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APARTMENTS IN DILLON, MONTANA

by Mark Pyeatt

A thesis submitted in partial fulfillment of the requirements

for the degree

of

Bachelor of Architecture

Approved:

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And for their love and patience, I dedicate this thesis to my parents, without whose help I could not have made it this far.

THESIS STATEMENT

An architect can use a local culture as a source of shapes and signs.

PROLOGUE

The goal of this study is to aid in designing moderate-cost housing for a small town.

I believe that we architects can more completely understand the most important constituent of urban form -- communication across space -- if we study the culture of the immediate area in which our client lives.

Toward that end, I have undertaken this thesis to formulate a technique by which I can derive useful shapes and signs from the culture of a locale. With these shapes and signs, I have made my own architecture, devising what I consider to be appropriate symbols and forms for my client.

PHILOSOPHY

Avoiding a universal intent frees one from universal ideals.

If the non-universal, local architect is free to choose, from what does he make his choice? The contention of this thesis is that one source available to him is local culture.

What is culture? It is the totality of man's thoughts, actions, and artifacts and their transmission to succeeding generations by speech and writing via abstract thought.

While it is possible to say that true culture is universal in that all people ultimately have similar values, it is important to search for and preserve characteristics which give a region uniqueness. The architect should be concerned with irony, humor, and cynicism: These are the qualities which have specificity in a regional culture, and thus lead us away from universal ideals.

The accessibility of the local culture and its relatively narrow scope allow the architect to quickly understand "legibility" in the local context and to participate in the general process of self-awareness for the local society. By aiding regional cultureal awareness, he contributes to universal enlightenment.

One seeks a source of shapes and signs. These can

be taken by the architect and used in a new way to symbolize what he finds appropriate or to make appropriate forms. Rapoport, quoting Mumford, points out the primacy of symbol and states that man has made symbols even before tools and that ritual came before work.[1]

It is the role of the architect here to make appropriate forms and symbols out of the shapes and signs derived from his search. These designated forms and symbols refer to the schemate of the culture, to its character, and to its world view.[2]

Historicism is a valid approach to form and symbol making because, in southwestern Montana, the stable system of early schemata was coherent and seems preferable to the apparent disarray which followed. In one sense, historically derived forms and symbols will help to solve the serious problem of a lack of an existential foothold, cited by Norberg-Schulz.[3] The solution, he says is true schemata and images.

It is important to remember that the authenticity of forms is destroyed through their repetition. Although the architect is attempting to enter actively into the cultural process, he uses the culture as a source of shapes and signs to which he then ascribes new meaning. It is the

schemata and images of the culture which the architect attempts to concretize; he does not try to preserve through repetition old forms or old symbols.

The house functions as a definition of territory[4] and symbolizes security. As a symbolic environment, it also becomes the scene of important ceremonies, including simple gatherings and intimate meetings.

In seeking to design housing for Dillon, Montana, the key is to keep in mind the residents' vision of the ideal life: those socio-cultural values which they hold in primary importance.

Research done for this thesis through personal observation and interviews indicates that this southwestern Montana culture values simplicity with occasionaly pretentiousness, warmth and intimacy, convenience and sharing, security, seclusion, indifference, spontaneity, inconsistency, and evasion.

The complete process proposed by this thesis is broken down into the following steps: 1) general investigation of the local culture; 2) search for cultural objects; 3) description of the culture's qualities; 4) shapes and signs in cultural object collection that inspire new forms and symbols, the means by which the architect will express

the qualities of the culture. This is the stuff which will tell the story of the local culture.

What are cultural objects? They are not artifacts. Cultural objects are existential processes frequently repeated by many members of a social group; a cultural object's existence can be presumed through some visual manifestation. An action is repeated generation after generation, perhaps reflecting an inherited attitude of indifference. An example of this would be a ritual which has been repeated, such as gathering at a store. The architect is to take these cultural objects, be they manifested in actions or artifacts or patterns, and re-emphasize their meaning by isolating and clarifying them in architecture.

This search for cultural objects has been very subjective. But the search is broadly organized into five levels -- geography, landscape, urban level, house, things -- and into three groups related to function -- proximity, continuity, and closure (place, path, and domain). In level, one moves from the grandest to the most personal; in function, from the stable, centralized <u>place</u> to dynamic <u>paths</u> to broad <u>domain</u>. These classifications give order to the results of the search and help the architect avoid

misusing the cultural objects.

How does one identify a cultural object? The choice is ultimately subjective, but objective criteria would be incorporated in the following questions: 1) Is it unique to this culture? 2) Is it highly repetitive? 3) Is it already in use as a symbol -- even if only informally? 4) If an artifact, does it explain "all those things made impossible by the environment"?[5] and 5) Is it a universal object given special emphasis?

What cultural objects are appropriate for this community? And which are appropriate for housing?

However gentle or mundane the community which I have chosen might appear to be, I have decided to emphasize its ironies, both cynically and in appreciation. Thus I have seen such human qualities as a sense of involvement combined with pretentiousness (the general store; false fronts); security despite solitude (latch; hogback); simplicity within inconsistency (single-room house; mountains confusingly unpatterned) intimacy despite indifference (bed; informal trail).

The cultural object is made into an image. An image "...exists only for perception, abstracted from the physical and causal order."[6] The images in the architecture

then liberate us "from all practical purposes"[7] and lead us to a "disengagement from belief."[8] But this is not the ultimate goal: Art forms are abstracted "...to be made clearly apparent... to act as symbols, to become expressive of human feeling."[9]

We have thus arrived at an architecture: A usable, affordable, durable building will be designed; the source of shapes and signs in this product will come from the collection of cultural objects. With them the architect will make his building beautiful, a place giving joy to man's spirit.

The making of images -- symbolic or not -- is appropriate in contemporary architecture because we need to learn to communicate across space -- especially urban spaces. This requires that we consider two elements: 1) symbolism; and 2) time -- or layering, the movement out of public space into private space. The appropriateness of each culturally derived image should be evaluated by considering each of these two elements.

What are universal images of "dwelling" which might concern this housing? They include: 1) a sloping, all-enveloping roof; 2) openings related to function; 3) natural materials; 4) human scale; 5) a private exterior. Each

of these images has been included in the housing designed for this thesis -- not to achieve universality, but because there is no reason here to avoid it, for it is applicable to this local culture.

Rapoport states that successful housing is economical, healthy, easily maintained, and socially and culturally valid.[10] It is this last aspect of social and cultural validity which most concerns me in this thesis. Laws, lending agencies, and tax policies "are the new socio-cultural form determinants in this country."[11] Yet the architect must still assume that there is a link between a group consciousness and the environment -- a link not yet recognized or satisfied by the far away legislators. Indeed, even in the most democratic of societies, the local or regional attitude toward nature and the landscape probably would not be accomodated. Thus the role of the environmental designer -- in this case, an architect -- becomes critical to assuring an immediate, personal sense of constancy and appropriateness.

The attitude toward nature and the landscape affects the relation of built form to land form, according to Rapoport.[12] There is, he says a need for constancy in man's inborn rhythms and biological needs which demand

a sense of place.[13] It is further his hypothesis that socio-cultural forces are the primary factors shaping the development of house form (vernacular) and that climate, methods of construction, materials, and technology are secondary modifying factors.[14]

Is the American culture homogeneous? In many ways it is, but the architect cannot hope to grapple with this immense civilization. He should concentrate his effort on the more manageable context of the community and enrich its life by enhancing its spiritual dimensions, which can only be done within a common heritage. An existential foothold only comes through adequately experiencing this heritage.

What values will the resulting architecture address? It should do the following: 1) Relate the present to a historical stable system of places;[15] 2) Communicate the impossibilities of the cultural or physical setting;[16] and 3) Fit the site and microclimate and respect other houses and the environment.

The architecture should also provide a public space. This would be a public existential space "...constituted by the most stable, common properties belonging to a large number of private existential spaces."[17]

Architectural space has shape ("spatial structure," according to Norberg-Schulz) described in terms of place, path, and closure. But it also has character, and this is "...the true subject matter of architecture."[18]

It was with the goal of finding the character and the place-path-closure spatial structure of southwestern Montana's culture that I conducted my search for cultural objects.

The remaining pages of this thesis are devoted to the cultural objects found in that search, design sketches derived from the cultural objects, and the final design.

FOOTNOTES

1. Amos Rapoport, House, Form and Culture (Englewood Cliffs, N.J.: Prentice-Hall, 1969), p. 42.

2. Ibid., p. 48.

3. Christian Norberg-Schulz, Existence, Space, and Architecture (New York: Praeger Publishers, 1971), pp. 18-19.

4. Rapoport, op. cit., p. 79.

5. Ibid., p. 47.

6. Susanne K. Langer, Feeling and Form (New York: Charles Scribner's Sons, 1953), p. 47.

7. Ibid., p. 49.

8. Ibid.

9. Ibid.

10. Rapoport, op. cit., p. 129.

11. Ibid., p. 132.

12. Ibid., p. 77.

13. Ibid., p. 78.

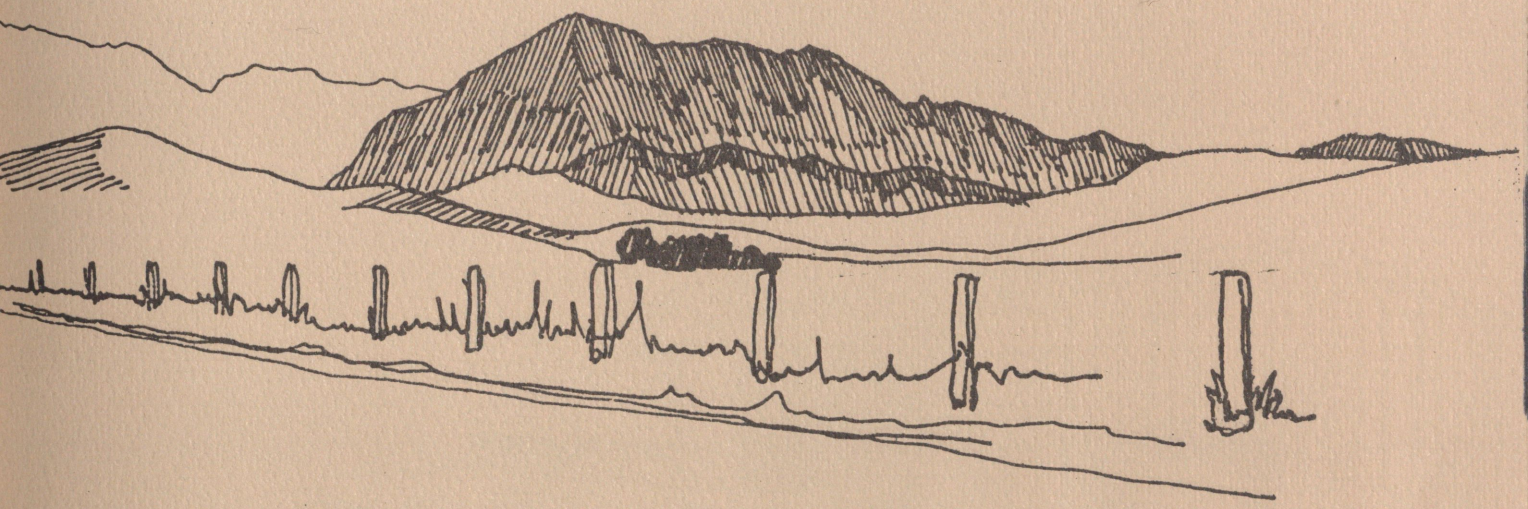
14. Ibid., p. 47.

