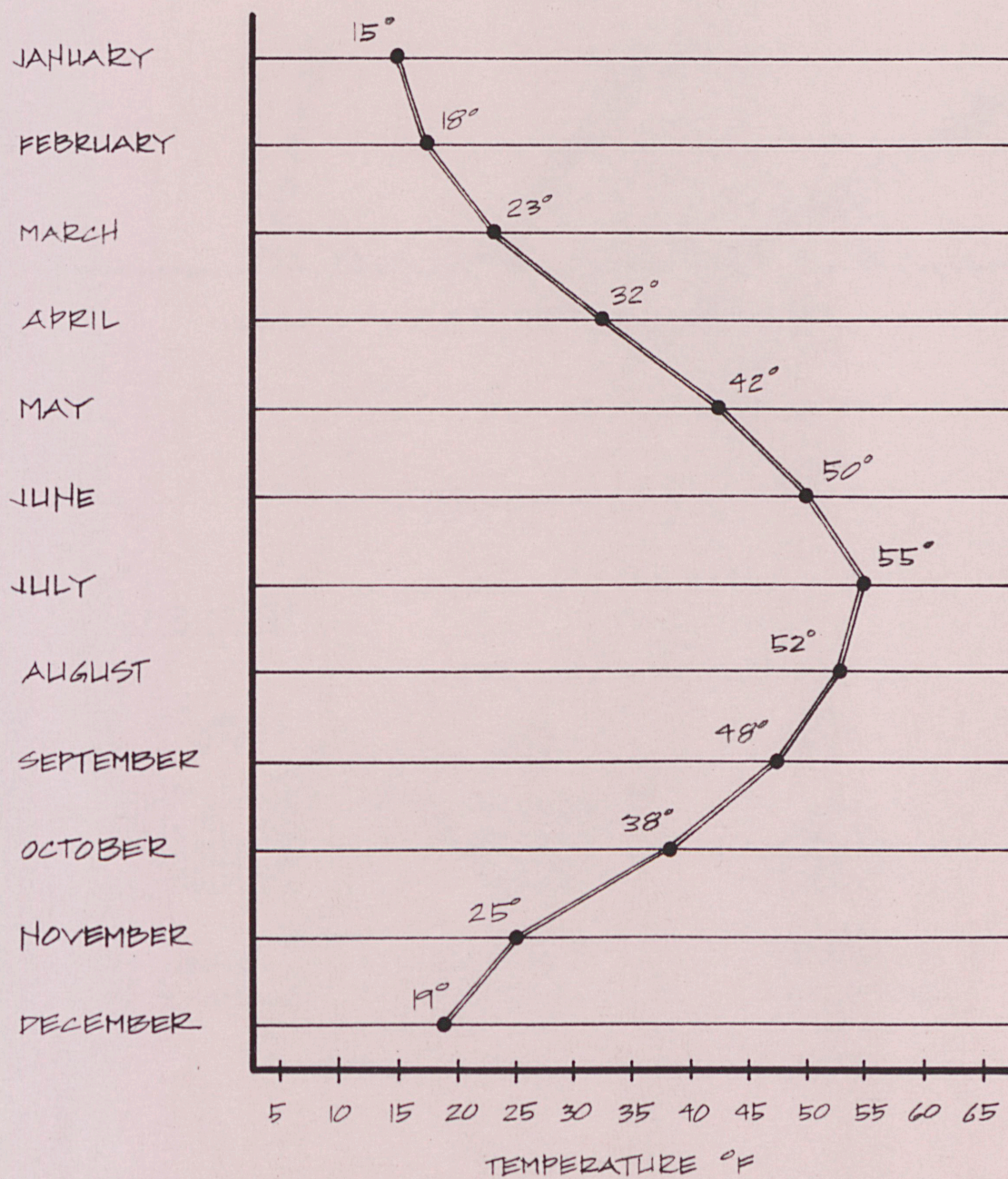
PRECIPITATION (avg.)

SOURCE: DECENIAL CENSUS OF U.S. CLIMATE



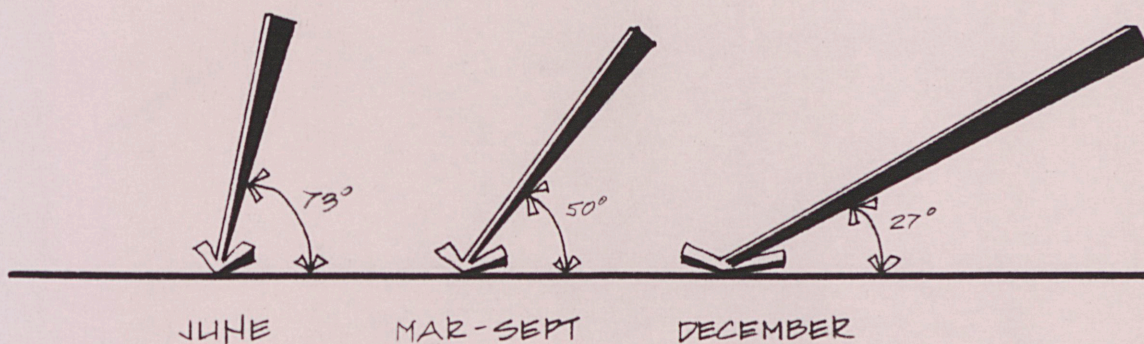
TEMPERATURE (avg.)

SOURCE: DECENNIAL CENSUS OF U.S. CLIMATE



SUN ANGLES

ALTITUDE



AZIMUTH

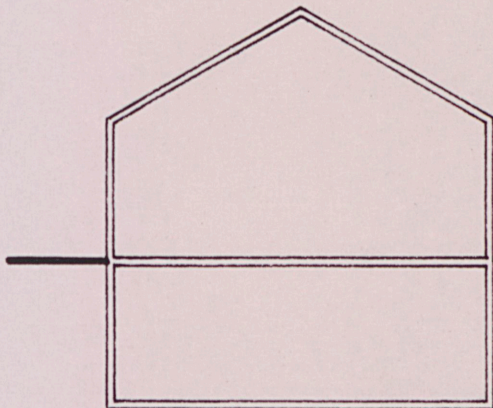


THERMAL DESIGN

SOURCE: BUILDING IN COLORADO'S CLIMATE

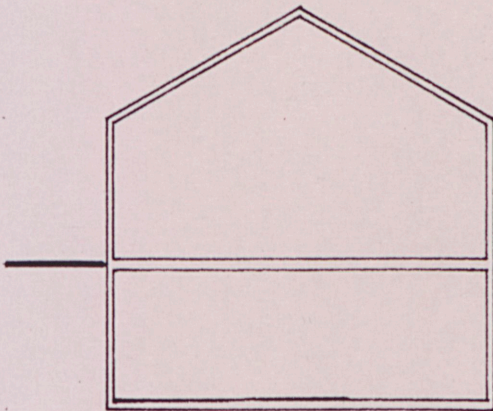
TEMPERATURES ABOVE & BELOW GRADE

SUMMER AFTERNOON



82°	- 10'
84°	- 8'
85°	- 6'
87°	- 4'
90°	- 2'
GROUND	
59°	2'
58°	4'
56°	6'
55°	8'
54°	10'

WINTER MORNING



27°	10'
27°	8'
27°	6'
26°	4'
24°	2'
GROUND	
32°	2'
38°	4'
42°	6'
44°	8'
46°	10'

SITE ANALYSIS

INTRODUCTION

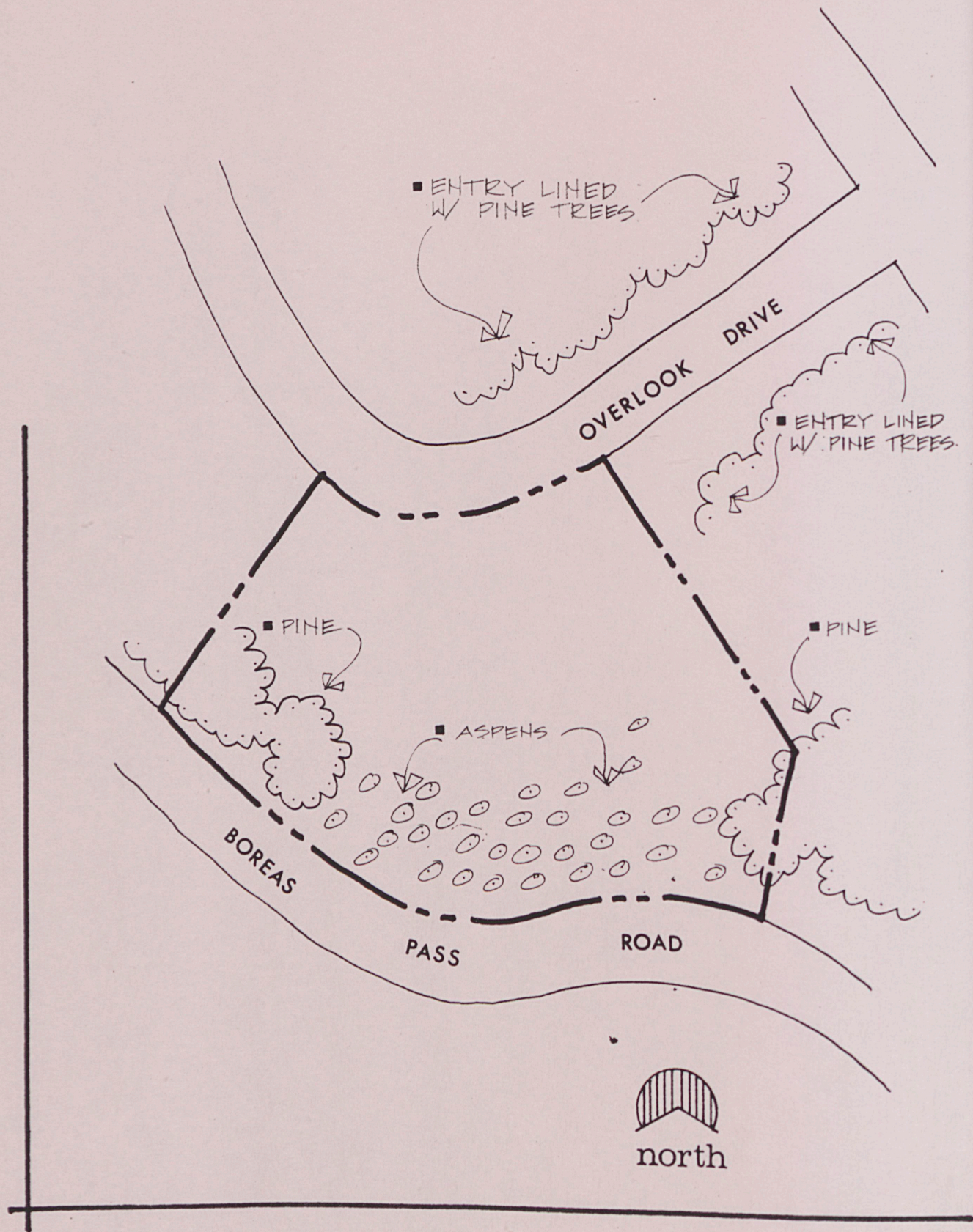
The site I have chosen for the Overlook Athletic Club is currently an existing athletic facility and comedy club. Due to several additions to the club, I have decided to redesign and enlarge the entire club. The only access to the site is an unpaved road called Overlook Drive. Since the club is located approximately three miles from town, it is accessible by two primary arteries, which are Boreas Pass Road and Moonstone Road.

The surrounding environmental conditions are a definite advantage to the site. With slow seasonal breezes and extensive southern exposure, the facility will be an ideal place to spend the whole day or even just a short while. Along with the advantages mentioned before, the seclusion of the site will eliminate noise and traffic conditions, such as vehicular and pedestrian.

