

A
PERFUMERY
FACILITY
FOR
CINDY OWINGS

SAN FRANCISCO, CALIFORNIA

TODD A. MCKERROW
M.S.U.
THESIS MAY 1993

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A Perfumery Facility for Cindy Owings Designs
San Francisco, California

by
Todd A. McKerrow

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

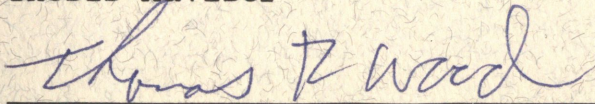
Bachelor of Architecture

Montana State University
Bozeman, Montana

May 1993

Approved:

Thesis Advisor



Director School of Architecture

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I would like to dedicate this book to my parents. Without their support, I would not have been able to accomplish this. Thank you Mom and Dad.

I would also like to thank the following people for their assistance with my project:

Cindy Owings
Jim Anderson
Tam Bates
Funda Ajaran
Jan Diekman
Paul McKerrow

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PROJECT STATEMENT

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This project proposes the design and adaptive urban use of a perfumery for Cindy Owings Designs (C.O.D.). The building would not only serve as an industrial dwelling for the production, creation and manufacture of perfume, but also a commercial habitat for the viewing and sale of her product. Not only would the architecture facilitate the creative process, it would also allow the visitor to view the process of the making and bottling of the perfume.

HISTORY

SAN FRANCISCO HISTORY

San Francisco is a port of entry for central California. Bounded by the Pacific Ocean and San Francisco Bay, this beautiful city is connected by Golden Gate Strait. San Francisco was founded in 1776 as Yerba Buena the name was taken from the mint that grew wild over the dunes in the area by the Spanish who established a prisidio and mission in the area. Growth flourished with the California Gold Rush in 1848, the discovery of silver in 1859 in the Nevada Territory, the development of the harbor for foreign trade and fishing, and the transcontinental railway in 1869. Historical landmarks include such marvels as Chinatown, Fisherman's Wharf, Coit Memorial Tower, Nob Hill, Telegraph Hill, Russian Hill, Treasure Island, Golden gate Bridge (1937), cable cars and Market Street.

San Francisco provides for a substantial center for commerce and manufacturing. San Francisco is traditionally the leading world trade center of the Western United States. A great seaport since the 1800's, San Francisco holds a major position as a cargo port on the West Coast. The city's major industries are tourism, shipbuilding, food processing, chemicals, apparel and textiles, publishing and fabricated metal products.

THE CITY



THE CITY SITE

San Francisco, California is located at 37.48 N. latitude, 122.24 W. longitude and is hilly in terrain, roughly square in size and about 46 square miles in area. It boasts breathtaking views of one of the world's most beautiful bays. To its south are the suburbs of San Mateo County; to the east and northeast is the bay and to the west and northwest is the Pacific ocean.

San Francisco Bay is river valley that drowned after the melting of the last glacial ice melting period, and has since been filled a bit by landfill. In 1965, the Bay Conservation and Development Commission was created to control landfill projects. More than half of the bay is still fillable. Inside the city limits of this majestic city are the islands of Yerba Bueno, Alcatraz (a state maximum-security prison until 1963), and Treasure Island, a man-made island built for the World's Fair of 1939. The Golden Gate Bridge leads north and the Oakland Bay Bridge connects San Francisco to the east bay via a tunnel through Yerba Buena Island.

THE CITY LAYOUT

The city of San Francisco has its central business district, financial district, North Beach, and Chinatown at the tip of the peninsula. The downtown district is built atop landfill, which covers deserted ships dating from 1849. The Prisidio, predominantly a military base, is to the west and is at the entrance to the Golden Gate Bridge. Famous Golden Gate Park is to the south.

The layout of the downtown is a grid pattern which accounts for the very steep hills and streets. These same steep hills afford a view to architecture such as the Bank of America Center, the Transamerica Corporation building, (which contributes a geometric pyramid against the downtown skyline), and the Coit Tower.

THE QUAKE

San Francisco is located in a high seismically active region. In 1906, an earthquake caused by the San Andreas Fault destroyed much of San Francisco. The earthquake, followed by a fire, leveled four square miles (512 blocks) in the center of town. Twenty-eight thousand buildings were destroyed and property damage of up to \$350,000,000. The earthquake damage added to the concerns of the safety of the residents in the city. Current building in San Francisco must comply with specific requirements to meet certain stringent earthquake standards.

THE PEOPLE

San Francisco has a potpourri of ethnic minorities because of its port location. During the latter half of the 19th century immigrants arrived from Europe making this one of the most European cities of the United States. Minorities include Chinese, Italians, Germans, Irish, Spanish and the British.

Just as the people are a melting pot of the urban context, so is the eclectic architecture which is interwoven in the fabric of the city.

TRANSPORTATION

San Francisco is unique in that it is very European in style and function, at least as far as America goes. There has been great concern about the automobile in the use of every day life and a great deal of effort to reduce the need of the automobile in the city though some car traffic is inevitable.

The inter-urban rapid transit system, otherwise known as BART (Bay Area Rapid Transit), connects the East Bay to San Francisco through an underwater tube. There is also ferry, bus, and of course, the trolley car.

The San Francisco International Airport is on the southwestern shore of the bay approximately seven miles south of the city limits.