15. Norberg-Schulz, op. cit., p. 114.

16. Rapoport, op. cit., p. 26.

17. Christian Norberg-Schulz, Meaning in Western Architecture (New York: Praeger Publishers, 1975), p. 430.

18. Ibid., p. 432.

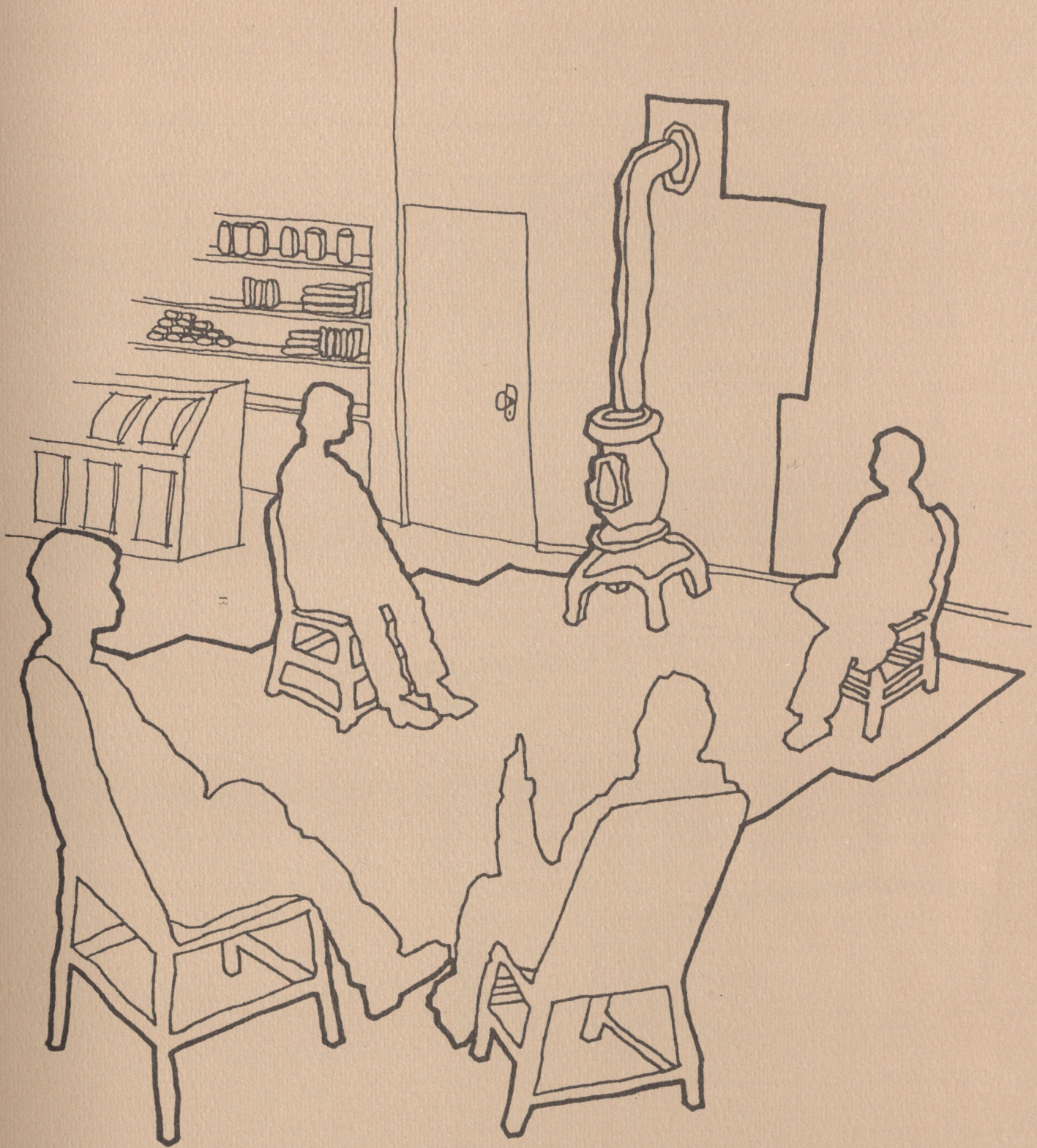


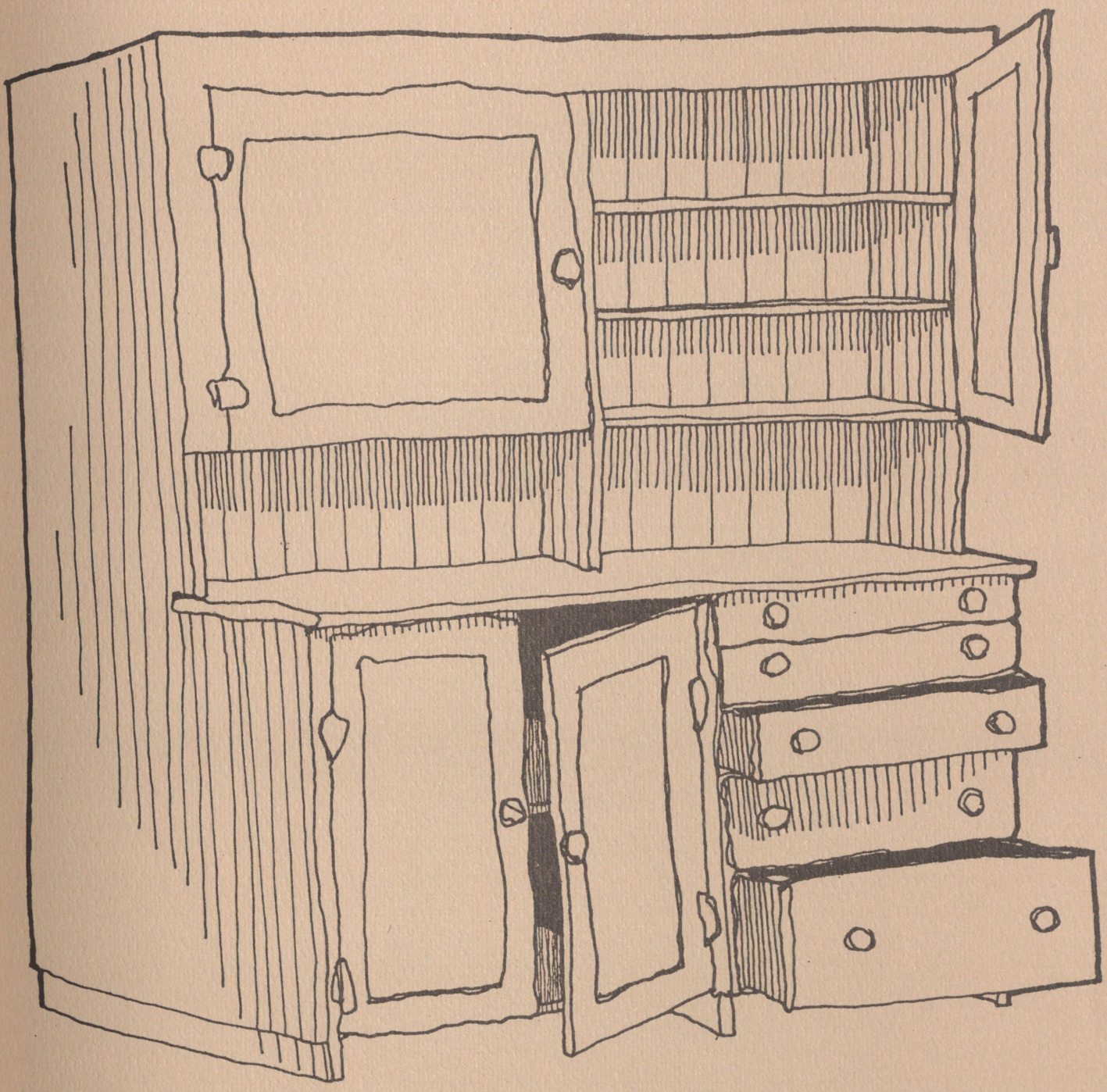
Groups

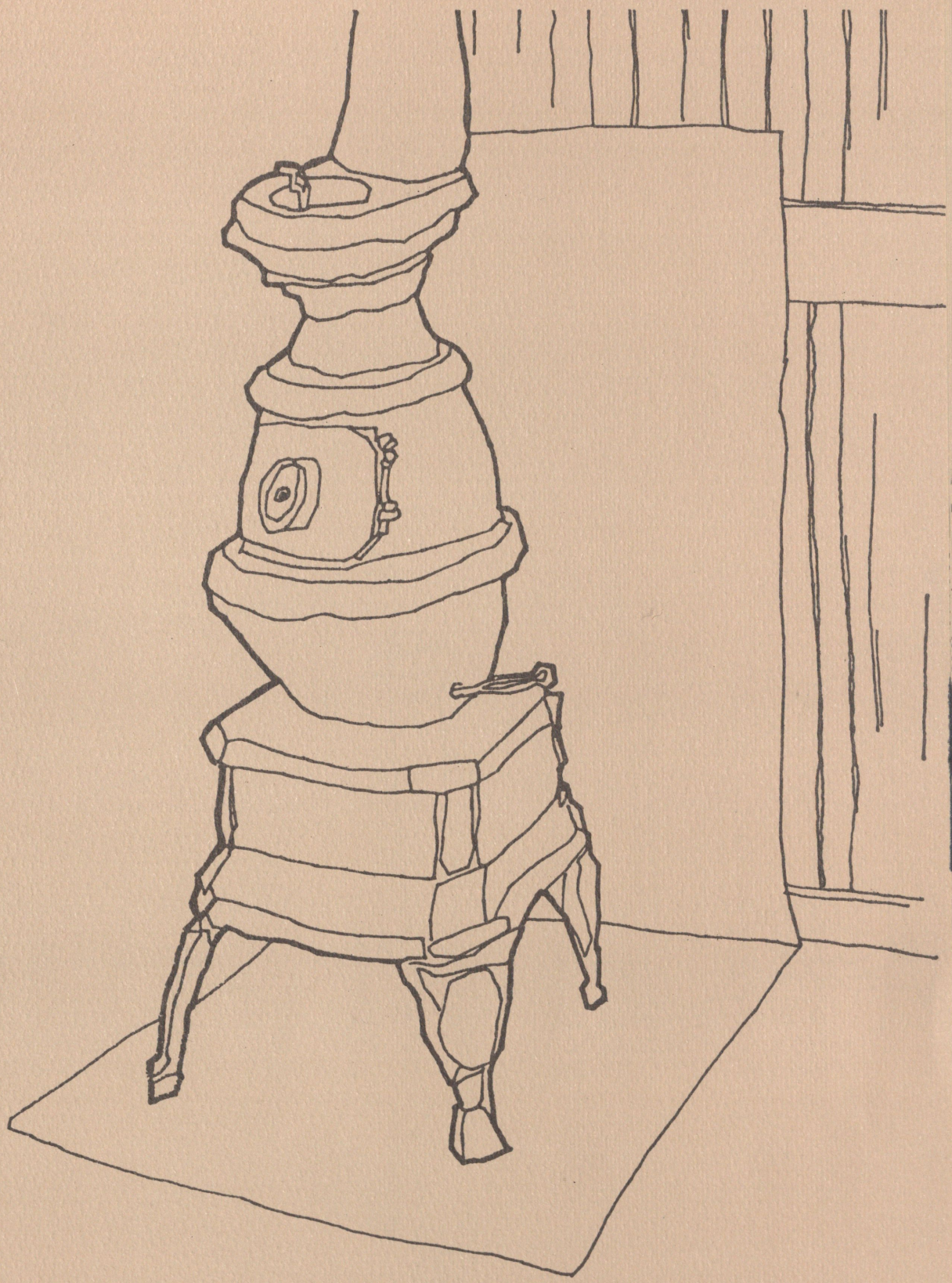
Groups form for many reasons --- to satisfy the need for affiliation, to accomplish work tasks, to concurrently enjoy an instructional or recreational program, and on and on. Adequate room and facilities must provide for group activities, and for the use of more than one group concurrently in habitats sheltering more than half a dozen scientists. Attention must be paid to the lessening of interference between differing groups, and between individuals desiring solitude and group activity. In an isolated, restricted situation, as an undersea habitat is by its very nature, this problem of lessening interference becomes a difficult one while at the same time increasing in importance.

