

Dennis Richardson
Thesis

June 12, 12:00 - 1:30 Jury
Lower Gallery

P378
.R3935

LIBRARY
MONTANA STATE UNIVERSITY
BOZEMAN

STATEMENT OF PERMISSION TO COPY

In presenting this thesis in partial fulfillment of the requirements for an undergraduate degree at Montana State University, I agree that the Library shall make it freely available for inspection. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by my major professor, or, in his absence, by the Director of the Libraries. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my permission.

Signed: _____

Devin Richardson

Dated: _____

6/2/81

CULTURE AND ARCHITECTURE

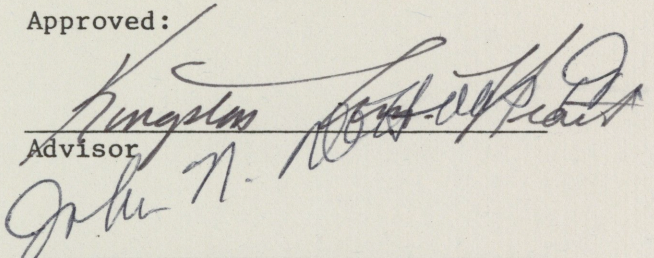
Dennis Richardson

A Professional Paper Submitted in
Partial Fulfillment of the Requirements
for the Degree

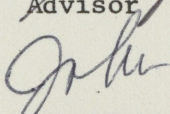
of

Bachelor of Architecture

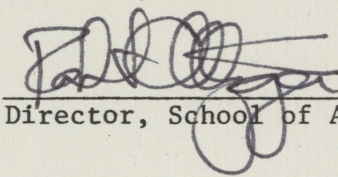
Approved:



Advisor



Chairman, Thesis Committee



Director, School of Architecture

Montana State University
Bozeman, Montana

P 378
R 3935

NA 25210
7706
M 16
R 393

DEDICATION

This work is dedicated to my Grandfather and Great Uncle,
Bill and Ted Nelson, and to my parents, Robert A. and Joyce
Richardson. From them I have learned ambition, humor, and will
always strive for higher ideals. It is also dedicated to my
old hometown, Thermopolis.

ACKNOWLEDGEMENTS

I would like to acknowledge the following people for their assistance in my thesis endeavor: Professor Kingston W. Heath, Thesis Advisor--David Matthews, Architectural Design--Lee Nellis, Hot Springs County Planner--Butch Cassidy, local Thermopolis outlaw. A very special thank you to my loving wife, Gala Goodwin.

TABLE OF CONTENTS

Statement of Permission to Copy	i
Title Page	ii
Dedication	iii
Acknowledgements	iv
Table of Contents	v
Introduction and Thesis Statement	1
Introduction to the Building Program	7
The Building Site "the old hill school"	11
The Building Program	14
Site Analysis	27
The Design Program	47
The Rules of Acquisition, Use, and the Limitations of Learned Behavior	48
Town History and Concept Formation	52
Bibliography	58

INTRODUCTION AND THESIS STATEMENT

This thesis project documents the processes and thoughts involved and the theoretical design of a community heritage center for Thermopolis, Wyoming. The written portion includes: "The Introduction and Thesis Statement," which defines and explains some of the concepts and terms used throughout the written portion of the project; "The Building Program and Site Analysis," which introduces and defines the design problem and then investigates and establishes the physical requirements of the project; and "The Design Program" which formulates the building concepts and form. The Design Program is a process that varies in form and theory for different design projects. Francis Ching explains:

"Architecture is normally conceived (designed) and realized (built) in response to an existing set of conditions. These conditions may be purely functional in nature, or they may reflect, in varying degrees, social, economic, political, even whimsical or symbolic intentions. In any case, it is assumed

that the existing set of conditions--the problem--is less than satisfactory, and that a new set of conditions--a solution--would be desirable. The act of creating architecture, then, is a problem-solving or design process.

The first phase of any design process is the recognition of a problematic condition and the decision to find a solution to it. Design is above all, a willful act, a purposeful endeavor. The designer must first document the existing conditions of a problem, define its context, and collect relevant data to be assimilated. This is the critical phase of the design process, since the nature of the solution is inexorably related to how a problem is perceived, defined, and articulated."¹

The design response, in this study, is based on the assumption that the town of Thermopolis needs a building that will serve the community as an entertainment, heritage, and community center. The town will benefit the most from a building that is

¹Francis D. K. Ching, Architecture: Form, Space, and Order (New York: Van Nostrand Reinhold Company, 1979)

designed specifically as a response to distinct "cultural" aspects and will reinforce the "fabric" of the community. Thermopolis' "culture" is the town's personality that has developed from "factors influencing its social and intellectual formation."² These factors will be investigated in the Design Program. By recognizing the influences of a designed environment on its inhabitants, the importance of developing a relevant "design concept" become apparent. The "design concept" is the fundamental theory from which the building is developed. The validity of that concept to the building's occupants will be determined by an investigative analysis of the images, social attitudes, historical and social influences characteristic of Thermopolis, and then by establishing a dialog between the building and its occupants.

"Architectural phenomena involve a range of properties-- from the subtle and elusive features of symbolism and sensual

²The American Heritage Dictionary of the English Language,
1969 edition

qualities at one end to the utilitarian qualities of measurable space and ambient conditions at the other--and all of these properties must be kept in view if one is to achieve a comprehensive understanding of the effect of the built environment on man and society.

Sensitivity to the totality of buildings and environments implies, in turn, recognition of the fact that architecture connects with the full range of human qualities, capacities, instincts, feelings, needs and dispositions including the needs for light and air, the experimentally observable functions of seeing and hearing, and the experimentally observable demands for communication and group membership, as well as a cultural need for strong integrative symbols and the individual need for a sense of place. The latter requirements cannot probably be directly observed or measured, but they can be inferentially determined from the linguistic and symbolic products of society."³

³Robert Gutman, People and Buildings (New York: Basic Books Inc., 1972)

An investigation of the design for this building must relate the pertinence of a particular concept and the application of that concept so that an interaction is set up between the symbolic representation of the concept and the subjects affected by the design. The "design" is a general term describing the summation of form, style, symbolism, and focus. The subject, in this case, is not just a casual visual-participant, but is the object of the design, the occupant of the building who will experience and use the final product.

An appropriate design for this project is a response to inferential conclusions made from observations of the subject's cultural, social, historical, and prospective future.

My Thesis Statement is formulated from the terms and concepts defined in the introduction above.

Subjective appeal for a design is based on the familiarity and relevancy of the design solution to the occupants. The design is the material representation of its occupant's social and cultural spirit.

"Designers inevitably prefigure solutions to problems they

are confronted with. The depth and range of their design vocabulary will affect both their perception of a problem and the shape of its solution."⁴

This Thesis is a conscious effort to supplement my design vocabulary so that I, as an architect, can react to socio-cultural influences and develop a design from them.

⁴Francis D. K. Ching, Architecture: Form, Space, and Order
(New York: Van Nostrand Reinhold Company, 1979)

THE BUILDING PROGRAM AND
SITE ANALYSIS

A Heritage Center for Thermopolis



"The fact remains, however, that the basic task of the builder, the task which distinguishes him from the engineer and contractor, is still the sheltering of man, his work, and his possessions in structures that provide spiritual as well as material gradifications."⁵

Sibyl Moholy-Nagy

My knowledge of socio-cultural influences on design will be applied by doing a theoretical design of a community heritage center for my hometown, Thermopolis, Wyoming. I have spent the limited research time available to me investigating the concept rather than gathering new material about the site and its social structure, so I committed myself to a site and society that I am familiar with. I want to apply this research knowledge to a

⁵Sibyl Moholy-Nagy, Native Genius in Anonymous Architecture (New York: Horizon Press, 1957)

unique social atmosphere so that the building will be more easily discernable as a response to this particular cultural group.

My intimate connection with the town and its citizens provides me with material that I would otherwise have had to spend valuable time assimilating.

This building is to include a public auditorium for groups of 350 or smaller, display space for heritage artifacts and art, a day care center for children to eight years old, a senior citizen's social room and workshop, administration office space, and an outdoor plaza for additional community activities like farmer's markets and fairs.

The building is directed toward the entire community. It is my intention to address all of the age groups in town and to stimulate interaction between them. The current energy boom in Wyoming has stimulated an influx of transient residents living in temporary buildings. The downtown atmosphere has changed drastically as have the residential areas. Where there were once meticulously landscaped homes, there are trailer courts with

yards full of junked cars, and the Norman Rockwell prototype downtown is now bristling with honky tonk bars.

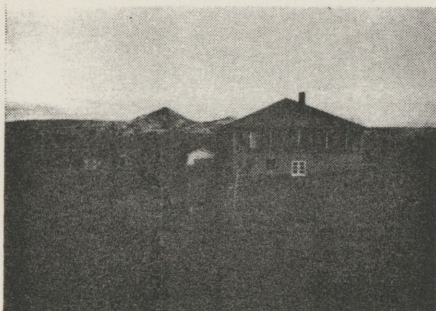
"This is the last cowboy song,
The end of a hundred-year waltz,
The voices are sad as they're
singing along,
Another piece of America's lost."⁷

This decadent new social trend is destroying the quality of life in Thermopolis. The traditional small-town atmosphere is being destroyed as well as the spirit of the town itself. These things could be lost forever, leaving nothing but a ghost town after the oil, coal, and other resources are used up. This project proposal is my response, as an architect, to this fate that is looming over the town. I hope that the concept, and finally, the building, in form and spirit, can reinforce the fundamental town identity and potentially prolong its existence.