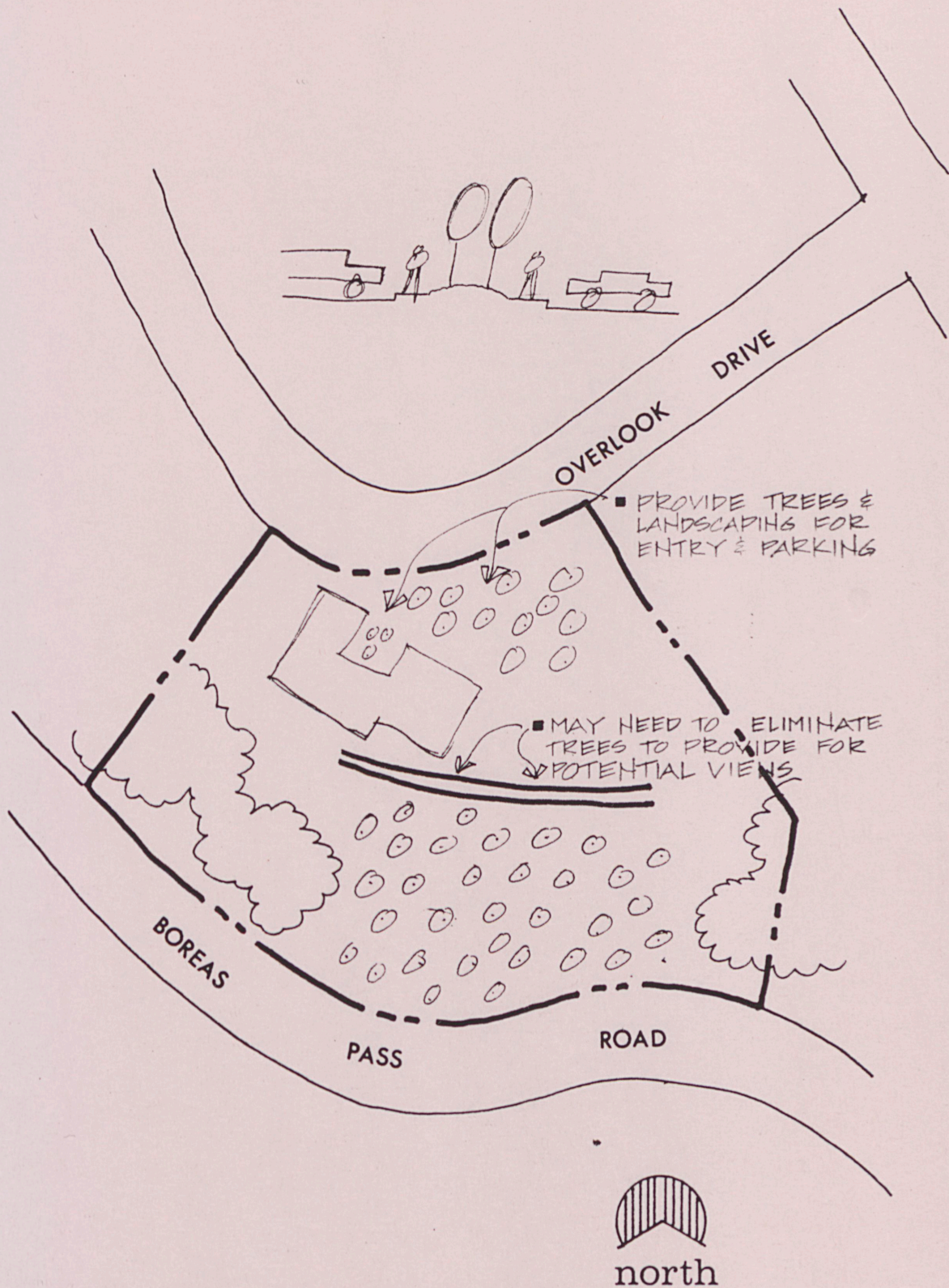
The implications of the site analysis are as follows:

- 1) The primary entrance of the club should be buffered from occasional strong gusts.
 - 2) Take advantage of the southern exposure and all potential views.
 - 3) Eliminate some vegetation to expose final solution as a focal element.
-

