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Program for the Development of a Building Concept for Student Housing

James Lawrence Brown

PROGRAM FOR THE DEVELOPMENT OF A BUILDING CONCEPT FOR STUDENT HOUSING - BROWN

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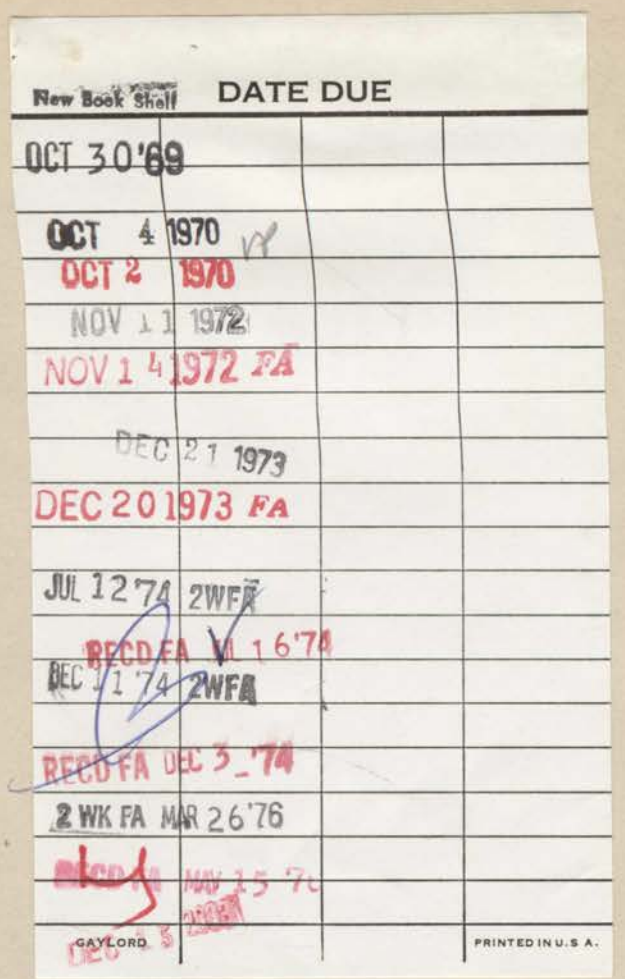

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PROGRAM FOR THE DEVELOPMENT OF A BUILDING CONCEPT FOR STUDENT HOUSING

by
JAMES LAWRENCE BROWN

Submitted in Partial Fulfillment
of the Requirements for the Degree
of Bachelor of Architecture in
Architecture at the University of
New Mexico, Albuquerque, New Mexico

Thesis Committee:

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CONTENTS:

I. Problem Statement:

To develop a building system concept for student housing in which the form of the building results from an analysis of the individual unit. The analysis will establish a lineal and volumetric module. This approach deviates from the normal pattern of building in that each segment of the dormitories requirements are broken down in a system of sub-systems. When the sub-systems are analysized they will comprise the total form of the building.

II. Each of the below are items that in themselves are sub-systems, and when analyzed will give shape and form to the Unit, hence the total building.

A. Sound Transmission-

1. to eliminate noise that interfers with the procedures of studing and sleeping.

2. to provide communication to each unit without disturbing persons in the immediate vicinity.

3. eliminate sound transmitted by heating and cooling systems.

B. Control-

1. to provide visual control over the residents.

C. Temperature-

1. to provide individual temperature control for each unit in such a way as not to distrub the residents.

D. Temporal Patterns-

1. to consider the use of different [illegible] in accordance with its specific time duration.

E. Recreation-

1. consideration for facilities for physical activities.

F. Study Patterns:

1. facilities for studying
2. access to facilities
3. storage of facilities
4. maintance of facilities

G. Eating Patterns-

1. area of dining facilities will depend upon the number of students to be fed at a certain time.

H. Sleeping Patterns

1. facilities for sleeping
2. access of facilities
3. storage of facilities
4. maintance of facilities

J. Storage-

1. personal items (suitcases etc.)
2. acquired items (books etc.)

K. Cleaning Patterns-

1. janitors facilities in relation to units.

