LIBRARY
Montana State University
BOZEMAN

A MALL AND DEPARTMENT STORE, BOZEMAN, MONTANA

Undergraduate Thesis in Architectural Design

By 441

Rengin Buckley

Submitted to the School of Architecture as partial fulfillment of the requirements for the degree of Bachelor of Architecture

at

Montana State University

Bozeman, Montana
August, 1966

P378
.B85b5
[redacted]
[redacted]
720.6
M76
B857

ACKNOWLEDGMENTS

I wish to extend my gratitude to Professor John Parker and Professor John DeHaas for their help in the research, organization, and writing of my thesis.

I wish also to thank Mr. O. Cutting, Mr. C. W. Hanshaw, and Mr. F. Benepe for their time and advice during my interviews with them.

TABLE OF CONTENTS

HISTORY..... 1

CONDITIONS CREATING A NEED..... 3

LOCAL CONDITIONS..... 7

Climatic Conditions..... 8

Wind Conditions..... 9

Population..... 9

Social..... 11

Transportation..... 11

SITE CONDITIONS..... 12

Location..... 12

Description..... 14

Topography..... 14

Soil Analysis..... 14

Utilities..... 15

Traffic..... 15

Zoning..... 16

FUNCTION..... 18

Customer's Zone..... 18

Merchandise Zone..... 24

Selling Zone..... 26

BUILDING PROGRAM..... 34

AESTHETIC CONSIDERATIONS..... 43

The Mall..... 43

The Building..... 46

ECONOMIC CONSIDERATIONS..... 48

Cost Analysis..... 49

SUMMARY..... 52

BIBLIOGRAPHY..... 55

HISTORY

The first white visitor to the Bozeman area was Clark of the Lewis and Clark Expedition of 1805. He camped at the cite of Fort Ellis after leaving the headwaters of the Missouri River. As explorers and settlers moved westward gold was discovered in Virginia City, and Bozeman was located on the trail which leads from Casper, Wyoming, to Virginia City. The trail was used to transport mining machinery and gold seekers from the Oregon Trail to the gold fields. Later, after John Bozeman founded the city of Bozeman, the trail, which became known as the Bozeman Trail, was used by settlers and farmers to bring farm machinery into the fertile Gallatin Valley. There are several views as to why Bozeman is situated in just this place. The official views are that it was located in the center of the most fertile part of the Gallatin Valley for purposes of agriculture, and that it is a handy stopping off point along the Bozeman Trail. The unofficial, but most likely the true, view was expressed by John Bozeman himself, who claimed that "this would be a handy spot to fleece the settlers as they come over the Bozeman Pass." Be that as it may, Bozeman grew rapidly on the foundation of agriculture, and today it is one of

the centers of the Montana cattle and farming industries.

In 1893, after losing the bid to become the state capital, Bozeman was given, as a runner-up prize, Montana College of Agriculture and Mechanical Arts. Today, after many years of positive growth, this school has become Montana State University, which is the cultural and economic mainstay of the city.

In 1883 the Northern Pacific Railroad came to Bozeman, which is the oldest city on its line in Montana.

Over the decades agriculture and the university have worked hand in hand in building Bozeman from a settlement to a town of some 15,000 residents. The projection of growth is for over 18,000 by 1970. Railroads have built two lines through Bozeman and the airport is one of the major stopping points for northwest air traffic.

CONDITIONS CREATING A NEED

My design problem is to use a building site on Main Street, Bozeman, as a site for a new department store. Moreover, I will have the additional problem of designing a shopping mall of about three blocks in size which will incorporate the department store as one integral part.

My attempted solution to this particular design problem will be in two parts, the first dealing with some of the problems encountered in designing a shopping mall, and the second dealing with the problems of designing one particular building of the mall.

I will make a plan to redevelop three blocks of Main Street, Bozeman, shopping area for the following reasons.

1. The population of Bozeman is gradually increasing. Parallel to the population growth, business is increasing. However, it does not seem to me that store accomodations are expanding at the same rate as population and business. Thus, in designing any new store in Bozeman, the growth of the town should be projected and taken into account.

2. As land becomes more and more scarce, propertyhvalues raise rapidly. Realizing that an attractive building is a business asset, and in order to bal-

ance the increasing land value, old buildings are being replaced by new. For example, the City Hall and the Imperial 400 Motel have replaced old and outdated buildings.

3. Because of the increase in land values, expansion usually does not only occur horizontally but also vertically, where one or two store buildings are replaced by higher buildings.

4. Since this expansion is bound to happen in every growing city center, if a plan for the future is kept ready, some of the chaos in careless planning can be prevented.

5. At the present time two major highways complexes pass through Main Street. They are highways # 10 and # 191. This heavy traffic creates an unpleasant shopping environment. The constant noise and necessity for caution adds to the frustration of the shoppers. Even with the new interchange, which will route most traffic around Bozeman, the traffic on Main Street would present a relative hazard which could be completely eliminated by the construction of a shopping mall free of traffic.

6. The design of commercial signs is of primary concern in the over-all pattern. Those now in existence protrude in every direction and create chaos. Not only each individual sign, but the appearance of all signs as a whole, require control.

7. The value of land makes the purchase of space for adequate and convenient parking ever more difficult from the standpoint of economics. A well planned shopping mall would take this difficulty into account and provide for parking adequate to the present and to the anticipated expansion in the future.

8. Other problems are to maintain access to storage of new merchandise, to provide space for a refuse pick-up, and at the same time eliminate unsightly alley ways.

9. I presented these considerations to Mrs C. W. Hanshaw, manager of Chambers Fisher, and Mr. O. Cutting, Bozeman city manager, and they both wholeheartedly agreed that the proposed shopping mall is an excellent idea.

My proposal will include detailed plans for one integral part of a shopping mall, a department store which would serve all of the clothing and accessory needs of men, women, and children.

The rationale behind this proposal is based upon several items of Bozeman business.

1. The prices of all clothes are quite high. In my estimation better merchandising practice, including quantity buying, will eliminate some of the wholesale cost of clothes and lower the shipping charges. This savings could then be passed on to the consumer.

2. Lowering the prices will allow for an

improvement in the quality of clothes without exceeding the budget of Bozeman citizens.

3. Though there are several clothing stores in Bozeman, there is still a lack of competition in prices, for it seems that the stores have agreed to maintain high prices and compete for the largest number of customers. Moreover, at the present time, there are only two relatively fashionable clothing stores for men, Hartman-Mockel and Varsity Shop, and two for women, Angionette's and Chambers Fisher, in Bozeman.

4. The new store must be designed with convenience in mind, e.g. parking, shopping, paying for goods, relaxation areas, restrooms, restaurants, baby sitting services, etc.