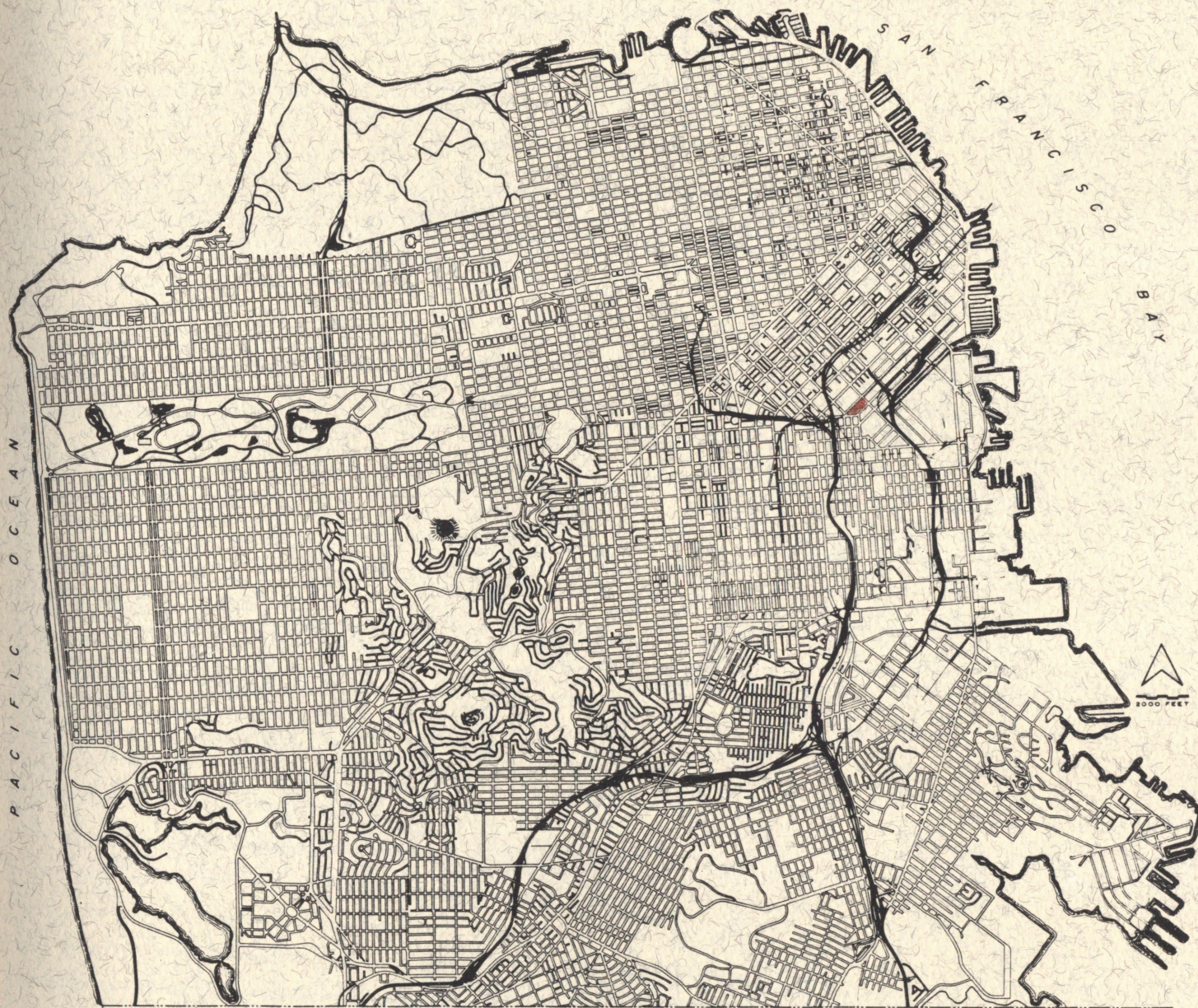
CLIMATE

CLIMATE

San Francisco has a temperate annual climate; winter is rainy and mild, spring is sunny and mild, summer is foggy and cool while autumn is sunny and warm. The average mean minimum temperature is 51 degrees fahrenheit, the average mean maximum, 63 degrees. Most of the rain falls between November and April at the annual rate of about 21 inches.

The sun shines during two-thirds of the possible daylight hours. The summer fog is known to be the most characteristic feature of San Francisco. The fog is created when the warm ocean air merges with the cold water which comes from the ocean bottom along the coast. This fog lies low over the city until mid-day.

SITE LOCATION





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SITE

The site I chose for my project is located in the oldest industrial section of San Francisco. I chose the area in part because of the flavor of the industrial aspects and partly because of the historical essence in an urban context which lends well to the eclecticism of the old and the new. Mostly the location was chosen with regards the convenience to other buying marts in the area. The user will be a combination of the tourist who wants to see how a product is manufactured, and the less public person who, mostly on business, would want to deal directly with the client Cindy Owings.

The site is located in the Showplace Square area. The site has approximately 109,450 sq. ft. located west of seventh street (western side of assessor's block 3799), lots 2 and 3, bounded by Townsend, Seventh, King, Division and Eighth Streets. The site is immediately west of the Baker Hamilton building.

VICINITY

The site is adjacent to many buildings related to the industry of the client, Cindy Owings. Immediately across the street on Eighth Street and Townsend is the newly erected Fashion Center which houses numerous stores and exhibit rooms primarily for buyers. Farther east, on the same block, is the Contract Design Center that houses furniture display rooms and showroom spaces for designs. The Baker Hamilton building has commercial and retail space and proposed residential units.

To the west of the site, is the Showplace Design Center which is a multi-office and wholesale display center. Across the street from this, still on Eighth Street, is the Sobel Design building. This serves as a furniture design space with numerous offices. On the south side of the site, on King Street, are various manufacturing shops, offices, the San Francisco Ice manufacturing plant and some truck yards a block south from King.

The character of the buildings is somewhat eclectic. The Baker Hamilton building built in 1905, with brick fire walls and heavy timber represents a majority of the buildings types of the area. In contrast are the newly built buildings on the north side of Townsend Street, which are all modern, such as the Fashion Center which is adjoined by a concrete parking structure linking it to the Contract Design Center. The manufacturing facilities in the vicinity are generally warehouse type structures with corrugated steel siding. The Sobel Design Center is a yellowish stucco-sided building with a clock tower on the corner.

ZONING

ZONING

The project is within an M-2 (Heavy Industrial) zoning district, which allows for retail, warehouse and commercial use. The building construction is type II fire resistive of steel, iron, concrete or masonry.

The building is classified as mixed occupancy, H-3 and B-2. The H-3 classification is listed as having occupancies with a quantity of material in the building in excess of those listed in the Table 9 of the U.B.C. which present a high fire or physical hazard, including...(3) Class 1,2 or 3A flammable liquids or combustible liquids which are utilized or stored in normally closed containers pressurized at 15 lbs. per square inch gauge or less and aerosols. Liquid use in the mixing rooms, from Sec. 503, states that rooms must have at least one exit door approved by fire department access. Mixing rooms cannot exceed 1,000 square feet and shall be separated from other areas by an occupancy separation having a fire resistance rating of not less than 2 hours if the room is greater than 150 sq. ft.in area.

Mixed occupancy, as per stated by Sec. 503 (d), states when a building is used for more than 1 occupancy purpose, each part must be separated from the other occupancy by a 1 hr. fire wall (Table 5-B).

Main exits shall be of sufficient width to accommodate one half of the total occupant load but shall not be less than the total required width of all aisles, exit passageways and stairways leading thereto and shall connect to a continuous and unobstructed

means of egress to a public way. Exits shall open in the direction of travel.

The other building occupancy is B-2. The retail commercial building must be separated from the H-3 occupancy by at least 30 feet. There are no setback or yard requirements listed for this site, however, I have provided a 25 foot service setback on the east side of the building.

Residential use is permitted as a conditional use to the density of the closest residential use district. In this case, it would be RM-2 (Mixed Residential, Moderate Density). I am not proposing residential areas in my building, but a proposal has passed for the Baker Hamilton Building that is being implemented along with more parking for the tenants.

The building is in a 50-X height and bulk district.

The surrounding area consists primarily of commercial\retail buildings of two to three stories. The area consists of a mix of converted warehouses and new construction. Local residents overlook the site which is located at the base of Potrero Hill.