III. Need for student housing:

Eighteen percent of the Student Body Enrollment is housed in enviorments called Dormitories. The shortage of facilities resules when dormitories cannot construct in proportion to increased enrolment. There exist three alternativies:

1. Restrict enrollment.
2. Change educational system by computerization.
3. Develop more expedient housing systems by studying the relationship of systems to subsystems and employment of materials

IV. Materials:

The need for student housing is far beyond the supply. For this reason materials must be choosen that offer expediency, durability, and economy. i.e. Plastics combined with other materials that fulfill certain requirments. The employment of Plastics necessitates two considerations: type and method of application.

A. Type- Each plastic i.e. the family of thermoplastic and thermosetting, fulfills a specific function depending upon the molecular structure. To assertain the advantages and limitations of each type, Robert Swanson's 'Plastics technology' will be of most help.

B. Methods and Application: Empirical data resulting from the behaviorism of plastic as structures can be obtained from the University of Michigan Report.

V. Circulation:

A. Pedestrian-

1. Unit to unit

2. Unit to dormitory

3. Units to campus

B. Vechicular

1. Resident to auto

2. Auto to campus (if permitted)

3. Auto to urban and suburban areas.

4. Service vechiles to dormitory.

VI. Site

A. To be located on the north campus, although, since this structure derives its form from the individual student needs multiplied by the number of students which it houses: and if we include in the design minor climatic conditions, the structure could be built in a number of enviorments.