5. Finally, the new store must be aesthetically pleasing.

LOCAL CONDITIONS

Geographical Conditions. Bozeman is located at a northern latitude of 45° and 40', a longitude of 111° and 93' west of Greenwich and at an altitude of 4856 feet above sea level.

Few cities can equal the scenic location of Bozeman. It is situated near the east branch of the Gallatin River. The Jefferson, Madison and Gallatin rivers all join in this valley to become the Missouri River. Bozeman is situated at the base of the western slope of the Bridger Mountain Range at a point where the valley is about ten miles wide east to west. It is surrounded on nearly all sides by mountains. The Bridger range is to the east, and the Gallatin Range to the south and west of Bozeman.

Along the slopes of the valley are national forests. On the southern and eastern sides is the Gallatin National Forest. On the western slopes is the Deer Lodge National Forest. To the northwest is the Helena National Forest.

The East and West Gallatin and Madison Rivers cut through these mountains in beautiful canyons. The West Gallatin Canyon is especially beautiful.

The city is cut by tributaries of the East Gallatin River which flows through the eastern part of

the city. The land is gently rolling between these streams.

Two major highways intersect at Bozeman; Interstate 90 or U.S. 10, an east-west arterial, and U.S. 191, which begins in Bozeman and is a major entrance to Yellowstone National Park. Bozeman is also connected to the nation's rail network by the Northern Pacific main line and a branch of the Milwaukee road.

Climatic Conditions* Climate is the most important of all the basic resources affecting a city's growth and welfare. It determines the type of agriculture the development of any industrial and commercial possibilities, the types of recreation, and even the livability of a city. To make the utmost of its climatic possibilities, a city must realize its advantages and its drawbacks.

Bozeman experiences a climate associated with mountain valleys, dry and clear. Summers are generally pleasant and are characterized by warm days, cool nights, and a high proportion of sunshine. Hot weather of 90-100 degrees is infrequient, usually lasting only about 10 days. There are known exceptions, for example this summer, where Bozemanites have suffered through several weeks of drought and hot weather. Uncomfortable humid conditions are rarely experienced.

* U.S. Department of Agriculture, Climate and Man, No. 59 (Washington, D.C., 1959), Page 122 and 123

Summer precipitation falls mostly as showers, but occasionally there is some hail.

The length of the summer season expressed in growing days is very short. Climate and Man gives a total of 115 days growing season for Bozeman, ranging from late May to mid September. Winters are relatively cold, and occasionally a winter month has a week or more of severely cold weather. In the 30 years summarized there have been six winter months during which Bozeman temperature averaged less than 10° F., and two months which averaged below zero. Temperatures as high as 40 degrees and as low as minus 40 degrees have been recorded in the coldest months of January and February.

The average mean temperature is nearly 43° F., the average yearly rainfall is more than 17.5 inches, and the mean snowfall is 72.7 inches.

Wind Conditions. Climate and Man states that the prevailing winds are westerly, but this is probably not true in the case of Bozeman where the wind direction may well be influenced by the high mountains surrounding it.

Population* Bozeman had a population of 5107 in 1910 and growth continued as follows.

1920 - 6183

1930 - 6855

* U. S. Census

1940 - 8655

1950 - 11325

1960 - 13366

In the period from 1940 to 1950 Gallatin County showed a higher birth rate than the state, and a lower death rate than the United States. This record indicates a vigorously growing population.

Bozeman has a large young population and conversely, a small percentage of its population in the age group over 55.

Bozeman's population by age reveals the following:*

Infant (under 5 years)	9.8%
School Age (5-14 years)	12.3%
Youth Age (15-24 years)	22.7%
Working Age (25-54 years)	37.6%
Mature Age (54-64 years)	8.8%
Pension Age (over 65 years)	8.9%

With a large percentage of the population in the young age group, there is plenty of energy and interest needed for the development of the city. Were the city more developed, then young people would be encouraged to stay, and others would be encouraged to come in.

The following is a geographical distri-

* S. R. DeBoer & Co., A City Plan For Bozeman, Montana, 515 E. Iliff Ave., Denver, Colo., 1958, page 5.

bution of population in Bozeman.

1. Residential population of the central district is very light, but many people live in the adjoining walking-distance areas.

2. The city is built around the north and east boundaries of the University, and there is a continuous growth in this area.

3. Other two steadily growing areas are along Sour Dough Road and the area South and West of the town and east of the city's cemetary.

Social. Bozeman is a conservative community and slow in adapting new changes.

Montana State University has a major effect on the people of Bozeman, both educationally and culturally. It also serves as a main resource for entertainment and employment.

Transportation. Bozeman lacks a local bus system. Private cars and a limited taxi service are the only available means of inter-city transportation.

In proximity to Bozeman are the following cities: Livingston, 26 miles east; Butte, 98 miles west; Billings, 142 miles east; and Helena, 100 miles north-west.

SITE CONDITIONS

The selection of a good site for a department store and shopping mall is determined by several factors.

1. Location: The location of the mall must be such that it is within easy driving distance from a large population center, and the location of the department store within the mall must be such that it is within the pattern of the customer's buying habits. Moreover, the store must be located so as to appeal to and attract customers.

2. Size: The mall must provide for adequate and convenient parking and expansion in case the population and business increases. The store itself must be large enough to handle the present flow of customers, but it must be designed and located in such a way that future expansion of the store is possible as business expands.

3. Site periphery: The site periphery of the building will be the proposed shopping mall. The periphery should be such that the store will present a good image to the customer.

Location. Since it is the center of the population distribution, Main Street, Bozeman, is the most logical location for a shopping mall and a new depart-

ment store. The site proposed for the store seems to be ideal. It has an area of some 18,000 square feet, bounded by Main Street on the north, Willson Avenue on the east, and Babcock Street on the south. Across the street to the north is the Baxter Hotel. To the west is located the new Imperial 400 Motel, and to the north is the Continental Bakery. This particular site is excellent for several reasons.

1. The size of the lot is such that there will be ample show room space to handle the needs of today, and is large enough to handle any anticipated expansion in the future.

2. The owner of the music store, Mr. Frank L. Benepe, is interested in selling the property, so that much of it is readily available for the proposed use. The funeral home presents no serious difficulty because eventually, as the shopping area grows, it will be moved to a location more suitable for its type of service. Moreover, it will not be in the way of the proposed department store, but when it is moved, the area can be used for expansion.

3. The property is one of the largest single lots available. The Bozeman shopping district is, in general, divided into numerous small lots to accommodate relatively small businesses.

4. The site is on the main flow of pedestrian traffic and thus offers easy accessibility to

the shopping customer.