A traffic impact analysis has been done. The proposed project took into account the current and future levels of traffic service. Level of service (LOS), is a measure of intersection performance consisting of a ratio of the designed capacity to the existing. Measurements are ranked ranging from A to F, (A being the lightest, few delays or congestion). Currently the LOS is "C" or better. The intersections analyzed were 7th\Townsend, 7th\King, King\Division\DeHaro. Also analyzed was Division\Townsend\8th\Kansas Streets which is known as the "traffic

circle". Assuming a 15 percent traffic growth, no improvements would be needed.

There is good transit accessibility in the vicinity of the site. Public transit lines available include 19-Polk, 42-Sansome, and 80-Gateway Express. Fifty two busses run on these lines during the p.m. peak hour. A Muni Metro expansion is planned for 1996 which would pass within one block of the site, providing platform stations between Owens and 7th Street near Hooper Street, and near the intersection of King and 6th Streets allowing easy access for the visitors to the proposed building.

PARKING

Parking is provided on the street. No on-site parking is required unless residential units are built. Adequate parking is provided with the Baker Hamilton parking implementation, the six level parking structure located across the street on Townsend Street, and the on-street parking along the perimeter of the site and adjacent blocks.

Title 24 of the California Government Code establishes uniform noise insulation standards for residential projects. Most of the noise at and around the site is typical of that heard around wholesale and retail districts. Truck and vehicular noise is the dominant factor. San Francisco Police Code Section 2907 b. Noise Ordinance requires no sound more than 80 dBA at a distance of 100 feet from the property line.

Air Quality would not be altered by the addition of a perfumery building since the items produced are made at no threat to the environment. No exhaust or toxic fumes are emitted from the blending of perfume since the components are all cosmetically safe and the combining of natural and or pure essences creates no harmful toxins. The Bay Area Quality Management District (BAAQMD) sets minimum size projects capable of producing air quality problems. A proposal of this size and type would not have an impact on air quality.

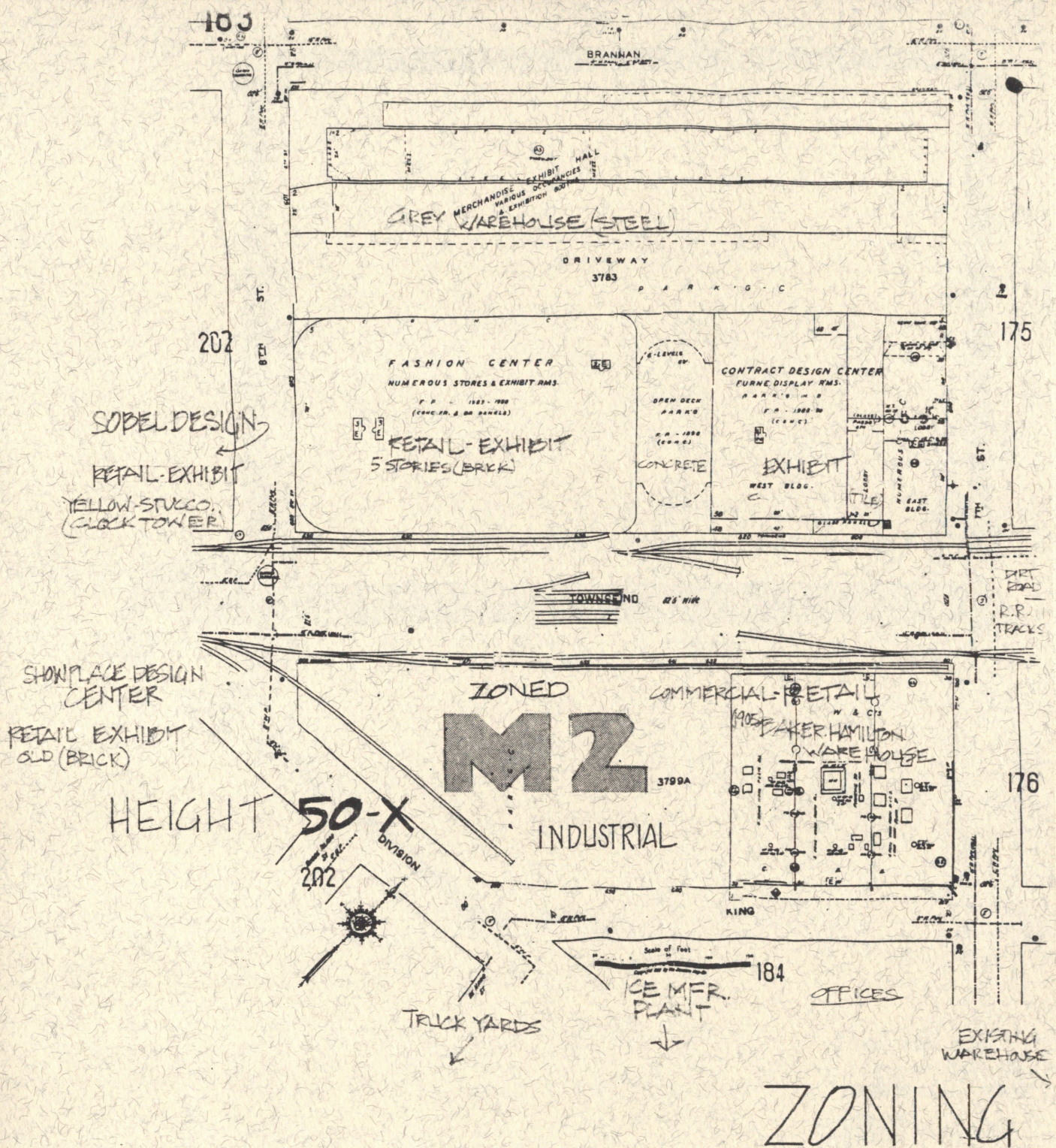
Use of public services and utilities on the site would be increased but not in excess of the amounts provided.