B. Sun
Wind
Percipatation
Temperature

KEY TO BUILDINGS PROPOSED FOR THE NORTH CAMPUS

1.....MEDICAL BUILDING

2.....LIBRARY

3.....UNION

4.....LAW BUILDING

5.....MEDICAL GENERAL PURPOSE

6.....V A HOSPITAL

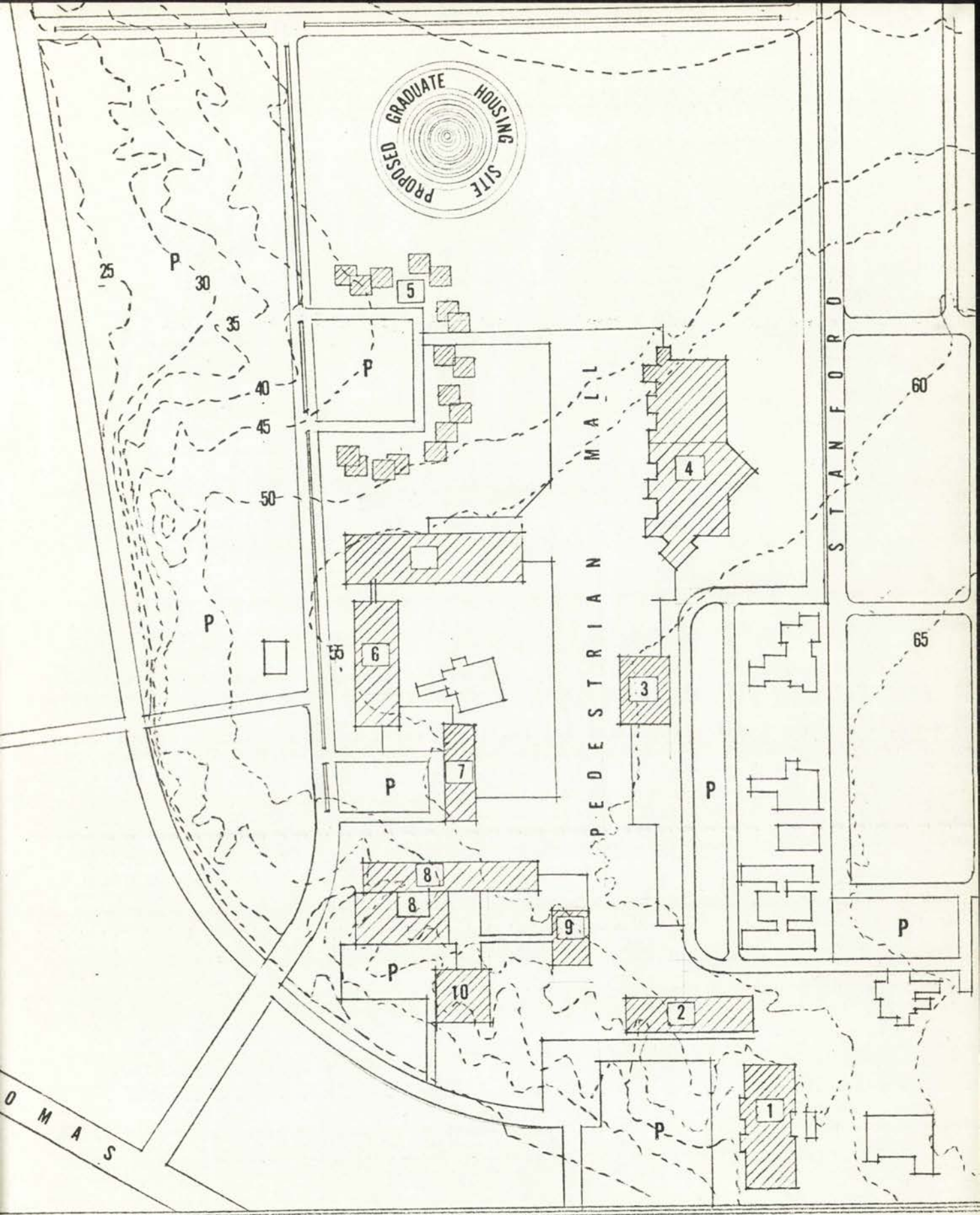
7.....CLINICAL SCIENCE

8.....TEACHING HOSPITAL

9.....BASIC SCIENCE

10.....NURSING AND PHARMACY

P.....PARKING



UNIVERSITY OF NEW MEXICO
PROPOSED NORTH CAMPUS

ROOMS

User Needs:

1. For the most part students want single rooms; a few, usually incoming freshmen will prefer the double room, and some student will accept double rooms in order to reduce their cost of board.

2. Some student will want to change from single to double rooms and vice versa.

3. In general, students want choice in the cost of their accommodations; they want to choose from a variety of accommodations; various amenities according to their pocketbook.

4. Student residents may want to occasionaly put up a visitor or off-campus student may want to rent space for a day or two.

5. Even when sharing a room student will want a personal space that is visually separate from their roomate.

6. Student for the most part prefer private bathrooms and resist the 'gang toilets'.

7. Students will want to have visitors in their rooms without the inconvenience to others.

8. Acoustical privacy is an essential students require in their rooms. One method is by the double door buffer space.

9. Students may want to come and go without disturbing others.

10. For economic feasibility, a 250 square foot room should not exceed 6000 dollars.

SPECIFICATIONS

1. all rooms are of three types;

   a) single rooms
   b) double rooms
   c) optional single or double
   b and c can accommodate the visitors or commuters.

2. Rooms are to be pre-fab spun fibre material and based on a module.

3. Each room will have its own bathroom core.

4. Each room will have two doors, one to a public passage way and one to a shared common room.

5. Each entrance has necessary acoustic buffer space.

6. Each room must receive natural light to be at the eye level of a person either sitting or standing.

7. Rooms to be all carpeted.

8. Telephones in each room.

COMMON LIVING SPACE..

User Needs.

1.Students may want to make an occasional snack for themselves (of course there is a large nearby cafeteria is most frequently used) on such occasional snacks the student may want a few friends to join him.

2. Students will use a shared living space for occasional parties, or seminars (refered heretofor as'semming')

3. Students studing in their rooms will want to take a break for snacks or talk.

4. When more than four people are assigned to a kitchen facility it is difficult to assign responsibility for cleaning up.

5. Students will want co-eds in common area, in lieu of parents, regulations may require a special entrance.

6. Students that are preparing food will a want to keep conservation with friends.

7. More than one student will to be using the gallery at one time, in other words, preparation area will have to be accessible from more than one place.

8.While cooking or eating students do not want to be more than a few seconds away from their room.

SPECIFICATIONS.

1.,One common living space with small kitchen gallery for every 4 to 8 students. Smaller spaces in the gallery should be provided for eating and sewing.

2. Student cooking in gallery should be able to talk to other in that same area.

3. Gallery counters,etc., should be of the island type so that accessibility is convient.

4. The gallery has two distinct preparation areas along with two hotplates, two sinks, individual cupboards and 2 cubic foot frig. one oven.

5. The common room opens up to the stairs or public passageway and also to each of the individual rooms.

6. Each common room is well lighted.

7. Each common room has one fire estinguisher.

8. Adaquate furniture for eating and sitting.

9. Refuse container.

FURNITURE AND EQUIPMENT.

