ROYAL PALMS: A RETAIL AND URBAN HOUSING MIXED-USE PROJECT

by
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APPROVED [redacted]

Professor Lyman Johnson

An Abstract of the Thesis of

Laura Michelle Reeves for the degree of Bachelor of Interior Architecture
in the Department of Interior Architecture to be taken June 1997

Title: ROYAL PALMS: A RETAIL AND URBAN HOUSING MIXED-USE PROJECT

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This project proposes a rehabilitation of the former Royal Palms Hotel in Portland, Oregon. The intent is to offer housing and support services in the River District, the area slated to be next to sustain significant residential growth. This project offers five apartments, geared toward people who expect the amenities offered by a single-family home, in an urban setting. The first floor of the building accommodates a cafe, a newspaper and magazine shop, and a produce market.

The development of this project required case studies to form a basis of knowledge about urban mixed-use housing schemes, programming exercises by which functional needs were resolved, and research about the building and its context. The design of this project began with sketches of basic spatial relationships and continued to the resolution of interior detailing. While this project will not be constructed, it addresses real issues of accommodating residential growth in a neglected but promising urban setting.

ACKNOWLEDGMENTS

The author wishes to extend sincere thanks to Professors Lyman Johnson and Linda Zimmer of the Department of Interior Architecture, and to Professor Joseph Fracchia of the Honors College for their enthusiasm, support, and guidance. Their instruction during this project, and throughout the author's college career has made this project truly feel like a summary of this phase of her education.

The author would like to dedicate this document to her family. A brief dedication can hardly begin to thank them for a lifetime of love and understanding. This project would not have been possible without their support and she hopes it makes them proud.

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CHAPTER 1:

Introduction

Introduction

The city of Portland has only recently caught up to other large cities on the west coast in the development of mixed-use urban buildings that involve housing. Cities such as Seattle and San Francisco are setting a precedent for Portland's urban housing boom. However, each city has unique conditions which cause this development. San Francisco led the trend, largely due to geographic limitations. Seattle followed but favorable economic conditions coupled with poor transportation planning, were the catalysts. Portland has the distinction of having planned this kind of growth through public policy. The metropolitan area's urban growth boundary was set seventeen years ago, but it has really only been in the last ten years that the idea of mixed-use urban housing has gained widespread acceptance.

This acceptance has to come not only from those setting policy, but also from financiers, and most importantly, the intended users. Indeed, people are beginning to reconsider the costs to lifestyles and natural resources by living in the suburbs. Since the Second World War, a home in the suburbs has been seen as ideal by many people, with the privacy, space, and amenities it offers. However, those same benefits, with added benefits such as reduced commuting times, closer services and more opportunity for social interaction can be found in a dense urban setting. One area in the central city, the setting for this design project, has been slated to be next to accommodate significant residential growth. This is the River District, an area defined by Interstate 405 on the West, Burnside Street on the South, and the Willamette River, which forms the

Southeast to Northwest edge. In February of 1996, the Portland City Council adopted a set of design guidelines for the River District, to amend the Central City Plan. These guidelines stress the development of the area to reinforce the existing identity of the sub-districts within the larger area, and to infill the area with high-density housing and mixed-use buildings to support an expected community of 15,000 people. Public infrastructure improvements, along with private investments will rejuvenate the area. The area is already well supported in terms of transportation, and development will add jobs, services, and opportunities for recreation. This project will strive to meet the River District Design Guidelines.

The building chosen to accommodate this project is the former Royal Palm Hotel, on the corner of Third and Flanders. The building was constructed in 1913-1914, and is on the National Register of Historic Places. Over the years it has mostly retained its original usage as a hotel, with the ground floor being occupied by retailers. A controversial recent renovation of the building turned it into a semi-permanent to permanent residence for homeless people with mental illness. Much of the controversy stems from the fact that just across the street will be an eight- million- dollar traditional Chinese garden, intended to be a showpiece for the community. The building itself has three stories, not including a full basement and a mezzanine area for mechanical equipment. The street level supports a retail program, with sixteen-foot ceilings, nearly floor to ceiling fenestration, and three large interior spaces. One main entry opens into a

space that takes up nearly two-thirds of the first floor area. This space will be the cafe. There are two minor doorways that open into the smaller spaces intended for the newspaper and magazine shop and produce market. The second and third floors are currently divided into several small rooms, but the structural system of columns will allow for the removal of such partitions. These floors will house the apartments.

These apartments are intended to be a middle step between a home in the suburbs and a home in the city. As such, they offer some of the amenities that one would expect in a house, such as a utility room and a full size kitchen. On the third floor, two of the apartments have a second bedroom, while three have office spaces overlooking the living room. As security for residents was a key issue, the location of the stairway was moved so as to be less accessible from the building's main lobby space, which is shared by the cafe and retail spaces. Admittedly an expensive change, it allowed for increased privacy and security for residents and the addition of an elevator, which was not previously present.

While the idea of mixed-use urban housing is not new, it has only recently become embraced on a large scale in Portland. After decades of contributing to urban sprawl, many people are again seeing city living as a convenient and stimulating lifestyle. What is new and promising is that Portlanders are willing to invest hundreds of millions of dollars in a district situated along Oregon's most vital waterway and along many convenient transportation routes, but is somewhat dilapidated and certainly not yet used to its fullest potential. This

project takes advantage of what is not already done and over, but what is yet to be.

My personal interest stems from growing up in the Willamette Valley and noticing over the years that the edges of the cities are being pushed ever outward, into what used to be fields and orchards. Meanwhile, downtown areas cease to be the vital centers they once were; not just as business centers, but centers where people live and take advantage of recreational opportunities. Living downtown has become attractive mainly to people who cannot afford to live in outlying suburbs. Why not save the resources lost to this expansion and instead improve existing infrastructure and buildings? This is not indicative of an opposition to urban growth. It is rather a desire to find ways to rethink and better use what we have.

Methodology

The development of this project began fall term of 1996, when students in the Interior Architecture thesis preparation course were asked to first propose five design projects, then narrow it down to three, and finally, select one. These proposals were two-part. First, they involved generating a program, that is a set of functional requirements and means of meeting them. Secondly, an existing building had to be found in an appropriate location and with features that would accommodate the chosen program. The program chosen for this project was a mixed-use scheme involving retail businesses and medium-density housing. The building chosen was the Royal Palms Hotel in Portland, Oregon. The next step was to gather information about the programmatic requirements and the building.

The programmatic requirements were evaluated by studying general spatial relationships, square footage requirements, and mechanical needs. Information about the building was gathered from city and state agencies and through a tour and interview with the construction foreman working on a current remodel of the building. The full-size set of plans given to me by the foreman became an invaluable resource.

Winter and Spring terms were devoted to the graphic solution of the design problem. First, the program is considered with respect to the physical structure. This stage, referred to as schematic design, is when written goals become graphic ideas. The technique whereby designers begin to test their ideas is

diagraming; quick sketches or studies of an idea in a theoretical or abbreviated manner. During the subsequent design development phase, more detailed and measured drawings are made to resolve and clarify design intent. These take the form of plans, sections, elevations, perspectives, and whatever other draw the designer feels is necessary to convey a complete idea. Finally, these ideas are brought to resolution by matching them to materials and dimensions.

As this project is purely a hypothetical proposal, the test of its relative success comes not from actual users, but from teachers, professional designers, and peers. As with any creative project, evaluation will always be on the basis of subjective preferences. However, there are certain functional requirements that must be met, such as making public spaces universally accessible.

The School of Architecture has a systematic way of giving students feedback throughout the term that is the review. Studio time allows for informal evaluation by one's instructor and one's peers. In addition, there are two more formal reviews during each term, midterm and final review. As this is a two-term design project, most of spring term will be spent working toward a coherent, formal presentation of the graphic solution. The final product will be presented and discussed at final review of spring term.

CHAPTER 2:

Context

Context Introduction

1. Photograph of Royal Palms Hotel
looking east, showing north and west facades

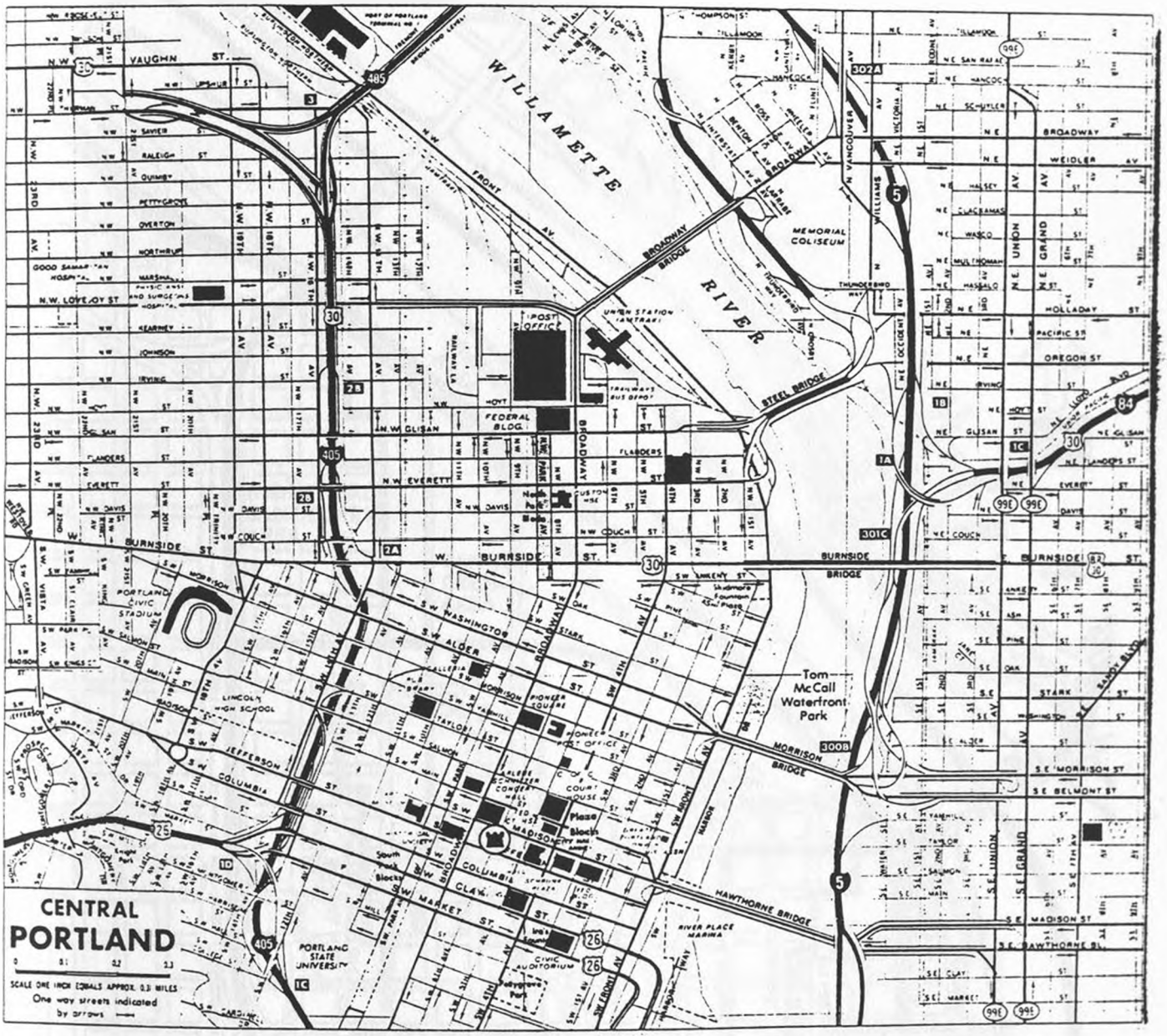
The Royal Palms Hotel is located in downtown Portland, on the corner of Third and Flanders streets. It lies on the outskirts of the Chinatown district, and as such, has historical ties with that community. It is a part of the larger area known as the River District, the site of an ambitious city plan to enrich the area's character through infrastructure improvements. The eventual goal is to attract a resident population of 15,000, with jobs, services, and recreation opportunities to support them. The area is currently lacking in many conveniences for a resident population, but is well served by several forms of transportation. The building does not have a view to the river, just three blocks away, but it does look over a fascinating city scape of other brick buildings and the Steel Bridge.