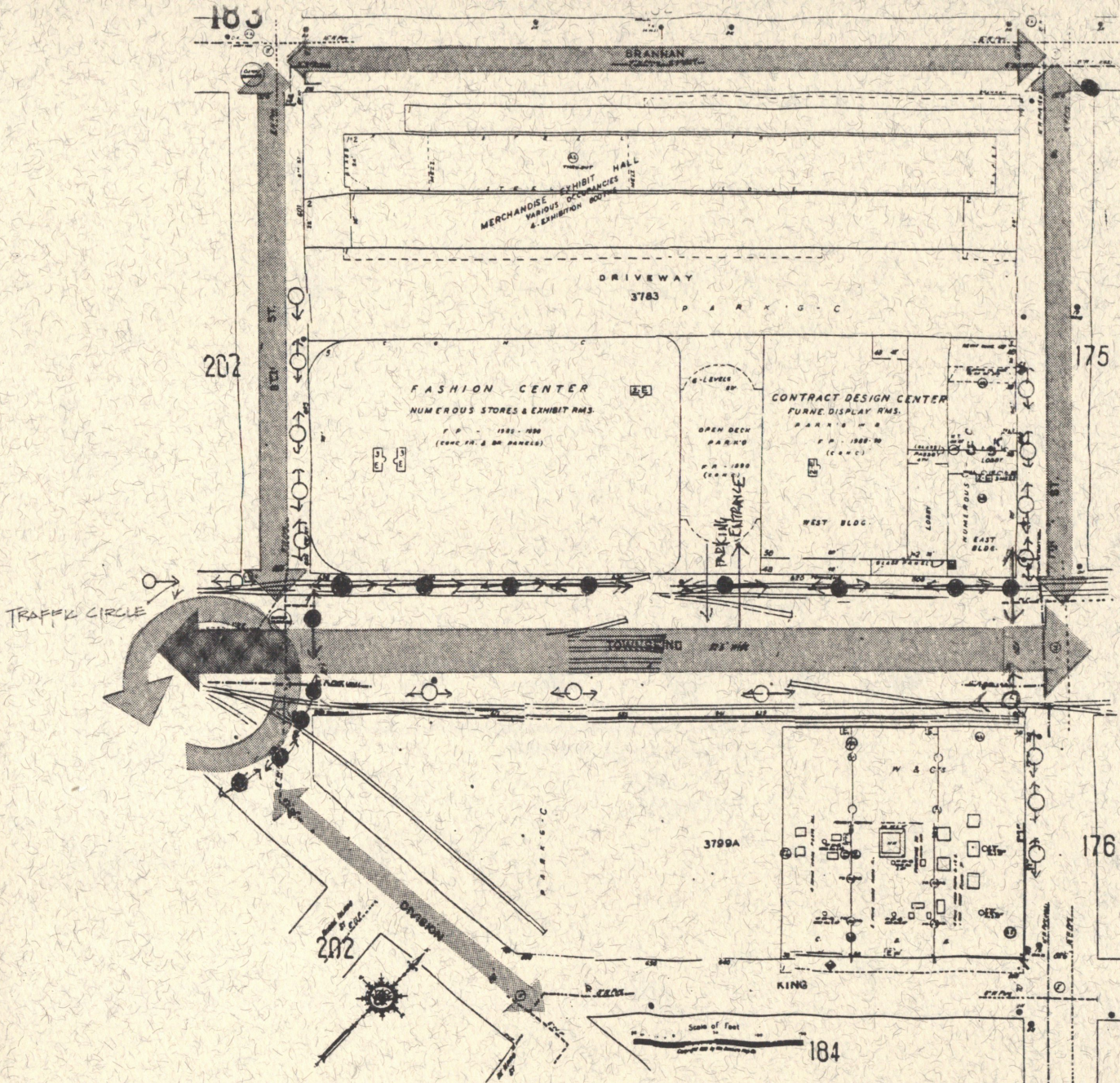
Subsurface conditions across the site are characterized by fill over sand. Load bearing bedrock is estimated to occur between 30 and 65 feet below sidewalk grade.

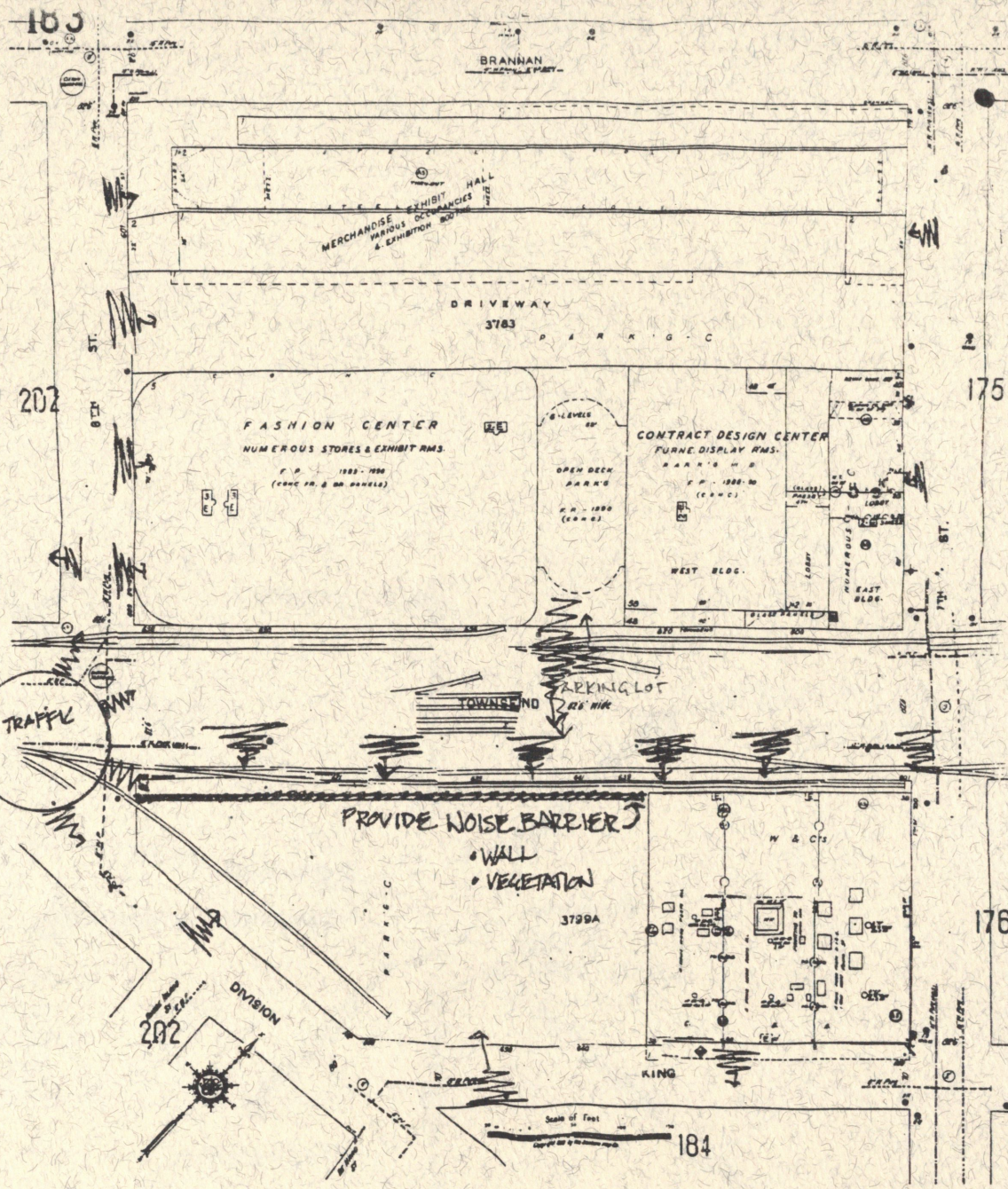
In 1986, Proposition M, the Accountable Planning Initiative (City Planning Code Section 101.1), established eight priorities:

- o Preservation and enhancement of neighborhood serving retail uses
- o Protection of neighborhood character
- o Preservation and enhancement of affordable housing
- o Discouragement of commuter automobiles
- o Protection of industrial and service land
- o Protection of open space
- o Maximization of earthquake preparedness
- o Landmark and historic building preservation

SITE ANALYSIS



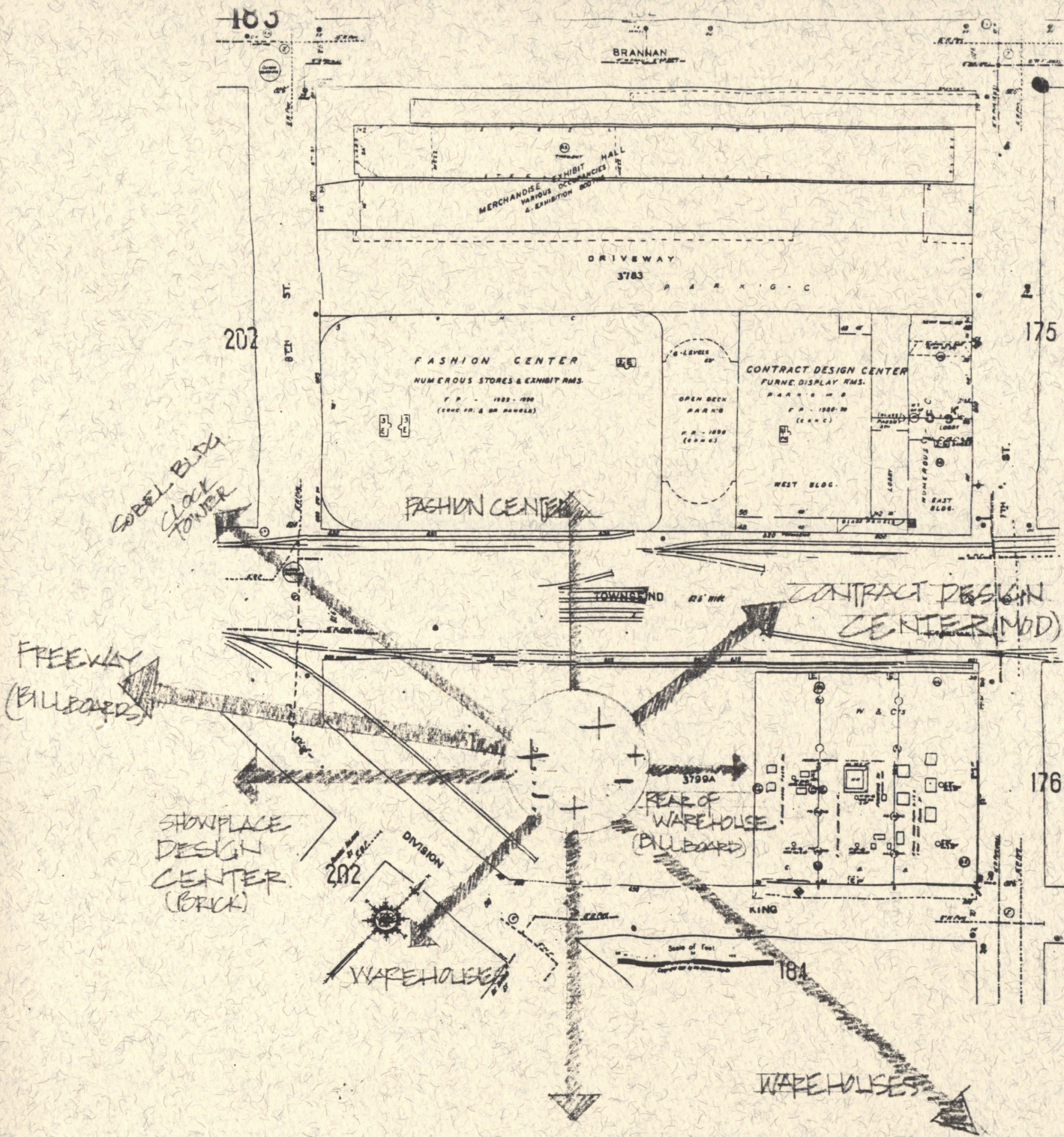




ELEVATED
FREEWAY
(HIGHWAY 101)

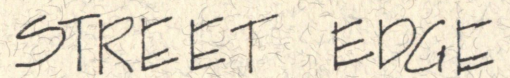
PROVIDE NOISE BARRIER
• WALL
• VEGETATION