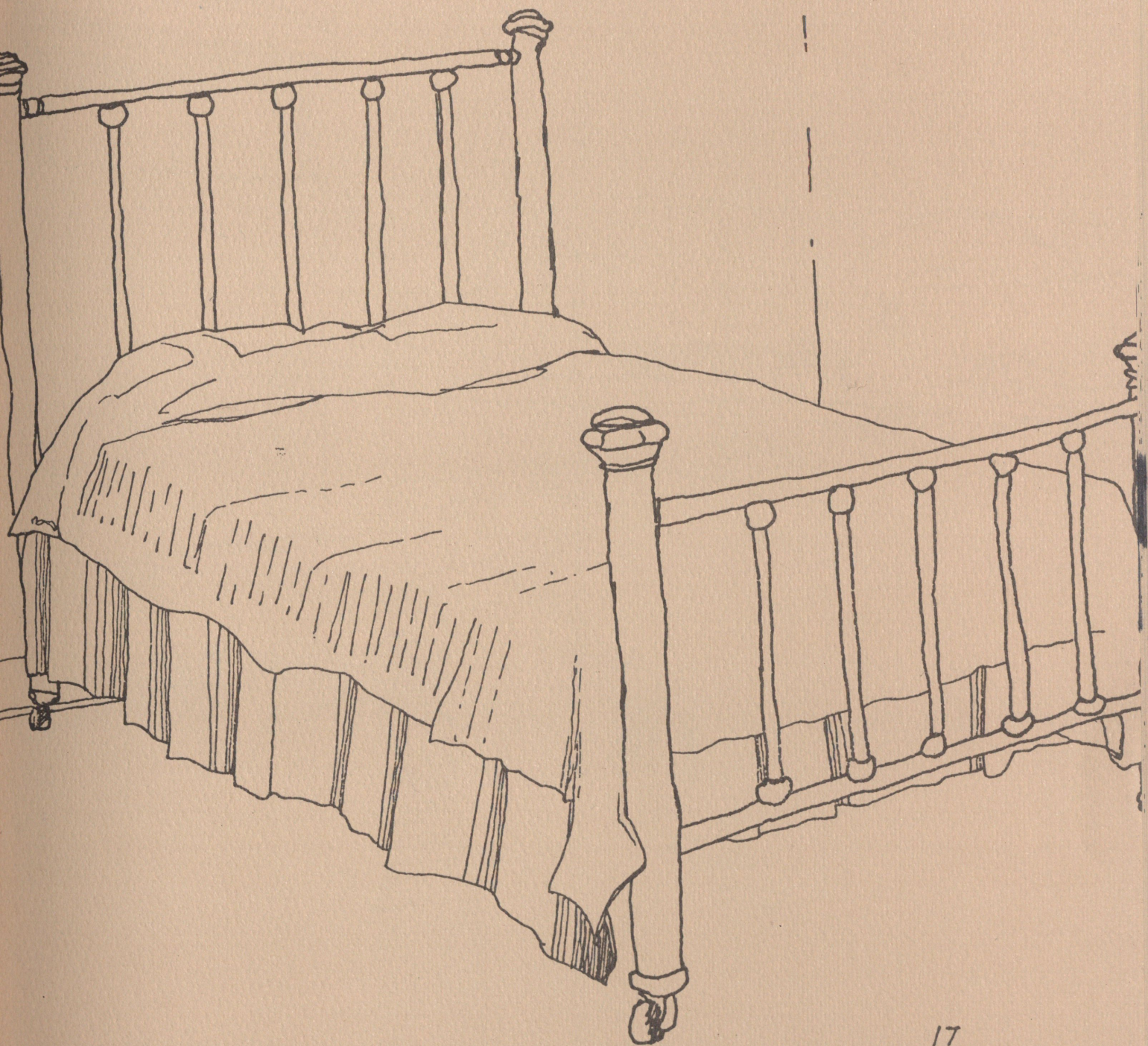
Physical influences on group formation are many and varied. One may perhaps assume that the means of avoiding group formation will be limited in an undersea facility, therefore making group formation and functions more readily accomplished. But care must be taken not to rely on such, because friction among participants as a result of forced grouping could be the demise of productive research activity and even the safety of the occupants in an isolated situation.

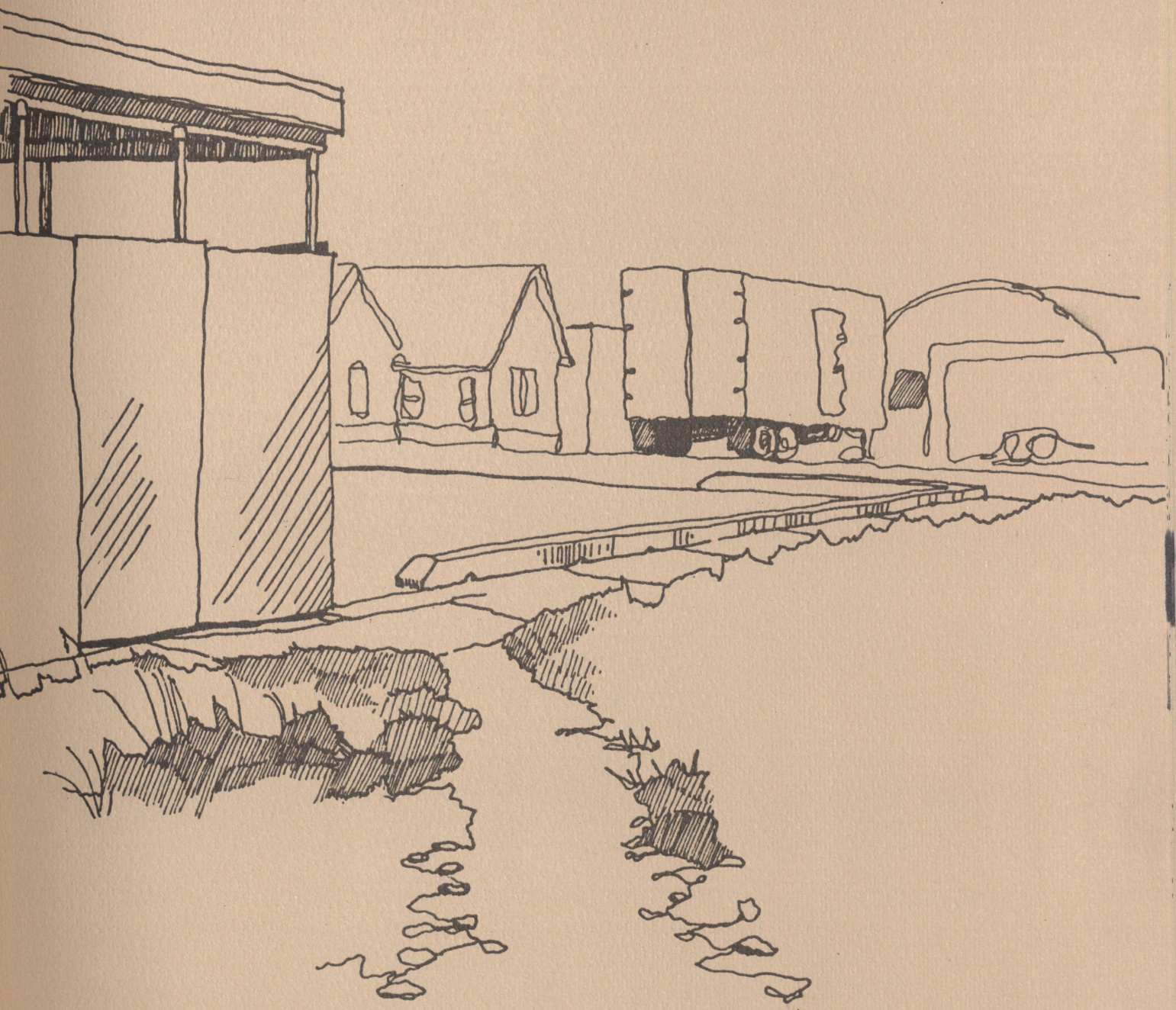
One thing which seems to stand out when considering facilities for group activities is flexibility --- particularly in an isolated situation. Many group activities may need a work table surrounded by participants --- but a wrestling match on the floor would find a fixed table quite an obstacle. Different activities will focus on different areas and different sizes of areas --- watching television requires that seating face a fixed, small area at a distance, without traffic passing through the interval between viewer and the view; a card game requires chairs around a table focusing on the table. Peripheral traffic may be an asset as well