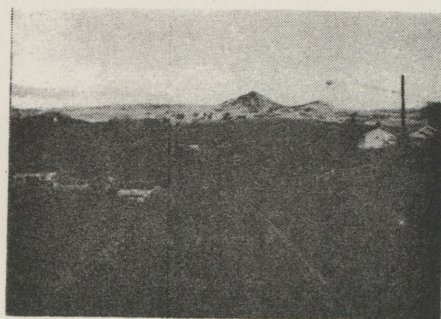
⁷"The Last Cowboy Song" by Ed Bruce and Ron Peterson, copyright 1979 by Tree Publishing Company Inc., and Gingham Music Company.

The Building Program defines the physical presence of this center and establishes the material aspects of its image as a common gathering place for all the facets of the community. The similarities that I have observed are common among most of the established residents of the county: First, they have a deeply inbred pride in their local heritage and each has a territorial devotion to their home area; secondly, there is a desire for some cultural stimulation, local culture especially; and finally, they all desire a vestigial icon that they can use to congregate, interact, and revive their regional pride. The Heritage Center will focus on these attributes and provide an attraction to the community through them. Currently, the area is socially fragmented; the community center will provide common ground that will, in turn, stimulate interaction between these fragmented groups. The resulting interaction will provide communicative energies that will, in turn, help to reweave the currently deteriorating social fabric.

The building site was selected from several possibilities



presented to me by the city planner. My final choice was the site of the "old hill school." I decided to do an adaptive reuse of the schoolhouse and add some additional spaces to its site. The hill school is one of the landmarks of Thermopolis; it is close to the original downtown district, and was the only elementary school in the valley for many years. Many generations of the local residents attended class in the building, and it still projects an "educational image" to them. It is commonly referred to as a reference point for the upper section of town, and it is on one of the major streets. Though it has been abandoned for almost twelve years, the site and building have remained undeveloped and basically unaltered. The schoolhouse is separated from any other building of similar scale. The view from the site allows one to observe most of the original business district and state park, but only the general layout and building forms are discernable. The view, the schoolhouse, and the site have a "timeless" quality that is reminiscent of Thermopolis' past. The site is physically an integral part of the town--it is only



three blocks from the major intersection in town, it is on Broadway Street, the traditional main street and the highway through town to Yellowstone Park, and it is in one of the community's most established residential districts--yet because the site is elevated above the business district, it is characterized by an aloofness that separates it contexturally from most of the undesirable design trends in the downtown district. The architectural style of the original schoolhouse is the only direct contextural style I have to react to. The school is a multichromatic masonry style that is very prominent in many of the older monumental buildings in town. I feel that the social era that this style is reminiscent of is the mood and attitude I would like to allude to. This style reinforces the traditional cultural trends, while the current architectural styles in town typify the current decadent trend.

The Building Program's differences from the Design Program have briefly been noted; there are also some overlaps that will become obvious as the concept materializes. The Design Program

will further develop some of the local social characteristics that have been introduced in this section. The following pages entail a careful and exacting itemization of the functional aspects of the project. By analyzing and fulfilling the details in this program, the concepts can be further nurtured in the Design Program and then applied and combined to establish a comprehensive design.

BUILDING PROGRAM AND
SITE ANALYSIS

This structure is to be intentionally designed as a place of group and individual orientation and social interaction. The final building should display indigenous, economical, historical, and thematic values that can be derived from the people of Thermopolis and of Hot Springs County.

Proposed Structure: A Cultural Heritage Center

Location: A vacated schoolyard and unoccupied schoolhouse; #37 and #38 Blocks; bordered by Broadway Street, Tenth Street, and Warren Street, Thermopolis, Wyoming, 82443.

The building will include:

1. A public auditorium for groups of 350 or smaller.
2. Permanent and temporary display space for heritage artifacts and art.
3. A Day Care Center for children aged from infants to eight years old.
4. A Senior Citizen's Area that includes a dining room.
5. An outdoor Plaza.

Required Spaces:

Public entrance--from Tenth Street. The vehicular entrance should be located in an easily recognizable position along the primary approach route (Broadway Street). This entrance will be into an outdoor space defined by the buildings on the site and the boundaries of the site itself.

The main building entrance should be located in an easily recognizable position along the vehicular/pedestrian circulation route through the site (the approach route). The entrance should have automatic doors for access to wheelchairs and the handicapped. A vestibule should be provided to reduce noise and draught into the main lobby.

Lobby

The principal function of the lobby is to provide access to all parts of the building. It should contain the public restrooms, refreshment and smoking area, and relaxation area.

Approximately 1,500 square feet.

Art and Artifact Display Area

This area should be easily accessible from the lobby. It

should include a section that will allow observation of the focus points in the town. A large storage room will be necessary to store displays and furniture. The entire area should be able to be secured from the public while still leaving access to the lobby.

Approximately 1,500 square feet.

Toilets

According to the local codes and requirements, toilets and restroom area shall be provided for the maximum number of people to use the center at one time (400). The restrooms should be located as to furnish convenience for the patron. For easy accessibility, they should be near both the entry to the auditorium and the plaza as well as the dining room and refreshment area.

Minimum Plumbing Facilities⁸Public Auditorium Restrooms:Male

1 Handicap Water Closet

1 Regular Water Closet

2 Urinals

1 Handicap Lavatory

1 Regular Lavatory

Female

1 Handicap Water Closet

3 Regular Water Closets

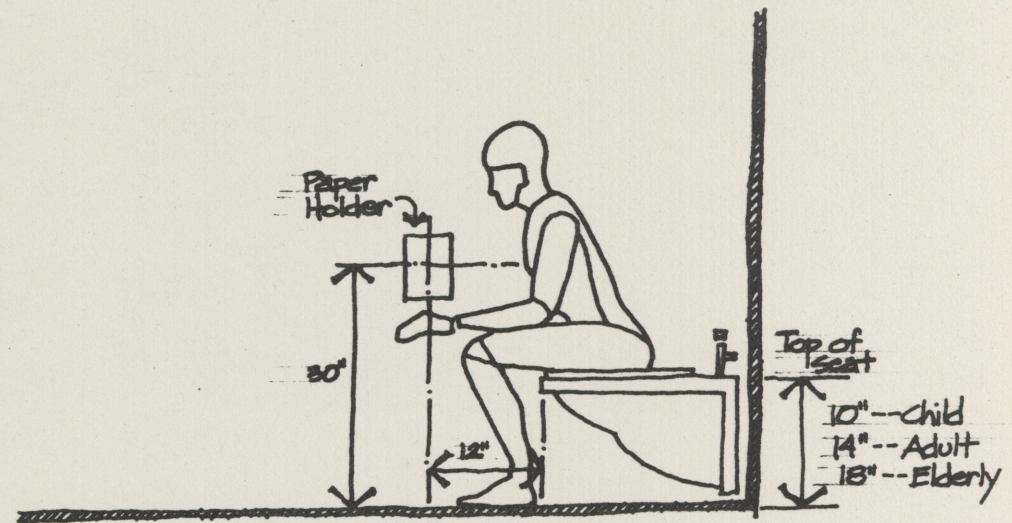
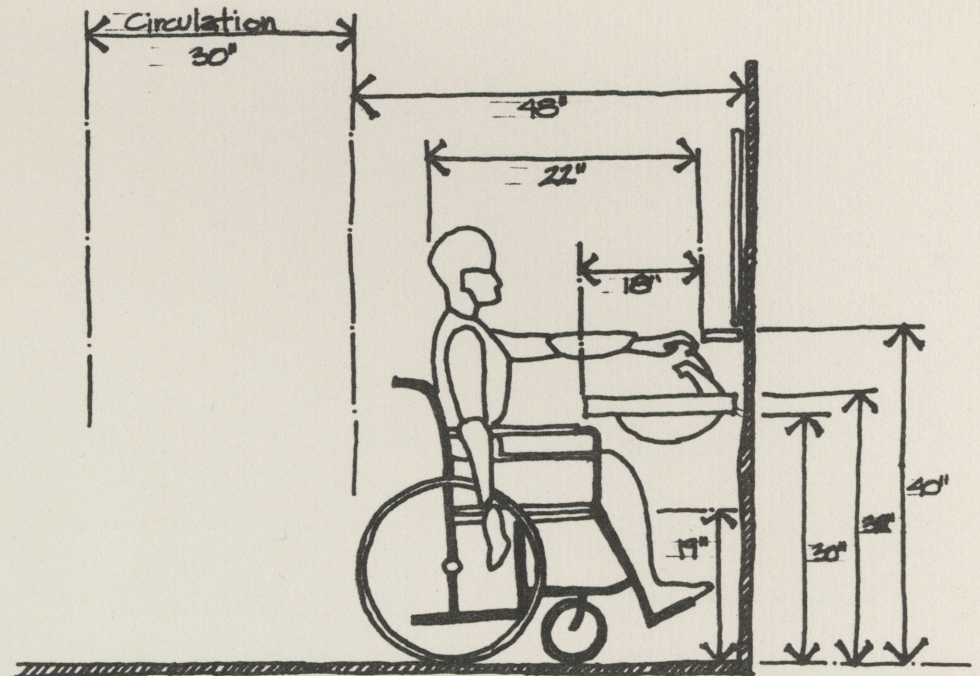
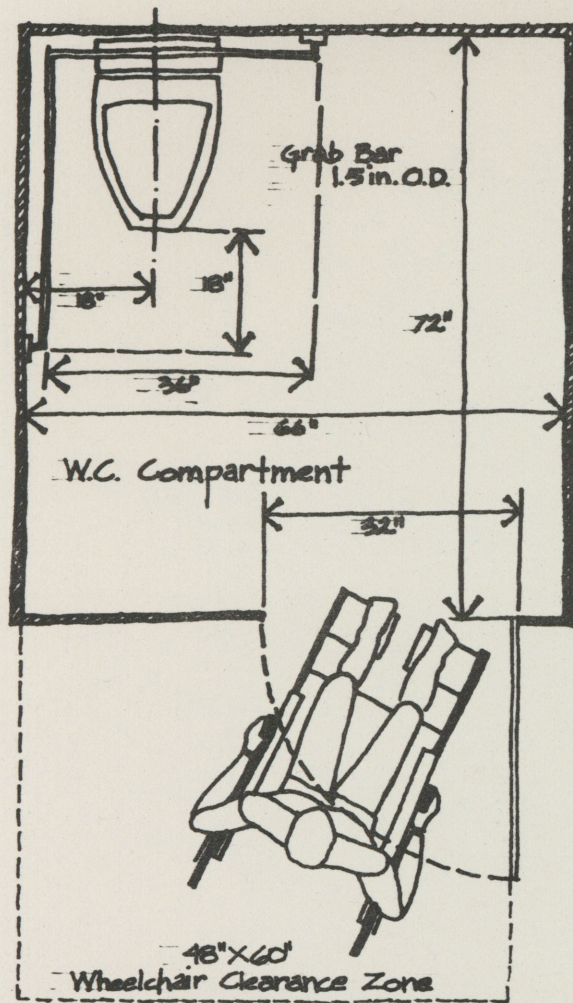
1 Handicap Lavatory