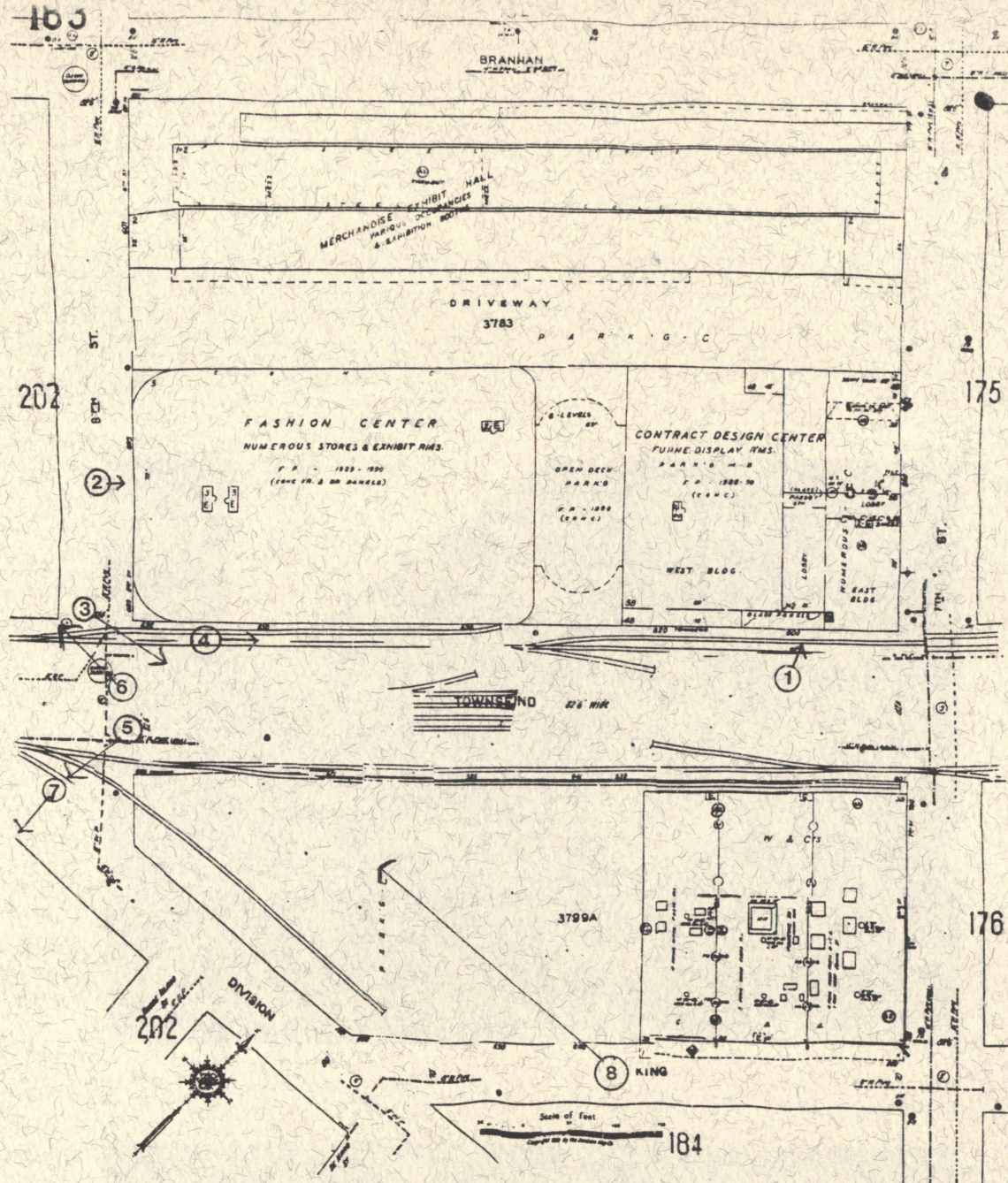
NOISE



POTRED HILL
RESIDENTIAL
(UP HILL)

VIEWS
FROM
SITE

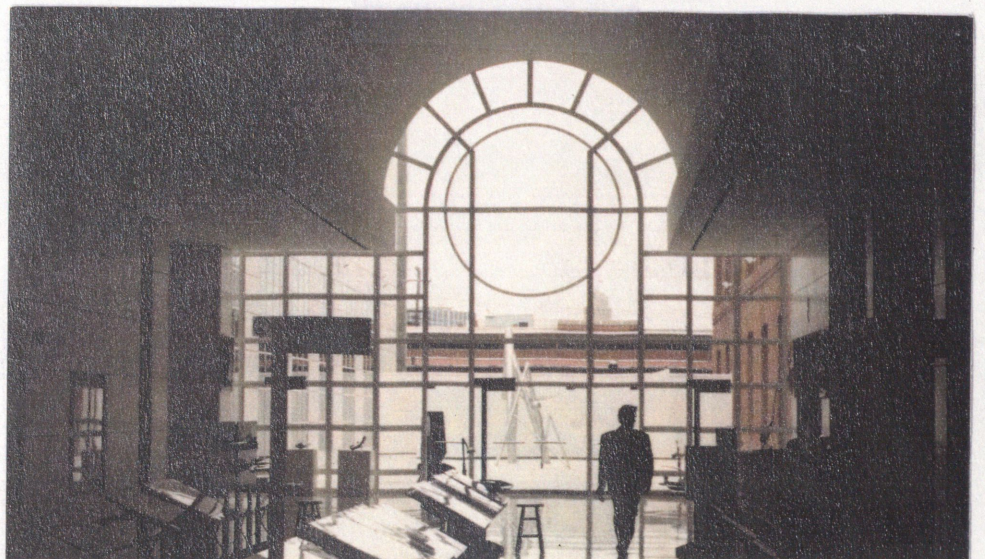




PHOTOGUIDE



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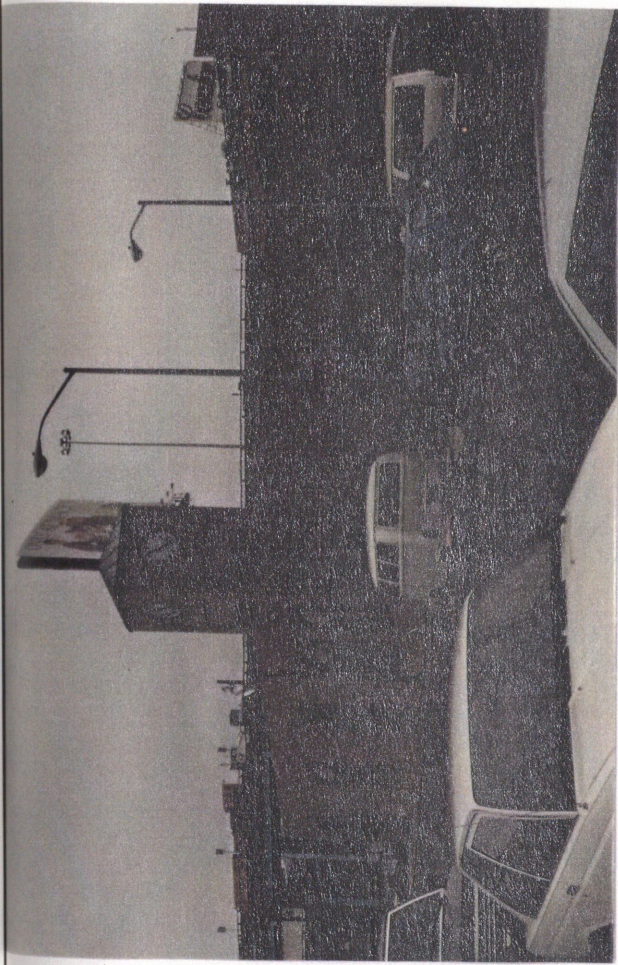
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CINDY OWINGS DESIGNS

C.O.D. BACKGROUND

Cindy Owings, a local textile and fashion designer, was born in Colorado and graduated from Colorado State University, Fort Collins, as a speech pathologist. Owings designs and manufactures a full line of women's wool coats. Her creations started when she envisioned something other than a dull ordinary coat, something fun to wear that made a statement, yet functional. She sells the successful Montana-made outerwear both nationally and internationally. She and about 15 employees do all of the design, pattern, production, sewing and marketing from Bozeman, Montana.

PROCESS

BACKGROUND OF PERFUME

The word "perfume" comes from the Latin *per fumum*, "through smoke," It began in burnt offerings, like incense.

The creators of perfume are known as "noses" in the trade, having an exceptional olfactory sense of smell and being able to distinguish between about 2,000 different scents. It is a true art and very secretive, handed down from generation to generation.

The basic ingredient start with the natural sources, or the essential oils; gums or resins purified with a solvent and absolutes. Each essential oil will vary a great deal, even among the same region. The ultimate aromatic essence is obtained after being either pressurized, extracted or distilled by steam.

Chemical aromatics are also produced in laboratories allowing an infinite number of possible scents. Synthetic essence is easier to control in purity and is cheaper to produce. Additionally, one does not have to rely on nature to produce a good crop.

The nose usually sits at a U shaped desk smelling narrow strips of paper dipped into the vials of different scents until he comes up with a concentrate.

Every perfume is made up of three notes; the "top note", which is the first smell you notice when you apply a perfume. It is usually a citrus or fresh scent. Then the "middle note" will appear. This is the body of the fragrance such as rose iris or jasmine. Lastly is the base note which is the strongest scent. This is usually a cedar or sandalwood that can be smelled about 20-

30 minutes after it has "dried down".