5. The lot is a corner lot and will thus offer more than the usual window space for the display of merchandise.

6. The removal of the existing business will do no great harm to the community or the business. The existing business is a music store whose trade is not large enough to accommodate the size of the building being used. Thus a smaller location will be to the advantage of the proprietor. Such a location is certain to be found where the convenience of the customer will not be hampered.

7. The present site is relatively attractive, being located next to a new building and across the street from an hotel.

8. The building site is level ground, and is thus easily excavated.

Description. The site occupies a rectangular area of about 18,000 square feet, which is most of the east end of a city block.

Topography. The site is quite level. Drainage should be no problem since there is a building on the site at the present time, and the architect for that building has fully taken care of this matter.

There is absolutely no vegetation on the property.

Soil Analysis. Though no soil analysis has

been made on the site, experience has shown that the entire business area is composed of two to three feet of sandy clay on top of an indefinitely large layer of gravel.

The water table varies between four and eight feet throughout the year. Thus all basements will need be fully waterproofed, and facilities for a sump pump should be included.

Utilities. Since the location is in an already existing shopping area, all utilities are immediately available.

Traffic. The site is on two main highways, # 10 and # 191, which makes the flow of automobile traffic quite heavy. Though this is a disadvantage to pedestrian traffic, the proposed highway bypass will relieve the situation. It is doubtful that the re-routing of through traffic around Bozeman, arther than through its center, will have any adverse effect on the clothing business, since the major part of the business would come from local, pedestrian trafffic rather than transient auto traffic.

The important factor is that the site is in the main stream of pedestrian traffic, being located near the heart of the down town shopping center.

The site fronts on Main Street, a street with 90 feet of right-of-way. It has 64 feet of roadway, accommodating four lanes of moving traffic and two

lanes of parking. The proposed site is bounded on the east and south by two other city streets, both major arterials through the city. One runs perpendicular to Main Street and the other runs parallel to Main Street.

Zoning. The site is located in Zone CB Class 1 according to the city Zone Requirement Chart. This particular zone will allow for the construction of retail sales, except for heavy machinery. This restriction will not, of course, apply to the proposed department store. Another provision is that the front yard along Mendenhall and Babcock Streets shall be a minimum of 15 feet, and this requirement has been duly noted in the proposed design.

Other provisions are:

1. "Curb-cuts shall be allowed for parking lot use only."

2. "A maximum of 40% of the total floor area provided may be in industry or storage use incidental to the primary use."

3. "Joint use of off-street parking facilities shall be permissible where an attested copy of a contract between the parties concerned setting forth the agreement to such joint use is filed with the application for a building permit. Parking space requirements shall be reduced 10% for each two (2) applications attesting to said contract, however in no case shall the

reduction be more than 20%."

Each of the above provisions have been taken account of in the proposed building design.

The fire regulations have been met by providing for a 4-hour fire-wall in the design of the building.

FUNCTION

Customer's Zone

The customer's zone includes an entrance, a lobby, coat and parcel checking facilities, fitting rooms, credit, account and adjustment departments, a place for relaxation, a tea room, a small outdoor cafe, a restaurant, baby sitting facilities, and public telephone and toilet facilities.

Entrance. Entrance doors are as important to the store front as show windows. A store's entrance door is the final invitation to shop. Therefore, it should both appear and be light in weight and easy to operate.

The location of the store entrance requires carefull consideration. First of all it should be related to the traffic pattern of the indoor shopping area. A central location on the store front between show windows is seldom a good choice unless symmetry is an important design element. Central entrance doors create a pair of symmetrical displays which are limited in scope and flexibility. If the entrance is placed off center it then becomes possible to create at least one large show window which can be utilized as a single unit or it can be flexibly subdivided into a series of separate displays.

Corner entrances are almost always bad. Such a location ruins the opportunity for the best display in the entire store front because a corner display can be seen by traffic from two directions. In addition, because of the wind currents, the corner entry provides an entry that is drafty and dusty.

Store entrances should never have exterior steps, as they are quite hazardous. A customer, being engrossed in the window display, may not notice the steps and thus is liable to trip on them. The best remedy for this situation is a ramp instead of steps.

The number of entrances is determined by the anticipated flow of customers. Each entrance should have at least two single doors in order to accommodate entering and exiting customers at the same time.

Entrance Lobby. Entrances and exits on streets should be provided with recessed lobbies to serve as protection against rain and wind for waiting customers. Moreover, the entrance lobby serves to relieve congestion when traffic becomes heavy and slows down. In addition to their traffic planning advantages, lobbies are particularly suitable for display purposes.

Coat Room. In a cold climate, where people dress for winter temperatures averaging around 20° F., a coat room is a necessity for comfortable, indoor shopping, because the stores are well heated, and it is

very unpleasant to shop with heavy winter wraps on.

A coat checkrrom should be located near the main entrance. About 100 square feet of floor space should be allowed for every 100 shoppers.

Since a store of the proposed size will need some one to answer incoming calls, the coat-check girl can double as the telephone operator.

Fitting Rooms. Despite the fact that fitting rooms serve only the one purpose of trying on merchandise, they differ a great deal from a luxurious store on Fifth Avenue to a department store on 14Th Street, in New York City. A dressing room can be a good sized room with a chair or two, mirrored walls or well designed full-length mirrors, clothes racks, ash trays, a shelf, and proper lighting to give the ultimate in viewing, or it can be merely a large community dressing room either with or without partitions. The store I am designing will feature individual fitting rooms with sufficient space to change clothes comfortably.

Credit Account and Adjustment Department. In the credit account office customers open charge accounts, make deposits on merchandise, and make installment payments. The credit account office should be combined with other offices such as bookkeeping. A small waiting area with writing desks will be included for the customer's convenience.

Relaxation, Telephones, and Toilets. There will be provided a sitting area for relaxation and reading for both men and women customers and for employees. It should be carefully situated in relationship to other services such as the tea room, the restaurant and the toilets. Telephone booths should be placed near the entrance, restaurant, tea room, and toilets, that is, near the center of crowd concentration.

Children's Playroom and Nursery. Baby sitting facilities in a store makes it possible formmothers to leave their babies and children with competent care while they do their shopping. This facility is found to be very effective for attracting customers. A small room for the nursery and an adjoining playroom should be adequate for this purpose. Possibly it will be located at the back of the store in order to isolate the noise and to make the best use of the valuable floor space.

Tea Room. Tea rooms are common features of European stores, but they are relatively rare in the United States. It is a place to have refreshments between meals. Tea rooms offer a wide variety of sweets, light dishes and beverages.

In order to make the best use of this space it should be designed in conjunction with the restaurant so that they might modify each other. When there is not room enough in either the tea room or the restaurant

then sliding doors which normally separate the two can be opened in order to facilitate the over-flow of customers.