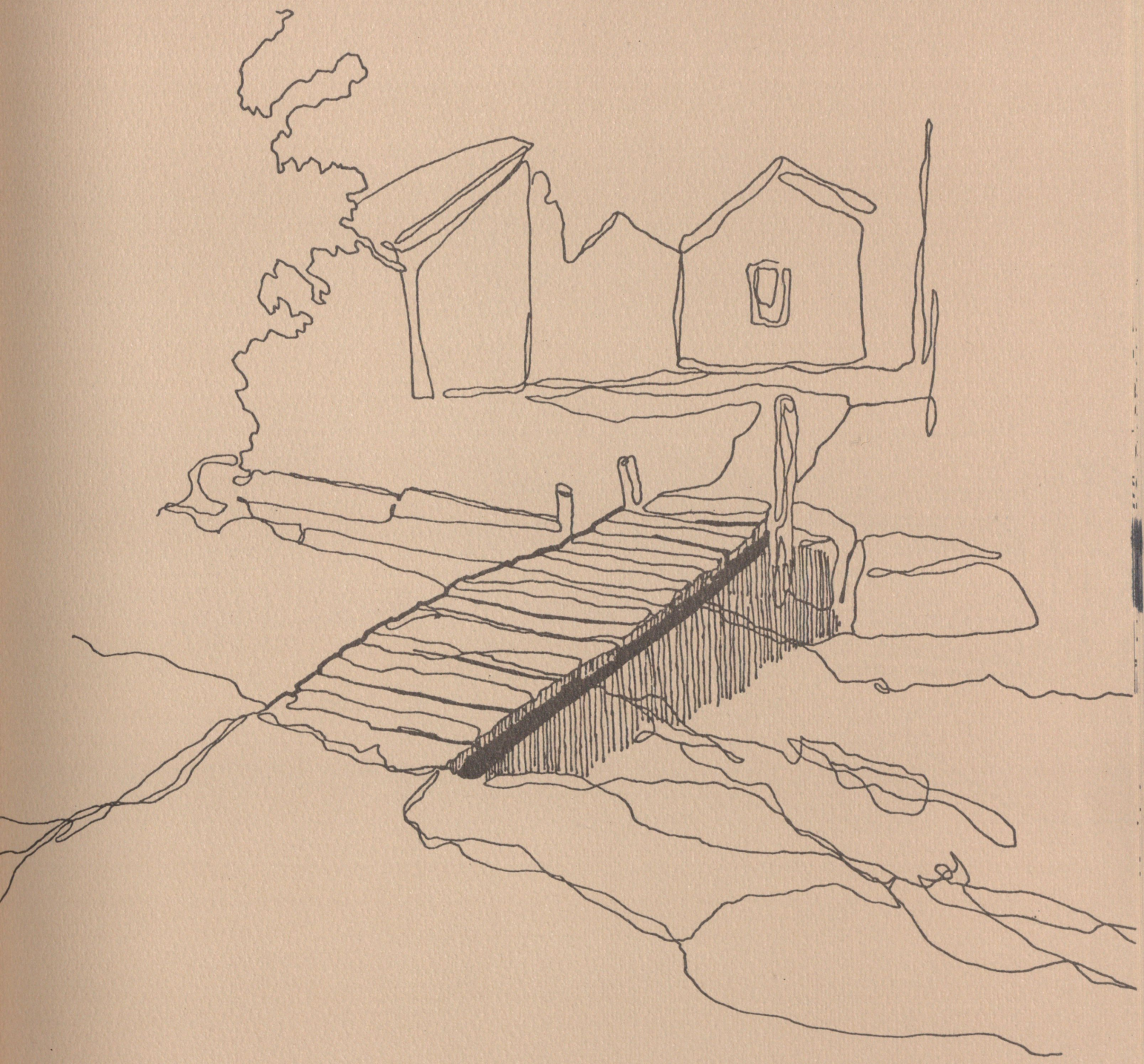


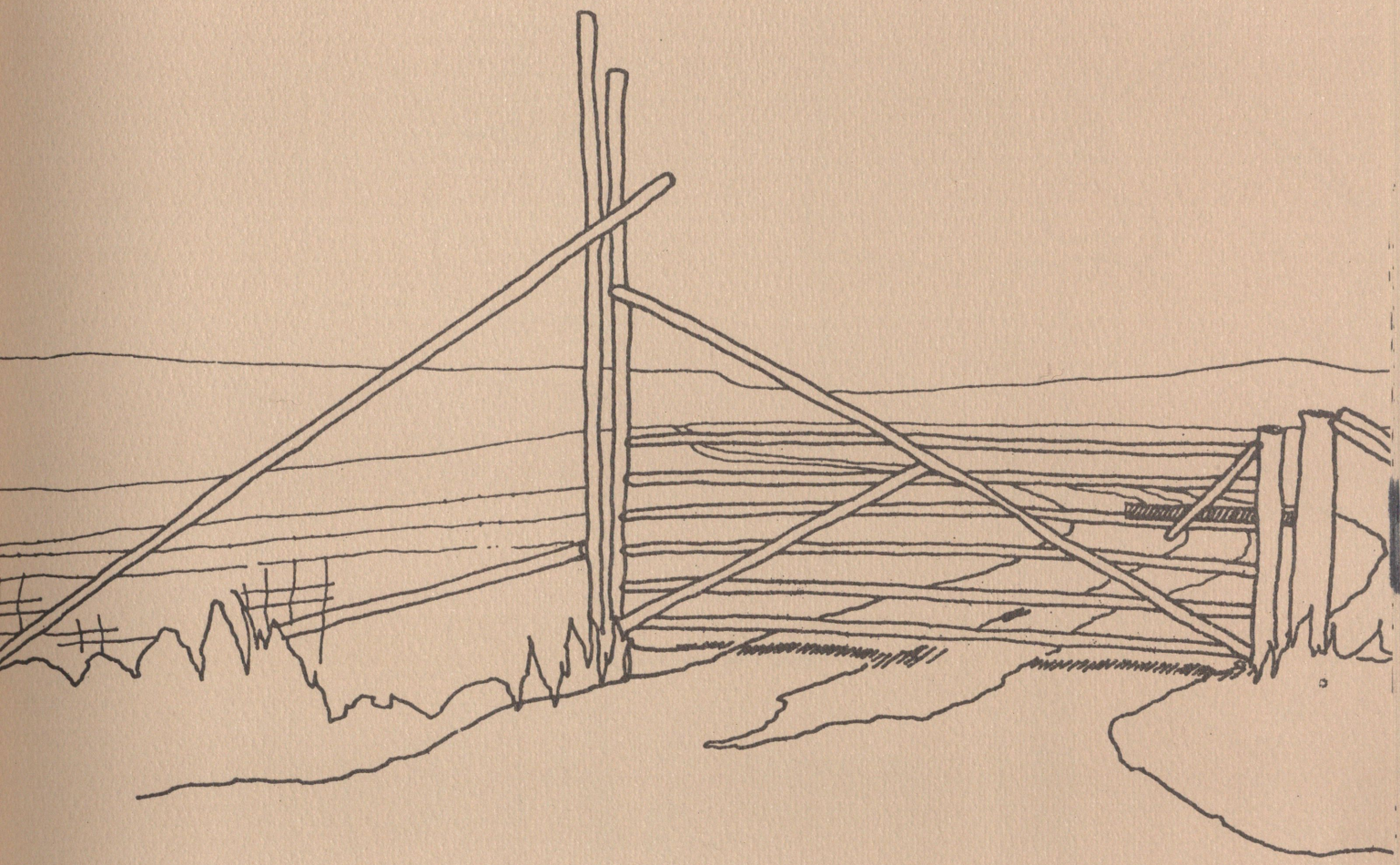


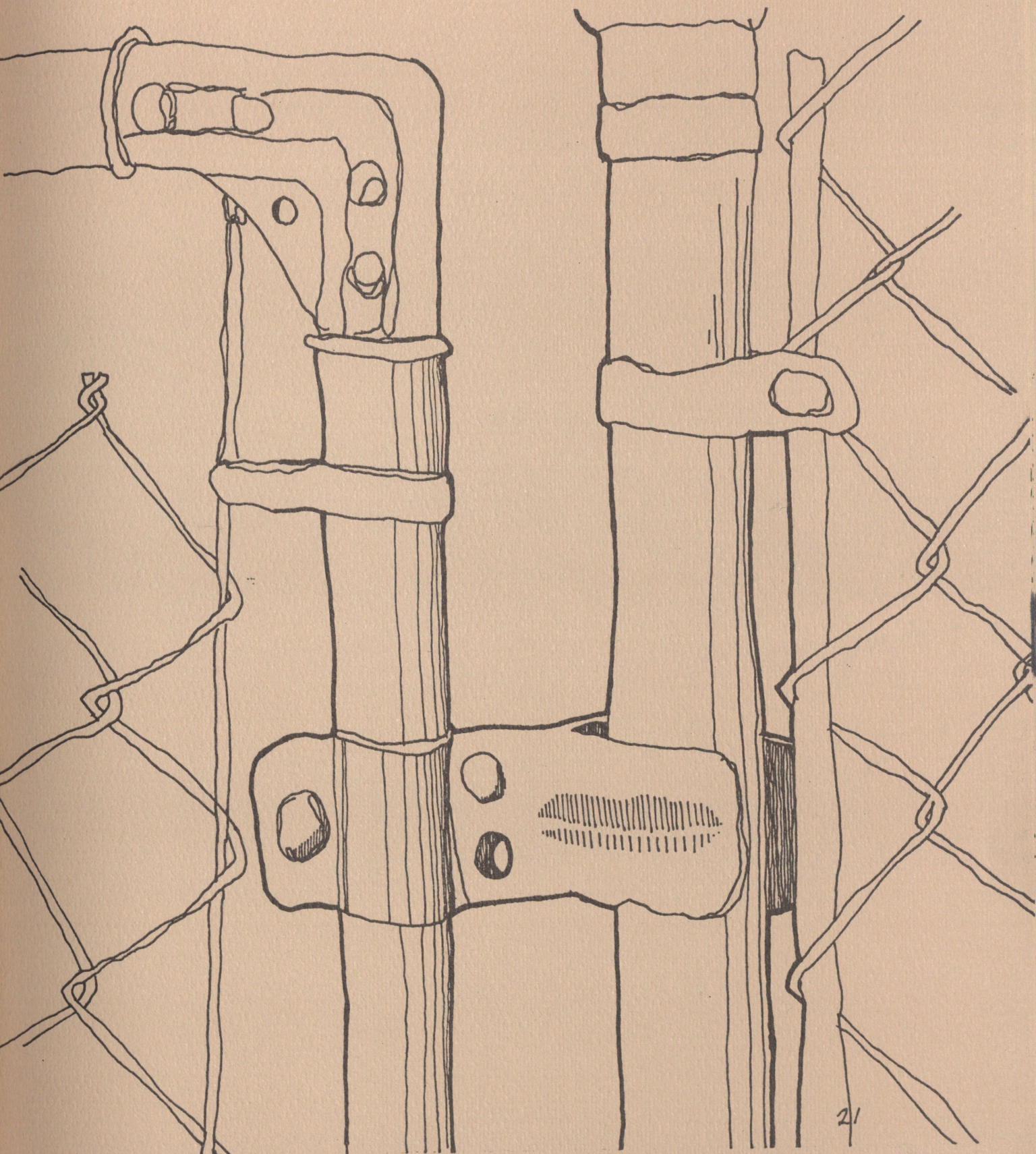




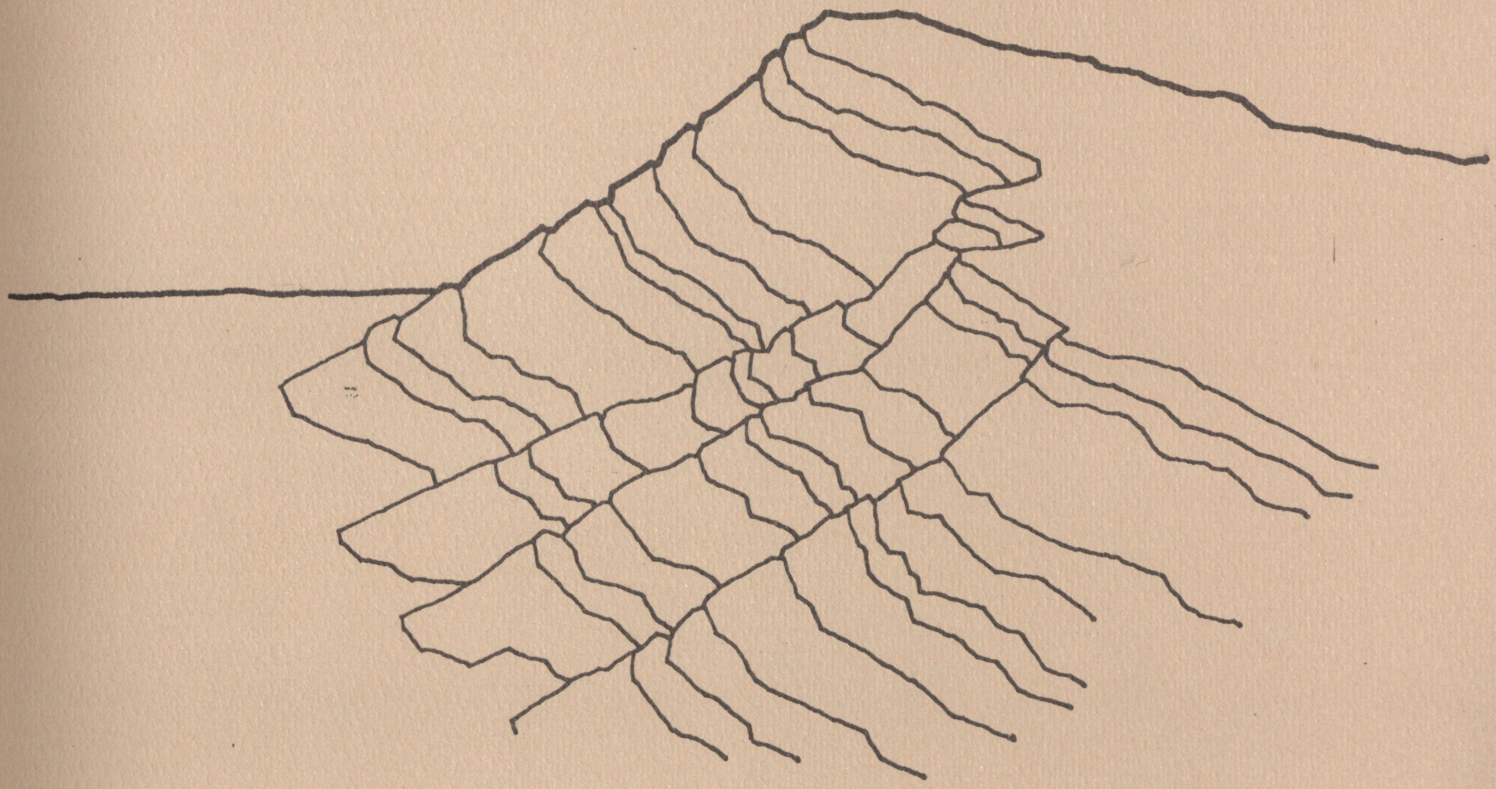




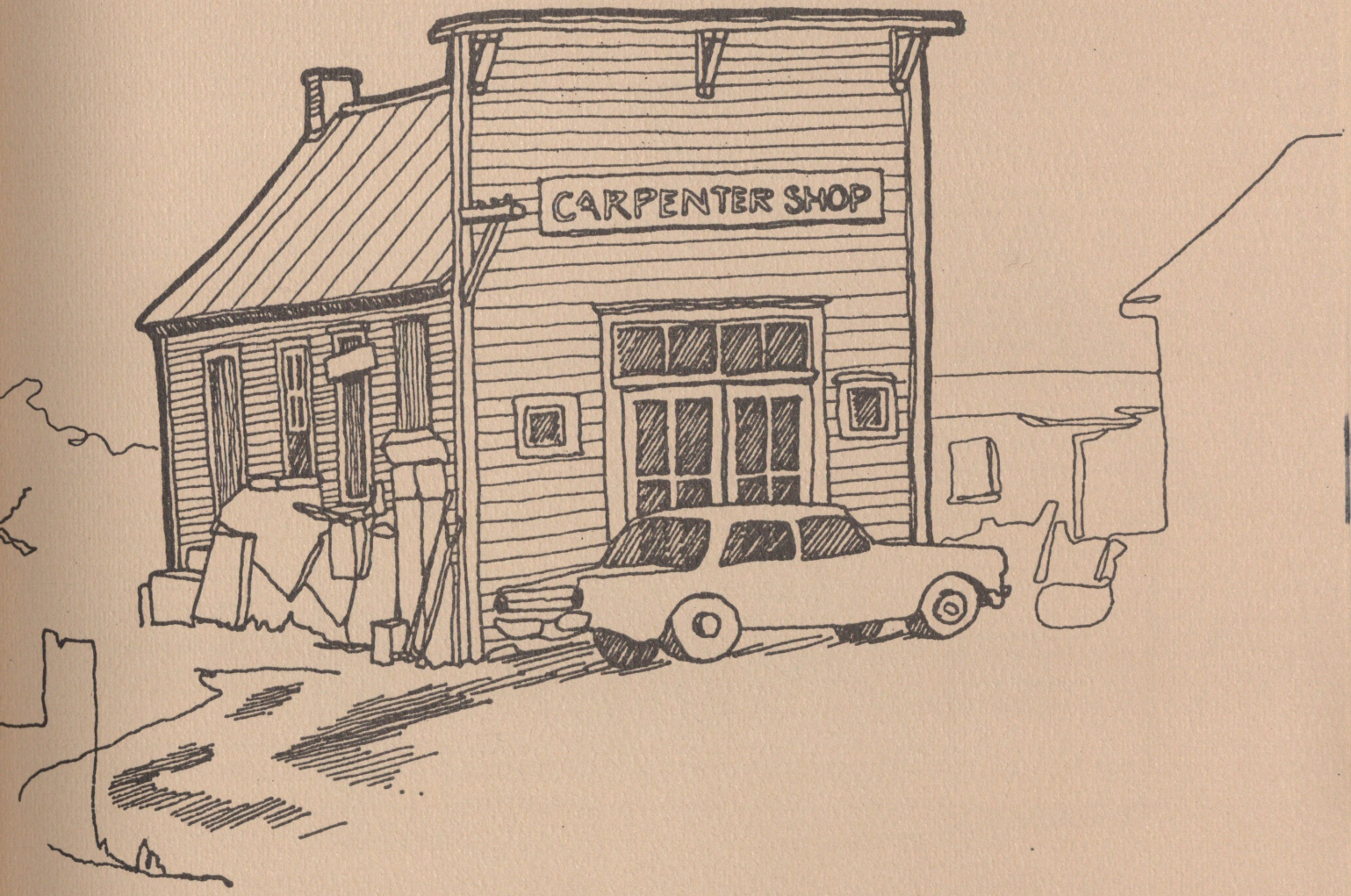


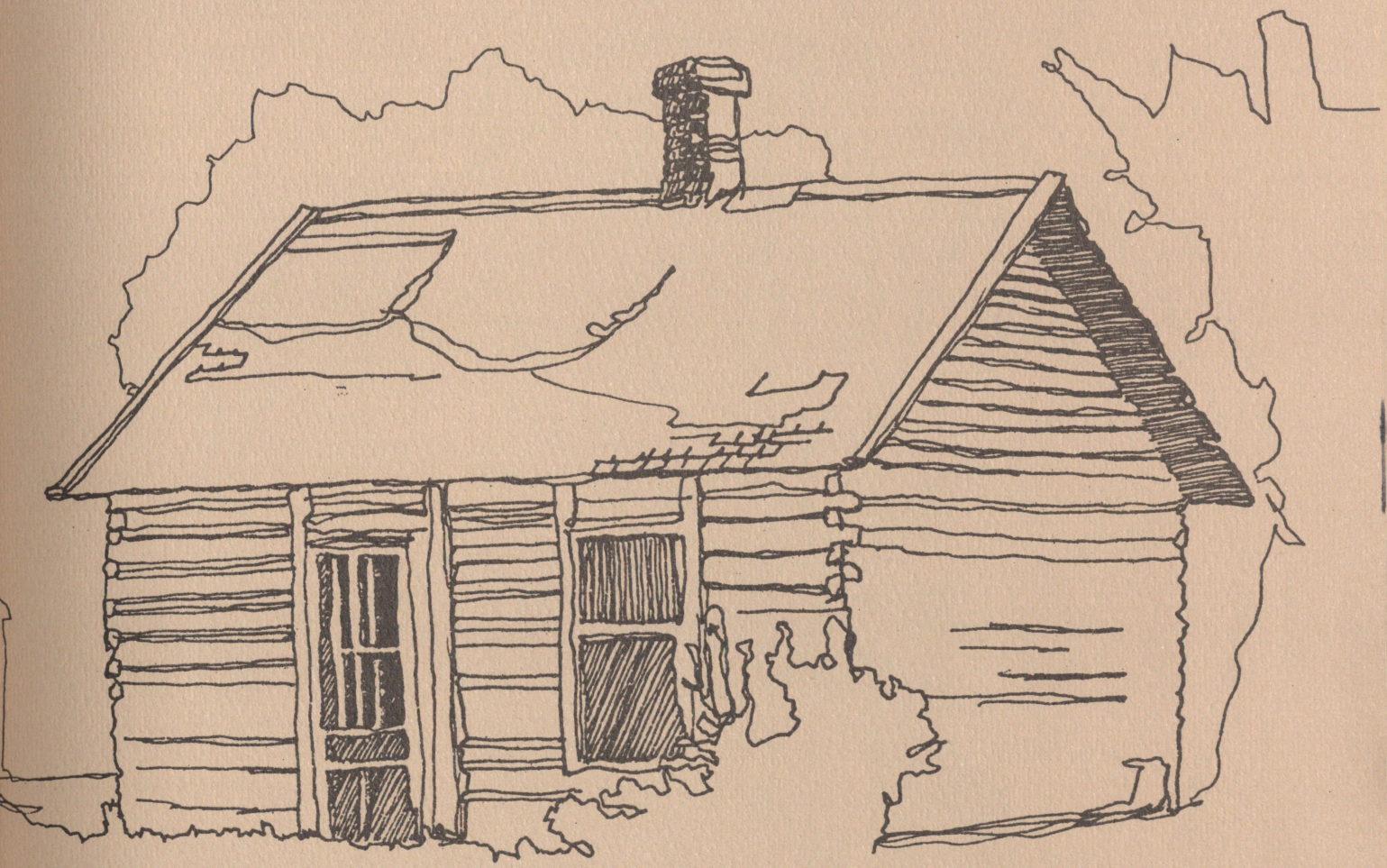


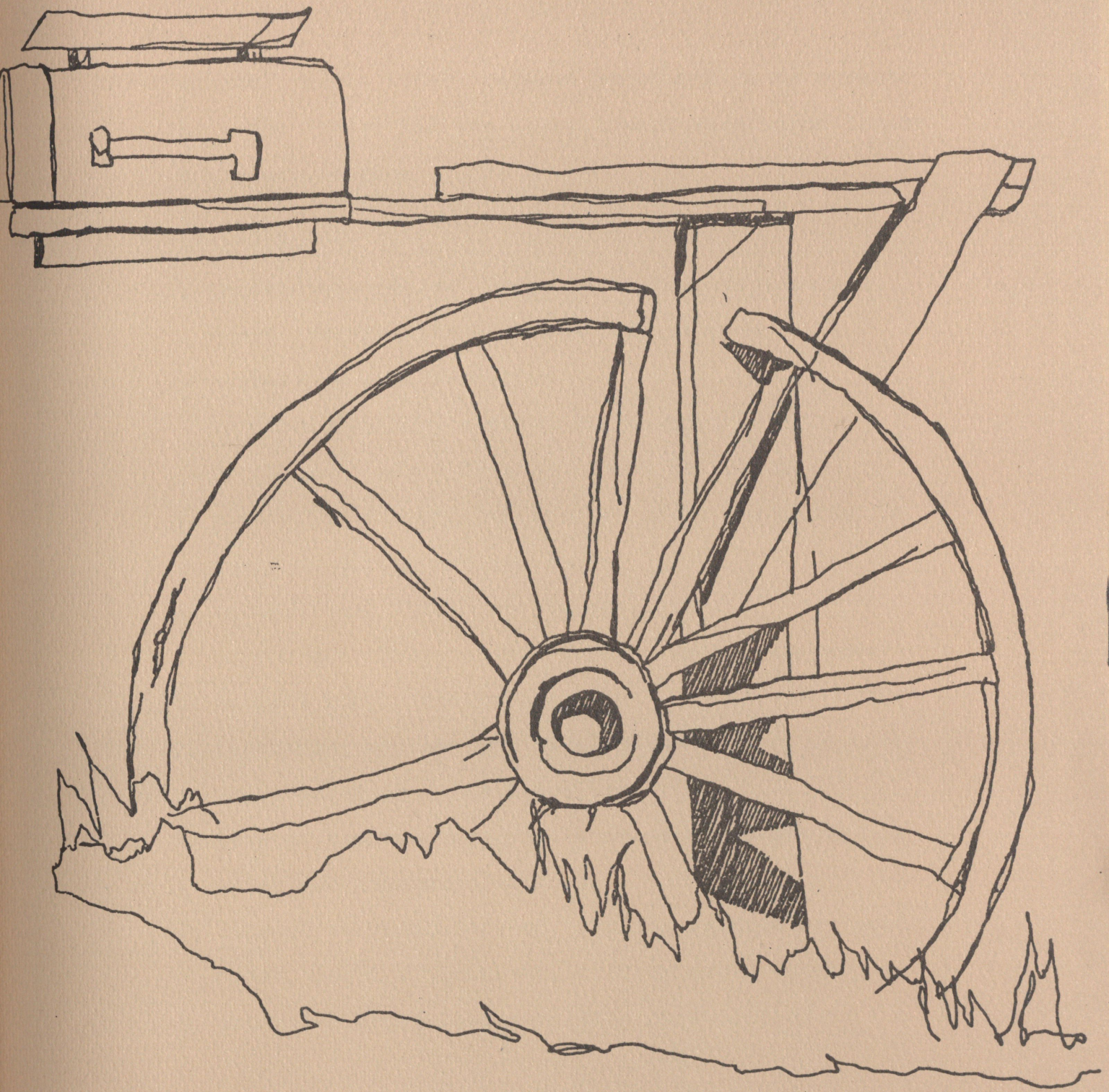







CARPENTER SHOP





SITE ANALYSIS

Architectural thesis site: between North and Butte streets and Idaho Street and the alley toward Washington Street in Dillon, Montana 59725

A. Climatic conditions

1. temperature range: very low winter temperatures; short summers with moderate temperatures
2. prevailing wind condition
   a. storm (winter) wind: north to northwest
   b. chinook (warm) breeze: south to southwest
3. snowfall: varies, relatively light; six inches to one foot during average winter
4. frost line: three feet below grade
5. earthquake zone: most severe seismic area, zone 3
6. unusual local condition: none
7. lightening protection: applicable

B. Physical conditions - realizability

1. type of contractors: small and medium; mixture of union and non-union workers
2. type of manufacturers of building materials: wood frame, masonry, concrete, prefabricated steel
3. general technical construction capabilities:

skilled, semiskilled, and unskilled; no advanced

4. availability of technical personnel: very limited
5. materials:
   a. steel - yes (if imported)
   b. concrete, regular - yes
   c. concrete, light weight aggregate - yes
   d. precast concrete plant - no
   e. prestress concrete plant - yes (if imported)
   f. stone - yes
   g. wood - yes
   h. masonry - yes
6. parcel number 9, lots 1 through 10 in the Original Townsite of Dillon

C. Soil and ground conditions

1. soil type: generally quaternary alluvium and glacial drift deposits of gravel, sand, silt, and clay having fair to excellent ground water aquifer (5 to 2,000 gpm)
2. any unusual amount of fill required: no
3. any water problem: part of site lies below elevation of water on site
4. any large body of water nearby: no
5. any irrigation easements or ditches: yes

6. Is soil bad enough to warrant a mat foundation? no

7. Is soil bad enough to warrant use of a pier (caisson) foundation? no

8. expertise available for soil work: yes

D. Adjacent structures

1. any tall buildings in the area: no; two story maximum

2. Will surrounding buildings affect wind loading? no

3. noise control necessary: area is mainly residential but within one block of main highway and bordered on the north by commercial trucking company

E. Legal considerations

1. building code to be used: uniform building code and other locally accepted and/or adopted codes

2. zoning requirements: none; but area has character of residential to the east, south, and north and small commercial to the west

3. setback requirements: none; but city has general 12 feet setback for main and side streets and 5 feet for alleys

4. height restriction: none