1. Students want to rearrange their furniture from time to time.
2. The BED is a popular study location.
3. Desks must permit comfortable studing involving two or three books, typewriter and papers.
4. Desk chair must permit free shifting tilting leg streching comfort. When students can not do the above there is a less productive studing session.
5. Students occasionally try to visually break up their room. Closets that are moveable can accomplish this.
6. Students want to extensively personalize their rooms by tacking, painting, hahging on the wall surfaces.
7. Because the students come and go for their own reasons, dorm administrators will periodically want to return the room to its original condition at a minimum cost.

SPECIFICATIONS.

1. Components to be moveable.
2. The bed unit can be free standing or hung from the wall. Bed unit includes adjustable backrest, lighting fixture, swing away night table.
3. The minimum desk dimensions are:
   45"long-------30"wide---------28-30"high.
4. Closet is free-standing moveable; contains drawers hanging space could double as a dresser. Optional bureau with height to be same as desk.
5. Wall surface panels for individual expression. Panels to be installed or removed with uncomplicated tools. (Author is trying to locate a paint that adheres to plastic and is easily removed from wall)

MEAL AND SNACK SPACES.

Most Universities employ a single type food service aimed at economy and functional efficiency. Food service is written in the dorm contract with students paying in advance for three squares a day, served at fixed times during the day.

COMPLAINTS.

1. poor food quality and lack of diversity in the menu.
2. Conflicts between the students schedule and fixed meal times.
3. Compulsory dress rules. (not a factor on this campus)

FUNCTION OF DINING SPACE AS SEEN BY ADMINESTRATION.

1. Efficiency and economy by mass feeding.
2. Flexibility of space.

EATING PATTERNS AS A FORM DETERMINENT.

1. Gorge and Go. Student in a hurry-needs quick meal-no detainment.
2. Casual Dining. Based on social interaction- making new friends-exchange of ideas and community information.
3. intimate conservation. meals with girl fried or the old buddy.
4. Solitary Meals while reading-quiet-leisurely-well lighted.
5. Snacking- 24 hour vending service-facilities for food storage in common rooms.

SPACE REQUIRMENTS.

20-30 square feet per person in dining facilities.
1600 square feet for kitchen and food preparation.
450 square feet for food storage (dry)
400 square feet for garbage disposal
--- square feet for walk-in frig.

CONSIDERATIONS FOR COMMUNICATION while EATING.

1. Long tables induce making new friends.
2. Round tables induce communication between established friends.
3. Self-service induces making new friends.

CLIMATE AND WEATHER OF ALBUQUERQUE

A report for the Department of Architecture,
University of New Mexico; February 1956

INTRODUCTION

This report was compiled to outline the characteristics of Albuquerque's weather and climate. This data is essential to the designer if he is to succeed.

Albuquerque's weather has been noted as one of the pleasant features of the city, and an important factor in its growth.

The information in the report was obtained from U.S. Weather Bureau data available at the Airport. All observations were taken at the municipal airport and are valid for the entire Albuquerque area.

CLIMATE

Albuquerque's climate can be described as arid continental with moderately warm summers and mild, dry, sunny winters.

The relative humidity averages 42% for the year, and drops to 15-18% in the daytime in late winter and spring. It rises somewhat at night with the drop in temperature, and averages up to 60% at 5:00 A.M. in early winter.

The average percentage of possible sunshine received during daylight hours ranges from 63% in December to 90% in June, with the yearly average at 77%

Prevailing winds average 8.8 miles per hour from the southeast for the year. In November, December, January and February the prevailing direction is from the north with speeds of 7-8

miles per hour. In March, April, and May the average wind speed is 10-11 miles per hour and is from the south and southeast. During these spring months the wind speed frequently exceeds 25 miles per hour. As recently as 1959, winds were recorded at 66 miles per hour with an all-time record set in 1943 of gusts to 90 miles per hour.