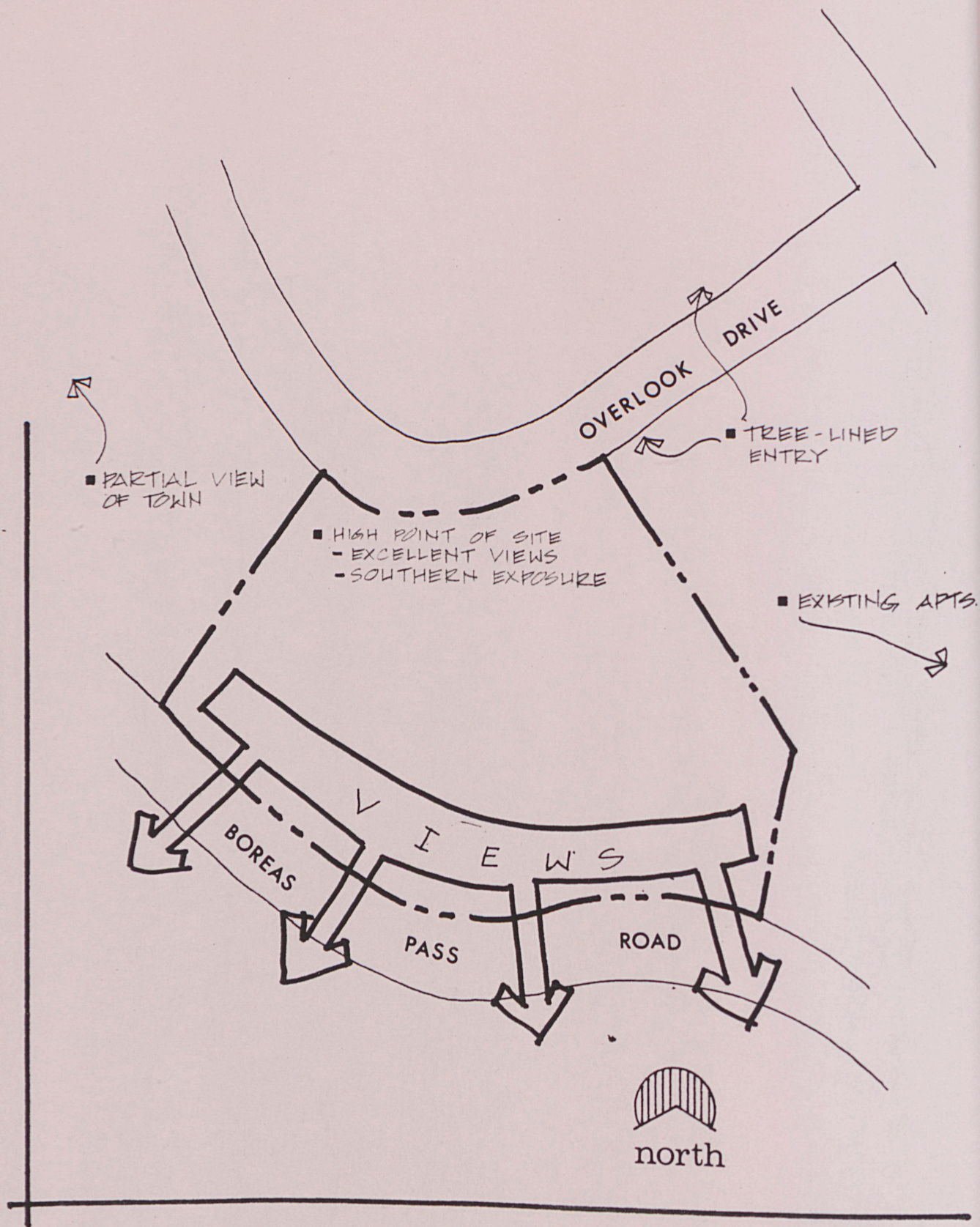
Condition: VEGETATION



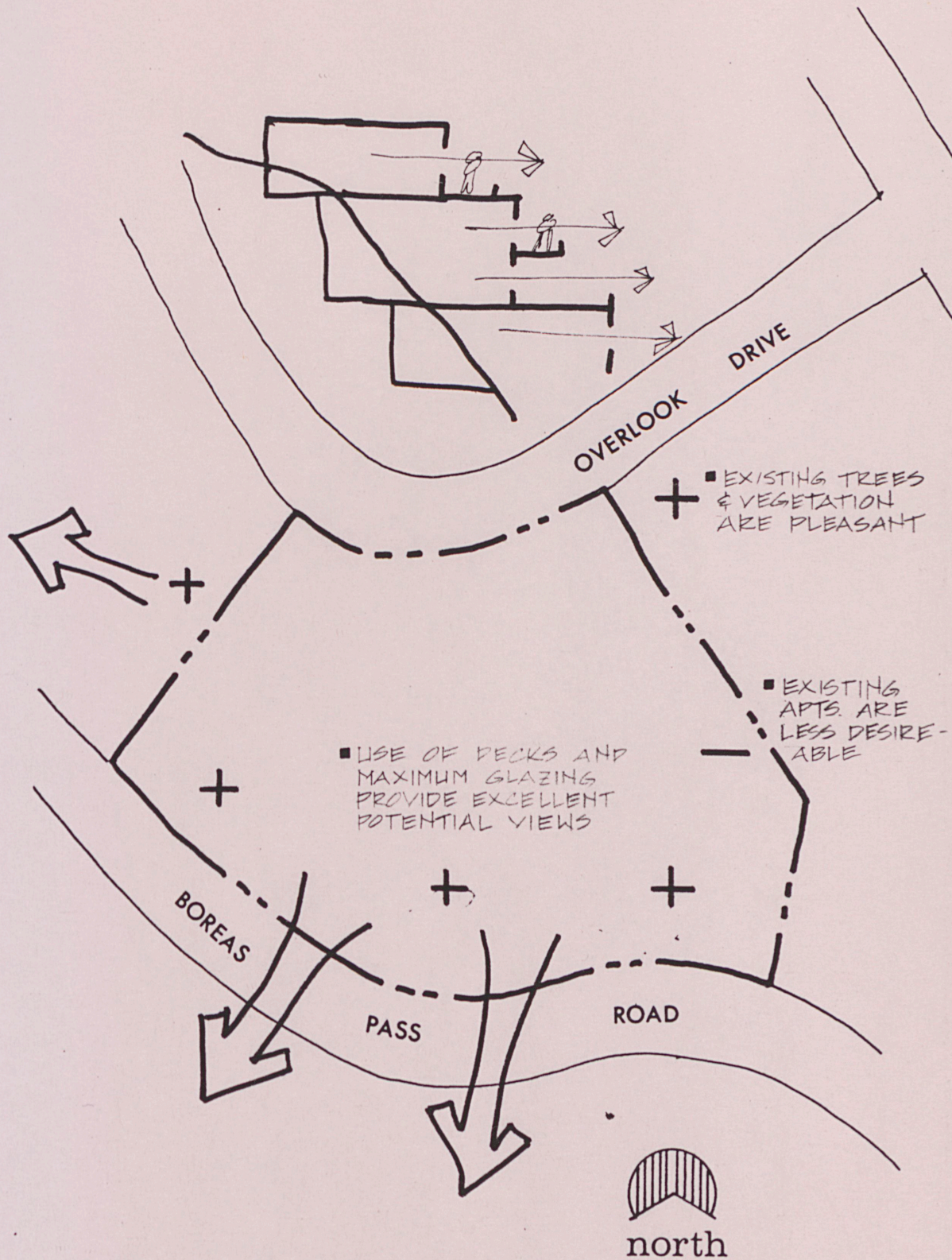
Response: VEGETATION



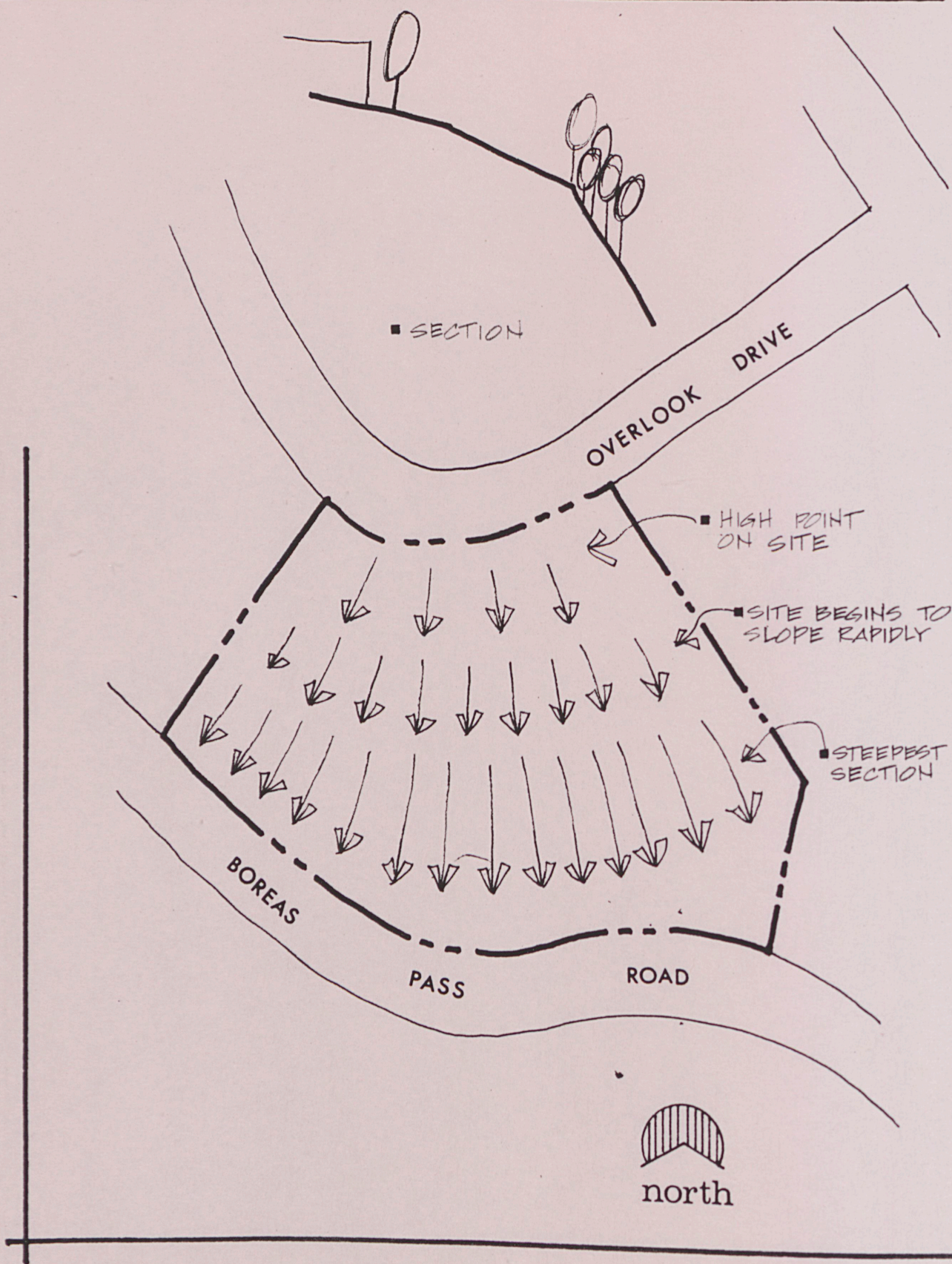
Condition: VIEWS from site



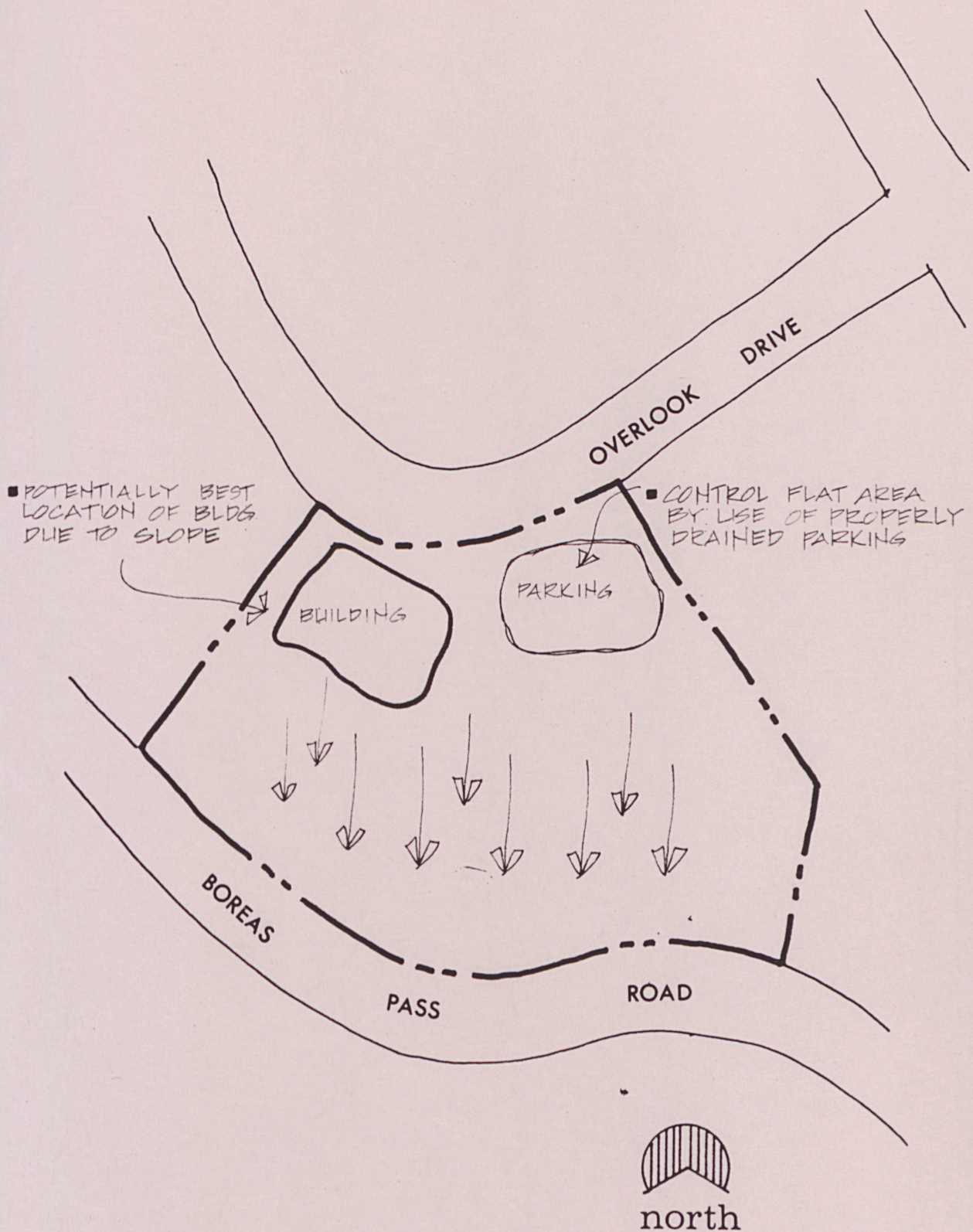
Response: VIEWS from site



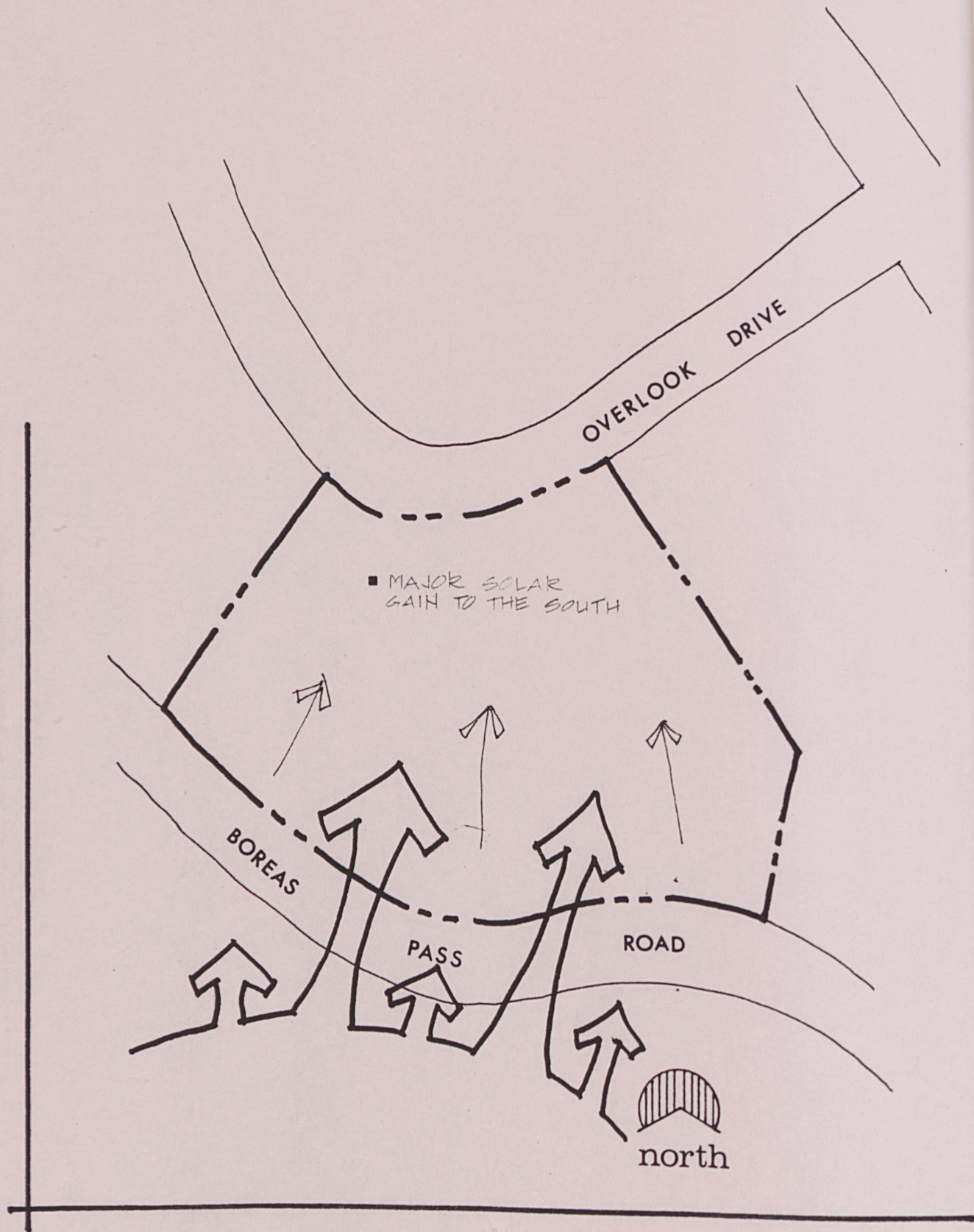
Condition: DRAINAGE