1 Regular Lavatory

1 Handicap Drinking Fountain

1 Regular Drinking Fountain

⁸Uniform Plumbing Code, 1976 Edition



Day Care Center Restrooms:Bathroom One

1 Water Closet

1 Lavatory

1 Small Size Water Closet

4 Small Size Lavatories

1 Laundry Sink

1 Bathtub with Hand Shower

Bathroom Two

Same as

Bathroom One

Adequate space should be allowed for a 30" X 48" counter with a cushioned top and low side rail to be used for diaper changing and baby maintenance.

The water closets will be partitionless.

Office Spaces:

General Manager's office

Secretarial office space

The general manager and his secretarial staff will handle all management, budgeting, and promotional services for the public auditorium, day care facilities, senior citizen's center, and outdoor plaza. The manager's office, his secretaries' office, the box office window, a security vault, and the promotional art studio space will be located in the same proximity. They will have direct access to the main lobby and will act as a control point between the entrance and the auditorium lobby.

Senior Citizen's Center

The senior citizens using the center will be considered by providing access to all areas throughout the building. The dining room will serve them meals and provide a meeting space where they can interact with one another. There are other

buildings provided in Thermopolis that provide this group with exclusive senior citizen activities. The citizen's center presents these elderly people with the opportunity to interact with the general public, assist with the day care children, and participate in a meal program.

Day Care Center

Classrooms, Art and Crafts Area, and Nursery

Individual spaces will be provided for:

0-2-year-old children

3-4-year old children

5-6-year-old children (after school care)

7-8-year-old children (after school care)

The spaces for the school-aged children will be less defined than the spaces for the preschoolers. There will not be any requirement for teaching aids in any of the classrooms nor is there any requirement for library space. All the windows in the classrooms and the artifact displays should be designed so that the children can easily observe the designated views and

displays.

The public auditorium space will also serve as an indoor play area for these children.

Space will be provided for:

10 infants

15 3-4-year-olds

20 school-aged children

Nursery--approximately 350 square feet.

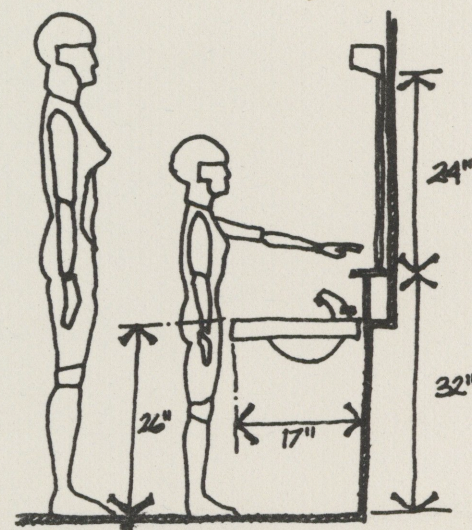
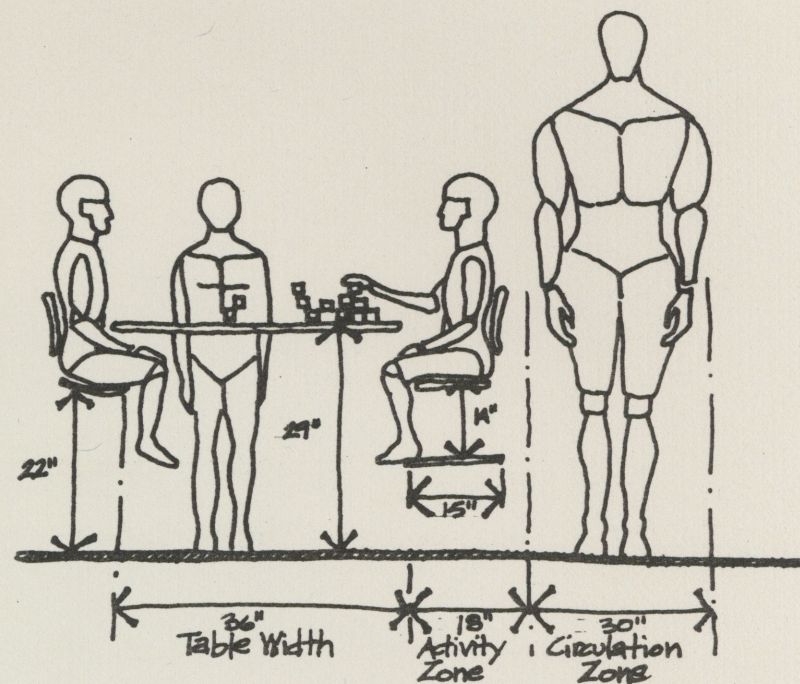
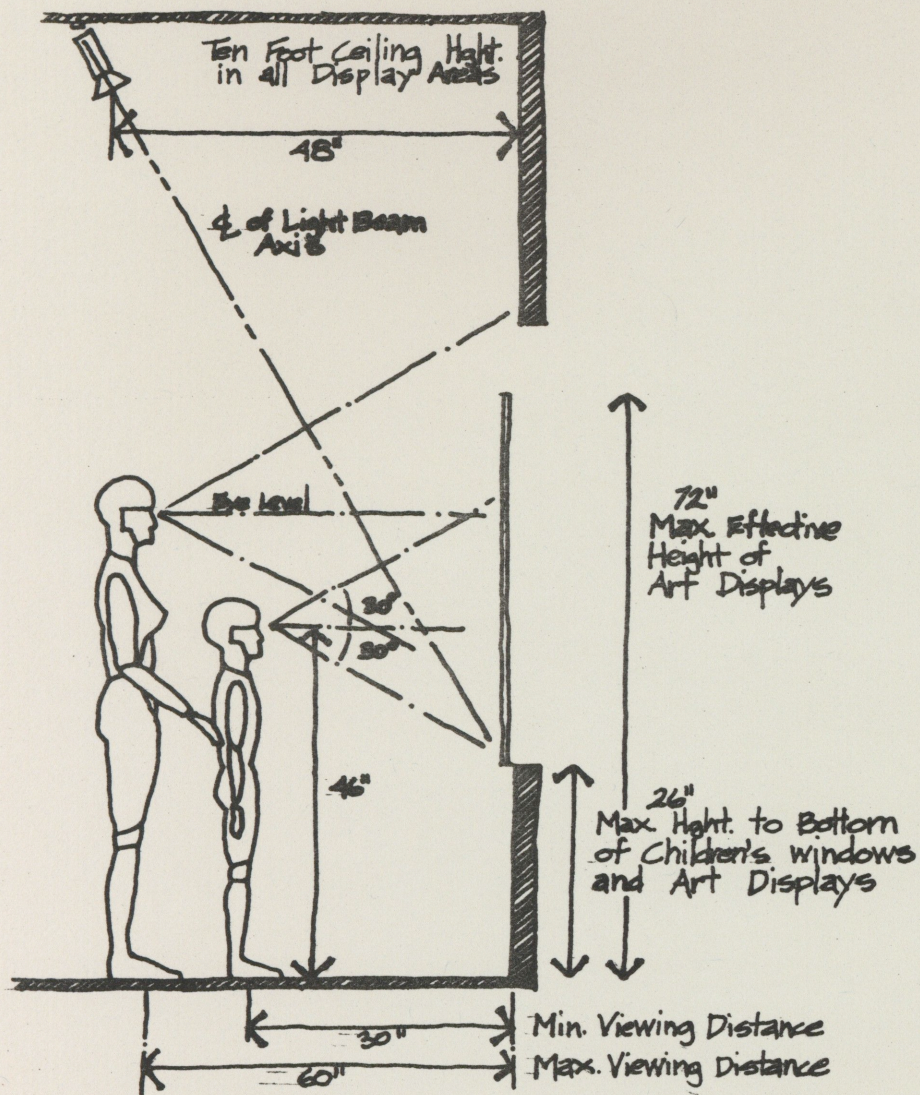
Three to four-year-old classroom--525 square feet.

After school care--700 square feet.⁹

Isolation Room

A separate room should be provided to isolate children who are suspected of having communicable sicknesses. Space will be provided for two cribs and three beds.

⁹Department of Public Welfare, Standards Relating to Licensing of Day Care Centers for Children, 1968 Edition.



Common Spaces:Dining Room

The dining room will serve the day care center's lunches, as well as meals, to the senior citizen's center. It will also be available to public organizations and the community for special dinner affairs. The maximum occupancy will be for groups of up to 150 people.