Cafe. The cafe should be placed on the Willson Avenue side of the store. This will interrupt the continual building line to give a proportioned facade to the building. It will be incorporated into the building in such a way as to be part of the building rather than be an arbitrary extension of the side walk. In the summer colorful umbrellas and an outdoor exhibition of merchandise will add an enchanting touch to the over-all environment. In the winter this outdoor area could be frozen for limited iceskating. Another charming addition would be to have the tea room and the restaurant over-look the outdoor area so that diners could watch the various activities taking place there.

Restaurant. There is a very important relationship between the restaurant and the store. Working people who find an attractive setting, where the prices are reasonable and the food is good, will make a habit of eating in a restaurant which is within walking distance. As workers walk through the store to get to the restaurant, merchandise will catch their eye and stimulate sales. Also, the restaurant will be an added convenience for shoppers who find themselves in the mall during lunchtime.

The restaurant should be located in such a way that diners will be exposed to the store's merchandise without their being aware of it. Moreover, the restaurant must go beyond the mere utility of the ordinary restaurant, and give such exceptional service that it will become a powerful advertisement for the store in order to attract more customers. The main objective of a store restaurant should be to draw customers and increase sales. It could even be kept open at night to draw theater crowds and make the store more widely known and liked. Since Bozeman has only a very few dinning facilities, none of which are elegant, a restaurant with a warm, elegant dinning atmosphere should have no problem in being a complete success.

The restaurant will be located on the first floor so that it will be easily operated in the evening, independently of the operation of the store. The kitchen will be located in such a way that the delivery of food and the elimination of waste will not cause a fuss, thus detracting from the atmosphere of the setting. The amount of floor area allowed per person will be between 12 and 18 square feet. This restaurant will be a fairly small one, capable of accommodating about 30 people at a time without opening the tea room. The small size will be advantagous in capturing the cozy atmosphere desired.

Food will be served by waitresses during the

day and by waiters during the evening. The evenings meal will be adorned by furnishing, among other things, candle light and heavy linen table clothes.

Merchandise Zone

Space Organization. All handling and transporting of merchandise is carried out in the merchandise zone. This zone consists of a series of rooms where the merchandise is received, checked, marked, prepared for display, and distributed to the selling department. Since the merchandising procedure is a continuous one, the rooms should be arranged so that each process feeds directly into the next.

Main Receiving. A loading ramp with an unpacking and a control room make up the main receiving department. The unpacking room should be equipped with tool cases and several work tables of varying height.

In the control room, located directly behind the unpacking room, merchandise is spread out on display tables for the purpose of examination.

Checking and Marking Department. The layout of the room where merchandise is checked and marked will depend on whether stationary or moving tables are to be used. The tables are often divided by wood, wire, glass, or screen partitions which help to keep the merchandise of various sizes and shapes in order. There must be

space near the tables for temporary storage of shipments until they are ready for checking. If the working aisle is wide enough, each shipment may be stored at the end of the table where it is to be checked and marked. Mounting the marking and ticket attaching machines on rolling tables which can be moved from one bin to another will save shifting the merchandise from machine to machine.

If the merchandise is needed immediately in the selling departments, it is moved directly, otherwise it is delivered to the reserve stock department.

Reserve Stock Department. There are three different systems for locating the department store stock rooms.

1. The Centralized System. All reserve stock is concentrated in the basement or on the top floor.

2. The Decentralized System. All reserve stock is distributed in small reserve stockrooms located throughout the entire store.

3. The Intermediate Stock Floor System. This is a new plan which utilizes the advantages and eliminates the faults of the first two systems.

In my store design the reserve stock department will consist of a centralized stockroom and a couple of small stock rooms to store the reserve merchandise which is in the greatest demand.

The traffic aisles of the stockroom should be at least 6 feet 8 inches wide, and the aisles between the stock shelves should be wide enough to allow two employees to sort the merchandise. Moreover, there should be enough additional space to accommodate a small desk for recording shipments and to park a small handcart.

The stock shelves will vary from 24 to 42 inches in width, depending on the type of merchandise it will hold.

One of the important problems in designing a stockroom is to protect the merchandise from deterioration, dust, vermin, and other forms of damage. For example, furs must be stored in very cold dry temperatures, for heat and humidity will adversely affect furs, rubber, and leather.

The Selling Zone

Department Layout. The vital center of department store activity is the selling zone where the customers, merchandise, and employees all meet. The contact should be peaceful with a well organized traffic pattern for shoppers to move easily.

The department store is a combination of a number of individual stores under one roof and one administration. As such, it is usually divided into a number of departments. The departments in the store I am designing will be Ladies' Accessories, Children's

Apparel, Ladies' Ready-to-Wear, and Men's Apparel. Each of these departments in very large stores could be subdivided into as many as 100 or 200 different sales departments in order to handle up to 400,000 different items. However, the size store I am designing will be considerably smaller than this, and will thus demand fewer departments and sub-divisions. If the store is to be a success, then one must arrange these departments according to convenience for the customers and sales people alike. The departments will be convenient if they can be serviced with a minimum of motion. For example, if all of the accessories and clothing for men are placed in one area of the store, then a male shopper can do all of his shopping without running from one part of the store to another. This is convenient for the customer, the sales people, and it cuts down on the traffic volume through the store.

For an effective store design merchandise has to be divided into two main parts, one impulse goods, and two demand goods. Perfumes, jewelry, gifts, furs, and most men's furnishings and women's accessories are all examples of impulse merchandise. Merchandise in the demand category includes such standard necessities as clothing and household equipment.

The merchandise in each of the basic selling groups will be organized into separate, well-defined

sales departments. The location of each department is vital. Shoppers will always find their way to demand merchandise if the route is clear and convenient. Therefore, demand departments should be located at the far end of the store, away from the entrance, and impulse departments near the start where customers are bound to pass them.

Another consideration is suggestive selling between departments. Good suggestive selling depends on several factors. One is traffic. Where traffic is heaviest, small, fairly inexpensive items which have a quick turnover are displayed. These are "pick-up" items which the customer will buy in passing through. Areas which suffer the least amount of traffic will feature merchandise which has the slowest turn-over and is a bit cumbersome to handle.

Another consideration in locating departments so that one can take the greatest advantage of suggestive selling is seasonal variation in the sale of types of goods. For example, some departments should be arranged in such a way that they can be expanded during the winter to handle and display effectively the added bulkiness of winter clothing.

The economic success of the store depends on how well it stimulates impulse buying. If the store sold only demand merchandise that its customers had planned to buy before entering the store, and did not

make the greatest use of suggestive selling practices to stimulate impulse buying, then the store would soon be in bankruptcy.