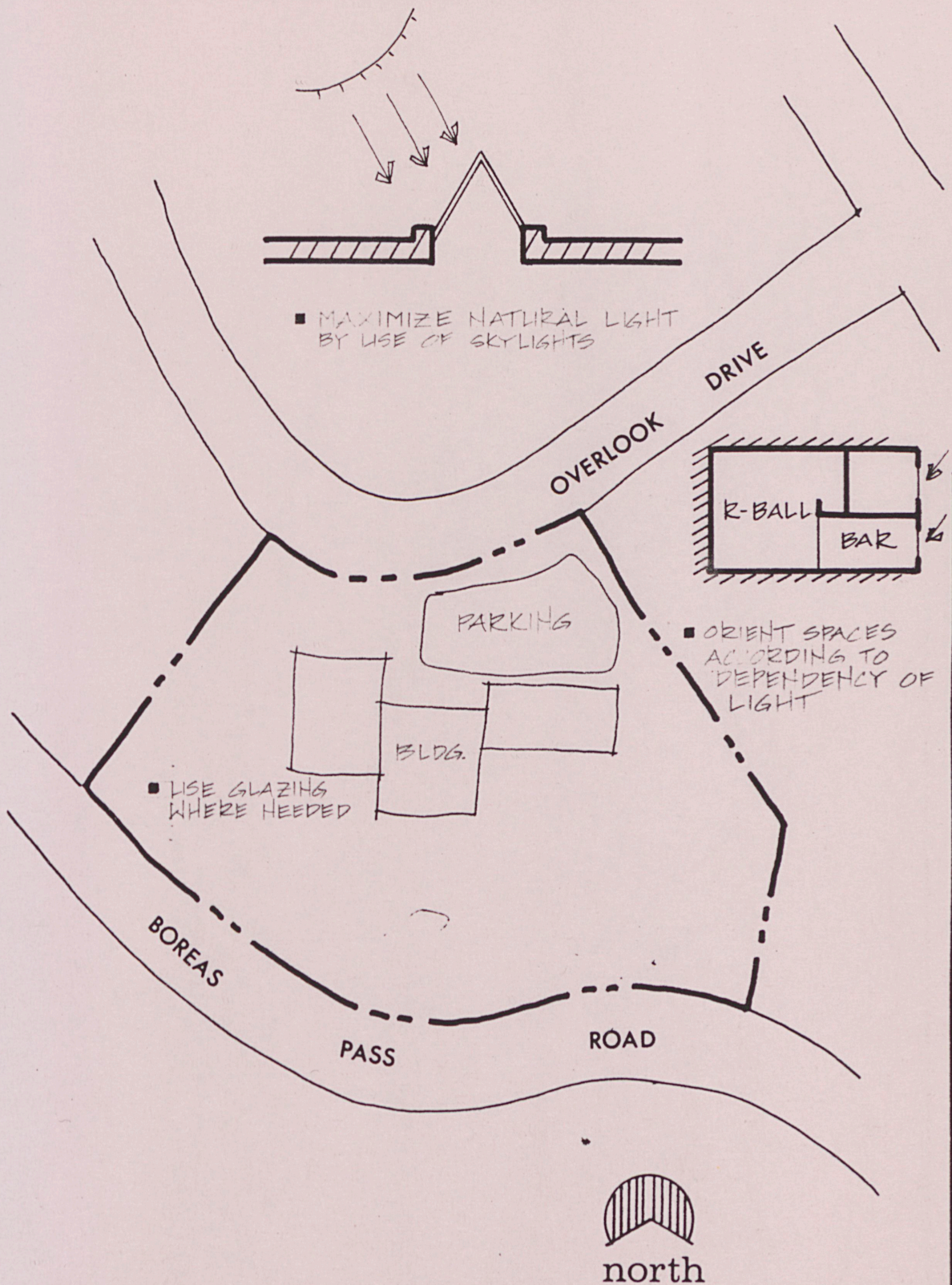
Response: DRAINAGE



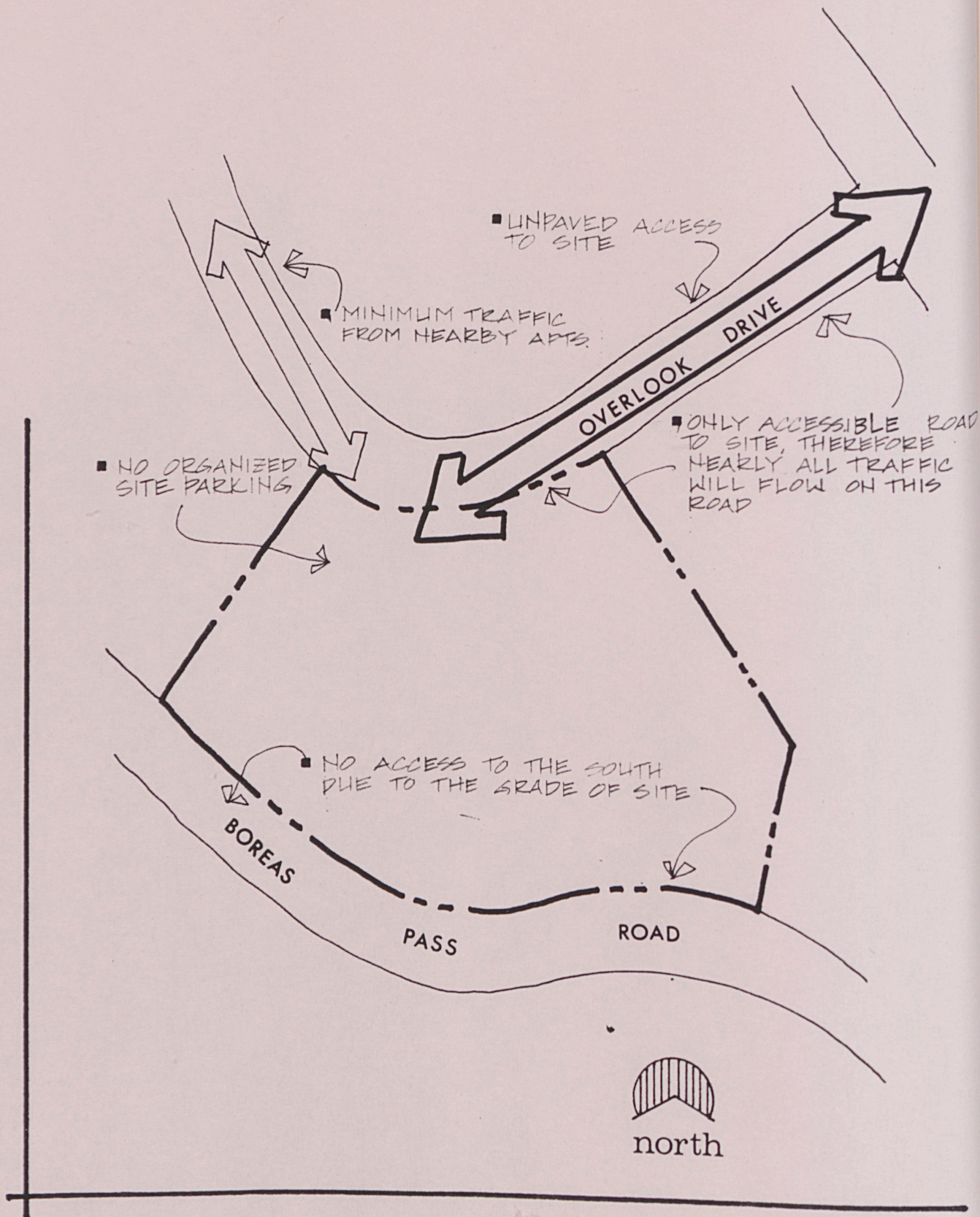
Condition: SOLAR



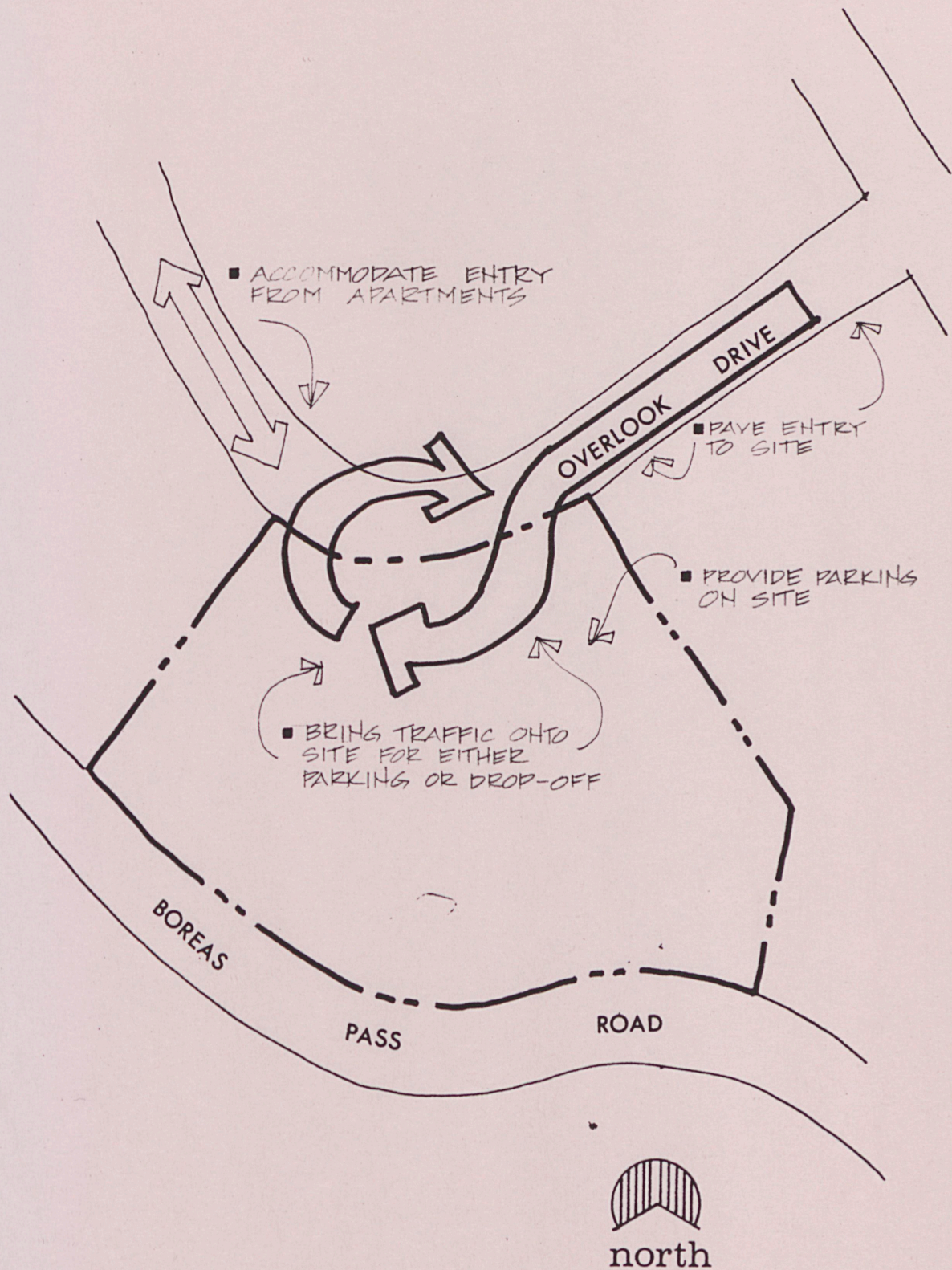
Response: SOLAR



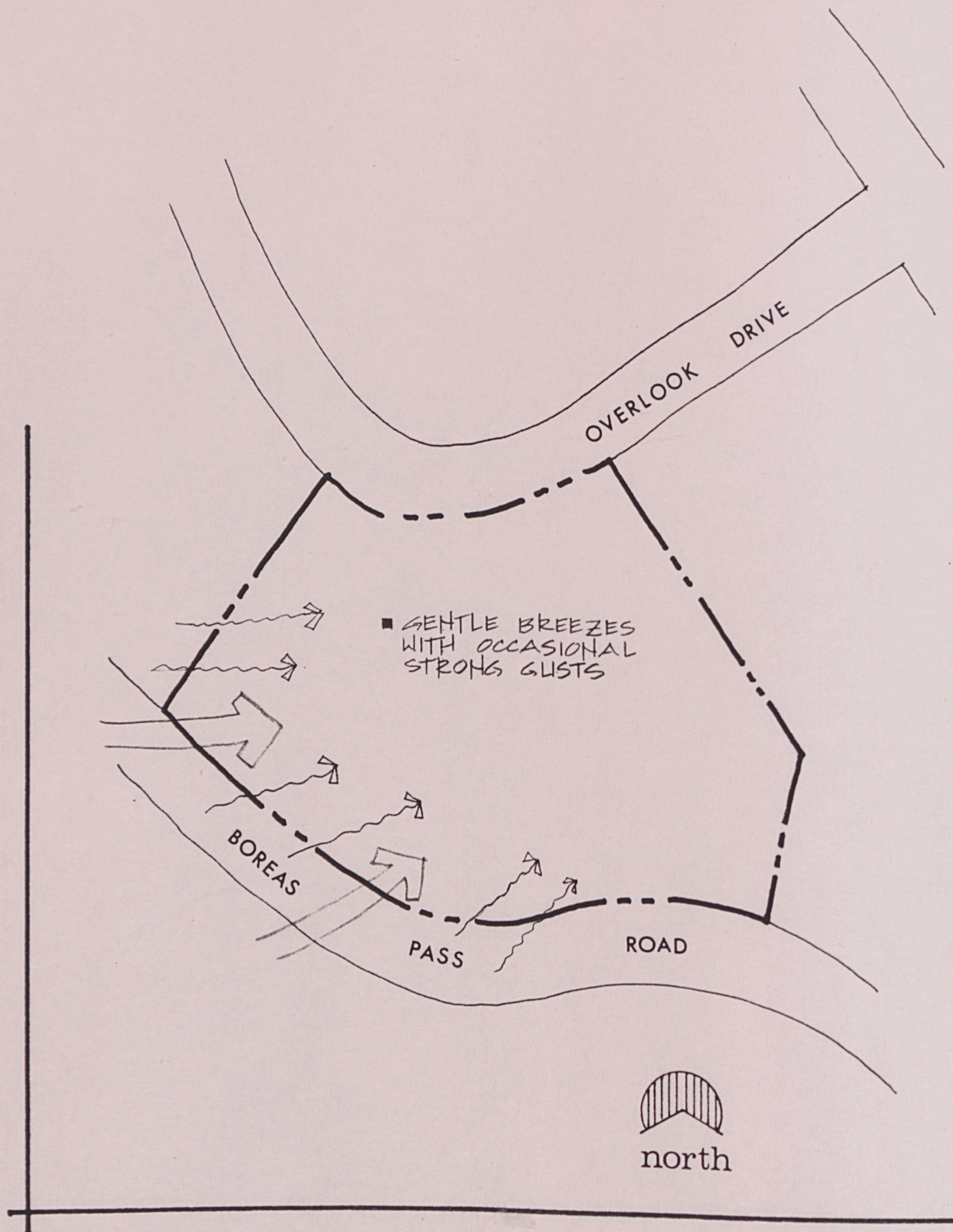
Condition: VEHICULAR CIRC.



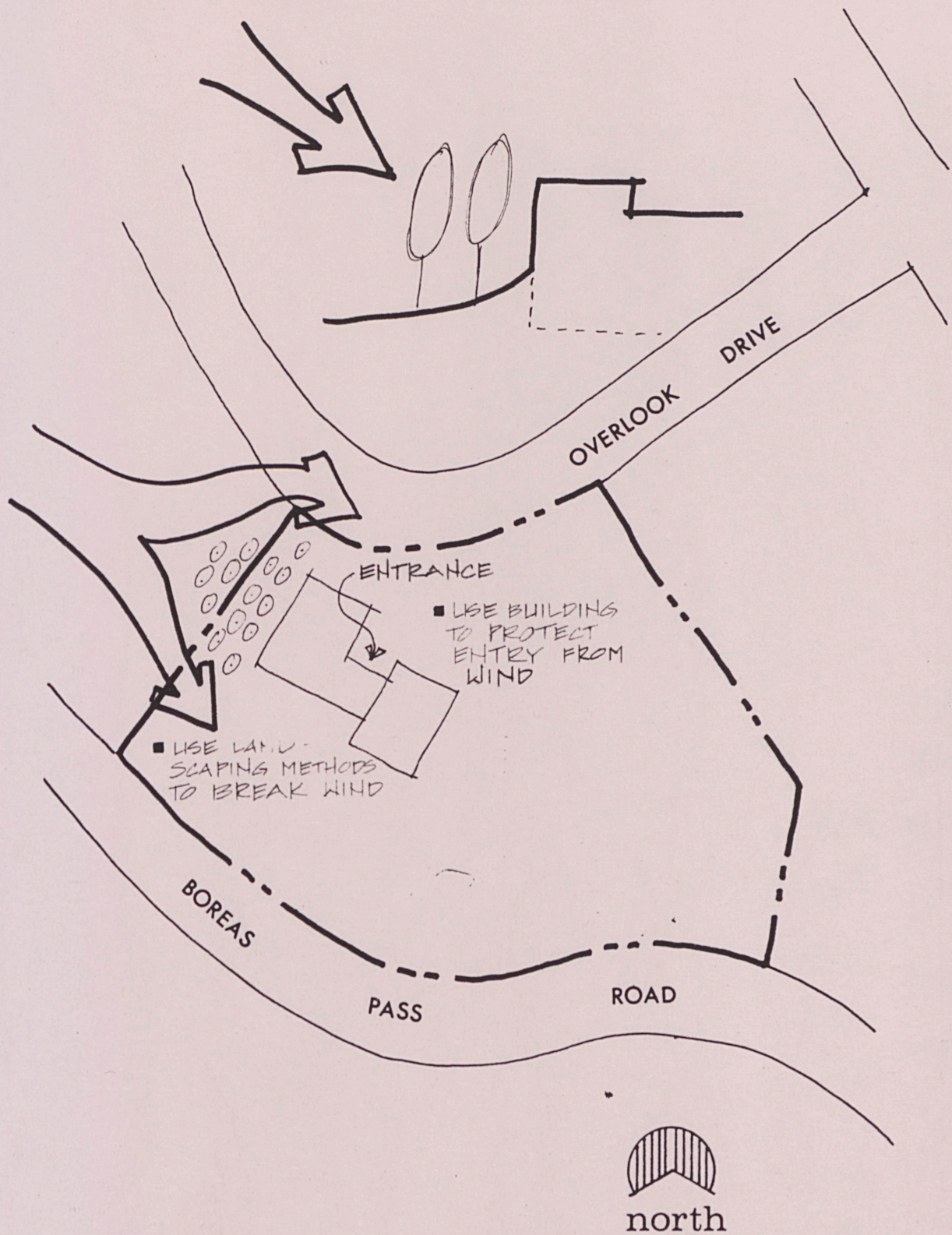
Response: VEHICULAR CIRC.