5. building area/open space @ each lot: limit

6. building shape restriction: none

7. building materials restriction: none

8. appearance codes or design criteria approval: none

9. "style"/character approval: none

10. parking requirements on site: none; but common practice in other Montana cities is 1½ spaces per living unit

11. if nonconforming . . .

variance: is not necessary

zoning change: is not possible

12. local covenants: none

F. Movement: pedestrian and vehicular

1. site access: generally in all directions for pedestrians and vehicles

2. on-site storage limits: limited

3. pedestrian circulation: general access to site at present although only displaced residents appear to walk a great deal

4. vehicular circulation: two way traffic on all streets; one way (either way) traffic in alley

G. Solar orientation

1. differential expansion: possibilities if masonry used

2. general direct light exposure: excellent

3. any structures blocking sunlight to site: no
4. exposure intensities generally:
   north: moderate; heavy offsite high trees
   south: excellent
   east: fair; partial obstruction by one story structures
   west: good

H. Local, state, federal government special design requirements

1. land use, land grant situation: must satisfy program requirements specified by non-profit community corporation
2. noise level: truck noise from west and north
3. external illumination level: normal for latitude and elevation
4. pedestrian/vehicular circulation during the construction: limited to alley and side streets; no vehicles on site
5. air rights: unnecessary
6. view easements: unnecessary
7. pollution control: normal as limited by local law
8. lot splits: not applicalbe (lots are 50 x 115 feet)
9. utility access/availability: unimpeded; all ser-

vices (gas, electricity, cable television, telephone) in alley

10. movement and vibration limitations: normal as limited by success of adjacent structures; design to conform to codes
11. other code or ordinance required: none
12. union policies: applicable only in certain cases; consult with relevant unions
13. wages: subject to current union rates
14. construction methods: as is the accepted trade practice and procedure
15. sympathy strike: not applicable
16. overtime: normally applicable
17. working conditions: as is normal in area, good to excellent in non-winter weather; site is okay

I. Fire and safety

1. fire zone: medium to high medium relative to city
2. occupancy group: Group I residential loading
3. construction type: masonry with frame partitions and wood structure
4. availability of hose bib on site: yes
5. fire protection from city
   a. hose bib: yes

b. truck/hook and ladder: yes

6. location on property for fire protection: okay

7. special fire setbacks: none

8. special allowable floor area: not applicable

9. maximum height or number of stories: two and a half