Relative Sizes of Sales Departments. One of the main factors determining the success of a department store is the alloting of the proper amount of space to each department. Space is expensive, and the department must be able to make the space alloted it pay off in sales and profit. There have been surveys run on the annual volume of sales per square foot in a large number of department stores. Thus, one need not rely on gueswork in the allocation of space per department, but can appeal instead to a chart compiled by the National Retail Dry Goods Association (1946), which, when the proper information is fed into it, it will give a very close estimate of space to be alloted for each department. Though the chart is a bit old, one of the findings of the Association is that buying habits of consumers does not seem to change a great deal over the years nor from place to place.

Aisle Layout. Aisles represent the "road system" in a department store. Analogous to a city, the department store is laid out in main, secondary, and distribution aisles or "streets." Main aisles distribute the customer traffic from elevators, en-

trances, stairs etc., throughout the store. The secondary aisles lead the customers from the main aisles to the selling stations of the various departments, and the distribution aisles allow for the free flow of sales and stock personel.

Aisles are formed by the placement of store fixtures, such as display counters. Such fixtures occupy from 30 to 50 per cent of the sales area, leaving the rest of the sales floor space to be divided up into aisles. The main consideration in designing a floor plan is that the aisles must be able to absorb all arriving customers, so long as the number of customers does not exceed the ability of the sales personel to wait on them. This last consideration can be facilitated by allowing for a great deal of self-service.

There are three different systems of aisle layouts which correspond in function to the layout of the fixtures.

1. The rectangular system: This is the most common system. It is laid out like a grid-iron city street plan. This system is infexible and cannot be adapted to local variations in customer traffic volume.

2. The inclined system: This system is one where the secondary aisles branch off the main aisle at 45 degree angles rather than at 90 degree angles.

This system corresponds to the way the secondary streets branch off of Market Street in San Francisco.

3. The free flow system: This is the most modern method of aisle layout, and it is the one I will adopt. According to this system, the general flow of traffic determines the aisles. The aisles are made up of curves, bulges, and recesses in the equipment. Even this system has its correlative in automobile traffic conditions where some modern housing developments are laid out in the same manner. This method of layout lead customers in the desired direction through irregular shaped aisles. The free flow method of aisle layout allows for quick adaptation for storage and display, and the various departments stand out clearly by having a distinctive size and shape. Moreover, more sales people can comfortably work in each department, and their access to behind-the-counter storage is much more convenient. The flexibility of the free flow system is nearly limitless.

Equipment Layout. A department store sells merchandise of nearly every size and description. Accordingly, the demand on shapes and sizes of layout equipment is complex. There are a few general types of fixtures used for the purpose of layout. For example, there are counters, showcases and display fixtures, and their proper arrangement presents problems

in every department. In days gone by, the philosophy of the store was that it is a shelter for the merchandise. Accordingly, fixtures were large, immovable cabinets which offerred the ultimate in storage but the minimum in flexibility. Today, the philosophy of the department store is that the store is primarily an area for display, and only incidentally a place for storage. Thus fixtures are designed for display, accessibility of merchandise, mobility, and fexibility. Fixtures are basic to the selling process, and are, therefore, of primary importance in the layout of any store. The layout and design of the fixtures depends on six factors. They are: (1) The selling system, such as clerk and self-service; (2) The sales operation such as wrapping; (3) The nature of the merchandise such as unit size, value, and volume of demand; (4) The speed of the selling operation; (5) The work movements of the selling operation necessary for the sales transaction; and (6) Protection against "shoplifting."

The kinds of fixtures required are stock carrying, selling, service, and display equipment. Traditionally all such equipment was rectangular in shape, but with the advent of the free flow system of aisle layout, and the demands for versatility and flexibility, curved as well as straight lines are used in the design of fixtures.

In my interview with Mr. Hanshaw, the manager of Chambers Fisher, he stated that he feels as I do, that flexibility in the design of store fixtures is of great importance. Accordingly, I have adopted the free flow system of aisle lay-out where the flexibility of both aisles and fixtures is at a maximum.

Offices. Large department stores have many offices for the many large and complex operations of a big buisness. A relatively small department store such as the one I am designing will be considerably less demanding in this area. It will be necessary to have an office for the store manager, and perhaps a small office for the assistant manager. Since the number of employees will be relatively small, the manager or assistant manager will do all of the hiring and firing, thus eliminating the need of an employment office. The only other offices will be a series of connected rooms facilitating cash, bookkeeping, invoice and auditing, and credit, charge accounts, and adjustments.

BUILDING PROGRAM

Area	Approx. sq. ft.
Entrance Lobby	200

Function: The entrance lobby serves as a protection for waiting customers against inclement weather, and it is equally important as a reception space for entrance traffic.

Equipment: The entrance lobby will be furnished with show cases and a public telephone.

Relationship: It will lead from the sidewalk to the sales area.

Coat Room	150

Function: The coat room provides storage for coats and hats and a location for the store's answering service.

Equipment: It will contain an intercom telephone system and coat and hat racks.

Relationship: The coat room will be located adjacent to the entrance lobby.

Fitting Rooms	30 each 210 total

Function: The fitting rooms are for customers to try on and model merchandise. There will be five rooms for women

Area	Approx. sq. ft.

and two for men.

Equipment: There will be a full length mirror on each of three walls, one chair, clothes racks, a shelf, and an ash tray in each room.

Relationship: The fitting rooms will be located adjacent to the appropriate sales area.

Room For Relaxation 200

Function: This room will be a sitting area for relaxation and reading.

Equipment: The room will be furnished with low, comfortable chairs, tables and ash trays.

Relationship: The room for relaxation will be adjacent to the restaurant, tea room, and toilets.

Rest Rooms (Men and Women) 260 each

Function: They will provide toilet and grooming facilities for customers and employees.

Equipment: They will be furnished with water-closets, urinals in the men's room, lavatories, mirrors, and miscellaneous equipment.

Area	Approx. sq. ft.

Relationship: The rest-rooms are located near the restaurant, tea room, and relaxation room.

Telephones (One booth and one not enclosed) 10 booth only

Function: The telephones are for public convenience.

Equipment: There will be one phone booth and one telephone which is not enclosed. The booth will have a seat and a shelf, and the non-enclosed telephone will have only a shelf.

Relationship: The telephone booth will be located by the restaurant and the rest rooms. The non-enclosed telephone will be in the entrance lobby.

Children's Playroom and Nursery 280

Function: This is a small room for a nursery and an adjoining room for a playroom to provide baby sitting for the children of the customers.

Equipment: There will be two baby beds which can be converted into play pens. In addition, the playroom will be furnished with children's furniture and toys, and a full sized couch which can be used as a sleeping

Area	Approx. sq. ft.

ing unit.

Relationship: These rooms will be located at the back of the store.

Tea Room (Serves 20 people) 200

Function: The tea room is a place to enjoy some light refreshments between meals.