Condition: WIND



Response: WIND



SPATIAL ANALYSIS

SQUARE FOOT SUMMARY

☐ RACQUETBALL COURTS	5 @ 800 FT ²	4000 FT ²
☐ VIEWING LOUNGE		1000 FT ²
☐ WEIGHT ROOM		4000 FT ²
☐ MULTI-PURPOSE GYM		9750 FT ²
☐ AEROBICS ROOM		1500 FT ²
☐ SWIMMING POOL - INDOOR		6500 FT ²
☐ LOCKEROOMS - MEN & WOMEN		4550 FT ²
☐ NURSERY/DAYCARE		400 FT ²
☐ TENNIS COURTS - 1 INDOOR		6300 FT ²
☐ KITCHEN		500 FT ²
☐ RECEPTION/LOBBY		1620 FT ²
☐ MANAGER'S OFFICE		400 FT ²
☐ TANNING ROOM - 3 BAYS @ 120 FT ²		360 FT ²
☐ LAUNDRY ROOM		100 FT ²
☐ BAR/LOUNGE		<u>1000 FT²</u>
☐ TOTAL		41,960 FT ²

☐ SUBTOTAL

41,960 FT²

☐ CIRCULATION (25%)

10,490 FT²

☐ SUBTOTAL

52,450 FT²

☐ MECHANICAL (5%)

.2600 FT²

☐ GRANDTOTAL

55,050 FT²

SPACE Racquetball courts
FUNCTION Promote conditioning and endurance
AREA 6400 sq. ft. (8 courts at 800 sq. ft. each)
REQUIREMENTS Laminated panels and shatterproof glass on walls,
hardwood floors.
COMMENTS Minimum ceiling height of 20'-0"

SPACE Viewing lounge
FUNCTION Viewing of court activities
AREA 1000 sq. ft.
REQUIREMENTS Built-in bleachers for glass courts, table, chairs
COMMENTS

SPACE Weight room
FUNCTION Promote conditioning and muscular development
AREA 4000 sq. ft.
REQUIREMENTS Resilient flooring, mirrored walls, weight racks
COMMENTS Provide for both Nautilus machines & free weights

SPACE Multi-purpose room

FUNCTION Allow large area for endurance activities

AREA 14,400 sq. ft.

REQUIREMENTS Accessories for volleyball & basketball, hardwood floors

COMMENTS Minimum ceiling height of 25'-0"

SPACE Aerobics room

FUNCTION Promote cardiovascular development

AREA 1500 sq. ft.

REQUIREMENTS Mirrored walls, ballet bar, carpeted area, stereo system

COMMENTS

SPACE Swimming pool

FUNCTION Promote cardiovascular activity

AREA 7800 sq. ft.

REQUIREMENTS 6 lanes, water resistant walking surface, skylights

COMMENTS Minimum ceiling height of 20'-0"

SPACE Locker rooms (men & women)
FUNCTION Provide shower, toilet & changing facilities
AREA 4550 sq. ft.
REQUIREMENTS Water resistant flooring in showers, carpeted locker area, lavatories, showers, toilets, whirlpool, towel area, make-up area
COMMENTS

SPACE Nursery / Daycare
FUNCTION Provide care for children during peak hours
AREA 300 sq. ft.
REQUIREMENTS Play pens, cribs, play equipment
COMMENTS

SPACE Tennis courts
FUNCTION Promote cardiovascular endurance
AREA 28,800 sq. ft. (2 interior, 2 exterior)
REQUIREMENTS Durable surface, bleachers
COMMENTS

SPACE Kitchen

FUNCTION Provide snacks & appetizers for bar/lounge

AREA 500 sq. ft.

REQUIREMENTS Cooking line and accessories to provide food

COMMENTS

SPACE Reception and lobby

FUNCTION Welcoming of guests and participants

AREA 1000 sq. ft.

REQUIREMENTS Counter, small waiting area, cash register, carpeted floor

COMMENTS

SPACE Manager's office

FUNCTION Management of club

AREA 200 sq. ft.

REQUIREMENTS Desk & chair, file cabinets, carpeted floor

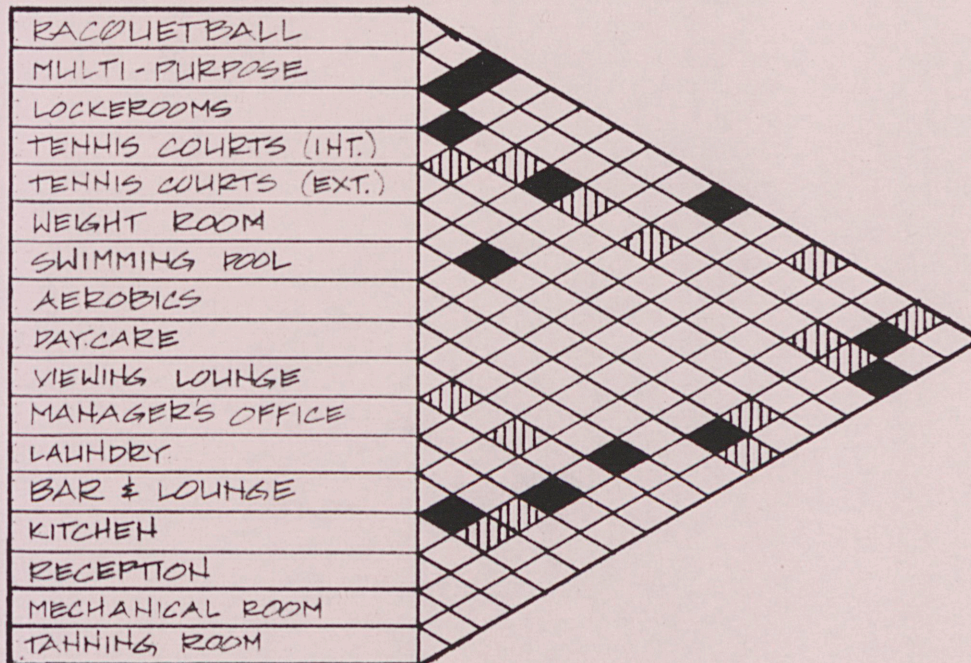
COMMENTS

SPACE Tanning rooms
FUNCTION Tanning of the skin
AREA 360 sq. ft. (3 bays)
REQUIREMENTS Tanning beds, fan, stereo system
COMMENTS

SPACE Laundry room
FUNCTION Cleaning of towels and other linens
AREA 100 sq. ft.
REQUIREMENTS Washer & dryer, folding tables, carpeted floor
COMMENTS

SPACE Bar & Lounge
FUNCTION Provide refreshments to guests and participants
AREA 1000 sq. ft. (40 - 50 people)
REQUIREMENTS Snack bar, juice machines, tables, chairs
COMMENTS

SPATIAL ADJACENCIES



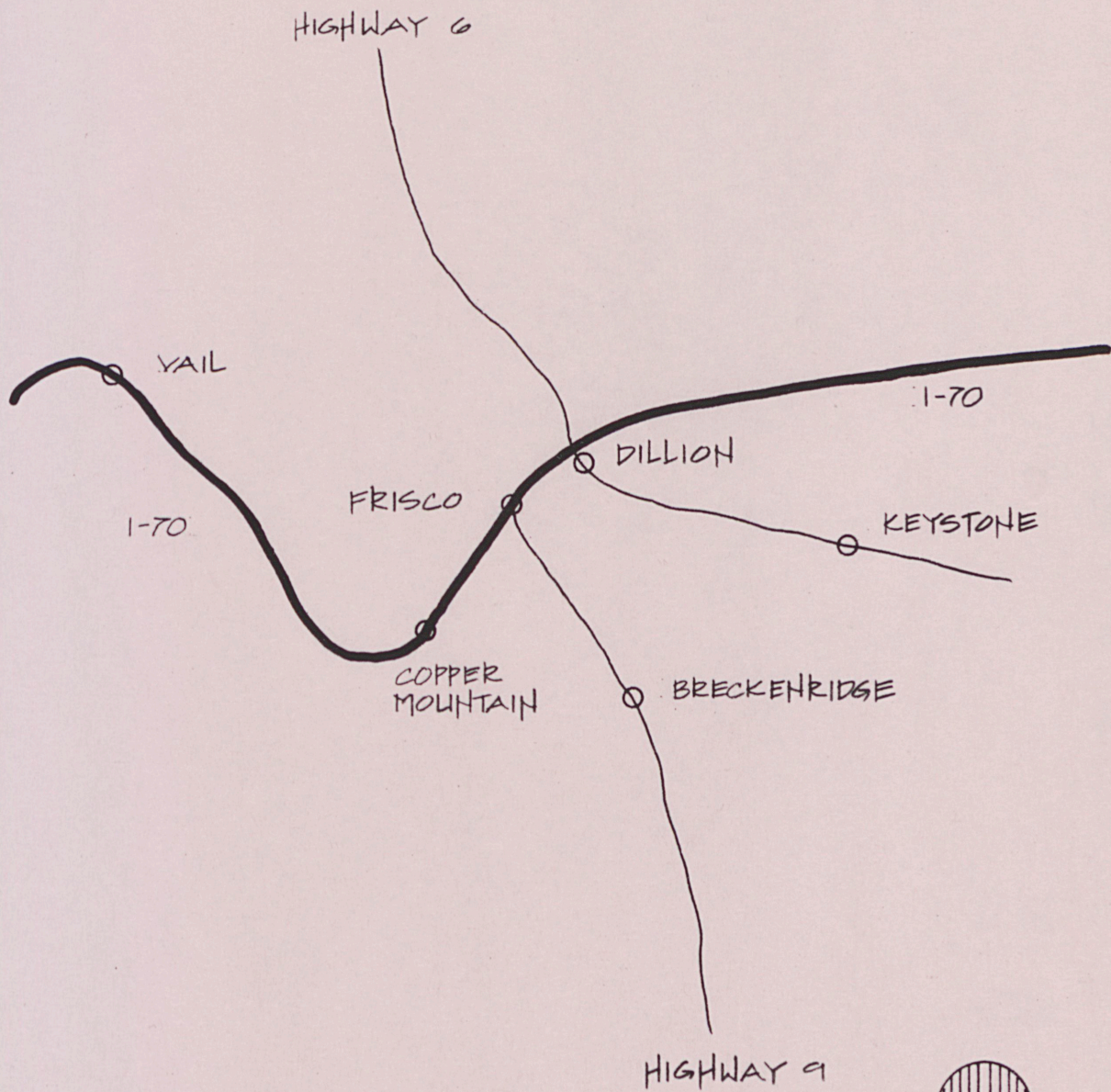
-  ADJACENCY REQUIRED
-  PROXIMITY DESIRED
-  NOT REQUIRED

USER PROFILE

USER PROFILE

The " users " of the Overlook Athletic Club can be classified into a variety of catagories which pertain to how frequent they use the club. The facility will provide for very active individuals ranging from everyday weight trainers and tri-weekly " aerobicsizers " to occasional users such as seasonal tourists and youngsters who need daycare.

The OAC, focusing on the citizens of Breckenridge, will also accommodate the public from other neighboring towns within Summit County, such as the communities of Frisco and Dillion. While the permanent population of Breckenridge is approximately 1300, the inclusion of Frisco, Dillion, and seasonal tourists will reach 10,000. The encompassing distance, less than 15 miles for these communities, will be an economic advantage towards the stability of the Overlook Athletic Club.



SLOPE PRECEDENTS

INTRODUCTION

THE FOLLOWING ILLUSTRATIONS & DIAGRAMS
EXAMINE TWO POINTS:

- 1) RELATION OF ARCHITECTURE TO TOPOGRAPHY.
- 2) RESPONSE OF THE BUILDING MASS TO THE SLOPE.

IN EACH CASE, BOTH THE RESPONSE AND THE RELATION ARE DIFFERENT.

□ OLIVER HOUSE (FIG. A)

- MASS IS SEPARATED INTO THREE ELEMENTS
- CIRCULATION BECOMES OWN ENTITY
- OVERALL FORM COINCIDES WITH SLOPE

□ HOLLYWOOD HOUSE (FIG. B)

- MASS IS A SINGLE ELEMENT
- VERTICAL CIRCULATION BECOMES IMPORTANT
- FORM CONTRASTS SLOPE

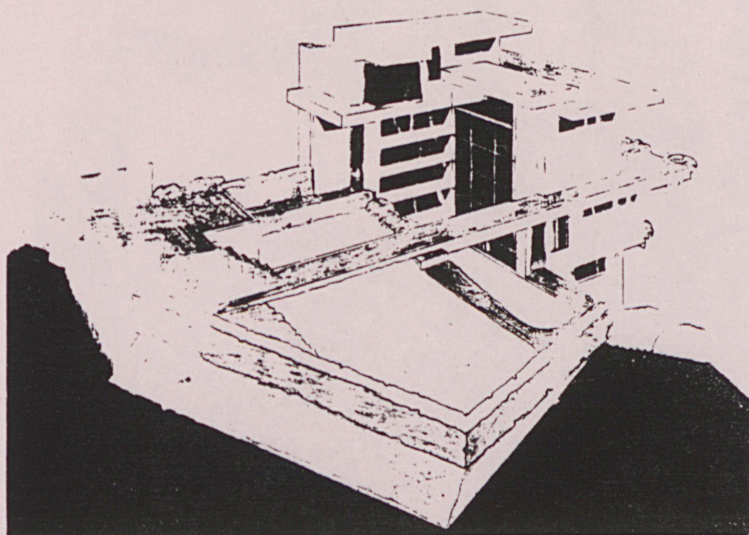
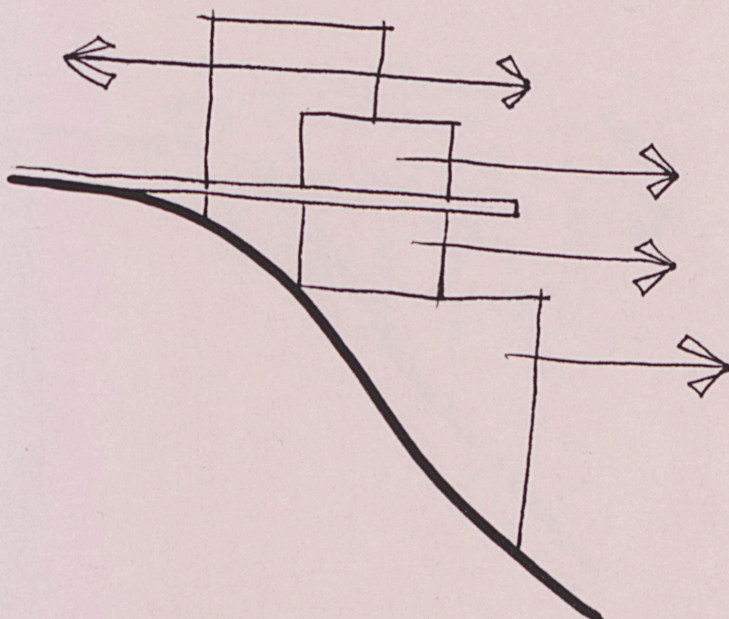
□ BRUBECK HOUSE (FIG. C)