10. allowable increases: see uniform building code

11. sprinkler system: not required

12. setback from front property line: see E

13. occupant loading: see uniform building code

J. Utilities

1. septic field (State Board of Health approval): not applicable; city will provide hook-up to city sewer

2. availability of services:

a. gas: yes

b. telephone: yes

c. electricity: yes

d. water or well: water okay

PROJECT AND PROGRAM

The project for this thesis is an eighteen unit dwelling complex on a half city block. Three of the units are efficiency apartments at ground level; the remainder are single bedroom and two bedroom units in three level buildings.

The project is sponsored by a non-profit community corporation in Dillon set up to serve low income residents of sub-standard housing on the northern edge of the city. It is assumed that the minimum 18 residents of this complex would be from this target group. HUD and FHA practices allow 10% of the units in similar projects to be occupied by any other residents of the community.

Each unit

Typical client: elderly married couple in good health

stairway
entry and long vestibule
coat and boot storage
household communication center and convenience storage
kitchen
    double sink
    refrigerator/freezer

oven/range

counter space

dining table

small appliance storage

food storage

covered balcony

bedroom

large built-in bed

built-in wall storage

closet and dressing space

bathroom

bathtub

single sink

toilet

towel storage and linen storage

vanity

Common facility

manager's office

recreation/public meeting hall

toilet

kitchen

laundry

lounge

stove wood storage

maintenance storage

garbage can storage

Size breakdown

number of bedrooms:	0	1	2
number of units:	3	12	3

24 parking spaces

CONCLUSION

The goal of this thesis has been to demonstrate that culture at a local level holds useful information for an architect. Specifically, this thesis contends that the information is cultural objects which serve as a source of shapes and signs.

In reviewing the limitations of this thesis, the following remarks seem appropriate: 1) It is difficult to divest any cultural feature of its meaning; the architect runs risks by assuming he has done this; 2) The architect will never escape the values of his own culture and will therefore occasionally fail to recognize the essential ingredients of any local culture; and 3) "Culture" itself is a ubiquitous term, used most often to describe personal meaning rather than regional or universal meanings.

What the achievements of this thesis? I am totally convinced that any locale is a rich source of inspiration -- of complex, profound, and mysterious clues to its description which eventually lead to understanding. For the architect with a keen eye, these clues can be seen and translated into architecture. That task is for a lifetime, but for having taken the first step, I make no apologies.