Kitchen

The kitchen will prepare all meals for the day care center and the senior citizen's center. A small office will be provided for the kitchen manager. There should be a serving counter for serving meals "cafeteria style" as well as a pair of serving doors leading into the dining room area. All access points into the serving counter and into the dining room should have adequate clearances for the handicapped in wheelchairs. The kitchen should be designed as a commercial kitchen with adequate facilities to prepare and serve food to groups as large as 200 people

a day. Since there is not a food distributor in Thermopolis and all the facility's food will have to be stored in the kitchen, adequate storage should be provided for the day care center, the senior citizens, and additional community affair storage.

Kitchen Design Criteria

Food Receiving and Storage

1. Loading Dock

- a. Height of loading platform
- b. Immediate food storage
 - dry storage
 - refrigerator storage
 - freezer storage
- c. Access and clearances for rolling racks and dollies
 - separate work and traffic aisles
 - traffic aisles should serve two departments
(keep them in the middle of rooms rather than
against walls)

work aisles--30 inches wide

traffic aisles--54 inches wide

2. Storage (Square Feet of Each Unit)

vegetable storage--45 square feet

dry good storage--55 square feet

low temperature storage--25 square feet

--goods entry area including weighing and checking--
50 square feet

--refuse storage--40 square feet

Kitchen Spaces

1. Main Cooking Area and Serving Counter

--meat cooking (outdoor cooking)

--vegetable cooking

--should be facing the serving counter

--broiler

--fryer

--steamers

--cold bins (drinks, fruit, etc.)

--cashiers

2. Preparation Areas

--meat preparation

--salad preparation

--vegetable preparation

--sandwich stations

3. Bake Shop

4. Dishwashing and Pot Washing

5. Garbage Storage

Public Auditorium

This space will be used for a large variety of activities including: an indoor game space for the day care center, public athletic space for half-court basketball and volleyball, public meetings, lectures, films, bazaars, craft displays, and dances. The space should be highly flexible and ample storage space should be provided. The ceiling height will be 24 feet unobstructed. Ample accoustical absorbing materials will be required on all room surfaces. The floor should be reasonably durable and resilient and provide a good dancing surface. A

proscenium stage will be provided along with a loudspeaker system.

Auditorium Door

There should be direct access from an unloading area into the auditorium.

Stage

The stage will serve as a speaker platform, bandstand, announcement platform, and projection area for the auditorium. Sufficient power, spot lighting, and structural support should be provided to support these functions. The height of the stage floor above the auditorium floor will be sufficient to allow good sight lines from any point in the auditorium.

Outdoor Plaza

The outdoor plaza will be provided for fair weather, outdoor activities for the community. The view from this space should be of the primary points of interest in the setting. Access to this area should be directly from the main lobby which should also serve as a control point for the area.

SITE ANALYSIS

Architectural Thesis Site

The 37 block and part of the 38 block bordered by Broadway Street, Tenth Street, and Warren Street, Thermopolis, Wyoming 82443.

A. Climate Conditions

1. Temperature range, delta T (ΔT)
+120 degrees to -30 degrees fahrenheit
2. Prevailing wind conditions (direction they blow from)
 - a. storm (winter) winds--range from northwest to southwest
 - b. chinook (warm) winds--south to west
3. Wind velocity--Average 2 to 8 miles per hour, gusts to 20 miles per hour, occasional 35 miles per hour gusts
4. Snowfall--Average depth four inches, occasional drifting snow to three feet deep
5. Frost line--Two and a half feet below grade
6. Earthquake--Moderate seismic area; zone 2

7. Tornado or hurricane area--Does not apply

8. Unusual local conditions:

Flash flooding does occasionally occur in the area; extreme care should be exercised to accommodate drainage on and around the site. Runoff water should not be funneled through any of the steep portions of the site. Adequate drainage in the parking area should be planned for.

9. Lightning protection--Very applicable

B. Physical Condition--Realizability

1. Type of contractors--Small, non-union (state has right-to-work law), large (if imported)

Importation of materials and labor to this site will mean added transportation costs. The average transportation distance will be 150 miles. Added costs can be assumed for transportation, communication delays, labor importation, and extra design/planning/organization time.

2. Type of manufacturers of building materials--Wood frame, concrete, steel or iron, masonry
3. General technical construction capabilities--Skilled, semi-skilled, unskilled, and advanced
4. Availability of technical personnel--Limited
5. Availability of materials:
 - a. steel--yes (if imported)
 - b. concrete--regular--yes
 - c. concrete--lightweight aggregate--yes
 - d. precast concrete plant--no, very limited access
 - e. prestress concrete plant--no, very limited access
 - f. stone--yes (if imported)
 - g. wood--yes
 - h. masonry--yes (if imported)

C. Soil and Ground Conditions

1. Test bore data:
 - a. 1'-2' topsoil (sandy loam)
 - b. 13'-20' clay

c. 15'-25' sandstone

2. Any unusual amount of fill required?--No

3. Any water problem?

Foundation should be stabilized well below clay soil level; extreme precautions should be taken to control above-grade drainage on steep portions of site.

4. Location of water table--First water near 50 feet below grade.

The water temperature at 100 feet is approximately 150 degrees fahrenheit with a high mineral content.

5. Any large body of water nearby?--No

6. Any irrigation easements or ditches?--No

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

8. Is soil bad enough to warrant use of a pier (caisson) foundation?--Yes, pier should extend into the sandstone subformation.

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

10. Expertise available for soil work?--Yes, in Casper,
Wyoming, 130 miles away

D. Adjacent Structures

The old schoolhouse on the site is the only adjacent structure to be considered. New construction will be planned in addition to an adaptive reuse of this space. See section "R" for analysis of the schoolhouse building.

1. Any basement in existing building?--Yes
2. Any underground structures in the area?--No
3. Will driving of piles adversely affect or damage adjacent structures?--Possibly; extra precautions should be taken to stabilize the schoolhouse foundation at its north edge.
4. Any tall buildings in the area?--No
5. Will surrounding buildings affect wind loading?--No
6. Noise control necessary?--Yes, Broadway Street has a lot of truck and vehicular traffic noise that should be isolated from the public auditorium.

Noise from within the public auditorium should be isolated from the surrounding residential district.

E. Legal Considerations

1. The building will conform to the Uniform Building Code and other locally accepted and/or adopted codes.
2. What are the zoning requirements?--Currently zones C-2 and C-3
3. What are the setback requirements?--20 feet from streets on all sides, no alley
4. Height restriction--None
5. Building area/open space for each lot--100 percent coverage after setback
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--50
11. If nonconforming:

- a. variance--is possible
- b. zoning change--is possible

12. Local covenants--None

F. Movement--Pedestrian and Vehicular

1. Site access--From Broadway Street

From Tenth Street

From Warren Street

2. On site storage limits--None

3. Unusual craft vehicle conditions:

- a. surrounding site--none
- b. on site--should allow access for large trucks
delivering production equipment to the audi-
torium and food to kitchen

4. Pedestrian circulation--Should maintain passage from
Broadway Street and Tenth Street and allow for circula-
tion from parking lot to building entrance through
vehicular circulation routes.

5. Vehicular circulation--Should allow access for two-way

traffic entering parking lot from Broadway Street and Tenth Street. Small to medium-size vehicles should circulate past the main building entrance, around the parking area.

G. Solar Orientation

1. General direct light exposure--Excellent
2. Any structures blocking sunlight to the site?--None
3. Exposure intensities, generally:
 - a. north--moderate (daylight only)
 - b. south--excellent
 - c. east--excellent
 - d. west--excellent
4. Is there a possibility of differential expansion?--Yes, especially if masonry is used.
5. Moonlight consideration--Excellent possibilities for view and use of light.

H. Local, State, Federal Government Special Design Requirements

1. Land use, land grant situation--Excellent possibilities including social study grants, historical building grants, geothermal energy development grants
2. Noise level--Considerations should be taken to isolate vehicular and pedestrian noise created by circulation into and around the building from the neighboring residential district.

3. External illumination level--Lighting should be provided to the following levels:

<u>Exterior Area</u>	<u>Recommended Minimum Foot Candles</u>
a. main entrances	5
b. back entrances (auxiliary fire exits)	1
c. building surrounds	1
d. stage doors for auditorium	5
e. parking lot	1 to 5

4. Pedestrian/Vehicular circulation during construction--The existing chain-link fence should be left in place during construction to secure the site from pedestrians. Any

construction within 20 feet of a neighboring lot should be surrounded by a fence to protect the neighboring property. Precautions should be taken to exclude children from the old playground area during the construction phases; refer to the Attractive Nuisance Law for possible liabilities.

5. Air rights--Okay
6. View easements--Okay
7. Pollution control--Normal as limited by local laws
8. Lot splits--Not applicable; the two houses currently to the east of the school will be cleared from the site by the city.
9. Utility access/availability--Unimpeded; all services (gas, electric, television, phone) along Tenth Street. The power lines currently running overhead through the site will be moved underground along Warren Street by Power Company and city.
10. Movement and vibration limitations--Normal in the

central portion of the site, limited along the north, east, and south perimeters on the steep hillsides of unsupported clay. Extra support should be added prior to excavation or construction phases in these areas.

11. Other codes or ordinances required--The existing school-house will conform to the Uniform Building Code, Chapter 1, Section 104 (f). See section R of site analysis.
12. Union policies--Not applicable unless out-of-state trades are used--Consult with unions.
13. Wages---Subject to bidded estimates and current construction rates.
14. Construction methods--As is the accepted trade practice and procedure
15. Sympathy strike--Not applicable
16. Overtime--Normally applicable as in number 13 Wages above.
17. Working conditions--As is normal in area; good to excellent in non-winter weather;

On site--Precautions should be taken on steep hillsides of the site.