- ONLY ONE MASSING ELEMENT TOUCHES GROUND
- CIRCULATION IS WITHIN MASS
- FORM "REVERSE STEPS" AGAINST SLOPE

□ CAPSULE VILLAGE (FIG. D)

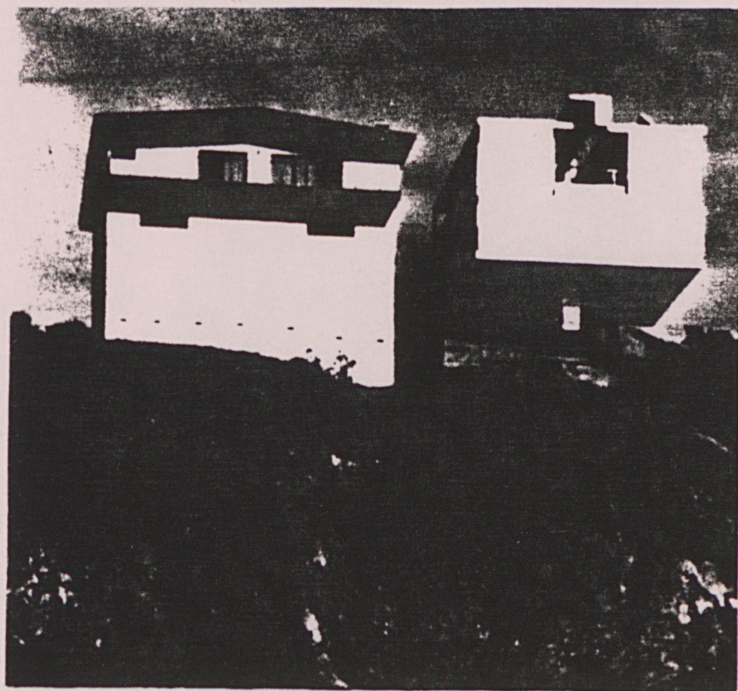
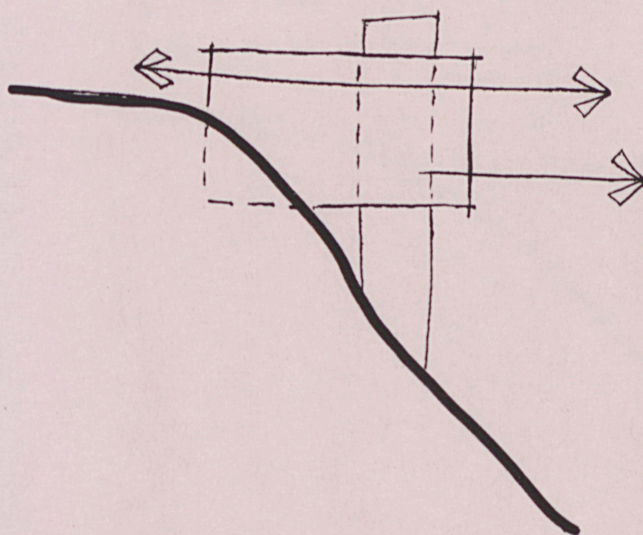
- VARIOUS MASSING ELEMENTS
- UNINTERRUPTED TOPOGRAPHY
- FORM STEPS WITH SLOPE

FIG. A



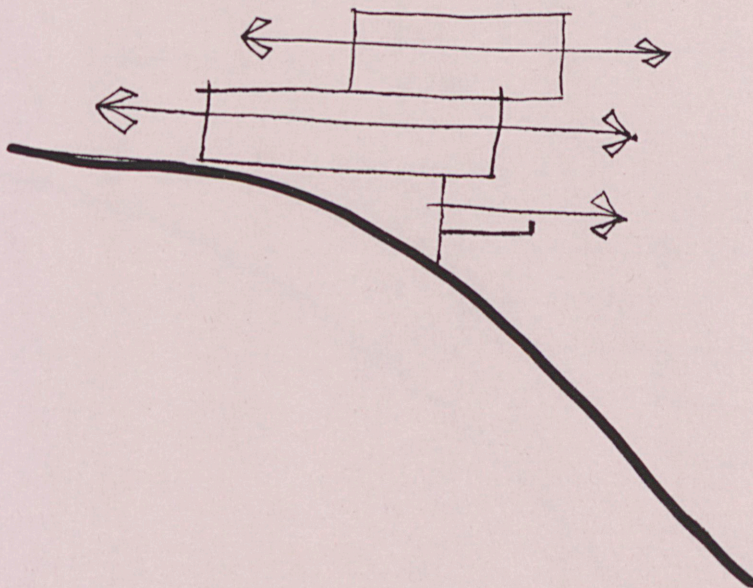
OLIVER HOUSE
R.M. SCHINDLER - 1931

FIG. B



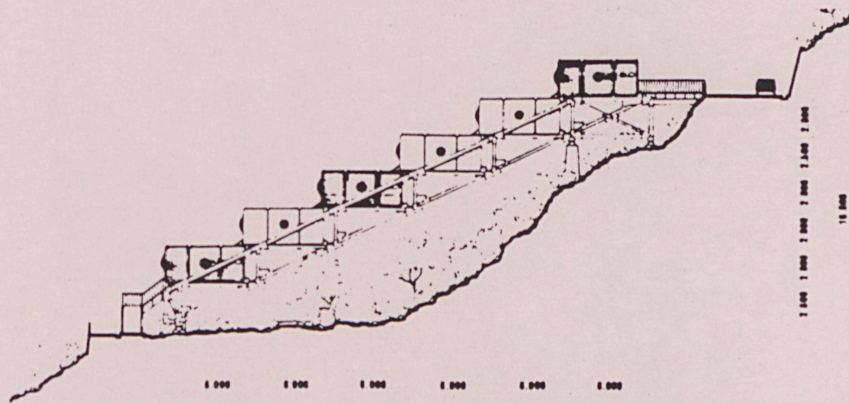
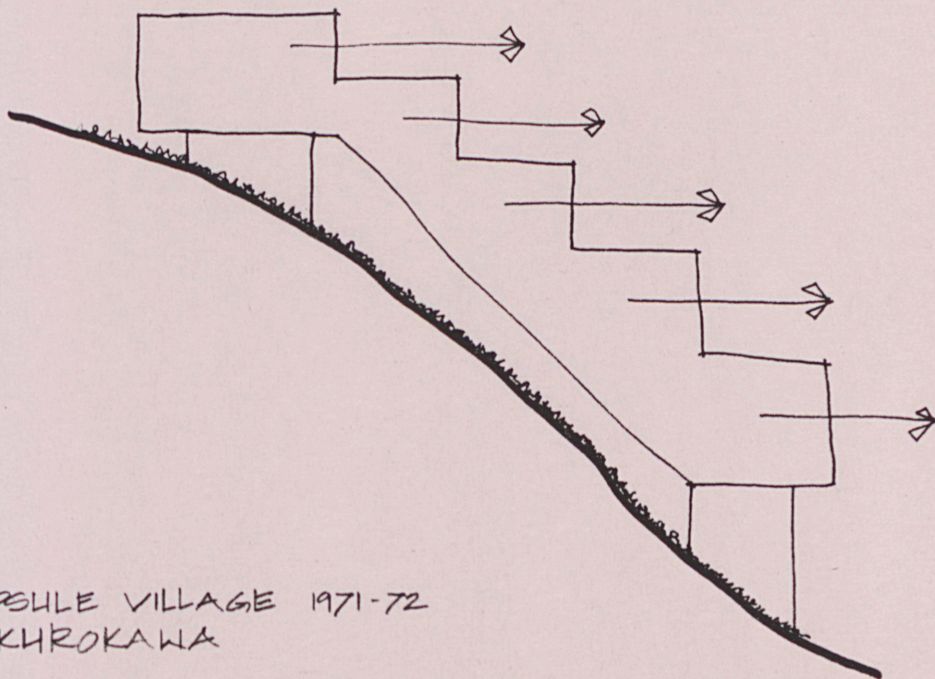
HOUSE IN HOLLYWOOD
PIERRE KOENIG - 1982

FIG. C



BRUBEK HOUSE
PIERRE KOENIG - 1959

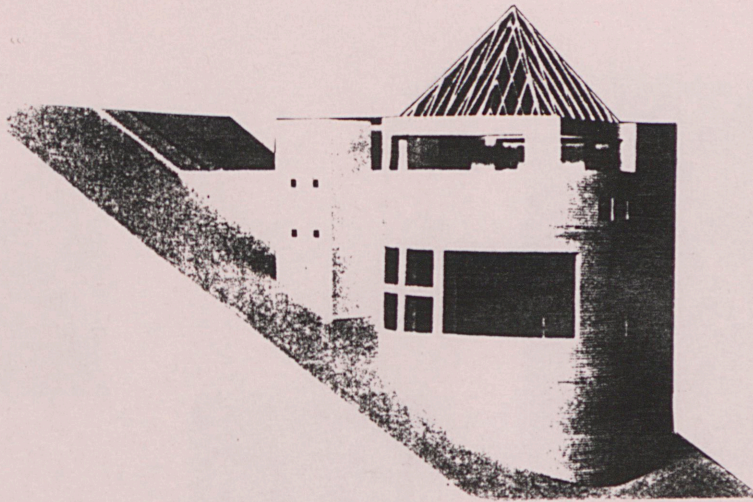
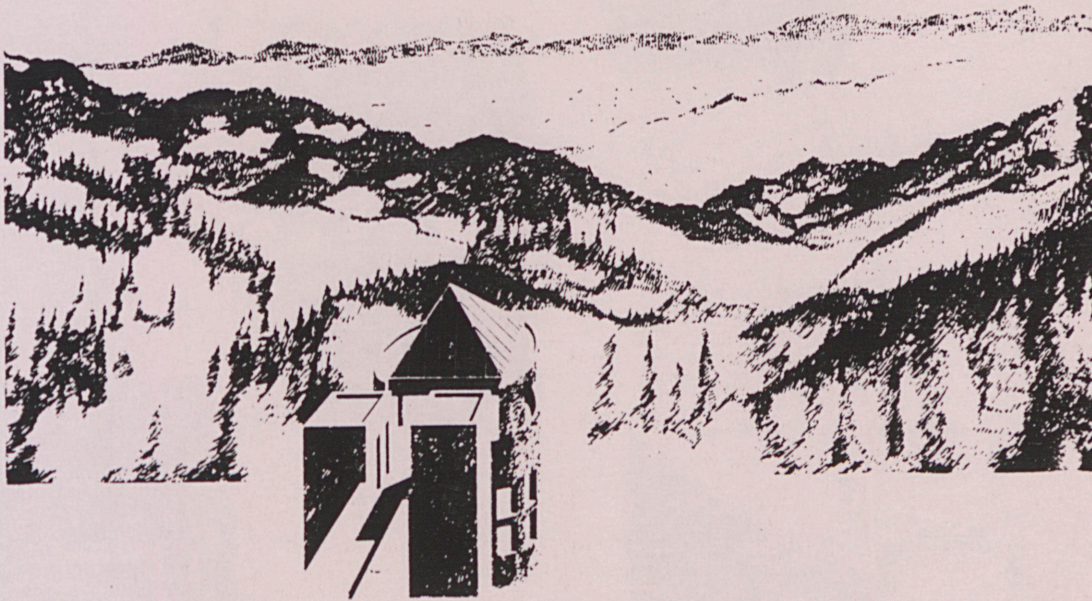
FIG. D