TEMPERATURE

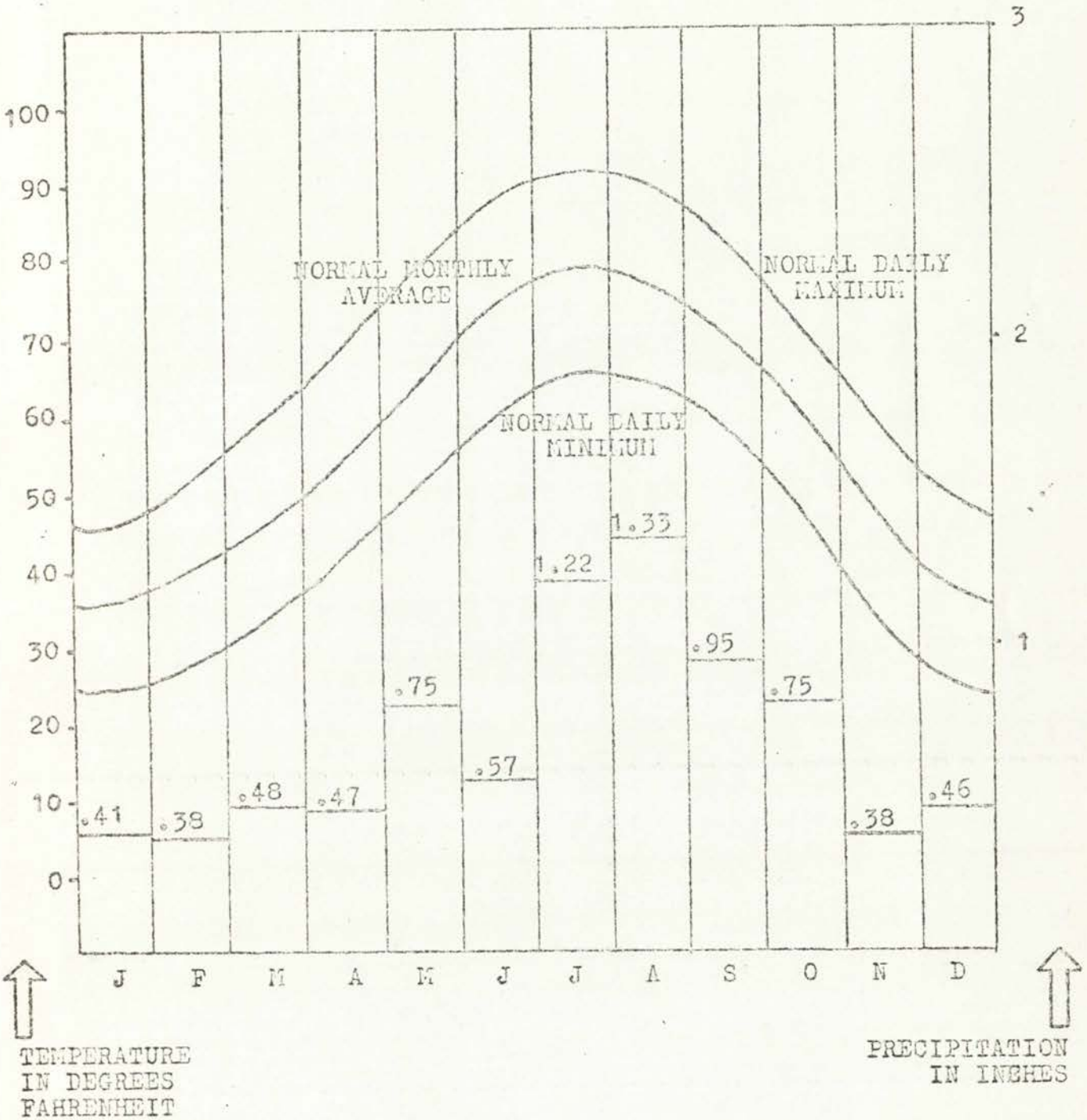
The summers are moderately warm with the average maximum at about 90 degrees from June to August. (See graph). As a result of the low relative humidity, the nights are cool and temperatures fall into the 60's.

In the winter, the daytime temperatures average near 50 degrees. They average 46 degrees in January, the coldest month. An average of 7 days each year the temperature fails to rise above freezing, and an average of once a year it falls to zero or below.

Due to the tendency of cold air to sink, the temperature in the valley averages about 5 degrees cooler at night than the Sunport observations.

PRECIPITATION

Annual precipitation averages 8.13 inches with almost half of it falling in July, August and September. (See graph). During August, the wettest month, there are usually 3 days with more than .5 inch of precipitation. Some snow falls in the winter, but individual storms seldom leave more than 3 inches and this usually melts in a few hours.



NORMAL TOTAL MONTHLY TEMPERATURE AND PRECIPITATION

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