Physical Context

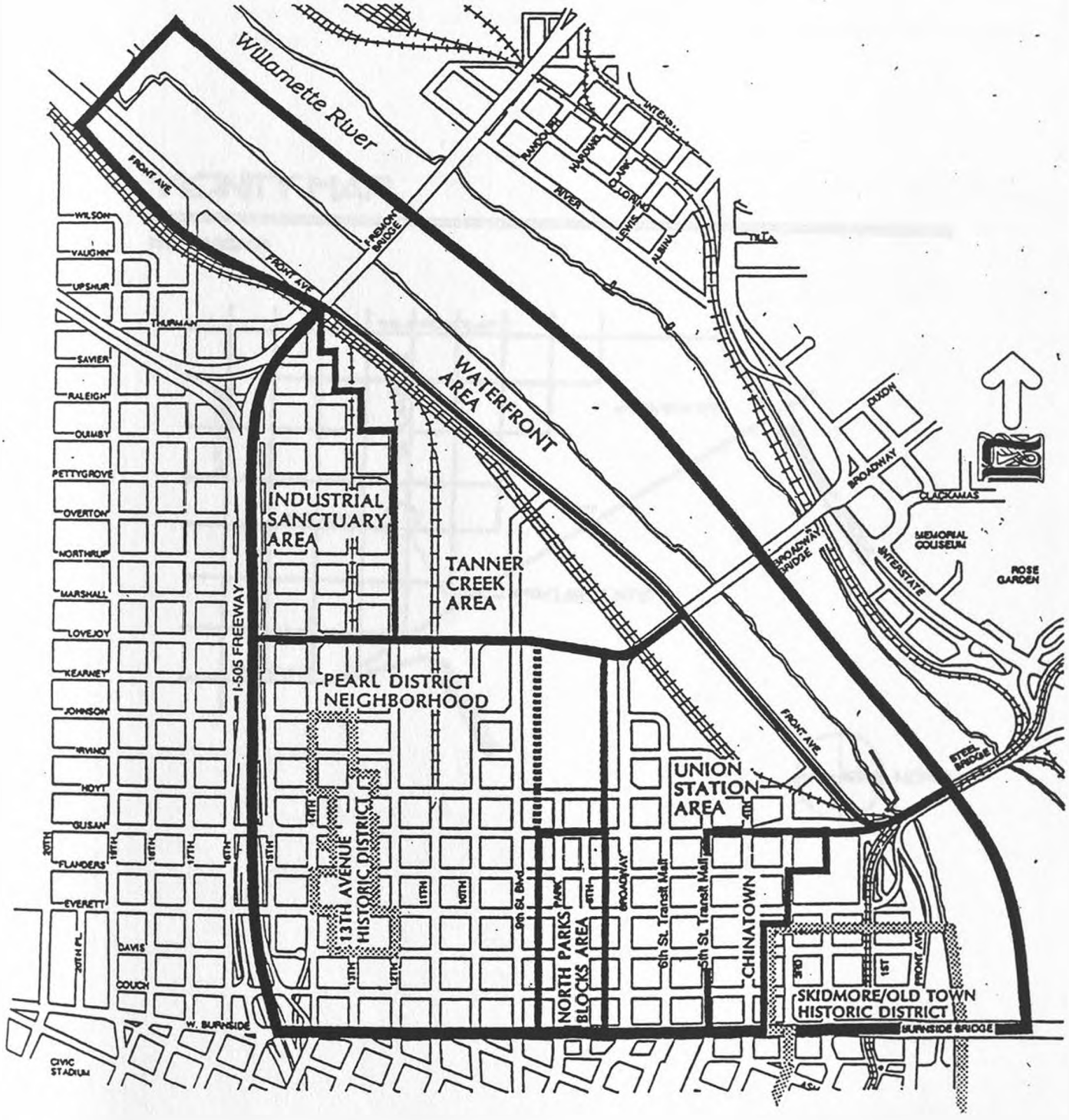
Portland is a city that enjoys a lively downtown business district, with certain neighborhoods standing out as centers of activity, such as the NW 23rd street area, which is known for its unique shops. The Pearl district has recently become an area of interest, commanding a purchase price of several hundred thousand dollars for a converted industrial loft. Slated to be next is the River District, defined by I405 on the West, Burnside St.,(a major East-West route) on the South, and the Willamette River, which forms the Southeast to Northwest boundary. The Portland Bureau of Planning has further divided the district into special design areas that already have somewhat of a unique identity unto themselves. These are the industrial area, the Tanner Creek area, the Pearl district, the North Park Blocks, the Union Station area, Chinatown, and the Skidmore/ Old Town Historic area.

Currently, the area does not have many of the services that a resident population would expect, such as grocery stores or schools. It is the goal of the proposed development plan that such services be available, and it is in part what this project proposes. An already present attraction is the availability of several forms of transportation within the district itself:

- There are currently several street level parking lots
- The site is within walking distance to the central business district
- Fifth street is on the city bus transit mall
- The site is four blocks from the end of the free downtown light rail route