I. Fire and Safety

1. Fire zone--Low to medium in relationship to city
2. Occupancy group--Type IA Fire Resistant
3. Construction type--Masonry, bearing wall with steel frame partitions and overhead members
4. Availability of hose bib on site--Yes, new locations will be established in parking lot and building complex.
5. Fire protection from city:
 - a. hose bib--yes
 - b. truck/hook and ladder--yes
6. Location on property for fire protection--City's hose bib is excessively far from the building complex; proper access distances should be maintained between the steep hillside and building complex.
7. Special fire setbacks--East, north, and south perimeters of the site will require special considerations (see number 6 above).
8. Allowable floor area--Unlimited
Special allowable floor area--Not applicable

9. Maximum height or number of stories--Covered by local codes, see E.
10. Allowable increases--See Uniform Building Code.
11. Sprinkler system--Required
12. Setback from front property line--Not applicable
13. Occupant loading--See Uniform Building Code, Chapter 33; Table 33-A, page 524.

J. Utilities

1. Septic field (State Board of Health approval)--Not applicable--City will provide hookup to city sewer.
2. Availabilities of services:
 - a. gas-okay
 - b. phone--okay
 - c. electricity--okay
 - d. water or well--water--okay

K. Budget Considerations

1. Budget limit--Not applicable
2. No. Budget limit--Not applicable

3. Architect's fee--Not applicable

L. Consultants

1. Electrical--Required
2. Mechanical--Required
3. Structural--Required
4. Soils--Required
5. Plant ecologist--Probably not applicable with expected work.
6. Landscaping--Required
7. Interior Design--Required
8. Other architectural expertise:
 - a. architectural historian
 - b. structural analyst for existing schoolhouse
 - c. accoustical experts
 - d. kitchen design experts
9. Sociologists/psychologists--Required
10. Scientific technicians--Probably not applicable

M. View Axis

1. Major view axis:

- a. north (Round Top Mountain)
- b. northeast (the State Park, focusing on Monument Hill)
- c. east (downtown area)

View is excellent from any point on the site at ground level or higher, of all view axis.

- 2. Minor view axis of Wind River Canyon and the Owl Creek Mountains, from second and third stories, to the south.
- 3. Street views to the north of Broadway Street.

N. Sensory Stimulants

- 1. Olfactory--Occasional, faint, sulfurous odors from the Hot Springs.
- 2. Tactile--Not applicable
- 3. Gustatory--Not applicable
- 4. Auditory--Traffic noise on Broadway Street should be considered; see H; #2.

5. Visual--See section M.

O. Vegetation/Landscape

1. Landscaping--Shall relate contexturally to the landscaping in the State Park; possibilities of using mineral water (from a well drilled on the site) for use as irrigation and also as form development (mineral deposits).
2. Vegetation shall be indigenous to the area.
3. Irrigation--Natural precipitation, runoff, and mineral water runoff will be diverted to vegetated areas.
4. The steep grade hillsides should be stabilized by terracing and by introducing vegetation.

P. Prevailing Architectural Vocabulary

1. Rural--No
2. Urban--Yes
 - a. predominant style--multichromatic masonry construction, hip roof, non-facadal
 - b. neighborhood style--predominantly non-applicable,

residential structures; the downtown area has some distant context--very eclectic and varied styles predominate; the multichromatic, masonry style is, again, very strong.

- c. strong design elements--proportion/scale/voids/
simplicity of form/subtle surface relief/horizon/
materials/singularity of elements

Q. Character of Adjacent Environment

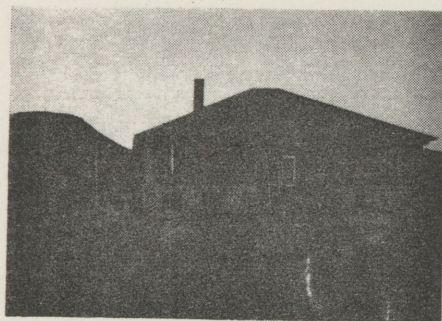
1. Natural--Yes, the aspect of a predominant natural setting is prevalent from all points on the site.
2. Artificial--Yes, the imposing streets and application of non-contextural signage is apparent, but secondary to the natural setting in dominance.
3. Dilapidated--Yes, evidence of a decadent culture is evidenced in the mobile home park across Tenth Street to the west of the site.
4. Growing/Changing--Yes, rampant growth and deteriorating community fabric

5. Stagnant--No

6. Renewable--Yes

R. Existing Schoolhouse

1. Physical description:



- a. First floor has reinforced concrete walls, a concrete subfloor covered with sleepers and fir flooring, structural walls are of reinforced masonry covered with lath and plaster, non-structural walls are of wood frame covered with lath and plaster, second floor joists are of steel, ceiling is of lath and is finished with plaster, all windows are double-hung wood frame, and all doors are solid wood with glass in the upper half, all trim is non-ornate fir, and all the wiring appears to be original and substandard.
- b. Second floor has masonry walls, uninsulated and finished on the inside with lath and plaster, wood spandrels covered with fir flooring, structural walls

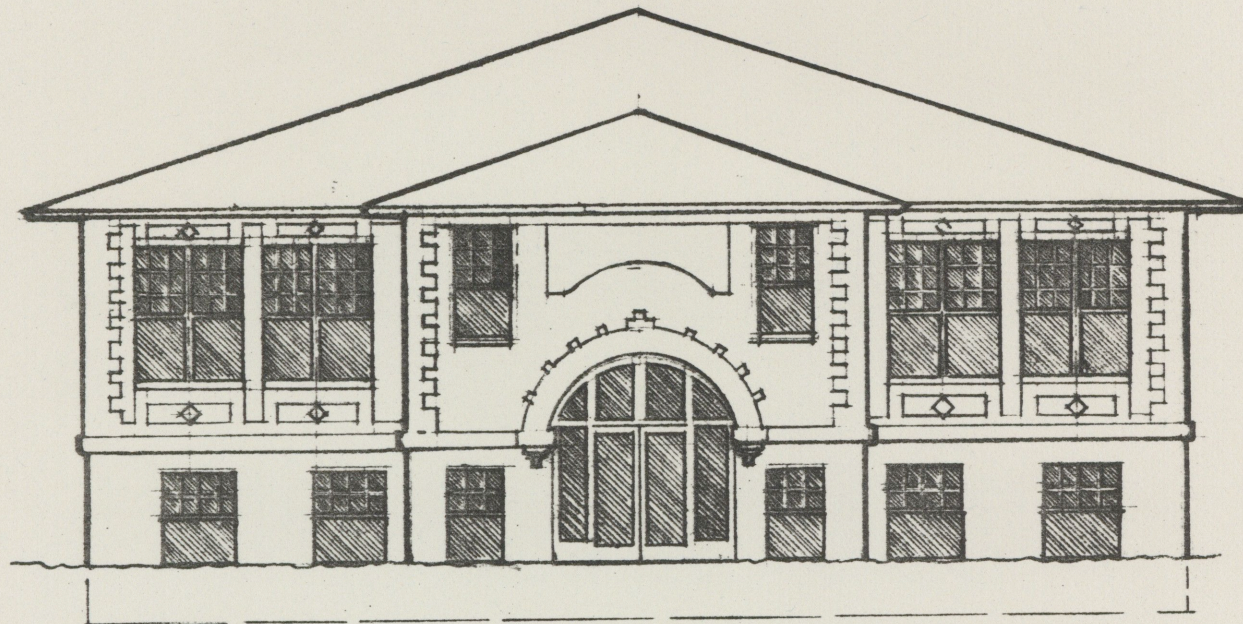
and non-structural walls are wood frame, roof trusses are wood as is the roof decking, all finish materials are identical to those on the first floor, and wiring appears to be substandard as well.

- c. Stairs have wood structural members, wood risers and treads, and are finished with non-ornate fir handrails and trim.
 - d. Floor to ceiling heights are ten feet for first and second floors.
- 2. Occupancy group--Group A, division 2.1
 - 3. Type of construction--Type IV
 - 4. Floor area--7,000 square feet for first and second floors excluding entrance level and stairs
 - 5. Allowable floor area (without changes)--13,500 square feet
 - 6. Maximum stories--Two
 - 7. Occupant load--70 for the entire building
 - 8. Adequate exits for each floor?--Yes, access by means of

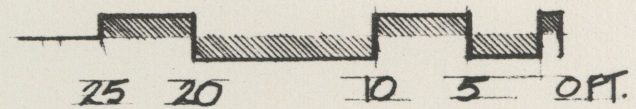
a ramp or an elevator must be provided for the physically handicapped.