There are also a variety of other notes used to blend the perfume such as Oriental notes, spicy, woody, fruity and green. Finally the nose creates his signaturred masterpiece and dilutes it with alcohol. A high quality perfume will contain approximately 18 to 25 percent of the concentrate dissolved with alcohol. Other concentrations are eau de parfum with 10 to 15 percent concentrate; eau de toilette 5 to 8 percent; and eau de cologne having 2 to 4 percent.

PROCESS OF PERFUME

The process of how perfume is made begins with the nose coming up with a formula, mixing, balancing, and creating a fragrance concentrate blended in proportion.

The concentrate is chilled to 40 degrees. This keeps the liquid below the flash point. Chilling also helps take the heavy suspended particles out of the concentrate and they are filtered out leaving only the pure essence.

The essence, now mixed with water and alcohol, goes into large stainless steel tanks that are housed in a refrigerated room. Much like the process of wine making, the essence matures allowing the fragrance to round out. This step in the fragrance process lasts approximately 60 days.

The essence then goes through quality control procedures. It is transported by stainless steel pipes to another room located directly above the refrigerated room. Here the essence is allowed to reach room temperature. This room has special considerations because it is not refrigerated and there is a slight chance that it could ignite. (There is no record of this occurring.) There is special lighting to prevent sparking, special light switches and fire sprinklers. During this time, the essence is being tested for purity; either by infrared testing, or gas chromatograph tests. This ensures the quality of the fragrance.

The fragrance is now sent to the productions room via gravity fed stainless steel pipes. Once the fragrance is sent to the productions room for bottling, it is either vacuum filled or piston

filled into bottles. This assembly line fills the bottle with perfume, caps it, adds labels and other adornments. At this point, the perfume is packaged.

The final goods are kept in storage on shelves ready for shipping.

PROGRAM

PROGRAM

RETAIL EXHIBIT SPACE

Space for the viewing of COD coats. Space should be the entry and the commercial retail end. Displays and visual merchandising to show the tourist and buyer alike the goods. Public. Adjacent to restrooms.

OLFACTORY LAB SPACE

Allow for purity of the fragrance to be tested. Must be fairly clean environment. Private.

INFRARED LAB where each component of the essence is checked to see if the molecular bond is pure.

GAS CHROMATOGRAPH LAB where the compound is heated to check more volatile alcohol content.

ADMINISTRATION

EXECUTIVE OFFICE for client Candy Owings. Must meet needs to meet personally with buyers.

CONFERENCE ROOM to accommodate buyers and suppliers. Provide for small meetings 6-10 persons.

OBSERVATION To allow the visitor to view the unique process of production. Will be personally guided by a tour guide (6-10 persons). Allow exit and keep from private areas.

COMMERCIAL MARKET SHOWSPACE To allow a more private showing of the fashion in a more elite setting. Space must accommodate the needs of larger gatherings, buyers parties and fashion shows. This area restricted to buyers only. Provide atrium space. 40-60 persons.

PERFUME RETAIL SPACE Allow for the display and purchase of the finished good. Fragrance sampling. A more intimate space for the sampling of the product.

PRODUCTION AREA

REFRIGERATED ROOM To allow for the cooling of the fragrance and fermenting of the essence.

MATURATION ROOM Directly above the refrigerated room. Must accommodate labs for periodic testing of the purity. Special fire code provisions such as mercury vapor switches, sprinklers, special roof.

ASSEMBLY LINE 20 feet minimum. Allow for the bottling, filling, labeling, and packaging of the bottles.

SHIPPING AREA adjacent to the end of the assembly line. Access to service exits and easily shelved until shipping.

RESTROOMS for the employees along with employee lockers

EMPLOYEE LOUNGE adjacent to the lockers and employee entry.

SECURITY

To accommodate the visitor and check passes. Must be centrally located to control areas such as elevators, stairs, and more private areas of the building. Provide information for touring facility. Oversee building.

OUTDOOR SPACE

To allow for sense of entry for pedestrian. To provide green space in the urban context. To provide transition between street edge and building exterior. To allow variety in level changes because of existing flat site. Add gardens to inspire the perfumer at work.

RESTROOMS

To provide the public with services. To access the handicapped.

One public, one on level 2, and one for employees.

LOBBY

To provide a meeting place for the small guided tours (parties of 8-10). An inviting space to relax. Centrally located.

SQUARE FOOTAGES

RETAIL EXHIBIT SPACE 2000 SQ. FT.

OLFACTORY LABS (2) 2 @ 400 SQ.FT. = 800 SQ.FT.

ADMINISTRATION

CONFERENCE ROOM 225 SQ. FT.

EXEC. OFFICE 400 SQ.FT.

OBSERVATION 900 SQ.FT.

COMMERCIAL MARKET SPACE 4000 SQ. FT.

PERFUME RETAIL SPACE 900 SQ. FT.

PRODUCTION AREA

MATURATION 3600 SQ. FT.

REFRIGERATION 3600 SQ.FT.

ASSEMBLY 4000 SQ.FT.

FINISHED GOODS 3200 SQ. FT.

TOTAL PRODUCTION AREA 14400 SQ. FT.

OUTDOOR SPACE 5000 SQ. FT.

TOTAL 28,625 SQ. FT.

GOALS

I SHALL SEEK TO PROVIDE A FUNCTIONAL AND AESTHETICALLY PLEASING BUILDING DESIGN.

I WILL TRY TO KEEP THE CONCEPT OF C.O.D. ALIVE WITHIN THE DESIGN.

I WILL PROVIDE INSIGHT INTO THE DEVELOPMENT OF ARCHITECTURE IN TRADITIONAL AND NON-TRADITIONAL FORMS.