Equipment: It will be furnished with rattan tables and chairs.

Relationship: The tea room will be located next to the restaurant.

Kitchen 800

Function: The function of the kitchen is to prepare meals for the restaurant, lunches for the cafe, and snacks for the tea room.

Equipment: The kitchen will be furnished with the usual culinary equipment, such as ovens, grills, refrigerators, etc.

Relationship: It will be located adjacent to the tea room, the restaurant, the cafe, and the outdoor service area.

Cafe 350

Function: Besides serving refreshments, it will open up the store to the outdoors.

by creating a "bridge" between the sidewalk and the store.

Equipment: The cafe will be furnished with tables, chairs, and umbrellas.

Sales Area 1800

Function: The purpose of the sales area is to display and sell the following types of merchandise:

Ladies Accessories	1800
Jewelry	
Neckwear and scarfs	
Handkerchiefs	
Gloves	
Hosiery	
Bags and leather goods	
Umbrellas	
Millinery	
Corsets and brassieres	
Underwear	
Foot wear	
Cosmetics	
Ladies' Ready-to-Wear	2840
Women's dresses	190
Women's coats and suits	100
Popular priced dresses	300
Junior and misses' coats and suits	410
Blouses and shirts	200

Area	Approx. sq. ft.
Sportswear	600
Furs	250
Aprons and house dresses	80
Negligees and robes	280
Children's Apparel	
Infant's wear	160
Girl's wear	180
Boy's clothing	140
Men's Apparel	
Men's furnishings	180
Men's hats	120
Men's shoes	80
Men's suits and coats	120
Dry Goods	440
Silks and velvets	
Woolens	
Wash goods	
Linens	
Patterns	
Ribbons	
Laces and trimming	
Zippers and thread	
Art Shop	240
Art materials and exhibi-	

tions of student work from the art department of the university.

Toy shop 210

Gift shop 300

Gift wrapping 100

Equipment: The sales area will be equipped with wall fixtures, counters, show cases, and display fixtures.

Relationship: Ladies accessories will be placed close to the entry and the other departments will be placed towards the rear of the store and on the second floor.

Un-packing Room 180

Function: The function of this room is to receive and un-pack incoming merchandise.

Equipment: It will be equipped with tool cases and several work tables of varying heights.

Relationship: It will be located between the loading ramp and the control room.

Control Room 240

Function: In this room the merchandise is spread out on display tables for examination.

Area	Approx. sq. ft.

Equipment: The control room will be equipped with tables for laying out the new merchandise.

Relationship: It will be located between the un-packing room and the checking and marking departments.

Checking and Marking Rooms 600

Function: It is here that the merchandise is checked and marked.

Equipment: This room will be furnished with nothing but long tables.

Relationship: It will be located between the control room and the storage room.

Reserve Stock 600

Function: This area is for merchandise storage.

Equipment: It will be equipped with stock shelves.

Relationship: It will be adjacent to the checking and marking room.

Executive Offices 300

Function: The purpose of these rooms is to provide individual working space for:

The general manager 140

Area	Approx. sq. ft.
The assistant manager	120

Equipment: The offices will be furnished with desks, chairs, files, and safes.

Relationship: They will adjoin the other offices.

Bookkeeping Room	400

Function: The purpose of this room is to handle bookkeeping, billings, and authorizations.

Equipment: It will be equipped with desks, chairs, files, and a small room of 30 square feet which will serve as a burglar-proof vault for the cash and valuable papers.

Relationship: This office will be located adjacent to the other offices.

Credit Account and Adjustment Department	160

Function: This is where customers can open charge accounts, make deposits on merchandise, and make installment payments.

Equipment: It will be equipped with desks, chairs, and files.

Relationship: It will be located near the other offices.

AESTHETIC CONSIDERATIONS

The Mall. In designing the shopping mall, there are three aesthetic items which must be taken into account. They are function, beauty and, unity.

In addition to the mundane purpose of bringing consumer products to the hands of the customers, the mall should serve two aesthetic functions. One is to promote physical enjoyment, and the other is to enhance peace of mind through the promotion of physical safety. In the ordinary shopping situation the customer is at the mercy of the elements, other pedestrians, and motor vehicles. Quite often, especially in large cities, we find ourselves in the flow of traffic. We mean to cross a street, but the light is red. In order to save time, we cross in another direction. We may like to try a store on the other side of the street, but we prefer to finish everything on this side to eliminate crossing the traffic more often than is necessary. We may step aside for a couple of minutes in order to decide which store to go to next. But rather than interfere with traffic we keep going, and before we get our bearings we find that the store we are seeking is on the other end of the block. Thus, it is obvious, that a complete separation of pedestrian from vehicular traffic is a first step in designing a shopping mall.

The fact that pedestrians with their children will not have to compete with motor vehicles will be a great help towards improving the shopper's peace of mind, and providing for physical comfort as well. Besides the considerations of traffic, there are other functions a mall must serve if it is to add to the physical well- being and peace of mind of the customer. Among other things the mall must provide protection from the elements, such as enclosed patios and rain shelters, and it must provide such conveniences as drinking fountains.

There are many ways in which a mall could be designed to provide these items, but surely, a major consideration in its design should be beauty. A bazaar in Istanbul is a ravishing, happy, care-free, place of delight, and shopping in Carmel, California is refreshing, because of their beauty. Without going into a dissertation on my concept of beauty, a few items can be pointed out which are, I believe, generally accepted. Most towns across the nation are composed of architecture such as that of Woolworth's and Grant's which is monotonous and above all without any consideration for the surrounding terrain's aesthetic demands on architectural design. A shopping center should have a character of its own, captured and expressed vitally. A sitting area provides a place of relaxation for shoppers, as well as a meeting place

for public convenience. Covered sidewalks or arcades protect the shoppers from rain, snow, and wind. Signs are necessary for giving directions. All of these things are elements of the well designed total environment, and good taste in architecture must be brought to bear if a mall of real beauty is to be constructed. Moreover, a beautiful mall will put customers in a more joyful frame of mind, thus increasing their likelihood of buying. In brief, the shopping mall should be a starting place for new experiences and adventures, not just a street of stores.

The third consideration is unity. Unity is the quality of an object by which it appears as definitely and organically one single thing.* In most every main shopping district of a town, as for example Bozeman, the relationship of the buildings to one another, and the arrangement of signs, signify some amount of disorder. Signs certainly are necessary for the convenience of the shopper, but they should be designed to enhance the appearance of the project by providing harmony and homogeneity. One could for example put restrictions on the size and color of signs so that they compliment rather than clash with one another.

A tree offers shade. Its spreading roots

* Hamlin, Talbot, Architecture, An Art For All Men, New York, Columbia University Press, 1961, page 67

give an earthly filiation to the surrounding buildings as if they too are part of the land. It helps our physical well-being and peace of mind, but above all it ties the shopping area into one unitary whole by acting as a connecting link between the buildings.