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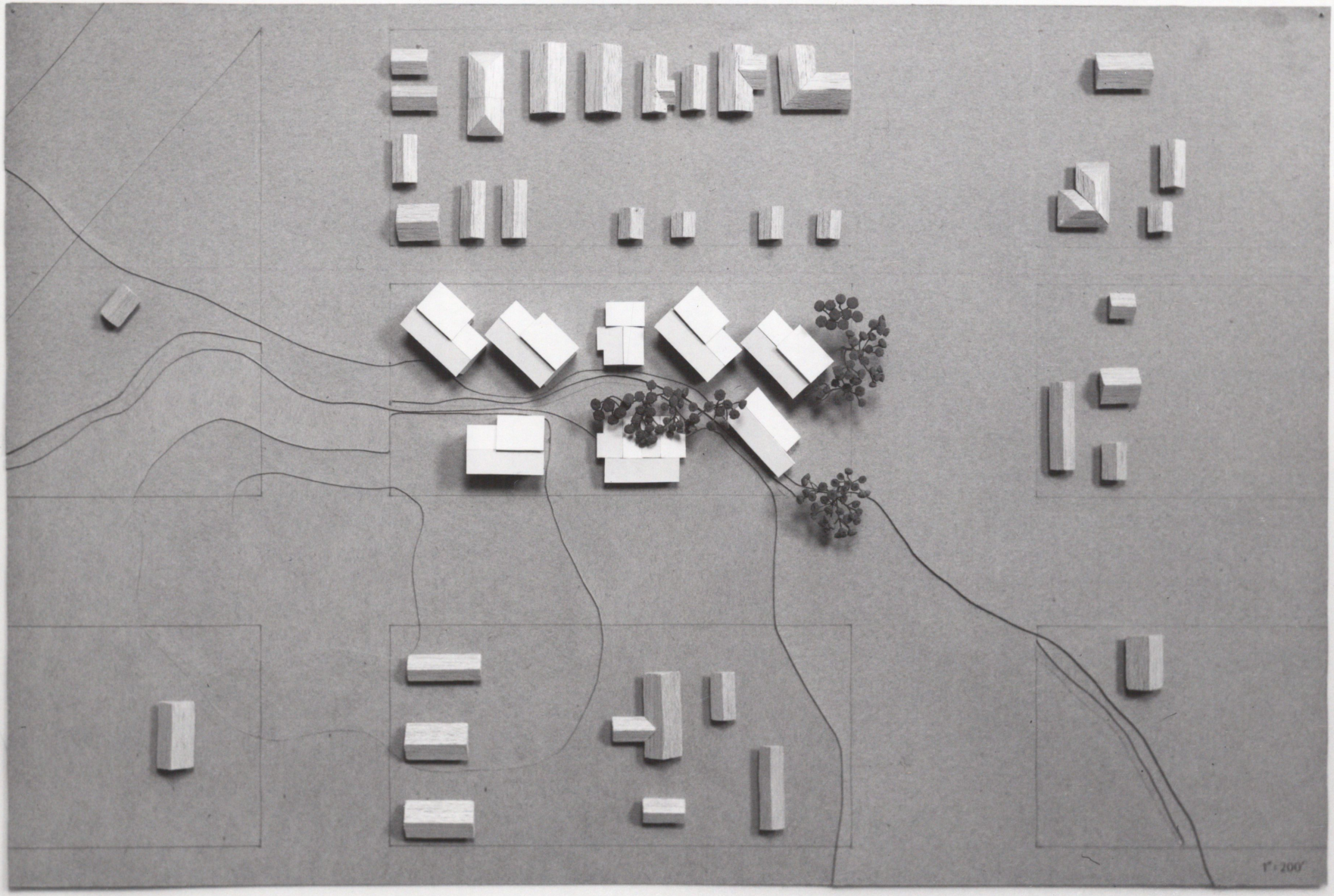
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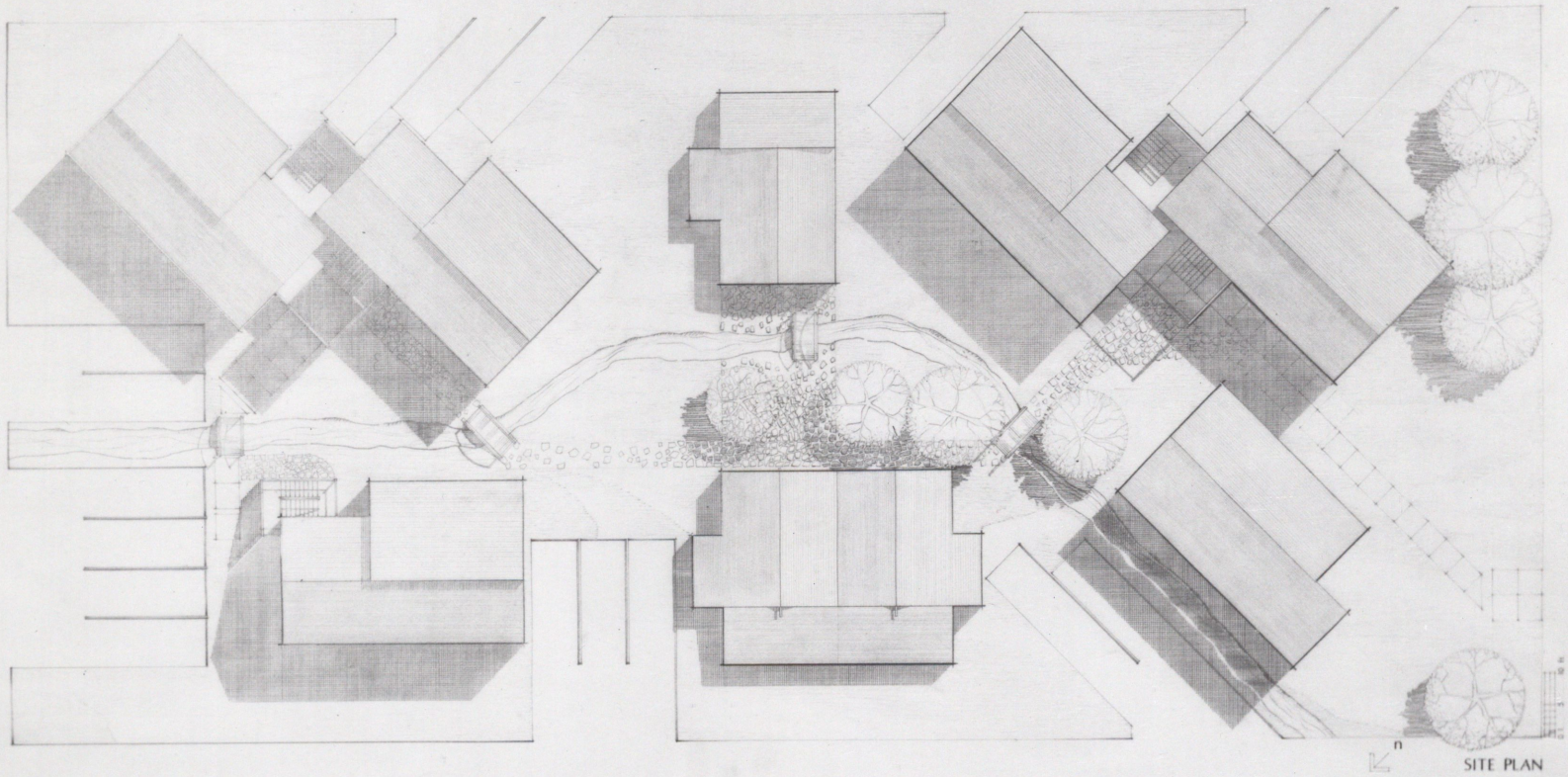
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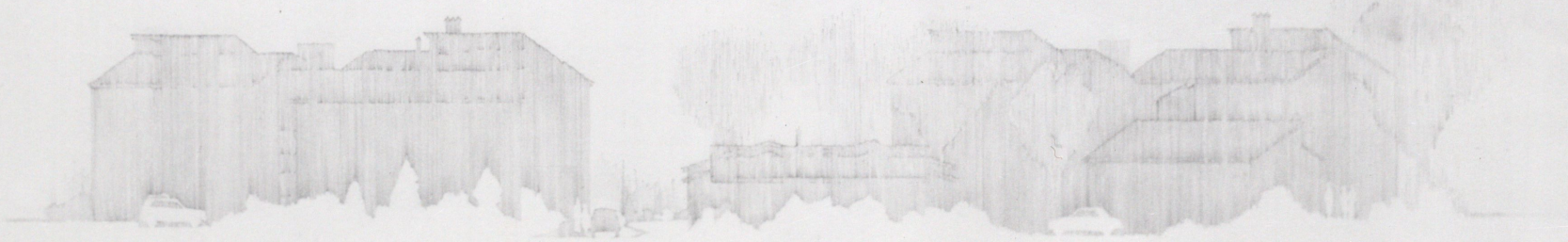
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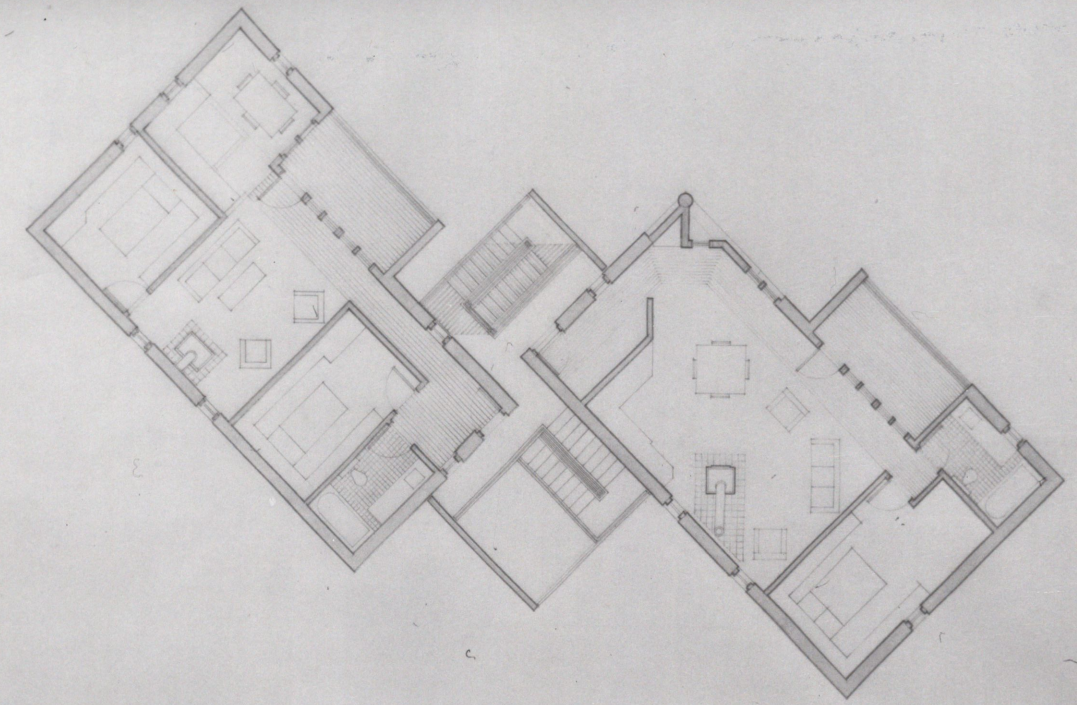
THE CABBAGE PATCH: HOUSING AS A CULTURAL EXPRESSION