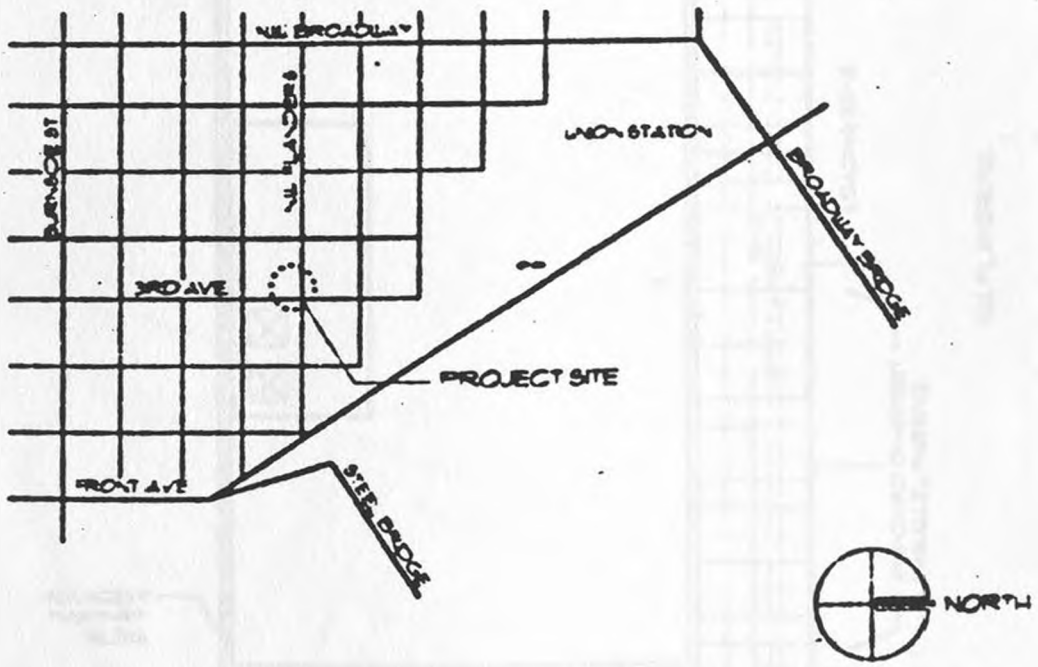
2. Map: Central Portland



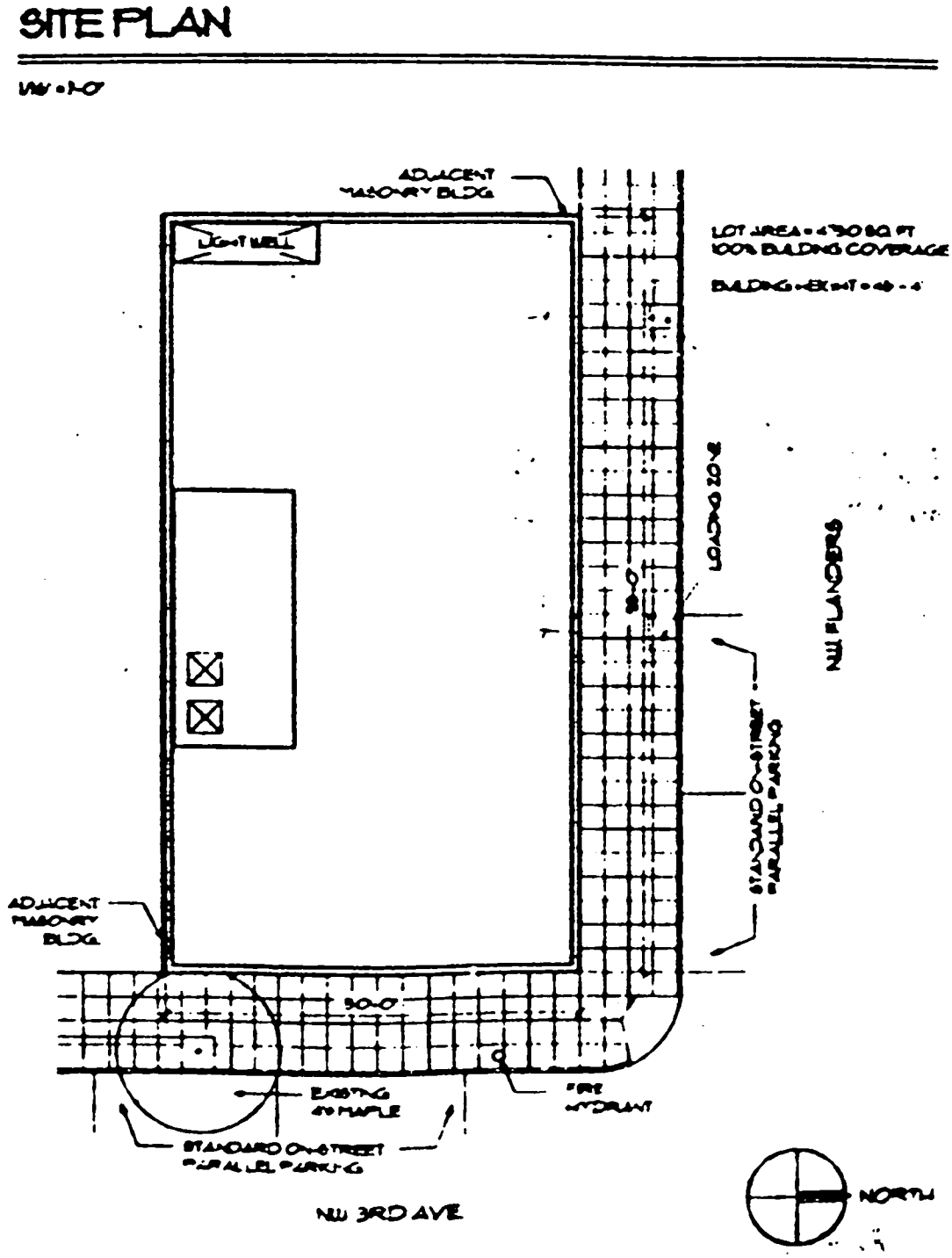
3. Map: the River District

VICINITY MAP

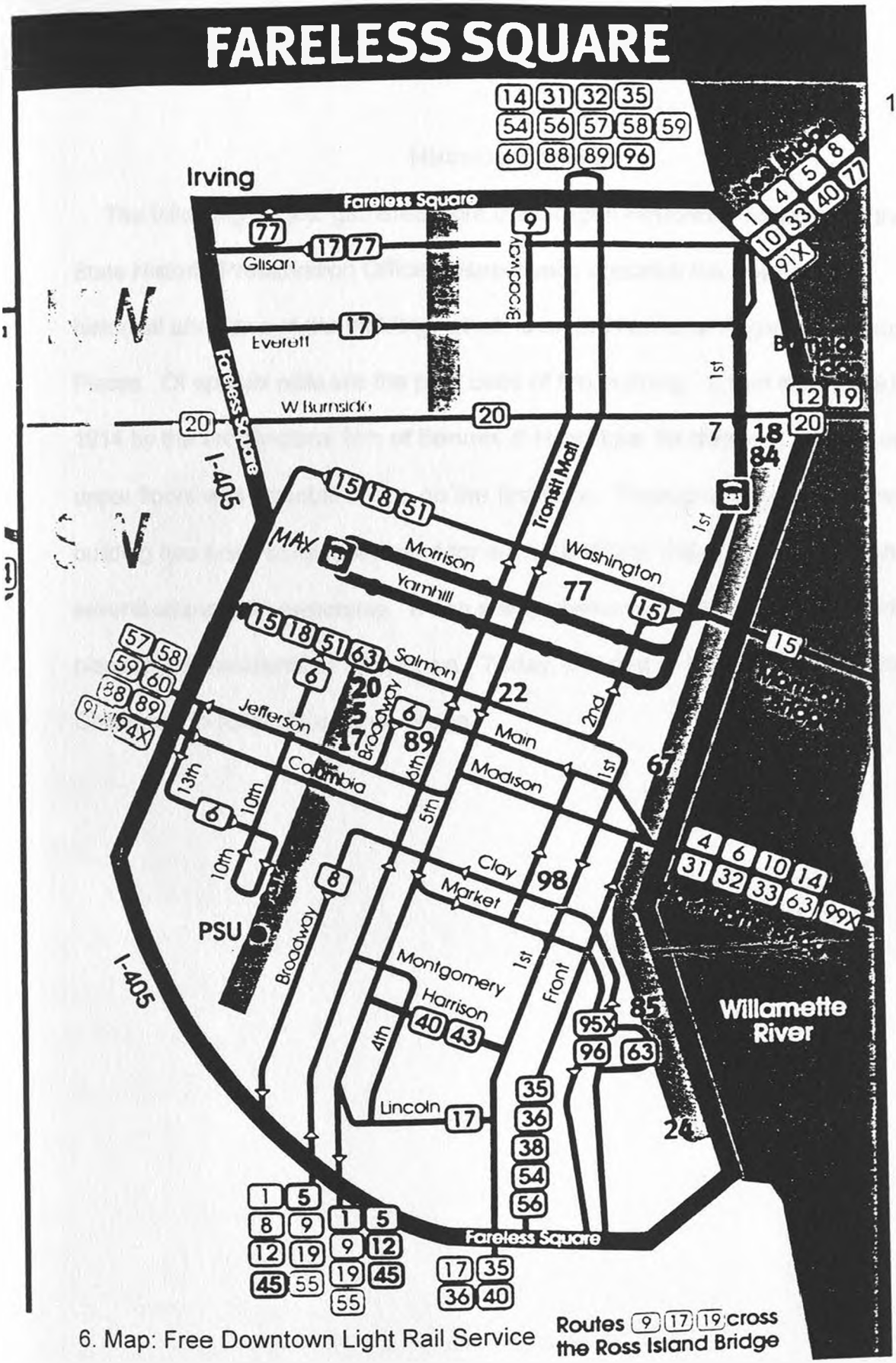
NOT TO SCALE



4. Map: Vicinity Map



5. Map: Site Plan



6. Map: Free Downtown Light Rail Service

Routes 9 17 19 cross the Ross Island Bridge

Historical Context

The following pages, gathered from the Oregon Historical Society and the State Historic Preservation Office, respectively, describe the physical and historical attributes of the building, which is on the National Register of Historic Places. Of special note are the past uses of the building. It was built in 1913-1914 by the architectural firm of Bennes & Hendricks for transient lodging on the upper floors and for retail shops on the first floor. Throughout the years, the building has been continually used for such functions, though going through several changes in ownership. It has always been noted as a social gathering place for the residents of Chinatown. Today, it is one of the few buildings in Chinatown to retain its original usage.

7. Photograph: The Royal Palms Hotel, January 1959

Historic Resource Inventory
CITY OF PORTLAND, OREGON

3-003-00331

331-337 N.W. Third Avenue

Couch, Block 26, Lot 8
QUARTER SECTION MAP #: 2929.5
Burnside

OTHER NAMES: Royal Palms Hotel, Union Gospel Mission

ORIGINAL FUNCTION: Retail

DATE BUILT: 1914

STYLE: Streetcar Era Commercial

ARCHITECTURAL PLANS BY: Bennesand Hendricks

ORIGINAL OWNER: Nelson, Otto W.

TAX ASSESSOR'S ACCOUNT #: R-18020-1830
ZONING: C1ZS

Rank III

HISTORIC DISTRICT: Chinatown (potential)

SPECIAL FEATURES AND MATERIALS:
Brick quoins. Brick block modillions with brick header string course beneath. Double-hung windows with brick stretcher rowlock above and brick sill below. Brick articulated piers at corners. Shop fronts with multiple sash above transom bar and plate glass below. Wrought-iron fire escape.

AREAS OF SIGNIFICANCE: Architecture

BIBLIOGRAPHY:

Multnomah County Tax Assessor records, microform, automated data files, and card files (Portland, 1980).

City of Portland Buildings Bureau microform and card files.

McArthur, Lew, unrecorded interview by Richard Meyer.

Bennes and Hendricks, working drawings, City of Portland Building Bureau Microfiche Collection.

OLD ADDRESS: 93-95 Third Street North

ORIGINAL BUILDING PERMIT #: 42594

Present owner as of May 1981: Union Gospel Mission
MAILING ADDRESS: 15 N.W. Third, Portland 97209

No Preservation Funding

Negative: 403-11

Score - Design/Construction: 10
Score - Historical:
Score - Rarity:
Score - Environment: 4
Score - Integrity: 10
Score - Intrinsic:
Score - Contextual: 14
Score - Total: 49

windows and a wooden bulkhead. The main entrance is located on the northwest corner of the building. An arched entrance door is also located on the west elevation. A wrought iron fire escape, added in 1949, is on the north side of the west facade and extends vertically from the second to the third floors. The building has a brick foundation and is in good condition.

Significance: Original permits, plans, and title records have not been found for this building. It was built about 1905 as a hotel with ground floor businesses. The 1908 Sanborn map shows the building as containing a saloon and a store on the first floor. Mr. S. Yamaguchi managed the hotel, which was commonly referred to as the Yamaguchi Hotel until 1931 when it was sold and became the Hotel New Meyer. Yamaguchi's wife worked as a mid-wife in the Asian community. The Hotel New Meyer (1932-1944) occupied the upper floors of the building while the ground floor housed the Old Ship Zion Seamen's Mission (1934-1940), subsequently followed by the Lighthouse Mission in 1943.

In 1933, Alice Palmer bought and sold the building to William Hause. Hause controlled the property until 1939 when it was purchased by Harold Wolf who sold it five years later in 1944 to the Keystone Hotel and Investment Company.

The building is considered to be contributing in the district because of its association with the Asian Ethnic community during the primary and secondary periods of significance. Although no alteration permits have been found for exterior changes, including stuccoing, the building retains its basic integrity from the primary period of significance.

#4 **Name:** Royal Palm Hotel
Address: 331-337 NW 3rd Avenue
Historic Name: Unknown
Original Owner: Otto W. Nelson
Architect: Bennes & Hendricks
Year Built: 1913
Style: 20th Century Commercial
Alterations: Minor
Classification: Secondary Contributing

Owner: Union Gospel Mission
15 NW 3rd Avenue
Portland, OR 97209
Use: Commercial/Residential
Tax Assessor #: R-18020-1830
Plat: Couch's Addition
Block: 26
Lot: 8

Description: The building faces NW Third Avenue to the east and NW Flanders Street to the north. The three story building is rectangular in plan and has a flat roof with a projecting cornice embellished with brick block modillions. A rowlock stringcourse is located below. One over one double hung wood sash windows punctuate the buff brick exterior on the second and third stories. The windows have brick sills and brick soldier coursing. The building is laid in a common bond pattern. Brick quoins accentuate the corners of the top two stories.

A projecting wooden beltcourse and soldier course articulate the first and second stories. The first story of the east facade is divided into three bays which are separated by wooden pilasters with granite bases. The storefront windows in the northern and southern bays flank recessed entrances which are embellished with a blue tile bulkhead. The central bay is comprised of four large fixed pane storefront windows and a tile bulkhead. Large transom multi-paned windows surmount the storefront windows. A wrought iron fire escape, located on the south end, extends from the second to the third story.

The north facade is divided into five large bays and two smaller bays consisting of entrance doors. The storefront windows in the eastern two bays are divided into four, fixed pane, wood sash windows with tiled bulkheads and large multi-paned transoms. A double entrance door, capped with a multi-paned transom, is located between the two eastern storefronts. The main entrance door to the upstairs apartments is located approximately in the center of the north facade. Above the double wooden entry doors is a decorative pediment which is supported by large brackets. The tympanum is embellished with a raised plaster design. A transom with a geometric design surmounts the entrance door. The two western bays consist of entrance doors and fixed pane windows with a band of transom windows above. The building has a concrete foundation and has a below grade basement. Extensive repairs were made in 1962 after a fire damaged the structure. The building is in good condition.

Significance: The three story building is one of the few remaining in Chinatown which retains its original use. It was designed by the architectural firm of Bennes & Hendricks in 1913 for transient lodging on the upper floors and small commercial shops on the ground floor. The building was constructed in 1913 by the Temblay Horn Company for Otto W. Nelson at a cost of $40,000.

Otto Nelson was born in Denmark and came to Portland in 1888. He was employed as a creamery worker for 14 years before he retired in 1931. Nelson was an avid inventor and is credited with inventing a portable clothes washing attachment in 1916. He was a member of the Danish Brotherhood Lodge #167. Nelson sold the property in 1916 to D.P. Donovan. Between 1916-1947, ownership passed to Green Security (1916-1924), Columbia Trust and Savings Bank (1924-1926), Gilbert Hart, New England Loan Company, Hartford Land Company (1929-1937), Portland Land Company, and the City of Portland who sold it in 1947 to Kelly Foster (1947-1958). In 1958, it was purchased by the Union Gospel Mission.

The building was most likely a speculative real estate venture, constructed in response to the growing investment opportunities in the area, as evidenced by the local real estate advertisements of the time. What the advertisements did not say was that the growth in the area was due to Chinese relocating from other parts of the city and state. Until the 1940's, the ground floor housed primarily Chinese businesses such as Kwong Shew Lung, an oriental goods merchant (1920-1932), Wing Wong and Ho Song, small business proprietors (1932-1938), Toy Duck Laundry (1938-1940), and other Chinese merchants such as Harry Duck Laundry (1940) Wong Tuck You, merchant (1938), and Herbert Wong (1932-1940). There were also non-Chinese businesses in the building, such as Industrial Electric and Engineering Company (1936), American Parcel Delivery Company (1938), and the Economy Express Service.

In 1930, the hotel that operated on the upper floors was renamed the Royal Palm Hotel. It was probably managed by Japanese as was characteristic of many hotels in the area. Of particular interest were the Japanese steam baths which operated in the basement of the building from 1932 to 1944. The building has been continually associated with the Asian community and served as a social gathering place.

Architect, John Virqinius Bennes, practiced in Portland for 37 years. Born in Illinois, he was educated in Chicago public schools and studied architecture in Prague, Bohemia before returning to Chicago in 1890. He began his professional career in Chicago but moved to Portland in 1906 where he practiced with Hendricks from 1906 to 1913. He was responsible for the design of numerous residential and commercial structures in Portland. Thirty-five buildings were identified in the City of Portland's Historic Resource Inventory as being designed by Bennes. An article in the Portland Telegram of 1916

credited him with the design of the Monmouth Normal School Training Building as well as being architect for Oregon State College (University), a position he maintained until his death in 1943. Little information is available on Erick W. Hendricks. He is listed as an architect in Portland in 1904, but disappears from the City Directory in 1914.