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T. McHarrow
Theater 1993



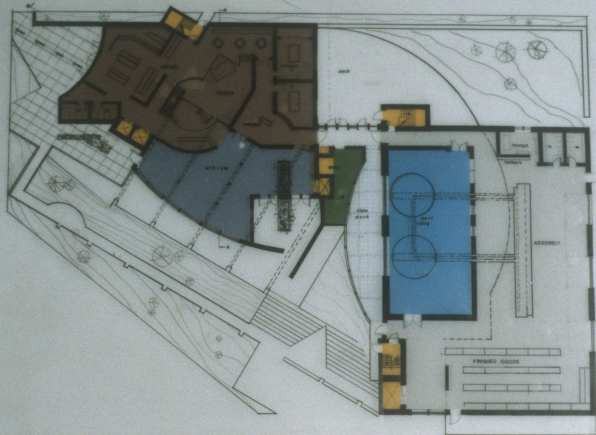
TOWNSHIP ELEVATION



KING STREET ELEVATION



ENTRY ELEVATION



LEVEL 1

1/20 scale



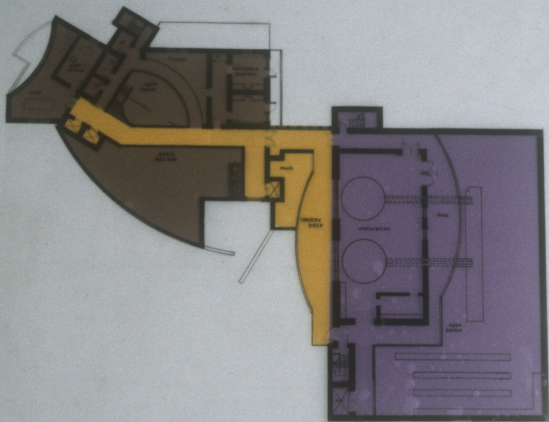
EXTERIOR
OBSERVATION
DECK



SECTION A A

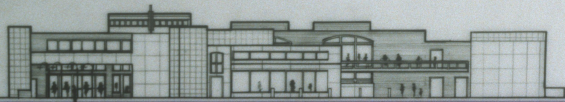


SECTION B B

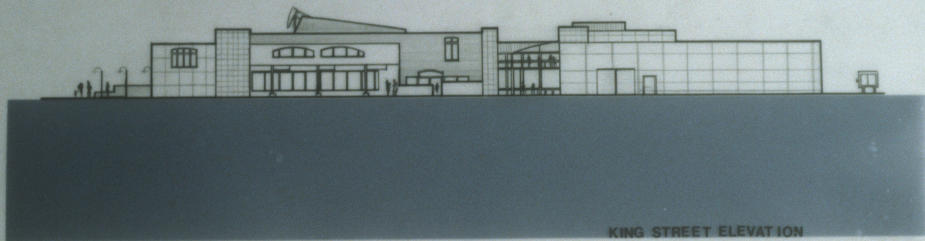


LEVEL 2

1-20



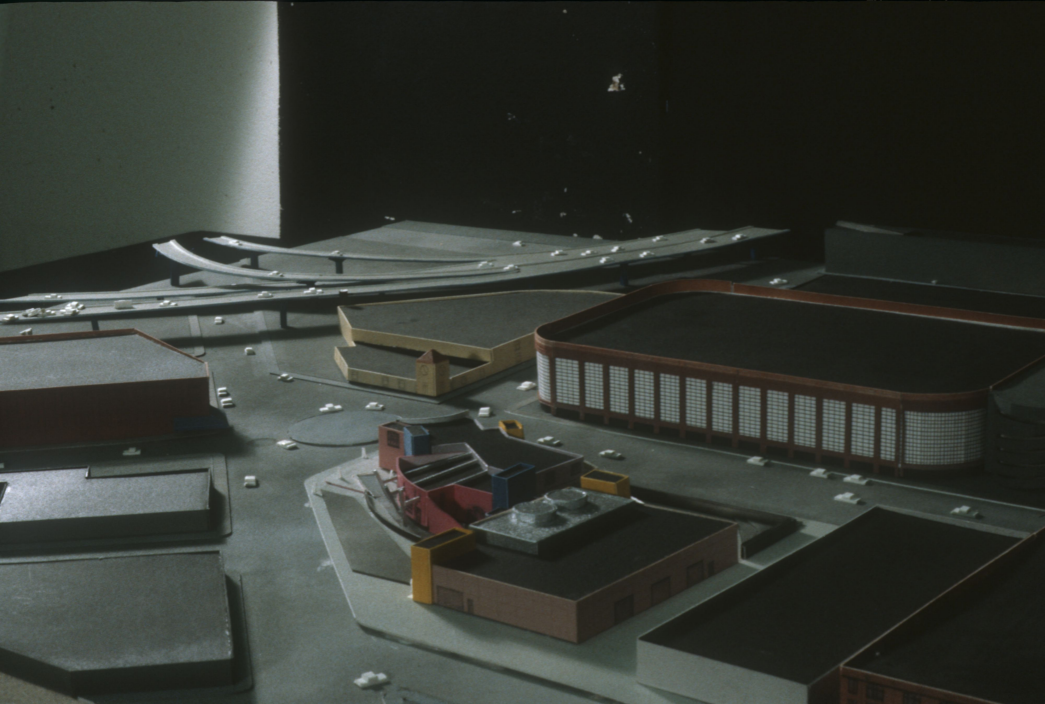
ENTRY ELEVATION

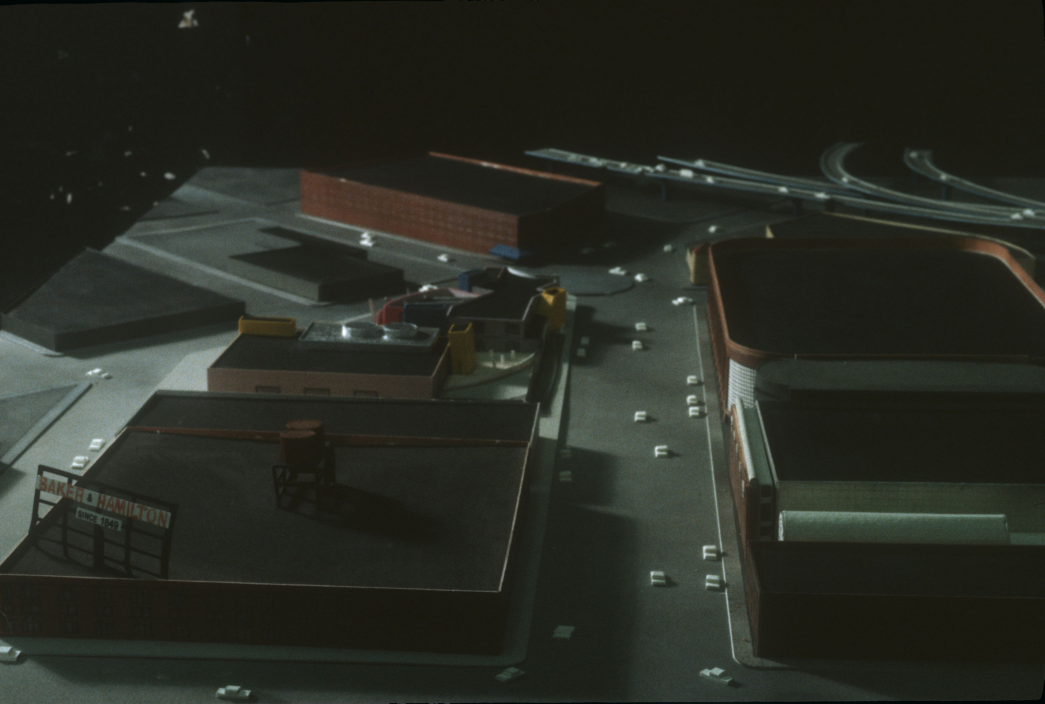




TOWNSEND ELEVATION







NO.

DATE

TITLE

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