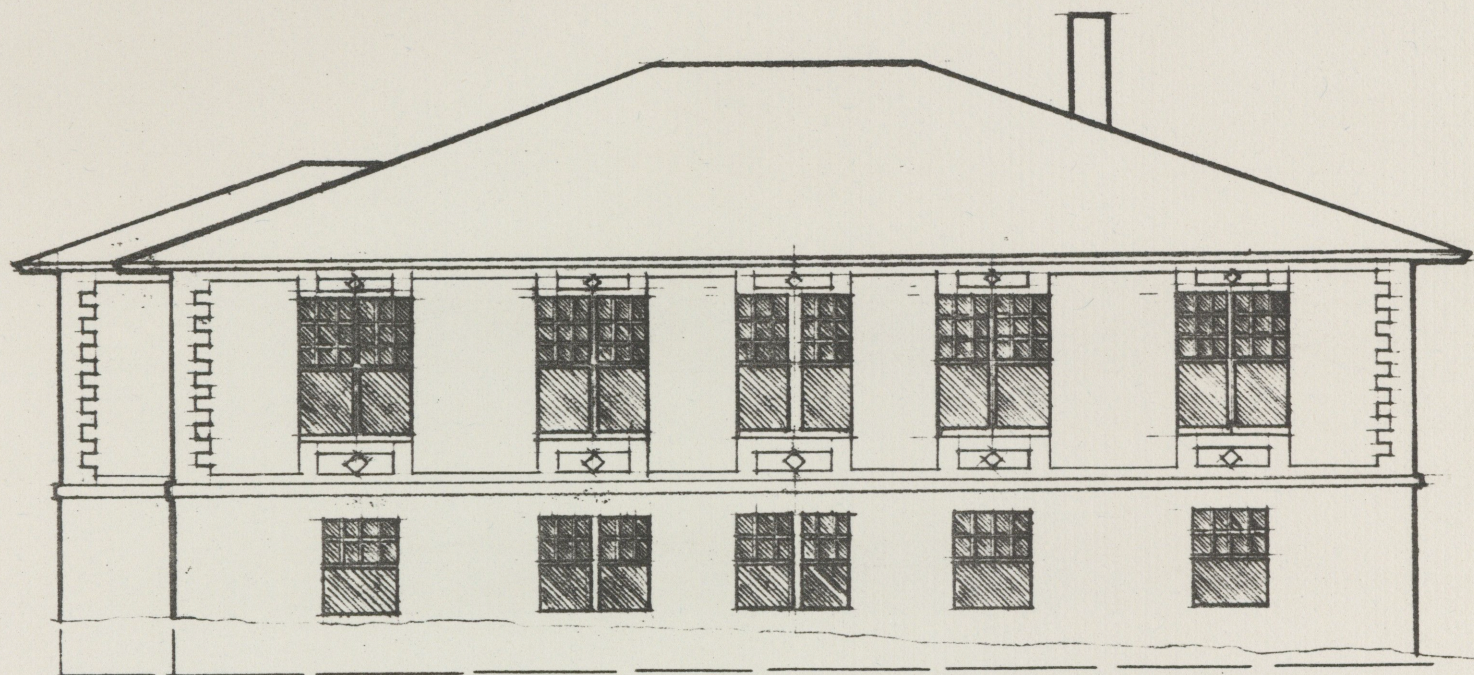
9. Changes needed in basic structure:

- a. All structural members appear to be in good condition; there is no deflection in either the floors or in the roof.
- b. There is no foundation settling apparent; all concrete is in excellent condition without cracks or settling.
- c. Front stairs should be removed and replaced with reinforced concrete stairs.
- d. An automatic sprinkler system should be provided throughout the building.