The building is considered to be contributing within the district during the secondary period of significance because of its association with the Asian Ethnic community and the architectural firm of Bennes and Hendricks.

#5 **Name:** Portland Fish Co.
Address: 317 NW 3rd Avenue
Historic Name: NA
Original Owner: Portland Fish Co.
Architect: NA
Year Built: 1965
Style: Industrial
Alterations: Minor
Classification: Non-Compatible Non-Contributing

Owner: Portland Fish Company
Attn: Kenneth Lance
PO Box 2706
Portland, OR 97208
Use: Industrial
Tax Assessor#: R-18020-1790
Plat: Couch's Addition
Block: 26
Lot: 5; N. 1/2 Lt. 4

Description: The building faces east on NW Third Avenue mid-block between NW Everett and NW Flanders. The two story, concrete block building is rectangular in plan and has a flat roof. The building is void of any detail with the exception of a metal door, with hood, in the center of the front facade. The warehouse is connected to the building at 316-322 NW Fourth Avenue (Resource #8) by a door in the west wall. The building has a concrete foundation and is in good condition.

#6 **Name:** Portland Fish Co.
Address: 301-313 NW 3rd Avenue
Historic Name: Unknown
Original Owner: Wakefield & Fries Co.
Architect: Charles W. Ertz
Year Built: 1925
Style: Industrial
Alterations: Major
Classification: Historic Non-Contributing

Owner: Portland Fish Company
Attn: Kenneth Lance
PO Box 2706
Portland, OR 97208
Use: Industrial
Tax Assessor#: R-18020-1790
Plat: Couch's Addition
Block: 26
Lot: 1; 4

Description: The building faces east on NW Third Avenue and south on NW Everett Street. The two story, concrete building is rectangular in plan and has a flat roof with an offset gable and a skylight on the southeast corner. A large cooling unit is located on the northeast corner of the roof. There is a stepped parapet on the south and east facades. A slightly corbelled cornice line projects over the stucco wall surface. The building is stepped on the southeast corner due to the addition of a second story in the 1940's. The addition has small aluminum sliding glass windows.

The south facade is comprised of five bays which are divided by concrete pilasters. The two storefront windows in the eastern bay are fixed pane and capped with cloth awnings. The bulkhead is concrete. An entrance door is located in the second bay from the east. A recessed panel with rounded corners surmounts a multi-paned garage door in the central bay. Another smaller garage door is located in the bay to the west. The western most bay consists of a solid slightly recessed concrete wall.

Proposed Context

Portland's North Downtown is the site of many buildings of historical significance and it is close to the central business district and the Willamette River, but past decades have brought decline to this area. The Skidmore/ Old Town area is home to many vagrants. In 1991 a group of concerned citizens came together to establish goals for the redevelopment of this area, goals that were to be met through both public and private investments. The overall vision called for a resident population of 15,000, with jobs, services, and recreation opportunities to support it. The six main goals are as follows:

1. Develop a functional and symbolic link to the river
   - improve pedestrian access to the river and offer a series of open spaces and attractions, incorporate water fountains

2. Promote development of a diverse inventory of housing

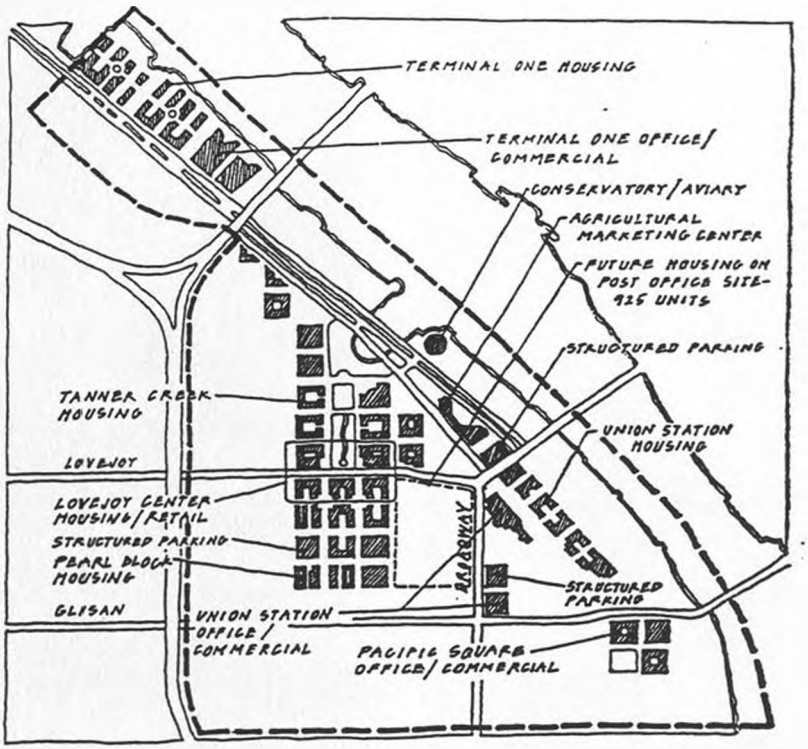
3. Become a community of distinct neighborhoods

4. Enhance the identity of positive features
   - preserve buildings of historical interest

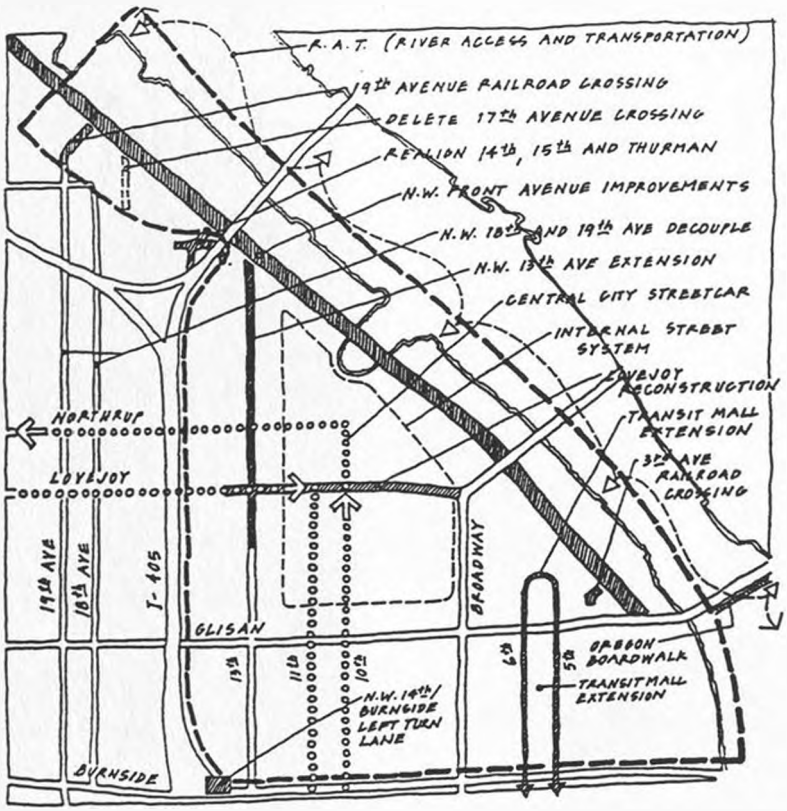
5. Strengthen connections between the River District and its neighbors
   -bridge the perceived barrier of Burnside street

6. Enhance the economy and functional efficiency of the city
   - improve access while limiting car trips
   - costs to taxpayers are less to improve this district than to add a single lane to either I-5 or I-84
   - estimated cost: $900 million ($150 million public funding)
     (To add a lane to I-5 or I-84: $3 billion)
     (Light rail $1 billion)

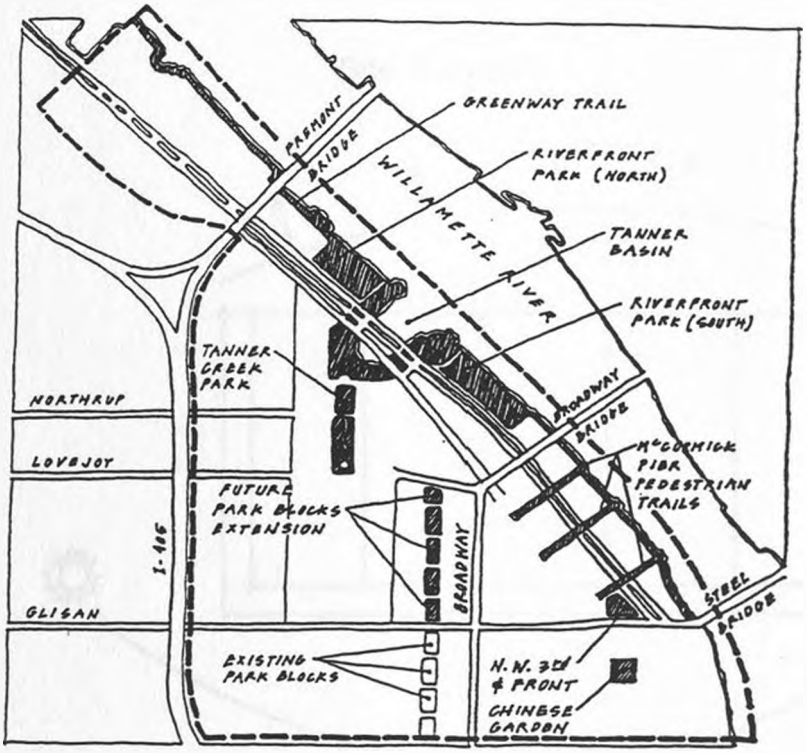
Of direct association with the Royal Palms Hotel, is a planned eight million dollar classical Chinese garden on the southeast corner of Third and Flanders.



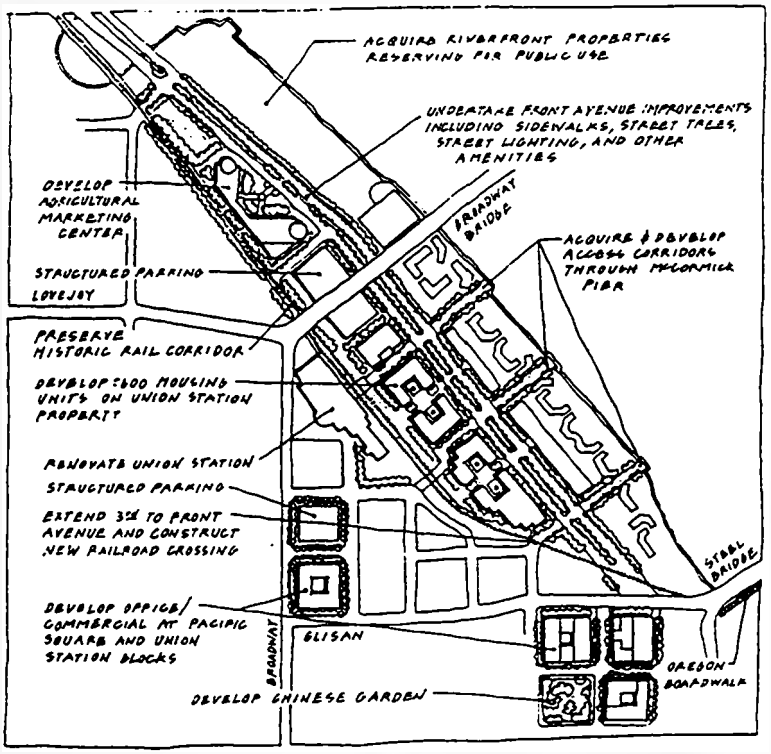
8. Diagram: Housing and Office Space Development