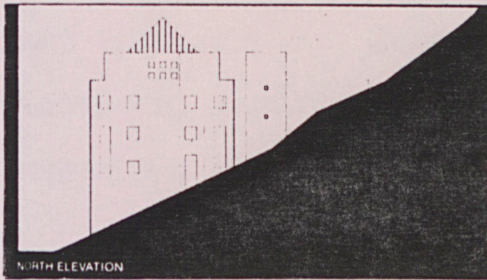
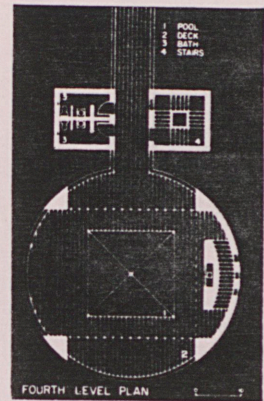
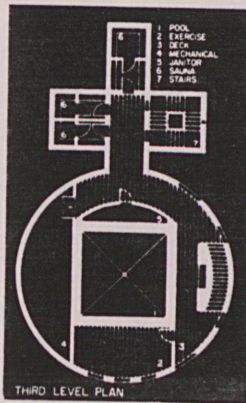
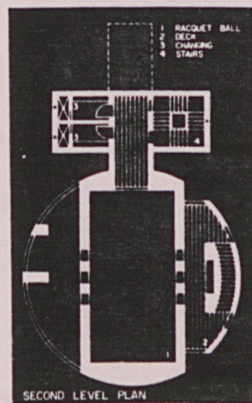
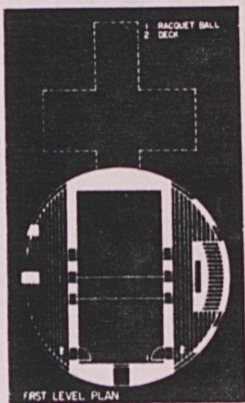
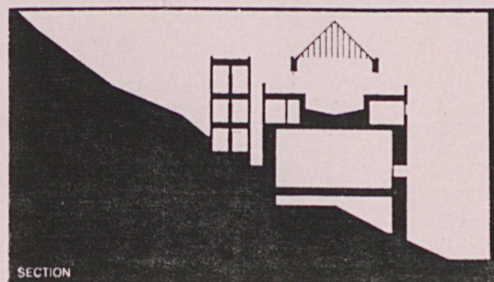
CAPSULE VILLAGE 1971-72
K. KUROKAWA

CASE STUDIES

CASE STUDY #1



EAST FACE ATHLETIC CLUB



EAST FACE ATHLETIC CLUB

STATELINE, NEVADA

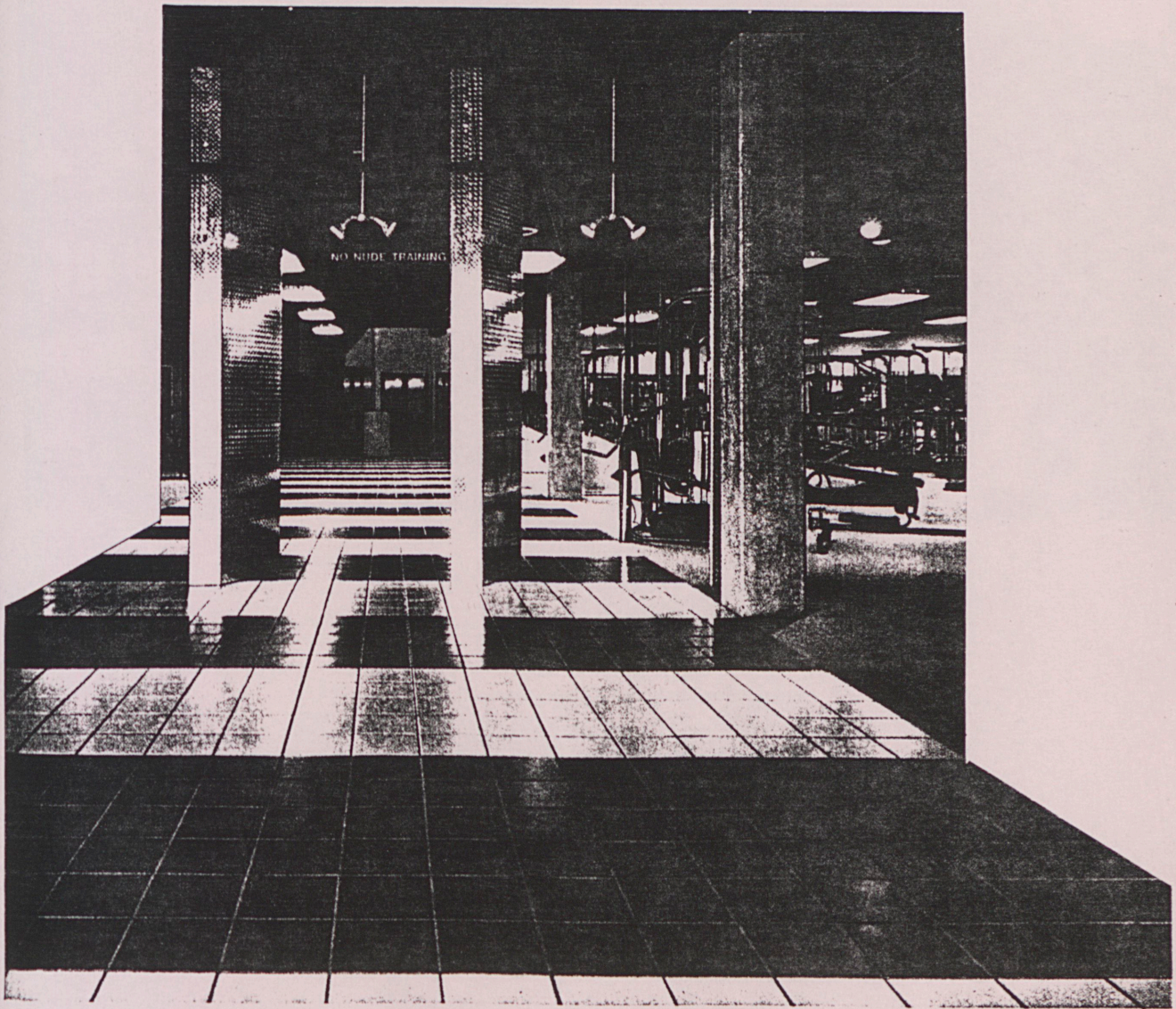
JENNINGS & STOUT

The East Face Athletic Club is an 8000 sq. ft. private club that is located on a very steep, wooded site, which overlooks a valley. The simple geometric forms allows the facility to coexist among the surrounding environment without being an overwhelming element. The major circular form accommodates the swimming pool and racquetball court, while the two vertical elements have different functions. One tower has changing area, saunas, and restrooms while the other is strictly for vertical circulation.

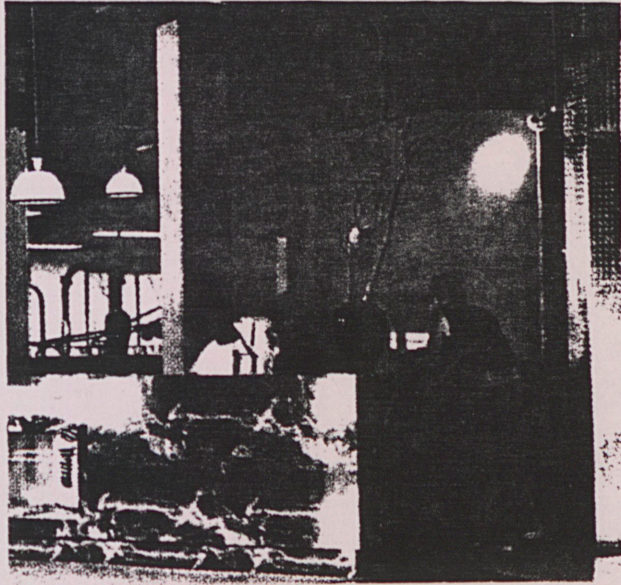
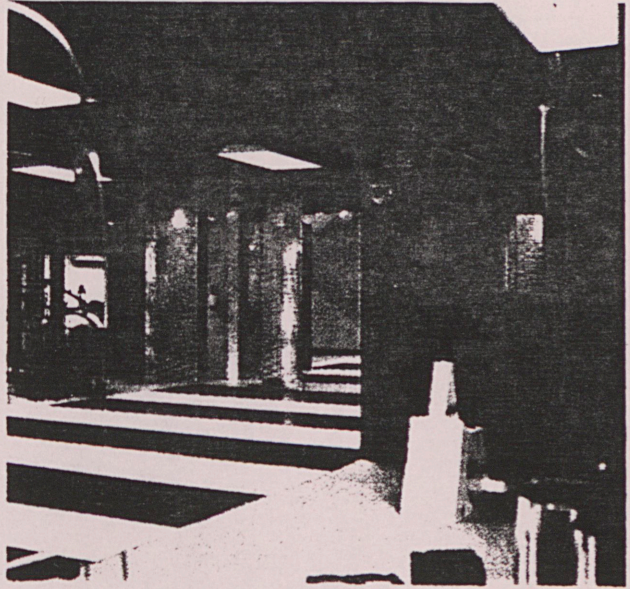
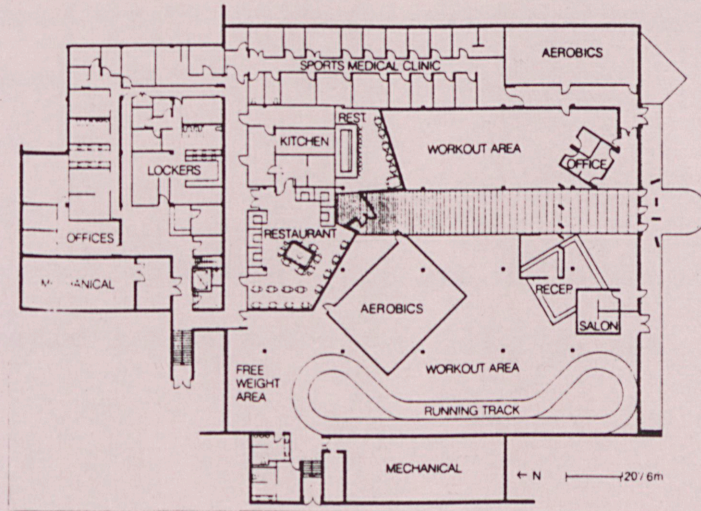
IMPLICATIONS:

- 1) Use of simple geometric forms
 - 2) Allowed for views of environment
 - 3) Becomes a focal element
-

CASE STUDY #2



QUESTSTAR HEALTH CLUB



QUESTSTAR HEALTH CLUB

HOLLYWOOD, CALIFORNIA

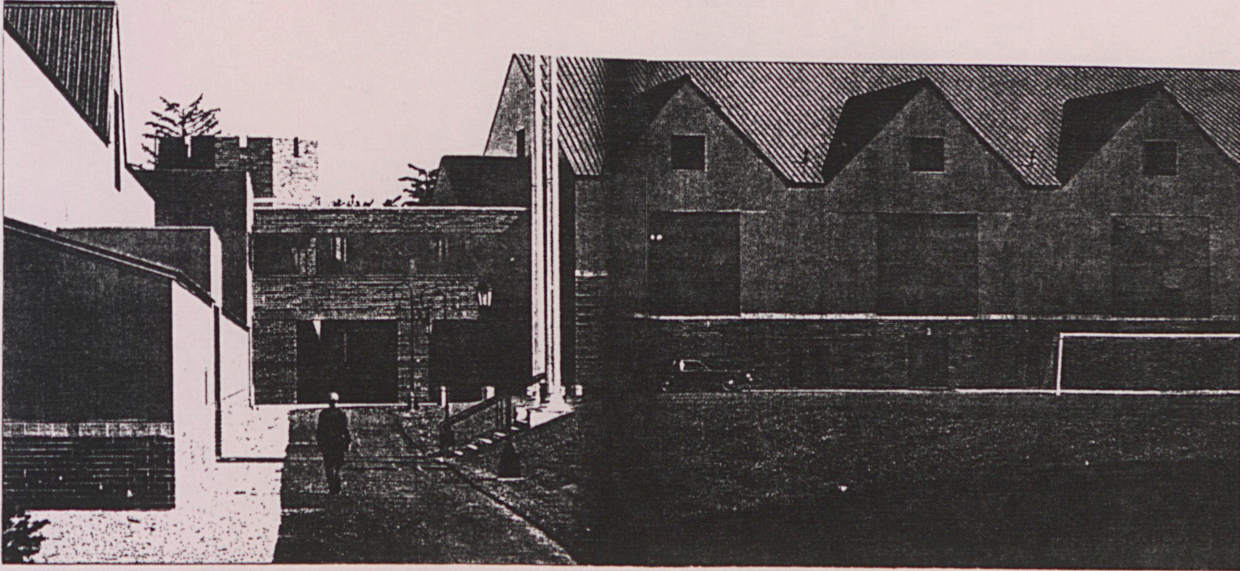
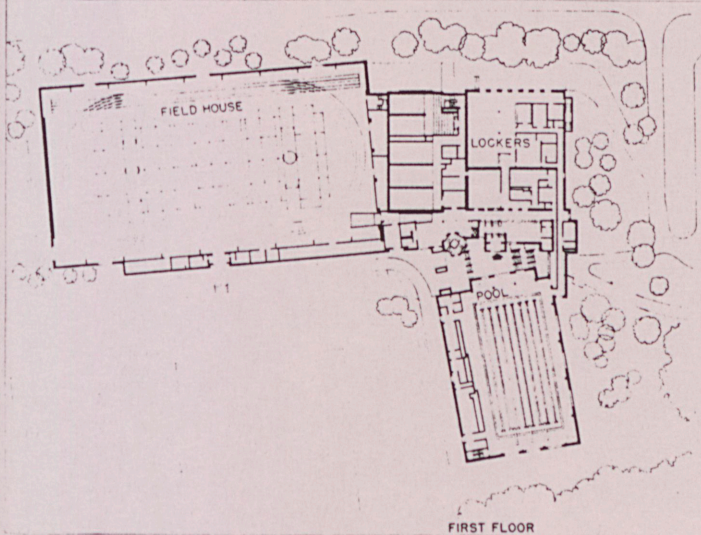
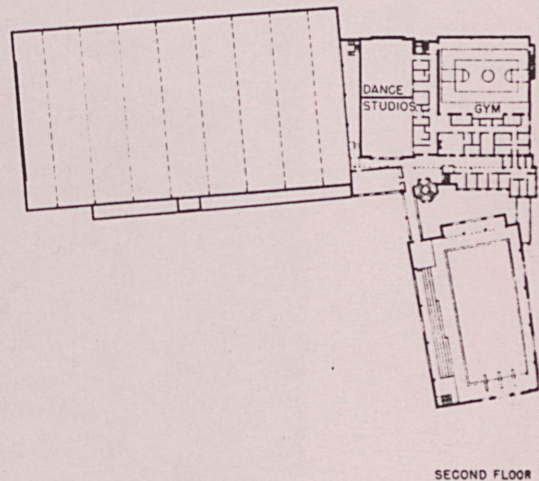
BAM CONSTRUCTION / DESIGN

The 33,000 sq. ft. Queststar Club is able to provide for a number of users but is cohesive enough to satisfy both the regulars and strangers. The limitation of cross trafficking enables the spaces to be addressed by a single pathway that links the entry to the restaurant by passing through workout areas yet not disturbing the spacial edge. The types and uses of materials adds much character to the already unique building organization.