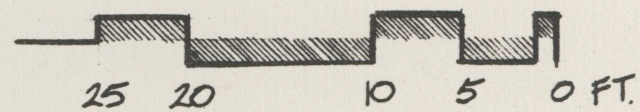


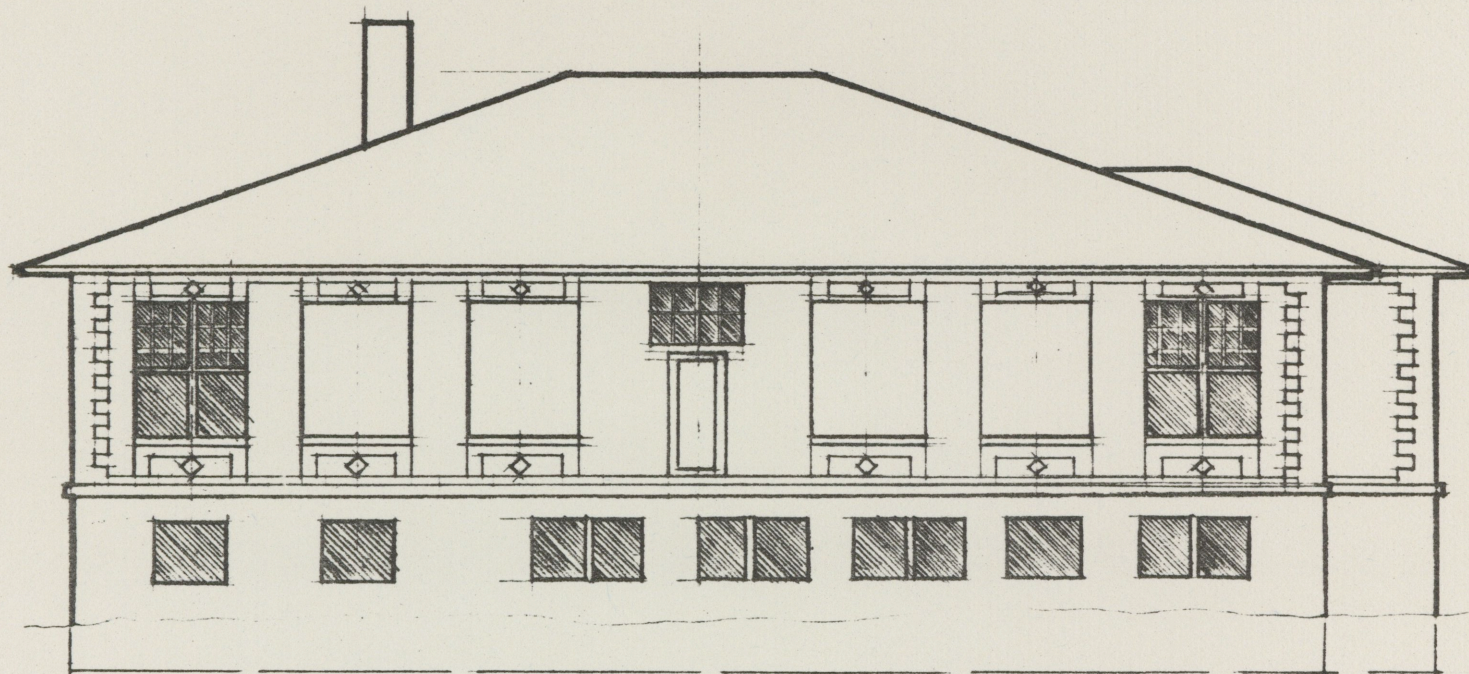
EAST ELEVATION



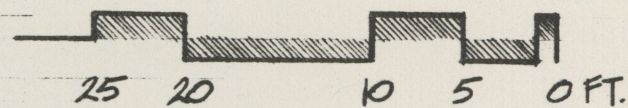


NORTH ELEVATION



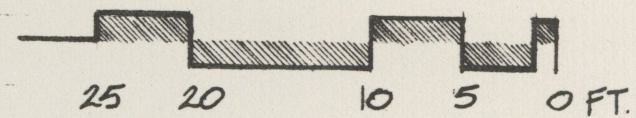


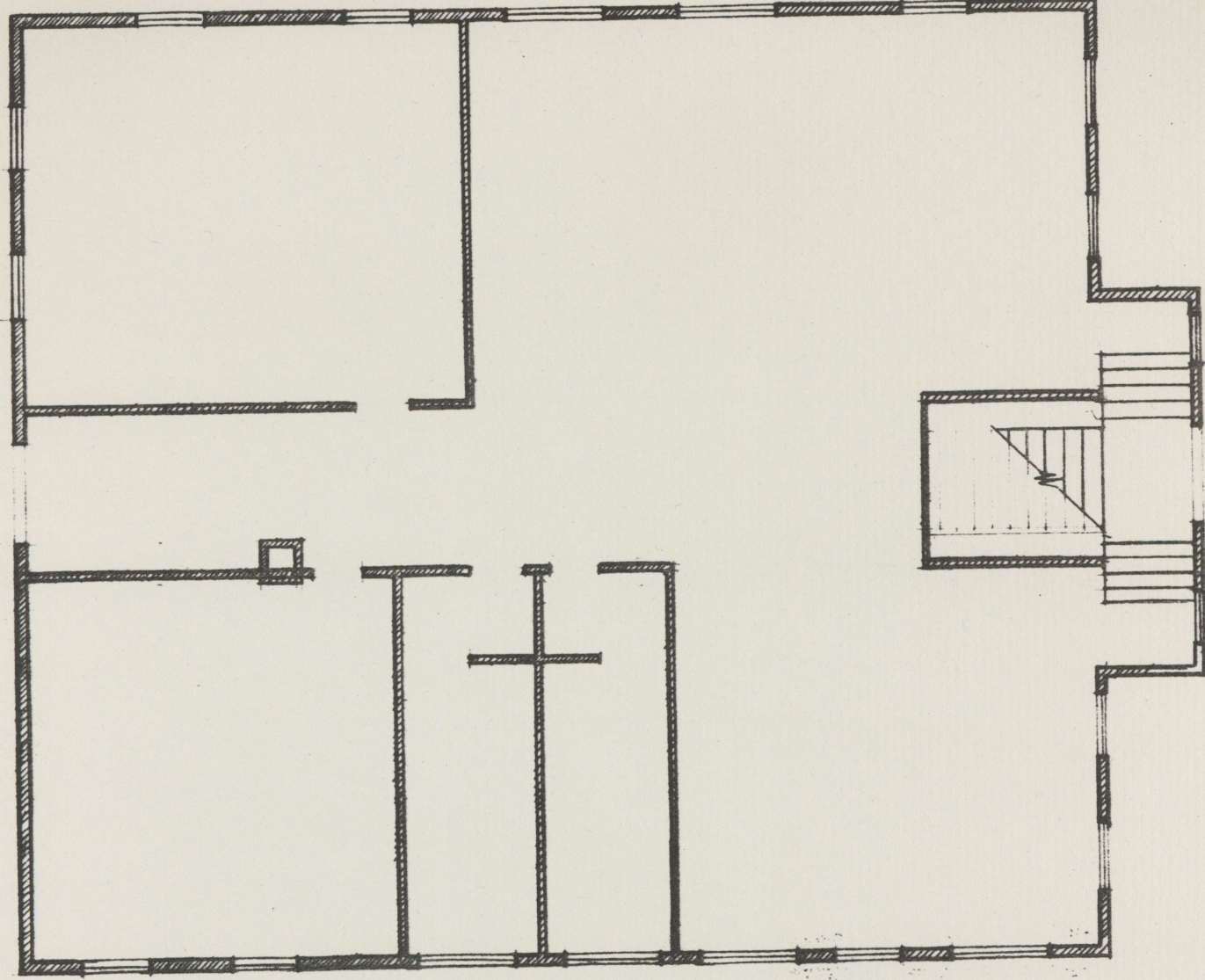
SOUTH ELEVATION



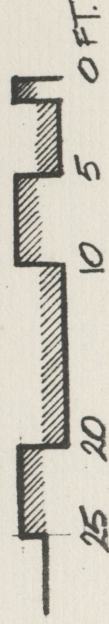


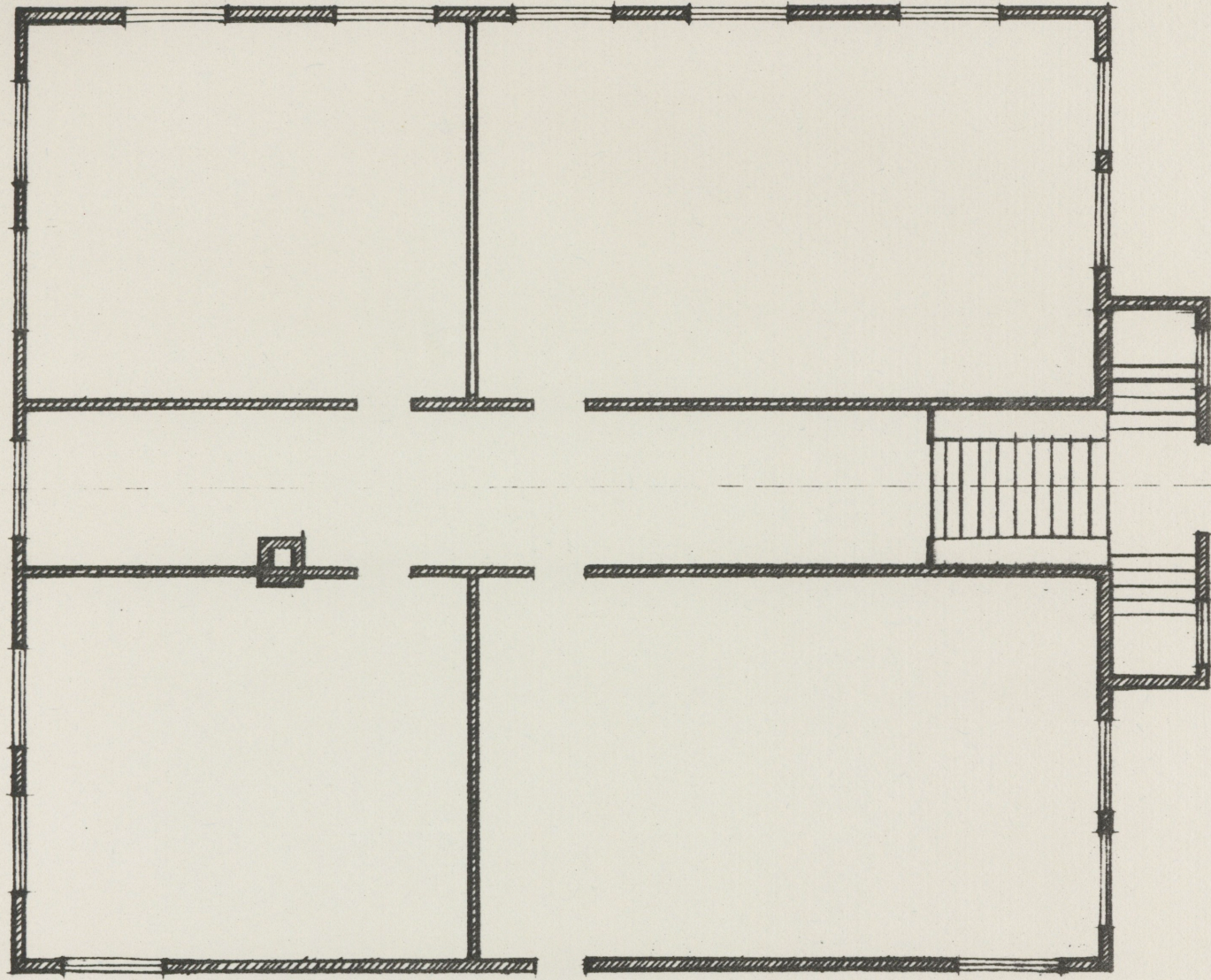
WEST ELEVATION





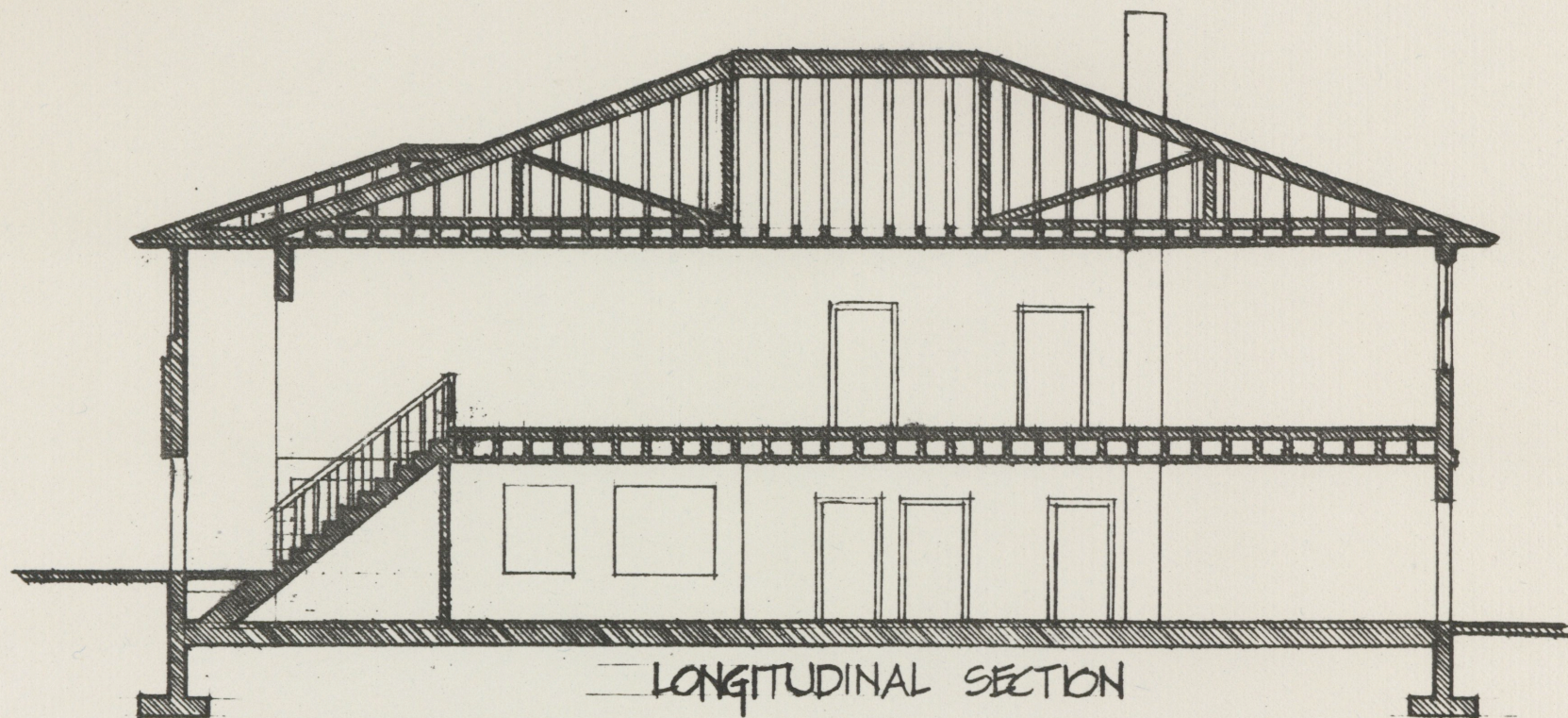
FIRST FLOOR PLAN



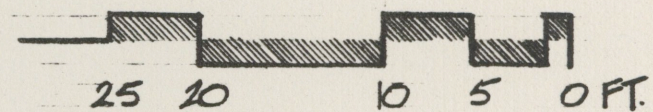


SECOND FLOOR PLAN





LONGITUDINAL SECTION



DESIGN PROGRAM



Thermopolis, Wyoming, is a town of 4,215 residents in the Big Horn Basin of northwestern Wyoming. It is the county seat and only major community in Hot Springs County. "Thermopolis" serves as the trade and governmental center for a rural area of 2,022 square miles which has an additional 1,942 residents.¹⁰

Thermopolis is a relatively isolated community; its cultural influences and social viewpoints are unique and localized. Their viewpoints are more easily predictable than those of a community that interacts easily with closely neighboring communities with separate cultural influences. Although outside influences like new residents, television, and magazines do influence the community, they do not develop as strong of environmental influences as the omnipresent town setting. Because of its small size and geographical isolation, Thermopolis has a closed society with a consistent community consensus.

¹⁰Wyoming State Census Report, 1980.

Its socio-cultural structure is not complex and provides this study with an ideal, prototypical study model. The design decisions concluded from observations of a particular socio-cultural phenomenon will be assumed to be consistent with the majority of this cultural group.¹¹ These assumptions will simplify the scope of this study and the conclusions made will be valid for the majority of the community.

The concepts developed in my Design Program are based on the physiological rules of how man becomes socialized and learns his cultural traits. These rules concern acquisition, use, and the limitations of learned behavior.¹²

Acquisition

The ability to learn is the simplest and most important

¹¹These conclusive statements were taken from a conversation with Wayne Larson, Ph.D. in sociology and professor of sociology at Montana State University. He is currently teaching a class on small-town and rural societies.