9. Diagram: Transportation Systems

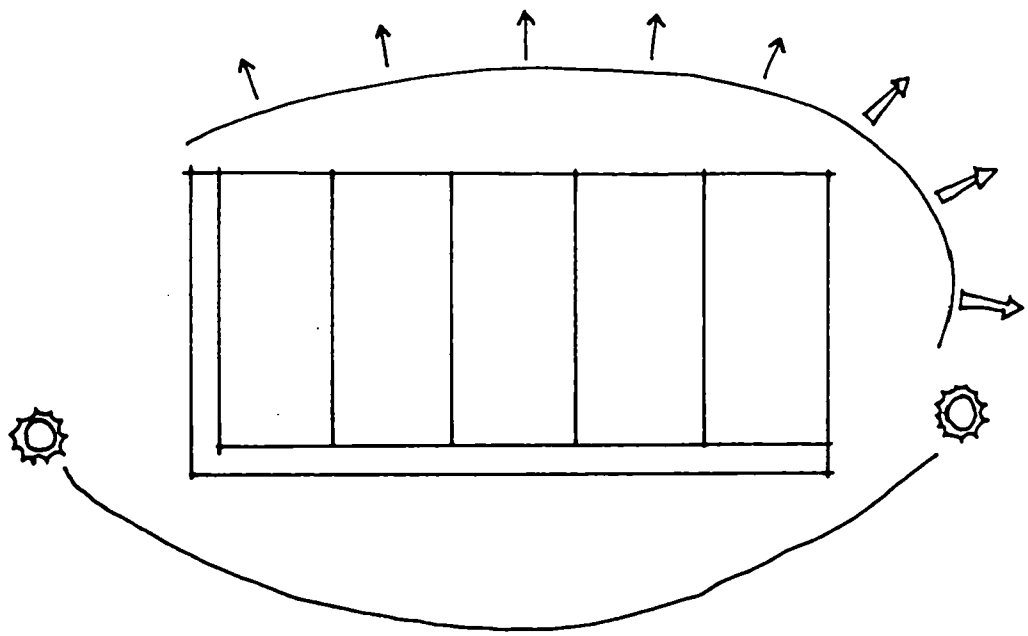


10. Diagram: Parks and Open Spaces

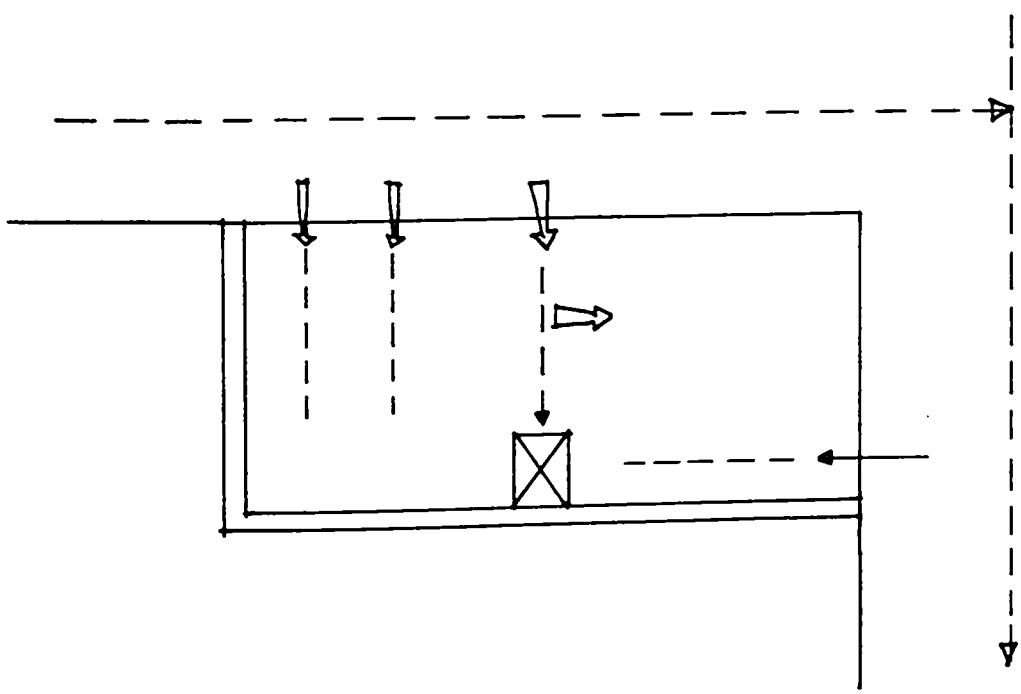


11. Diagram: Union Station/ Old Town Improvements

Site Diagrams



12. Diagram: Sunlight and Views



13. Diagram: Circulation

CHAPTER 3:

The Building

Building Introduction

The Royal Palms Hotel is located on the edge of the Chinatown district. It has historical significance partly due to its longstanding association with the Asian community in downtown Portland, and partly due to the significance of its architects. Of the two, John Bennes' work is well documented in the City of Portland's Historic Resource Inventory. Also of note is that the building has generally retained its original usage over the years.

The first floor has mostly been used by retailers and merchants, and the upper floors for lodging. The most recent, and likely most controversial use of the building is as a short-term to permanent center for homeless people with mental illness. In this scheme, the first floor is used for public spaces for the residents. The upper floors have been kept in the original hotel formation. This thesis project proposes a return to street-level retail space, in accordance with the city's hopes to rejuvenate this district for pedestrian traffic. However, this project proposes a restructuring of the upper floors to allow for a smaller number of large apartments.

The building is well suited for street-level retail businesses. The street-level facades, on the north and east sides, are divided into large bays that have extensive glazing. The interior is divided into three main spaces, each with its own access from Flanders street. The two upper floors, nearly identical in plan, are divided into smaller bays and have smaller windows.

A structural system of posts and beams allows for flexibility in reconsidering

interior partitions. The minimal use of steel and the use of solid wood members and unreinforced masonry are indicative of construction practices and available materials at the time. In the latest renovation, it was found that the structure was still in good condition and only needed retrofitting to bring it up to current seismic code.

Property Information
Lot 8, block 26 Couchs Addition
Tax Account # R-180 20 1830

Project Data
Site Data

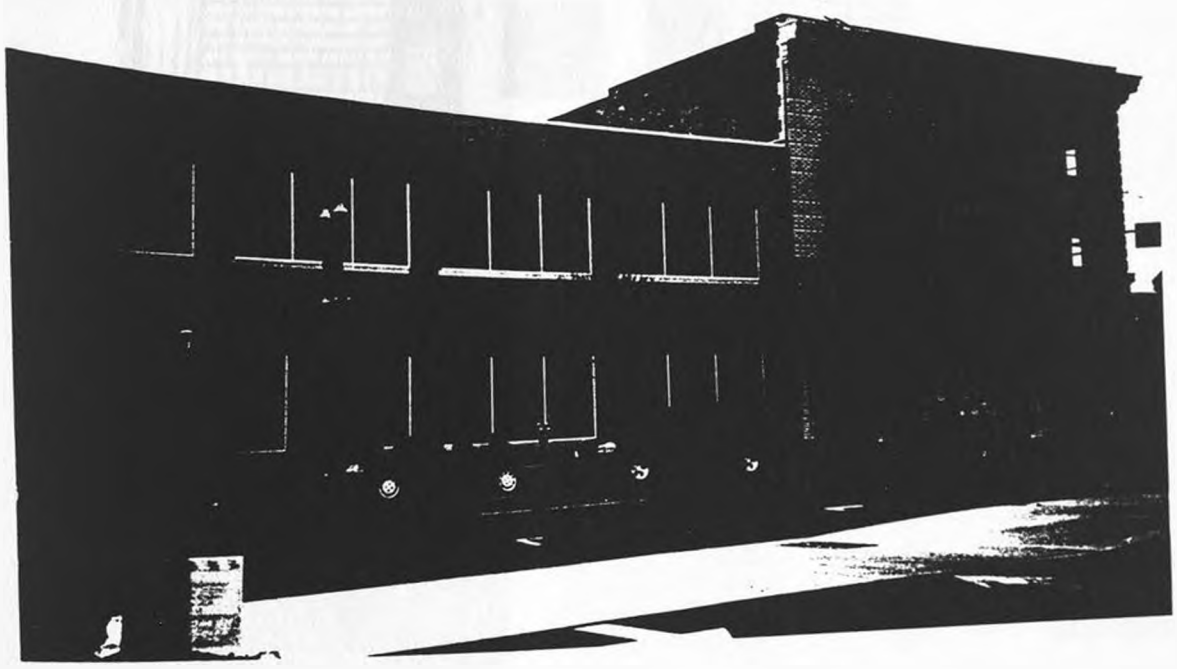
Address:	310 NW Flanders Portland, OR 97209
Zoning Desc.	D
Site Area:	4,750 s.f.

Building Data

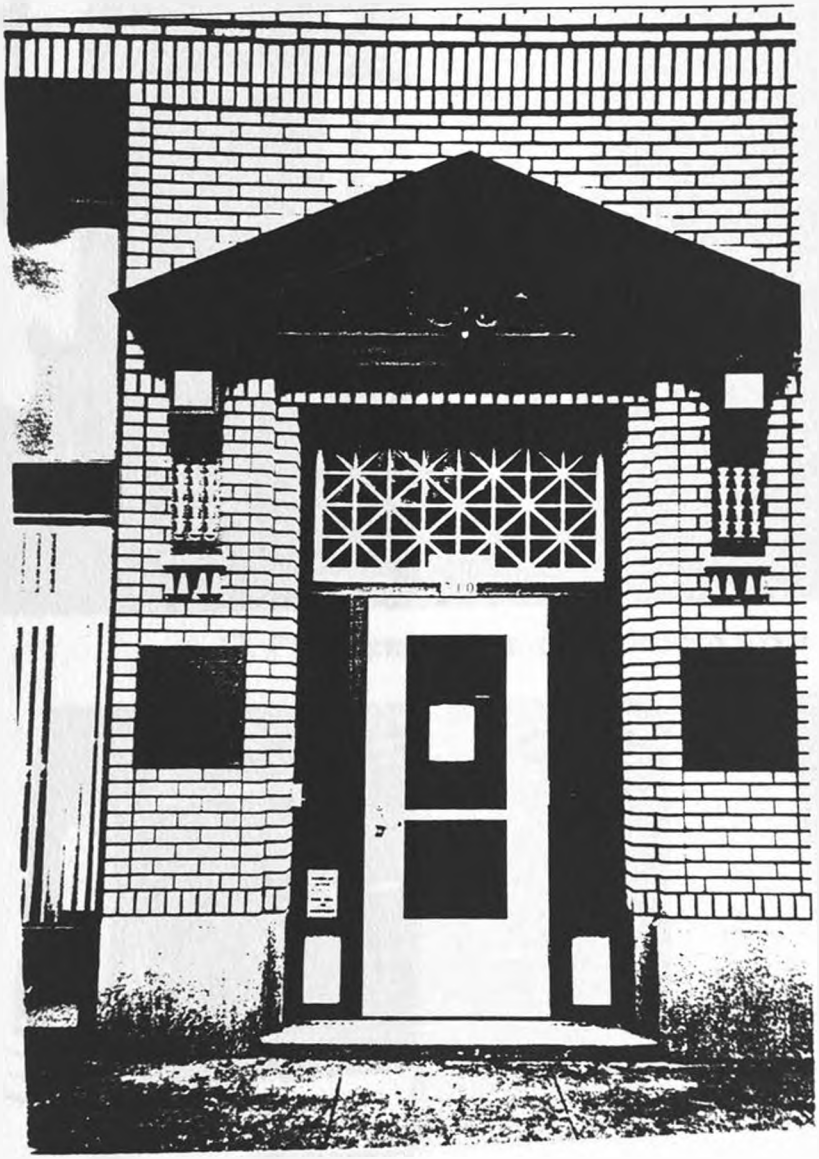
Building Area:	basement	3,638 s.f.
	ground floor	4,750 s.f.
	mezzanine	415 s.f.
	second floor	4,235 s.f.
	third floor	4,235 s.f.
	Total	19,239 s.f.