The Building. In part, the aesthetic considerations of a department store are governed by its function. The store front is the dominant contact between the shopper and the store. There are several factors which must be taken into account.

First, the store front must catch the eye of the shopper. This is done best by designing a well-organized and attractive store front.

Second, the store front must identify the kind of store it is and show off its kind of merchandise. Yesterday's concept of letting the merchandise speak for itself in a plain setting must be, and has been in many instances, replaced by the more modern view of displaying the goods in a stylish, tasteful background. The fact of the matter is that the merchandise is difficult to evaluate unless it is modified and interpreted through a fashionable, attractive, and gay display. Customers are often unsure of their own judgement and like to be reassured that the store can be depended upon to have good taste and that the fashion, price, and quality are right.

Third, as a medium for displaying merchandise,

the store front acts as a stage set, where proper display will dramatize the merchandise and instill in the buyer the urge to buy.

Fourth, the store front should draw approaching pedestrians to the entrance door and on into the indoor shopping area. Store fronts are essentially three-dimensional posters, and successful design serves the purpose of offering an attractive invitation to the customer.

Unity in a building, like unity in the mall, is the quality of composition which holds the architectural creation together as a single expression of its own individual character. The building must be constructed according to the rules of composition, such as balance, rhythm, proportion, climax, harmony, and functional expression of purpose and structure.

Conclusion. Customers will tend to favor the store that satisfies a natural liking for interesting form, color, enriched surfaces, and an air of fashion. Design for the successful store will skilfully combine excitement, opportunity to explore, gaiety, amenity, character, convenience, comfort, and beauty.

ECONOMICS

ECONOMIC CONSIDERATIONS

In building a new store there are several possible sources of financial backing. The first and most obvious source is a loan from some sort of loan company, such as a bank, an insurance company, or a savings and loan association. In order to get such a loan, the builder must be able to offer sufficient financial security from his own pocket in order to insure the lender that he is not taking a bad business risk.

Another possible source of money is from some individual entrepeneur who is willing to back what he may consider an economically sound venture. The lender in this case may want to be taken in as a partner, or he may just demand an equitable return on his money. In either case, the builder may or may not need to put up his own money, depending on the judgement of risk as seen by the lender.

One may also sell stock through the stock market, where the stock holders will become, in essence, the owners of the company.

A final possible source of financing may be through convincing one of the major department store chains, such as Macy's, Addiss, or the May Company, to establish a new location. All that may be necessary

here is to convince the company that the expansion would be to their economic advantage. The store, of course, would be taken out of the hands of the builder and would be owned and operated by the establishing department store chain.

The motive for building the new store is going to play a large role in ascertaining the source of financing. If the builder is interested in owning and operating the store himself, then the fourth method of attaining financial backing is out. The motive for building such a store may be a love for designing and constructing a beautiful building, much the same as an artist creating a painting merely for the feeling of aesthetic accomplishment. If the builder is interested in owning and operating the store himself, then the first and perhaps the second method would be necessary. If the builder is interested only in building the store, then any one of the methods could possibly be used.

Cost Analysis. There are four methods of making a rough estimate of the cost of building.

First, one can use the cubic foot cost method which is based on the volume of building space. One estimates the cost per cubic foot of building space, and multiplies it by the total number of cubic feet in the proposed building.

Second, one can use the square foot method, which is based on the cost per square foot of floor area of the building. This method is identical to the cubic foot cost method except that square feet of floor area is used instead of cubic feet of space.

Third, the most difficult, but most accurate method of estimation is the segregated cost method. According to this method the architect determines the cost of each part of the construction, and then totals the cost of all of the parts.

The fourth method is used primarily in dealing with public buildings. It is the per capita cost method, which is a rough estimation of cost in relation to the population which is expected to use the building.

In this report I will use the square foot cost method by appealling to the Marshall Valuation Service (1966) book. According to Class B classification, the department store is considered as excellent, being constructed of stone, the best metal walls, and fine display fronts. The interior uses the highest grade plaster, terrazo, carpets, high luminosity, many good outlets, and tiled restrooms.

The estimation of the cost is based on the following figures:

Average floor area.....18,000 sq. ft.

Average perimeter..... 600 ft.

Floor area perimeter
multiplier..... .891

Square foot multiplier for
28' height..... 1.584

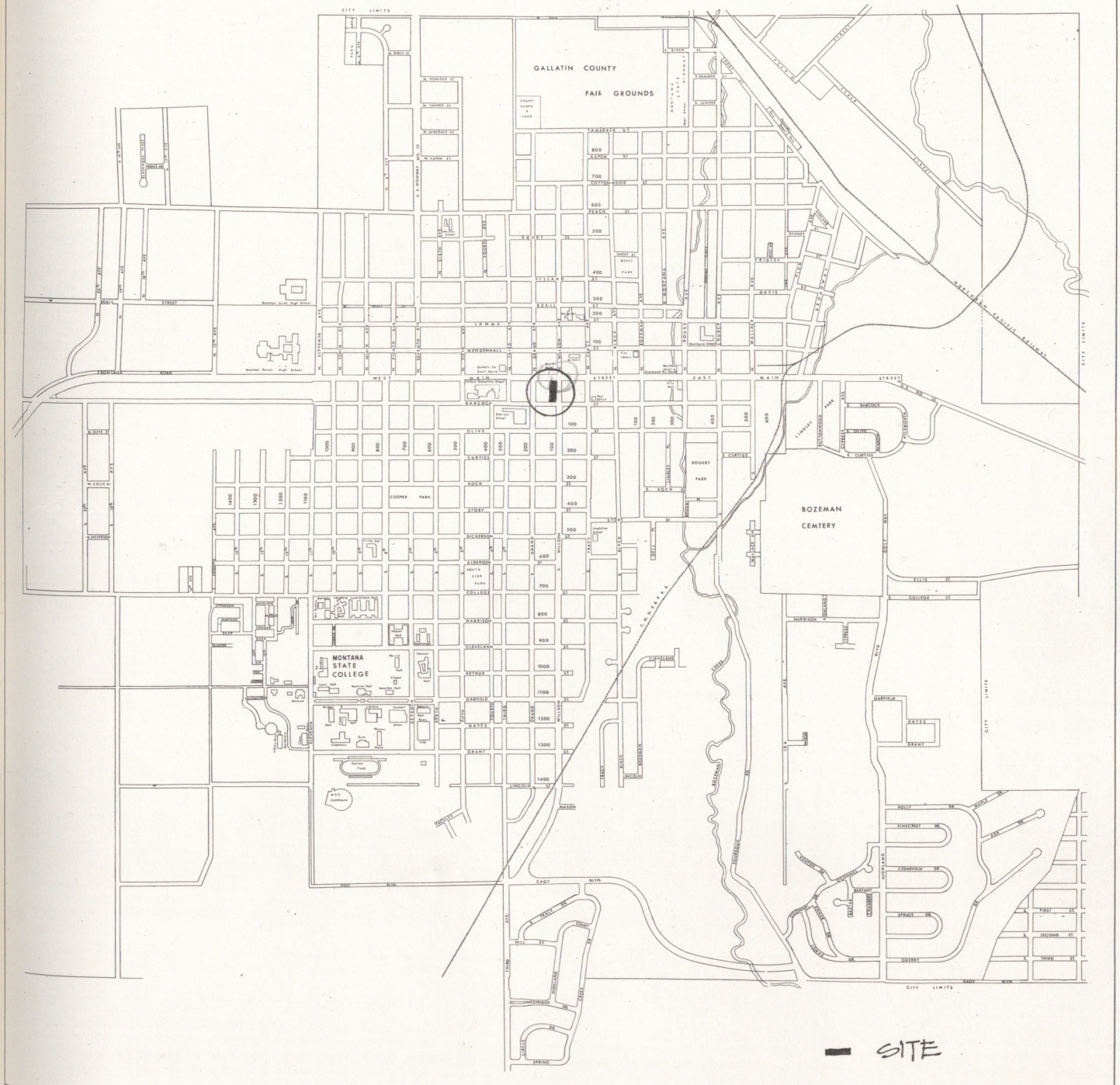
Price per square foot of
area..... $ 24.49