¹²Alfred R. Lindesmith, Anslen L. Straus, and Norman K. Denzin, Social Psychology Fifth edition (New York: Holt, Reinhart, and Winston, 1977), p. 30.

form of acquisition. At birth, a child is born with no acquired knowledge; it is his ability to learn that enables it to obtain social characteristics. From the familiar symbols and activities that take place around us, we learn our behavior. This is the principle rule; from this basis the other rules about society and culture become valid.

Consistent repetition of the symbols and events surrounding us develop the most meaning to an individual. The repetition of the same events, environments, forms, and sequences within a society assures the individual of a consistent meaning and develops the relevance of other similar items.

Providing that an existing association has meaning, a slight manipulation or contradiction of that association will also have relevance. This deviation will not only create an associational pertinence, it will often enhance the meaning of the changed object.

Acquisition eventually develops the abstraction, or isolation, of the general case. This level of acquisition is

obtained when, in the course of individual experience, "man discovers that he is like other things while still being an individual entity."¹³ Abstraction isolates certain general associational principles from which reiteration can take place. In this particular community, some examples would be the learned images for house, church, office, store, or hotel.

Finally, all the different associational forms are combined to create a relevant conclusion. This interrelationship of parts is called "acquisitional construction" and is the most sophisticated form of acquisition.

All of these levels of acquisition are interrelated and defined by one another. They rely on their particular socio-cultural structure to establish and disperse them.

Use

After the information has been acquired and stored, it is used in many different ways. Association can take a simple or

¹³Ibid., pp. 140-143.

complex relationship. The "functional" relationship is the simpler of the two. A response is developed as a result of specific learned symbols; for example, a person who is familiar with a chair responds to it by sitting in it. The response is a product of the object's function and is made because of its visual properties and the acquired association developed about it. The same relationship holds true for a door, window, or an elevator, etc.

The second form of association is more complex. It concerns concepts or ideas that have little to do with function. They deal with the exchange of "spiritual ideas."¹⁴ These are the connotative aspects of association; some examples can be found in the concepts of "enclosure," "scale," or "power" (a courthouse is usually a monumental structure associated with "power"). It is usually helpful if the receiver of this connotation had some previous concept of the associated idea, but it is not always necessary.

¹⁴Charles Morris, Significance and Signification (Cambridge, Massachusetts: MIT Press, 1964)

Limitations

While the system of significant association that societies develop have virtually endless possibilities, they also have their limitations. We must consider that through this system we learn definitions in a narrow-minded way. It is human nature to develop an inability to associate in terms other than those we have predefined. This is obvious in the value differences between age groups. These value differences have occurred largely because of the different acquisitional focuses and lack of insight or communication of one another's group influences.

Before 1850, the Thermopolis valley was inhabited only by native Americans. The Shoshoni, Crow, Arapahoe, Cheyenne, and several small tribes all coexisted within Thermopolis' general vicinity. The area's large amount of thermal activity germinated mystical beliefs about the valley. It was known as Bog-wi-wana, the smoking waters, and it was believed to be the center of the earth. The power of Bog-wi-wana was attributed to its great healing powers, its supernaturally consistent temperature, and

custodian of nature."¹⁵ This attitude about the setting still exists among some of the county's residents, especially the retired people, the farmers, and the ranchers. These groups recognize the unique aspects about Thermopolis' setting and appreciate them as the motivating force behind the town's existence.

Recent social trends within the town are becoming very decadent. Interests in the area's resources have created an exploitative attitude about Thermopolis' setting; natural landmarks no longer have much spiritual significance, roads are being imposed on mountains that people once proudly climbed on foot and built cairns atop as a tribute to the Hot Springs healing powers, and the Big Horn River that is famous for its large rainbow trout is being polluted with raw sewage and refinery waste without even an utterance of protest from the town bureaucracy. Interests have turned toward the immediate economic

¹⁵ Amos Rapoport, House Form and Culture (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969)



profits that are available from the environment and this exploitation is eroding the very foundation of Thermopolis' existence. The consequences of this period will certainly lead to the community's demise unless an awareness of the setting's omnipotent influences can be aroused and the implications of these actions can be directed at all of the facets of the community.

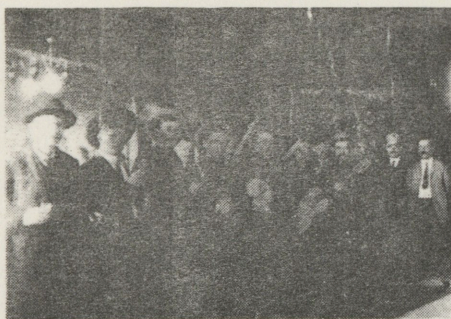
The first part of my building concept concerns the development of an awareness of the town's setting. A focus will be drawn toward the natural features that define the town and the state park. An association between the town, the community center, and the setting will be instigated by manipulation and contradiction of the building forms and materials with some of the prominent landmarks that are easily seen from the building site. According to the rules of acquisition, this manipulation can enhance the meaning of the objects of focus.

My design concept will also use the ideas of "materials," "circulation," and "affinity" to further develop its relevance to this community.



Until about 1970, the townspeople had always had a congregating place within the town structure that served as a place to interact with their friends and neighbors. After the town was established in 1902, the first "permanent" buildings were erected of sandstone or brick in the downtown area. Among the first of these buildings were the Skinner Hotel and Saloon, and Herard's Drugstore. They not only served as businesses but as "community centers" where the local people could meet, often by chance, while downtown shopping, and share some conversation and entertainment. These early structures were always built of masonry and projected the image of "permanence," in contrast to the wood frame houses and shops adjacent to them. This concept of "permanence" was continued in some of the later successful centers, the Emery Hotel and the Washakee Dancehall and Plunge. The association between the monumental "permanence" and masonry "materials" has always been prevalent in any successful community center.

"Going downtown," in Thermopolis has always meant that the



person was going to go downtown or to the park and walk or drive around until they found someone to talk to. This activity had always held high social significance. While there was a well-defined downtown district, "going downtown" served as the major social interaction that unified the community and served to knit the town into a tightly bonded community.

Recent social and architectural trends have destroyed this tradition. There is no longer a unified gathering place in the town. Many of the old architectural centers are being torn down and replaced with "modern" metal buildings that lack the forethought and spirit to ever serve the public as anything but warehouses. Different facets of the community still have their own private meeting places, but there is not a place for the community as a whole.

One important aspect of a successful community center, then, is acquired from its associated image of the masonry, permanent, building. The concept of "materials" establishes that the use of masonry, and the image of permanence, are associated to

styles that have acquired this spirit for the Thermopolis society. A relevant community center, then, is a multichromatic masonry building, and the hill school's architectural style fits the bill. The additions that I design will be of a compatible and similar style.

The concepts dealing with "circulation" and "affinity" are based on the still valid activities of "going downtown" and meeting their friends. The building and its parking area will define a circulation route that will intentionally detour pedestrian (minor) and vehicular (major) traffic from Broadway Street, through the parking area, and past the major entrances to the center. Stopping and going into the center will be optional, but an "affinity" to the activities, people, and the building itself will lure the potential participant into the center and create the desired community interaction.

These design concepts will be developed further in the following graphic sections.

BIBLIOGRAPHY

Ching, Francis D. K. Architecture: Form, Space, and Order.
New York: Van Nostrand Reinhold Company, 1979.

Diamonstein, Barbaralee. American Architecture Now. New York:
Rizzoli, 1980.

Dunster, David. Architectural Monographs 5, Michael Graves.
London: Academy Editions, 1979.

Griffin, Kenyon N. Meeting Demands for Public Services Created
by Water and Energy Resource Development, Financing Problems
in Impacted Wyoming Communities. University of Wyoming, 1977.

Gutman, Robert. People and Buildings. New York: Basic Books,
Inc., 1972.

Küller, Rikard. Architectural Psychology. Stroudsburg, Pennsyl-
vania: Dowden, Hutchinson, and Ross Inc., 1973.

Lang, Jon, Charles Burnette, Walter Moleski, David Vachon.
Designing for Human Behavior: Architecture and the Behavioral
Sciences. Stroudsburg, Pennsylvania: Dowden, Hutchinson,
and Ross Inc., 1974.

Lawson, Fred. Designing Commercial Food Service Facilities. New
York: Whitney Library of Design, 1974.

Lindesmith, Alfred R., Anslen L. Straus, and Norman K. Denzin.
Social Psychology, Fifth Edition. New York: Holt, Reinhart,
and Winston, 1977.

Moholy-Nagy, Sibyl. Native Genius in Anonymous Architecture.
New York: Horizon Press, 1957.

Morris, Charles. Significance and Signification. Cambridge,
Massachusetts: MIT Press, 1964.

Panero, Julius and Martin Zelnik. Human Dimension and Interior Space. New York: Whitney Library of Design, 1979.

Rapoport, Amos. House Form and Culture. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1969.

Rapoport, Amos. Human Aspects of Urban Form. Elmsford, New York: Pergamon Press Inc., 1977.

Rapoport, Amos. The Mutual Interaction of People and Their Built Environment. The Hague, Paris: Mouton Publishers, 1976.

Ruskin, John. The Seven Lamps of Architecture. London: G. Allen, 1904.

Schubert, Hannelore. The Modern Theater. New York: Praeger Publishers, 1971.

Sleeper, Harold R. Building, Planning, and Design Standards. New York: John Wiley and Sons Inc., 1955.

Sommer, Robert. Design Awareness. Corte Madera, California: Rinehart Press, 1972.

Stewart, H. Michael. American Architecture for the Arts. Dallas, Texas: Handel and Sons Publishing Inc., 1978.

Thompson, David. Dialogue in Architecture. An undergraduate thesis, Montana State University, 1979.

MONTANA STATE UNIVERSITY LIBRARIES
stks 720.6.M76R393 CA
Culture and architecture /



3 1762 00158572 6

~~1112510~~

~~1211~~

~~1110~~

~~R215~~