Building Height: 45 feet (3 stories)

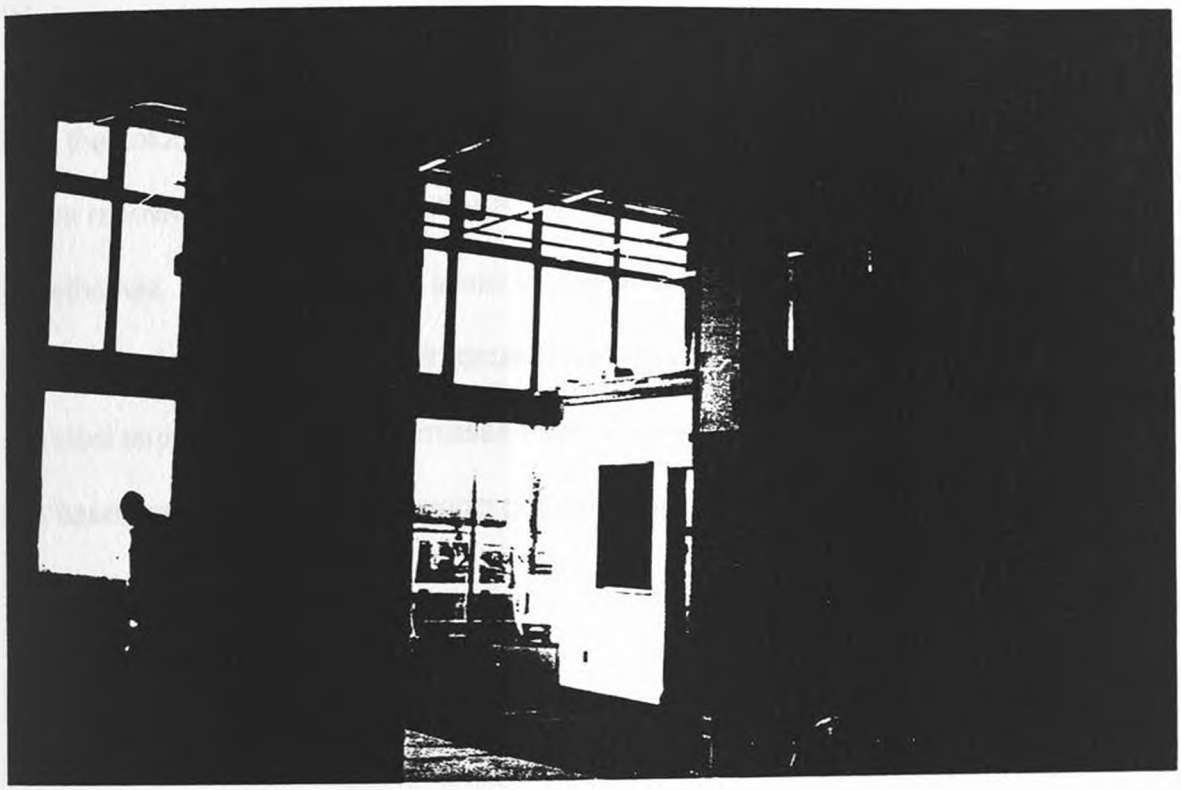
14. Photograph: North Facade of Royal Palms Hotel



15. Photograph: East Facade of Royal Palms Hotel



16. Photograph: Main Entrance

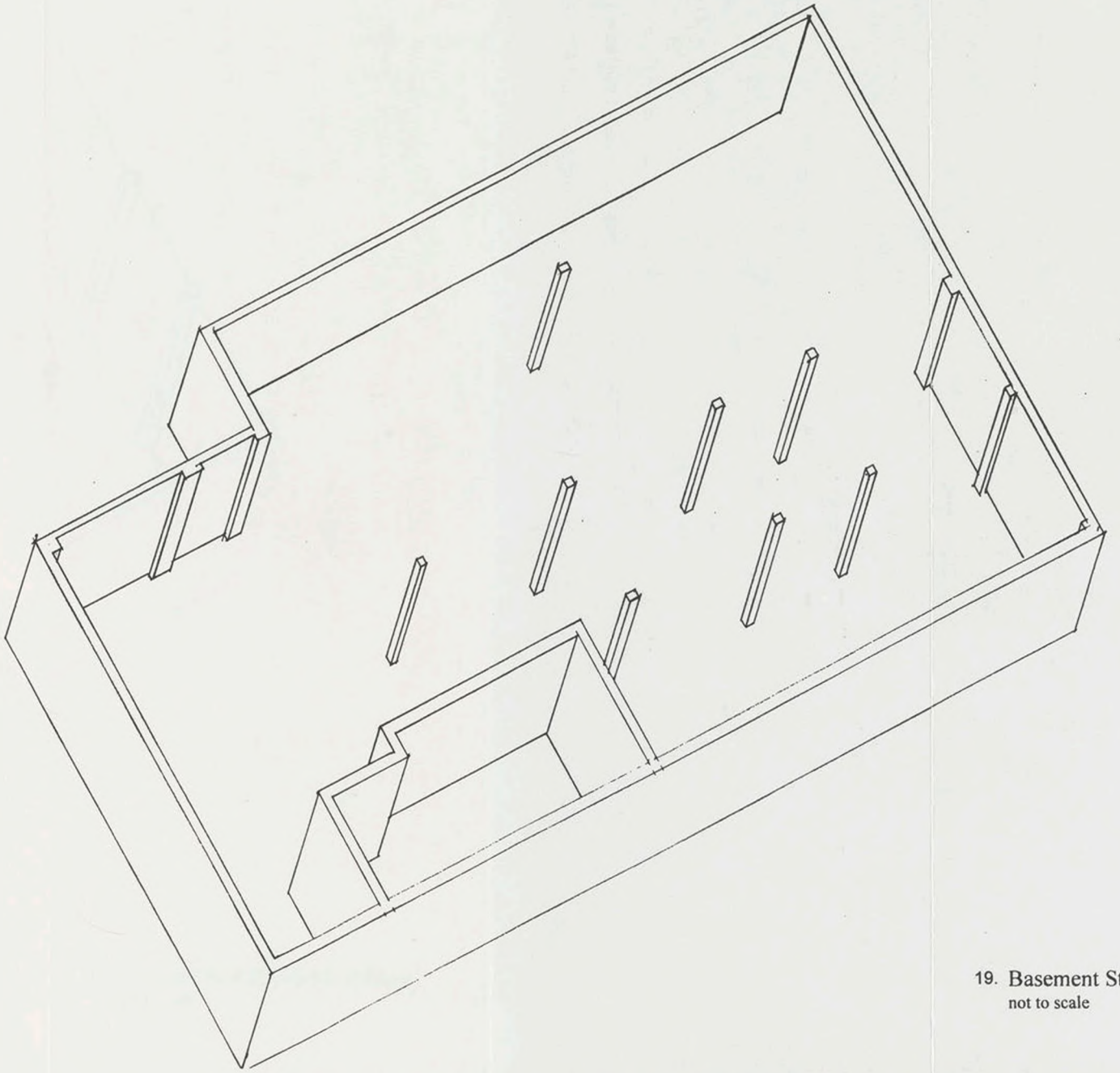


17. Photograph: Interior of Ground Floor

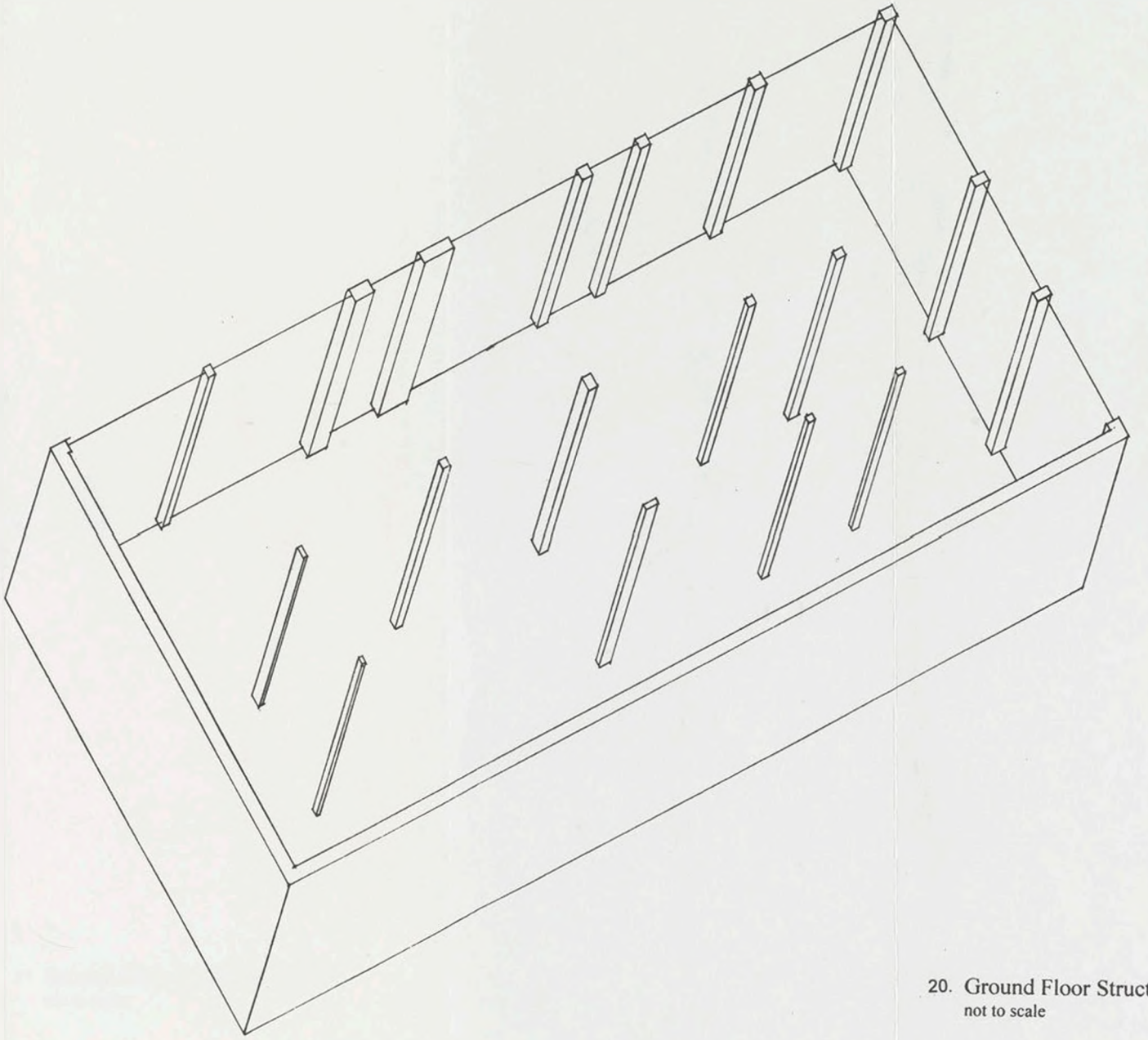
18. Photograph: Interior of Ground Floor