Multiplying the following figures together gives an estimation of cost of construction.

18,000 x 24.49 x .891 x 1.584 gives a result of $ 621,388.34 as the total cost of construction.

SUMMARY

CITY OF
BOZEMAN
MONTANA.



In order for a store to be prosperous, it must make efficient use of its space. It is obvious that the music store does not utilize all of its showroom area.


J. Gemeinhardt
FLUTES
AND
PICCOLOS
Ludwig
most famous
name in drums



The sight of the proposed department store as it appears today.








Harolds
MUSIC &
RECORD
CARBURETOR
REPAIRS
400
MOTEL







The elimination of unsightly alley ways would add a great deal of beauty to the shopping district.


LUCKY LAGER
GREAT FALLS


PRIVATE PROPERTY
Phillips
BOOK STORE



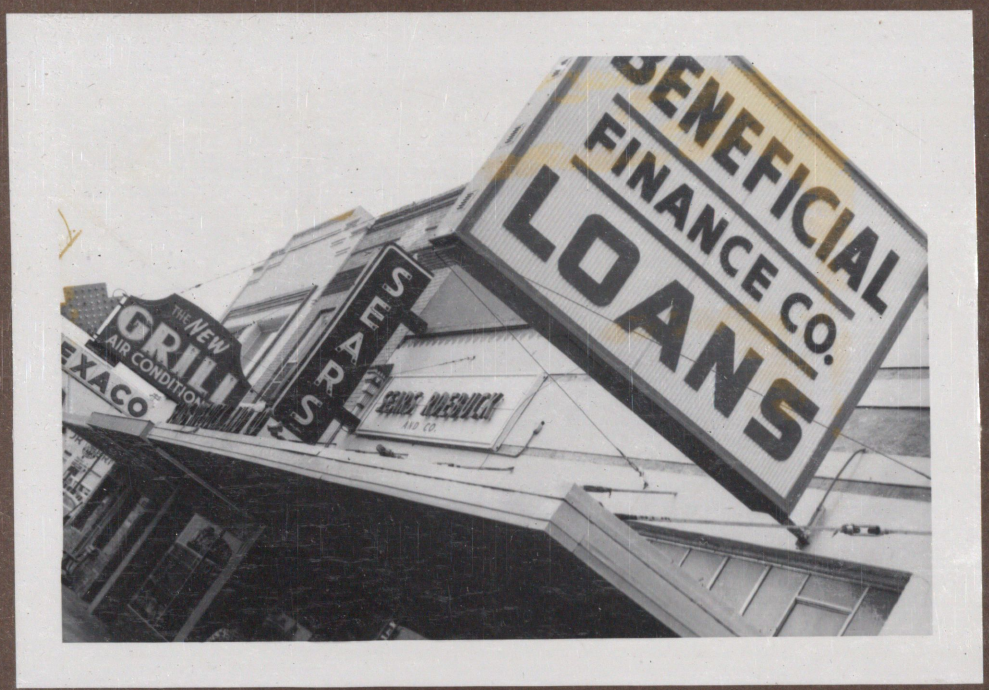

Restvedt's



Notice how the signs, from a "people's-eye" view, because of their chaotic arrangment, can be quite confusing rather than helpful to the shopper.

SPORTING GOODS
FABRICS

AMC
PHOTO SUPPLY


BENEFICIAL
FINANCE CO.
LOANS
THE NEW
GRILL
AIR CONDITIONED
SAMS
SERVICE
SEARS ROEBUCK
AND CO.
EXACO


Bozeman
JEWELRY
PHOTO SUPPLY
AMC
Phillips
DRUG STORE

BIBLIOGRAPHY

Books

1. Hamlin, Talbot. Architecture an Art for all Men, New York, Columbia Univ. Press, 1961.

2. Ketchum, Morris Jr. Shops and Stores, New York, Reinhold Publishing Corp., 1948.

3. Le Corbusier. The City of To-morrow, London, The Architectural Press, 1947.

4. Marshall and Stevens. Marshall Valuation Service, Los Angeles: Marshall Stevens Company.

5. Parnes, Louis. Planning Stores That Pay, F. W. Dodge Corp. 1948.

Pamphlets

6. Bozeman Chamber of Commerce, Basic Information for Bozeman, Montana, 1961.

7. City Plan for Bozeman, Montana: Summary and Conclusions, Denver Colorado: S. R. DeBoar and Company, City Planning Consultants, 1958.

8. U. S. Department of Commerce, Weather Bureau, Climatatological Summary, Monatan State University Recording Station, 1956.

9. Zone Requirement Chart, Appendic CD, Bozeman City Ordinanace 818.

Interviews

10. Mr. C. W. Hanshaw, Manager of Chambers Fisher

11. Mr. Oscar Cutting, City Manager, Bozeman, Montana

12. Mr. R. Benepe, Owner and Manager of Harold's Music

MONTANA STATE UNIVERSITY LIBRARIES
stks 720.6.M76B857 CA
A mall and department store, Bozeman, Mo
3 1762 00154597 7

~~NA 2540~~ [redacted]
~~720.6~~
~~M76~~
~~B857~~
~~LIB. USE ONLY~~