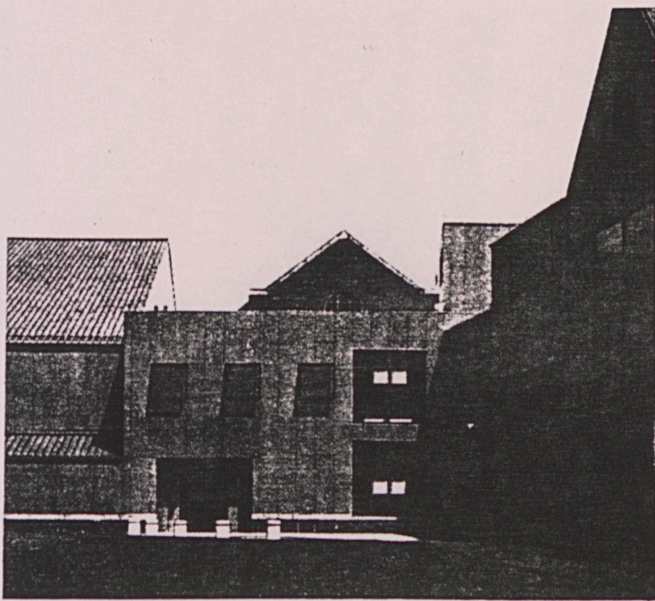
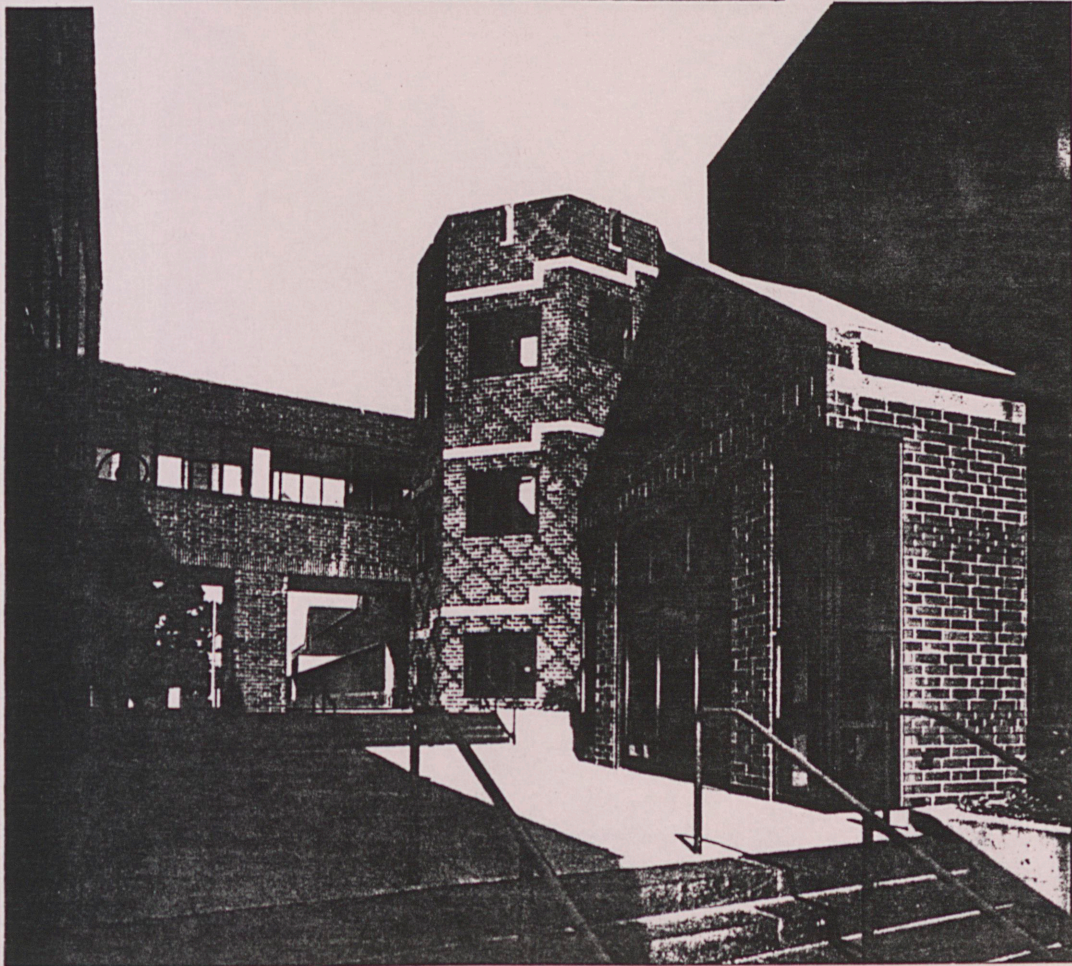
IMPLICATIONS:

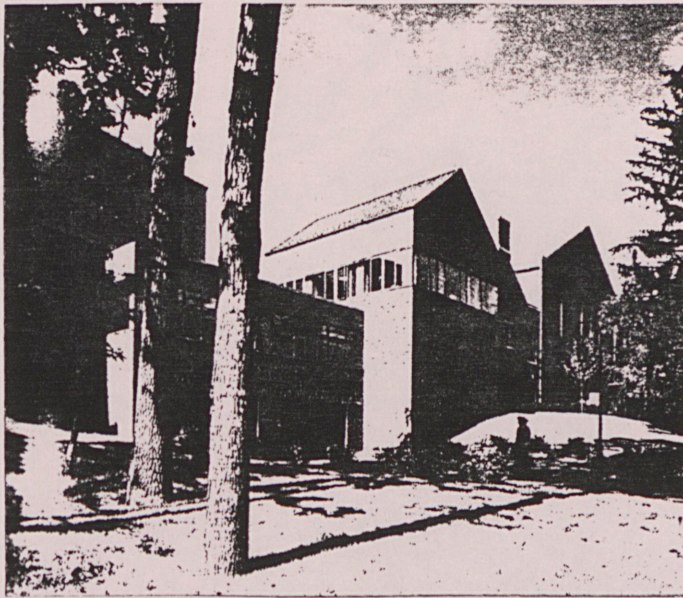
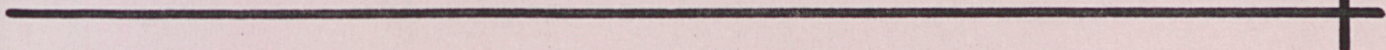
- 1) Minimal traffic and privacy collisions
 - 2) Dynamic use of materials and lighting
-

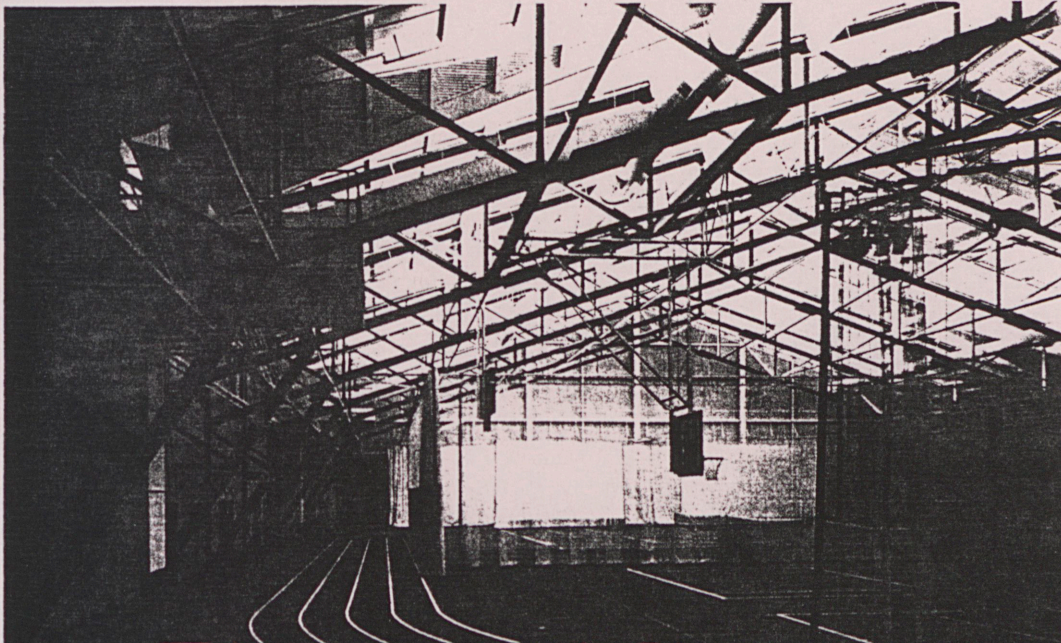
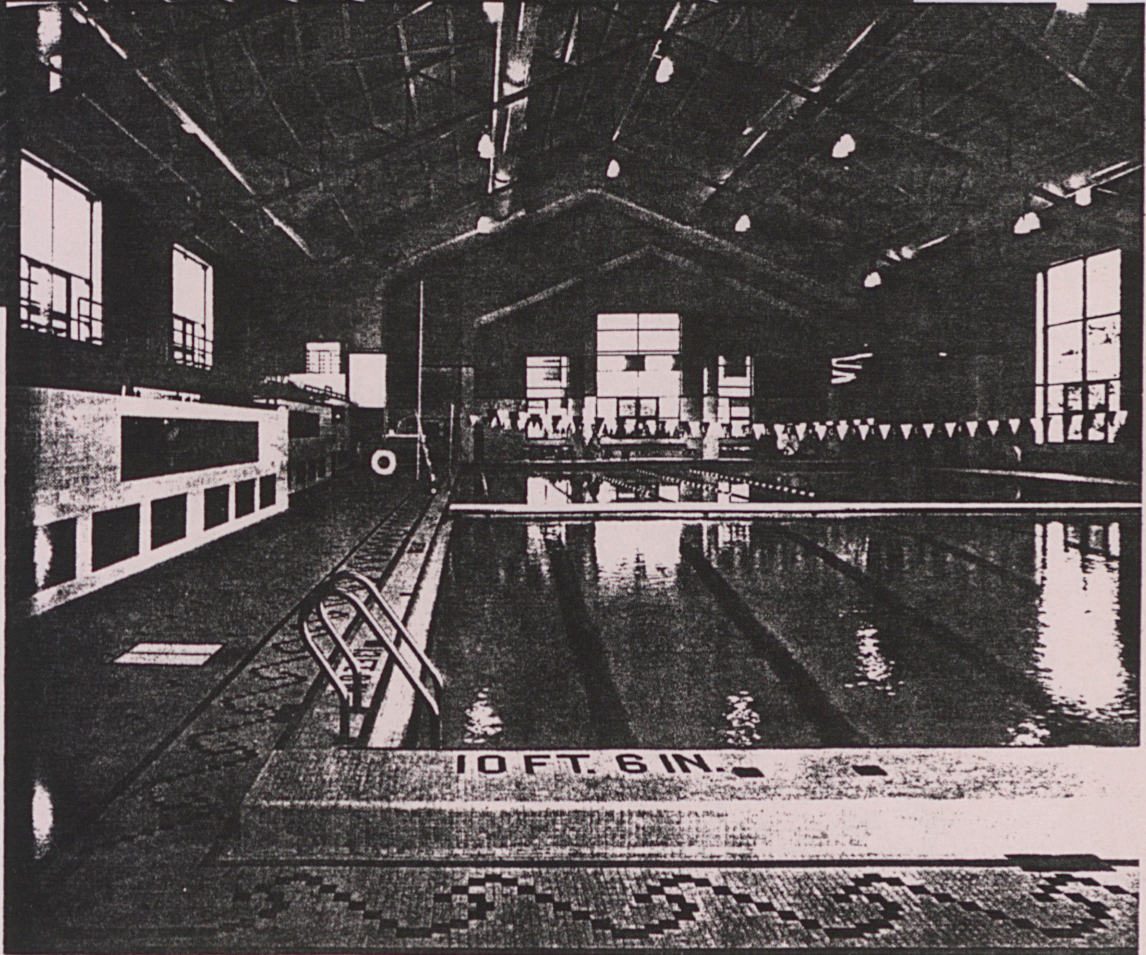
CASE STUDY #3



WELLESLEY COLLEGE SPORTS CENTER







WELLESLEY COLLEGE SPORTS CENTER

WELLESLEY, MASSACHUSETTS

HARDY HOLZMAN PFEIFFER ASSOC.

The 140,000 sq. ft. sports center, an abstraction of Gothic Revival, imitates a neighboring building which is remodeled and is worked in to the proposed scheme. The familiar brick work and style are then echoed in the new facility to coincide with other campus architecture. The L-shaped organization enables courtyards to exist in the entry and pathways.

IMPLICATIONS:

- 1) Non-axial organization
 - 2) Nice pedement and parapet articulation
 - 3) Coexistence with surrounding environment
-

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