Structural System

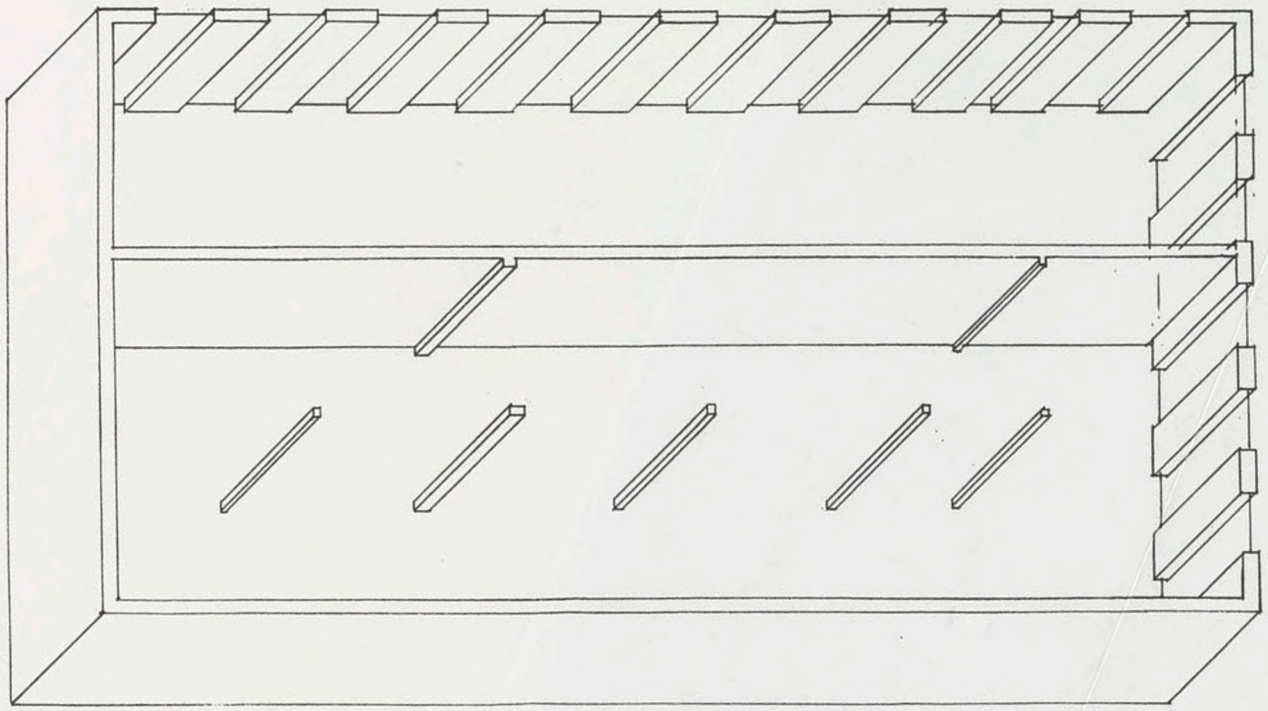
The structural system is solid wood post and beam construction, with walls along the column lines. A representative of the construction company doing the current renovation reports that after 83 years, the structure is still in good shape. Nevertheless, the structure has been updated to fit the latest seismic codes. Changes include tying the unreinforced masonry facades to the floor structures with steel straps and installing massive steel moment frames in the north and east basement walls. The following pages show, in a diagrammatic way, the basic structural system.



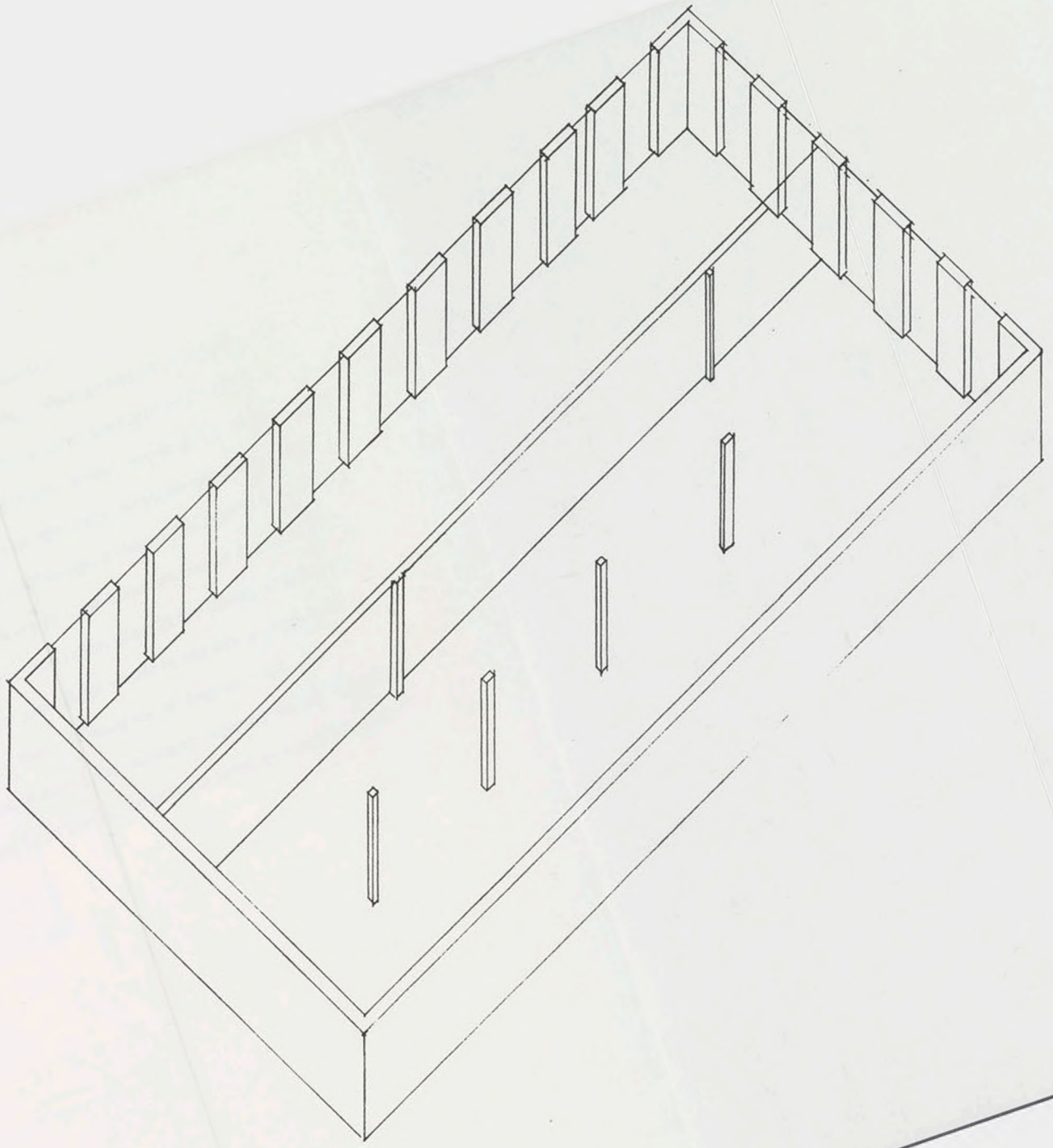
19. Basement Structural System
not to scale



20. Ground Floor Structural System
not to scale



21. Second Floor Structural System
not to scale



22. Third Floor Structural System
not to scale

Building Materials

The building materials present in the Royal Palms Hotel are indicative of the time period during which it was built. The facades are made of unreinforced brick. Columns and beams are made of solid timber, in places 10" thick. There is limited use of steel, as there were no steel factories on the west coast at the time. What steel was used was either brought overland (the beams surrounding the fenestration on the ground floor), or small hardware pieces that were hand-forged on-site. The floor construction differs greatly from current construction methods. Above the 14" floor joists (solid lumber of this size is rarely used today) is a 1" thick subfloor, then a 2" deep row of sleepers which are interspersed with bunches of straw. The contractor reported that the straw was tested and found to have been fireproofed at some point, so it was left intact.

GENERAL NOTES

1. COORDINATE EXACT DEMOLITION REQUIREMENTS WITH NEW WORK. PROVIDE ALL DEMOLITION, WHETHER SHOWN OR NOT, NECESSARY TO ACCOMODATE NEW CONSTRUCTION.
2. SEE REFLECTED CEILING PLANS FOR LIGHTING FIXTURES TO BE REMOVED.
3. SALVAGE PLUMBING FIXTURES, WOOD DOORS AND WOOD TRIM FOR USE BY OWNER. COORDINATE W/ ARCHITECT THOSE ITEMS WHICH COULD BE REUSED IN PROJECT.
4. CAP OFF REMOVED PLUMBING LINES WITHIN WALL OR FLOOR STRUCTURE. PROVIDE DOCUMENTATION OF PIPING LOCATION.
5. REMOVE ALL ABANDONED WATER LINES.

23. (1) BASEMENT DEMOLITION PLAN
1/4" = 1'-0"

Plumbing materials sha
be installed as per the
Oregon State Plumbing
Specialty Code, Append
M and the Oregon State
Structural Specialty Cod

Water Closet Bowls C
Be Elongated Bowls
Equipped with Open-F
Seats.

Limit Lav
G.P.M. and
Temperature of 110° F.

Shower Valves and Bathtu
Shower Va
Pressure
a Maximum 120° F. Outlet
Temperature.

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MICROFILMED

JUL 16 1998
MICROFILMED

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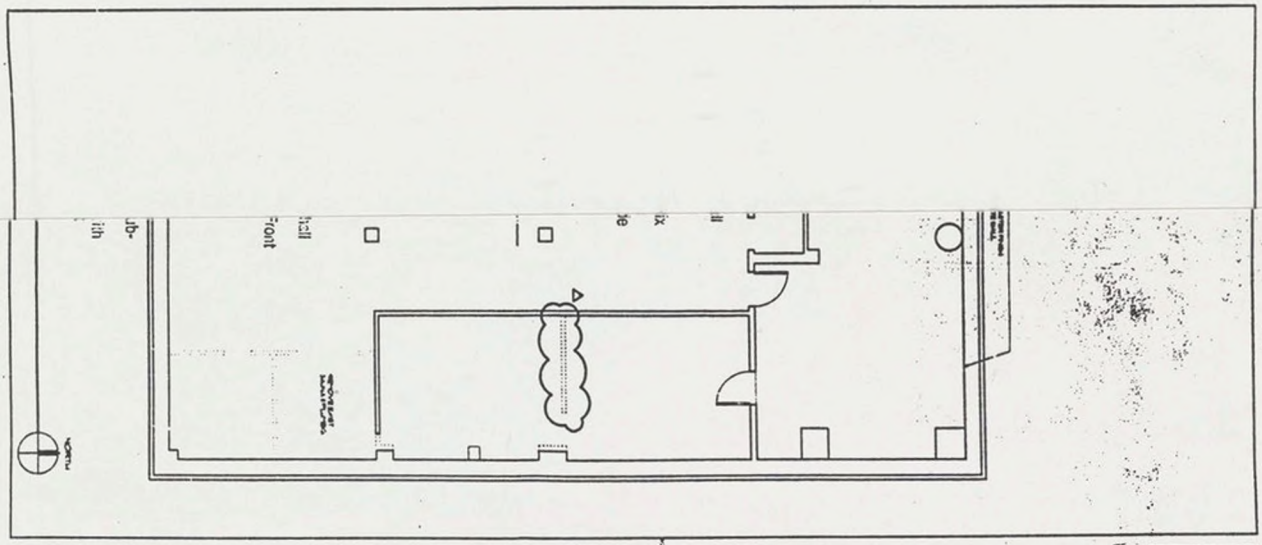

BASEMENT
DEMOLITION PLAN

ROYAL PALM
MENTAL HEALTH SERVICES WEST
316 N.W. FLANDERS - PORTLAND, OREGON

CARLETON ♦ HART
ARCHITECTURE, P.C.