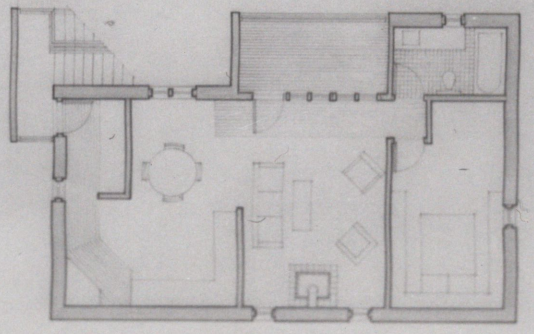


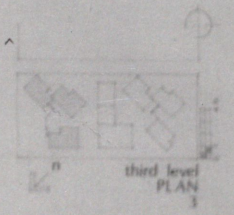


SITE PLAN



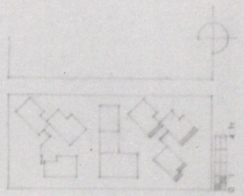




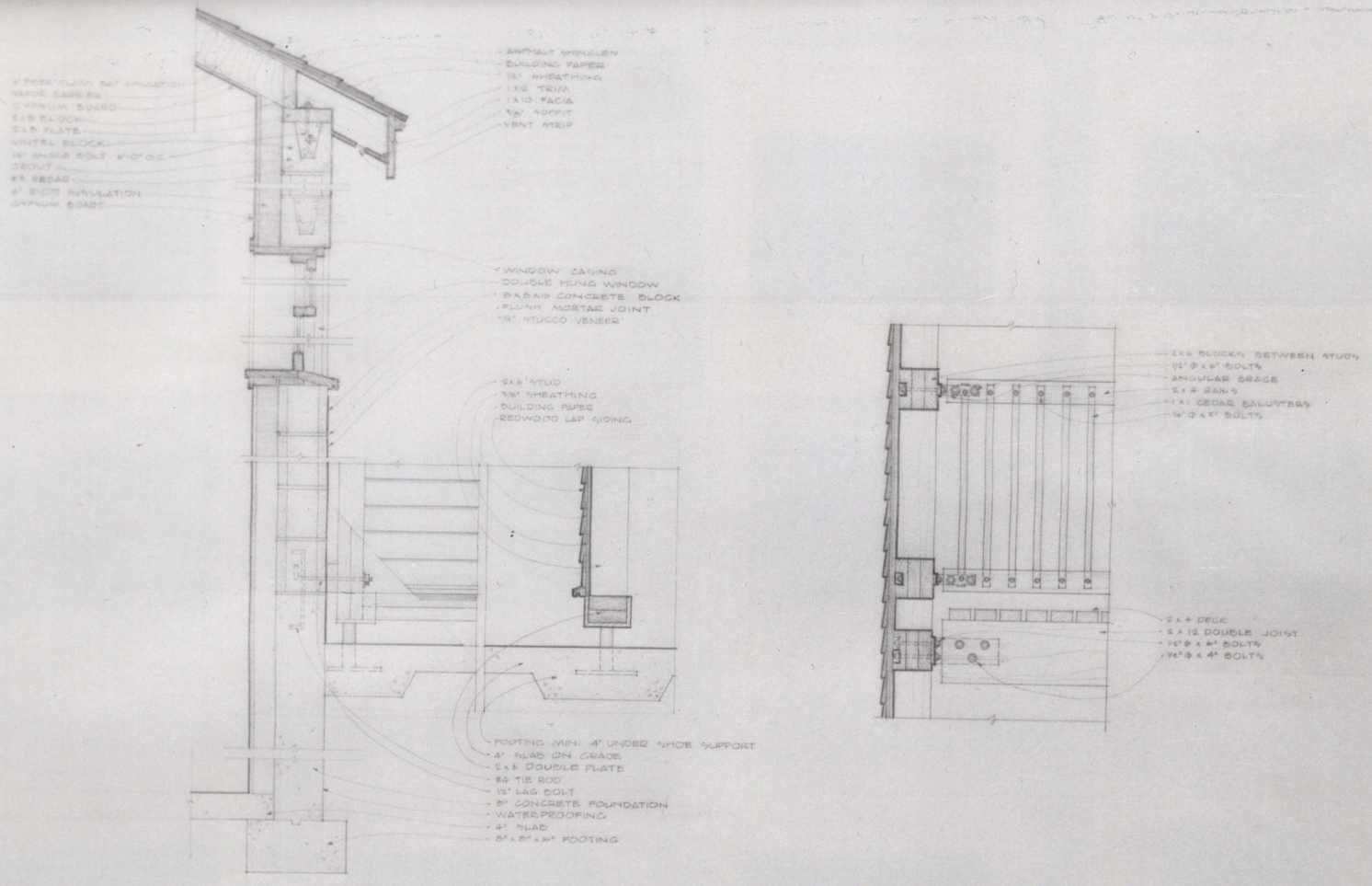

third level
PLAN

ELEVATION



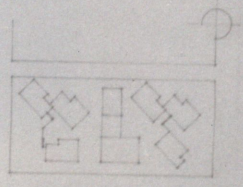


ELEVATION
9

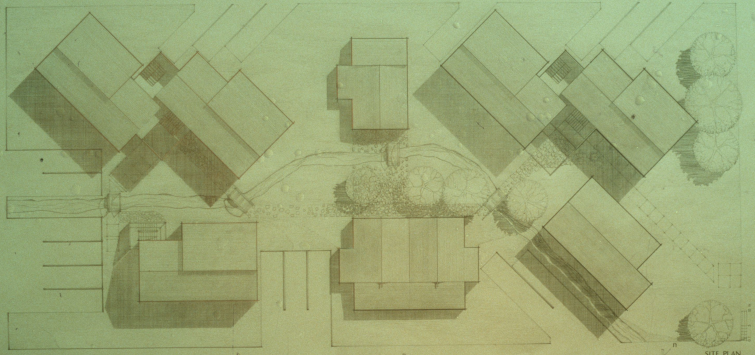


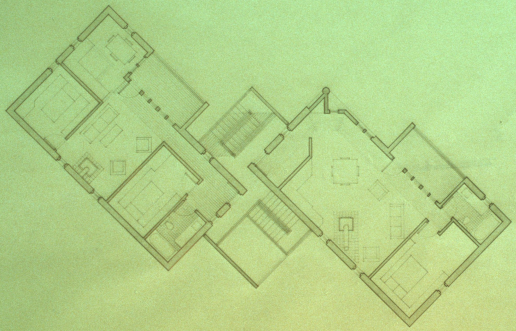
1/13 TYPICAL MASONRY WALL SECTIONS & "FALSE FRONT" CONNECTION
1½" = 1'-0"

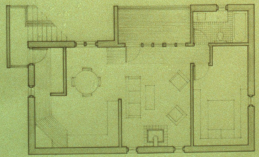
2/13 TYPICAL RAILING & DECK CONNECTIONS
1½" = 1'-0"

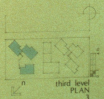


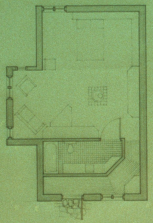
DETAILS
13

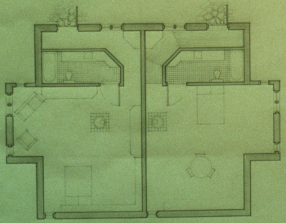

SITE PLAN

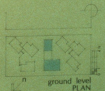




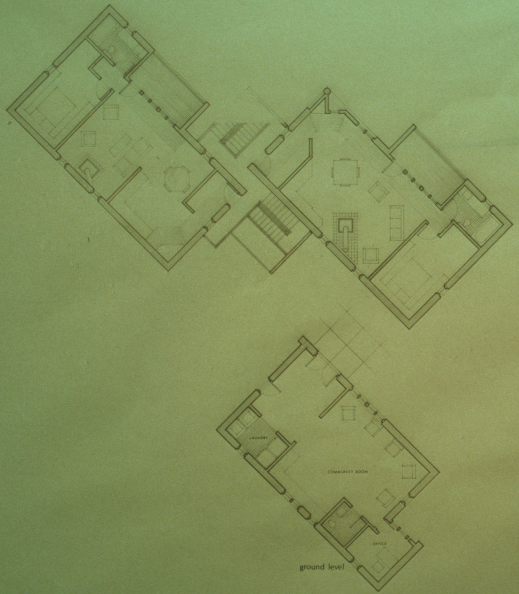

n
third level
PLAN
1





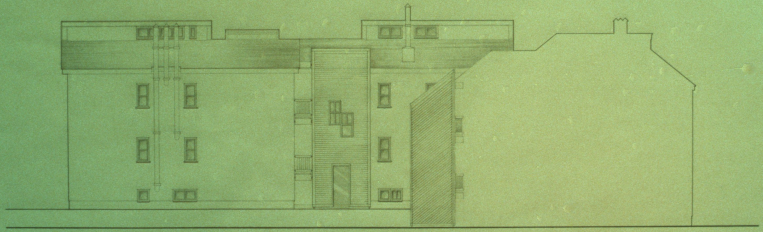


ground level
PLAN
4



ground level

third level
PLAN
5





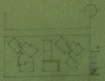
ELEVATION
6



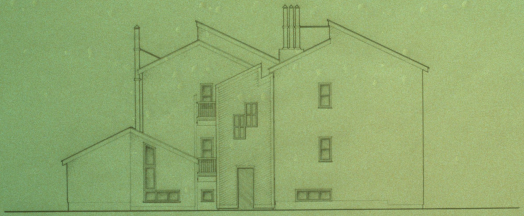


ELEVATION



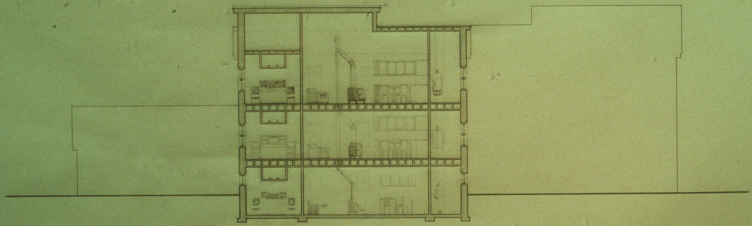


ELEVATION
8



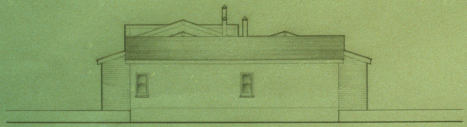


ELEVATION
9



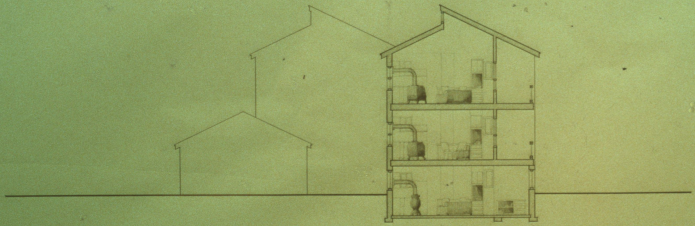


SECTION
11





ELEVATION
10





SECTION
12

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