REGISTERED ARCHITECT
STATE OF OREGON

24 1/4" = 1'-0" GROUND FLOOR DEMOLITION PLAN

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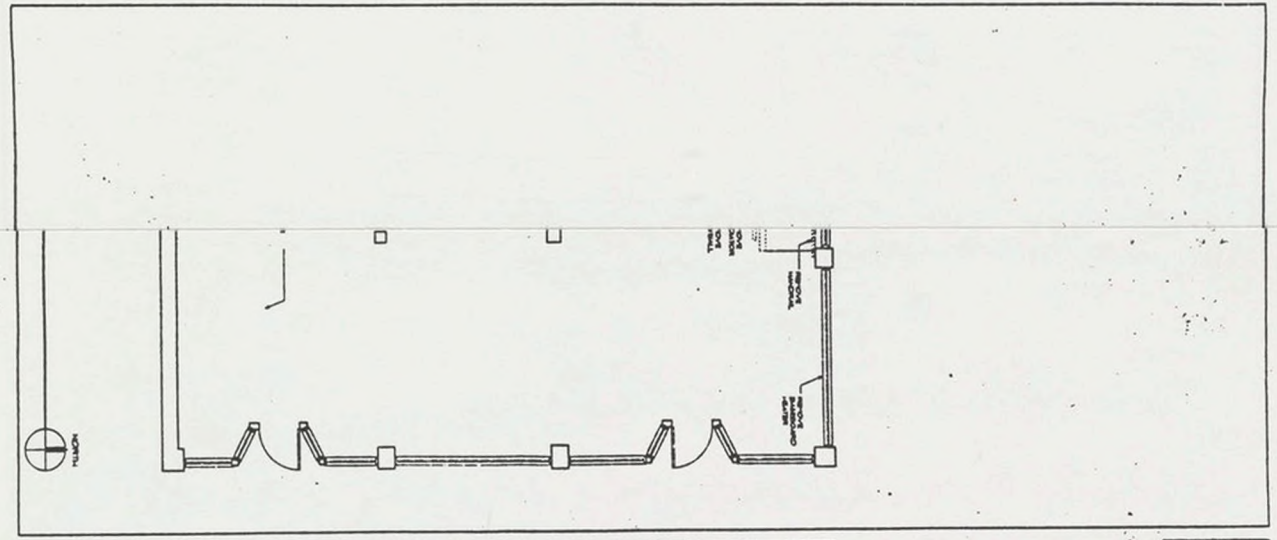


A1.2

REVISIONS	DATE	ID
	7/18/95	

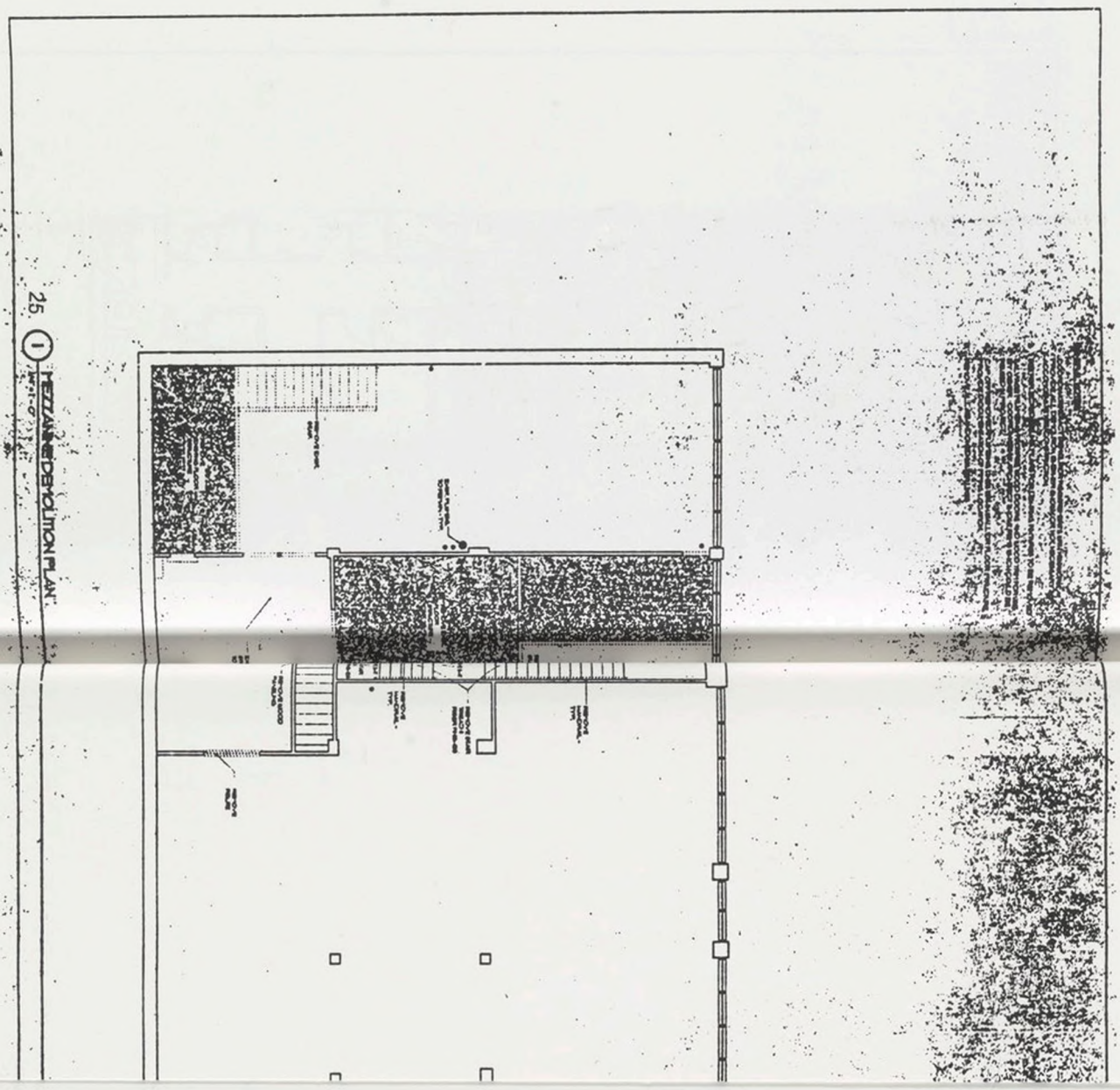
GROUND FLOOR
DEMOLITION PLAN

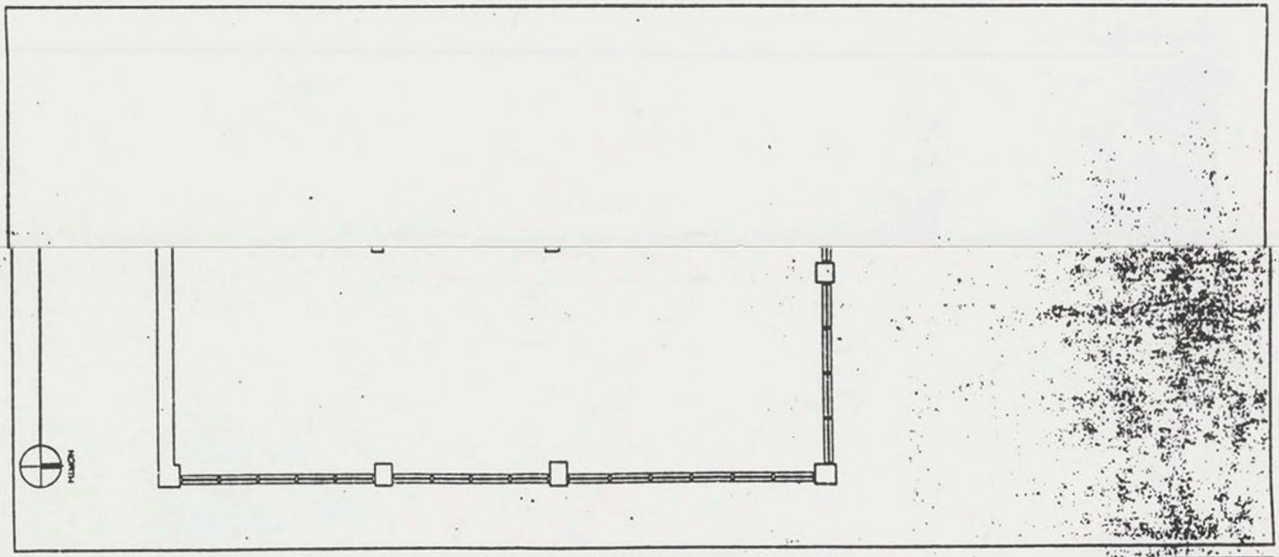
ROYAL PALM
MENTAL HEALTH SERVICES WEST
310 N.W. FLANDERS · PORTLAND, OREGON

CARLETON ♦ HART
ARCHITECTURE, P.C.

REGISTERED ARCHITECT
STATE OF OREGON

Y-1 2095-03207





A13

MEZZANINE
DEMOLITION PLAN

ROYAL PALM

MENTAL HEALTH SERVICES WEST

310 N.W. FLANDERS - PORTLAND, OREGON

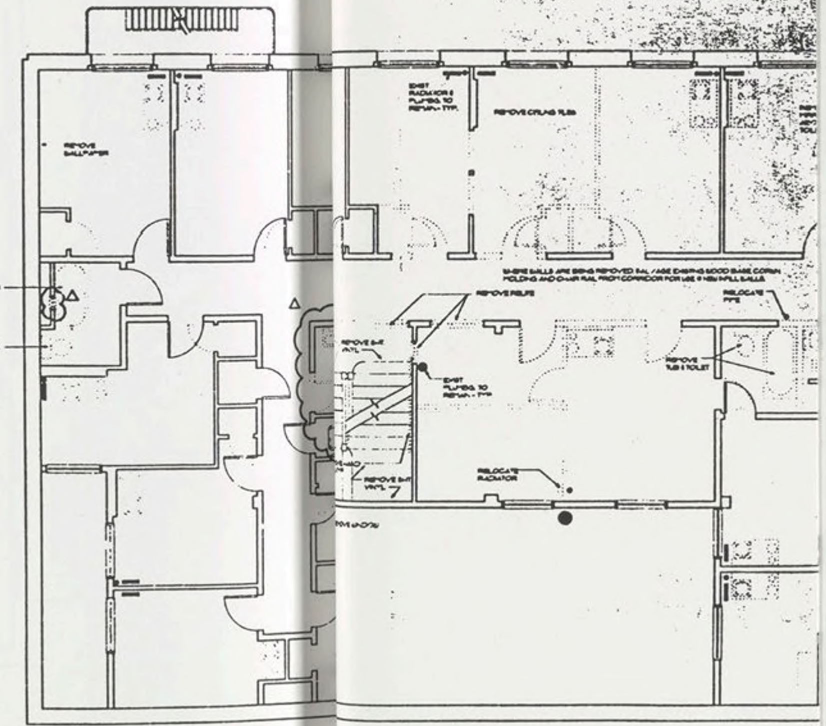
CARLETON HART
ARCHITECTURE P.C.

GENERAL NOTES

1. COORDINATE EXACT DEMOLITION REQUIREMENTS WITH NEW WORK. PROVIDE ALL DEMOLITION WHETHER SHOWN OR NOT, NECESSARY TO ACCOMODATE NEW CONSTRUCTION.
2. SEE REFLECTED CEILING PLANS FOR LIGHTING FIXTURES TO BE REMOVED.
3. SALVAGE PLUMBING FIXTURES, WOOD DOORS AND WOOD TRIM FOR USE BY OWNER. COORDINATE W/ ARCHITECT THOSE ITEMS WHICH COULD BE REUSED IN PROJECT.
4. CAP OFF REMOVED PLUMBING LINES WITHIN WALL OR FLOOR STRUCTURE. PROVIDE DOCUMENTATION OF PIPING LOCATION.
5. REMOVE ALL ABANDONED WATER LINES.

GENERAL NOTES FOR SECOND AND THIRD FLOOR

6. PULLMAN UNITS TO BE REMOVED BY OWNER.
7. REMOVE EXISTING FLOOR FINISH MATERIALS.
8. REMOVE CROWN MOLDING AND BASE.
9. REMOVE ALL CLOSET DOORS AND DOOR FRAMES WITHIN APT UNITS.
10. REMOVE ALL DOORS.
11. DOOR TRIM AT RESIDENT UNITS - REMOVE CASING AT RESIDENT ROOM SIDE (TO BE REPLACED) - REMOVE CASING AT CORRIDOR SIDE (TO BE REINSTALLED)
12. REMOVE TRANSOMS.
13. REMOVE TRIM AT DOOR HEADERS TO BE REINSTALLED.
14. REMOVE VENT WINDOWS AT TOILET ROOMS.



26. (1) SECOND FLOOR DEMOLITION PLA
1/4" = 1'-0"

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MICROFILMED

JUL 18 1996
MICROFILMED

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A1.4

SECOND FLOOR
DEMOLITION PLAN

ROYAL PALM

MENTAL HEALTH SERVICES WEST

310 N.W. FLANDERS - PORTLAND, OREGON

CARLETON ♦ HART

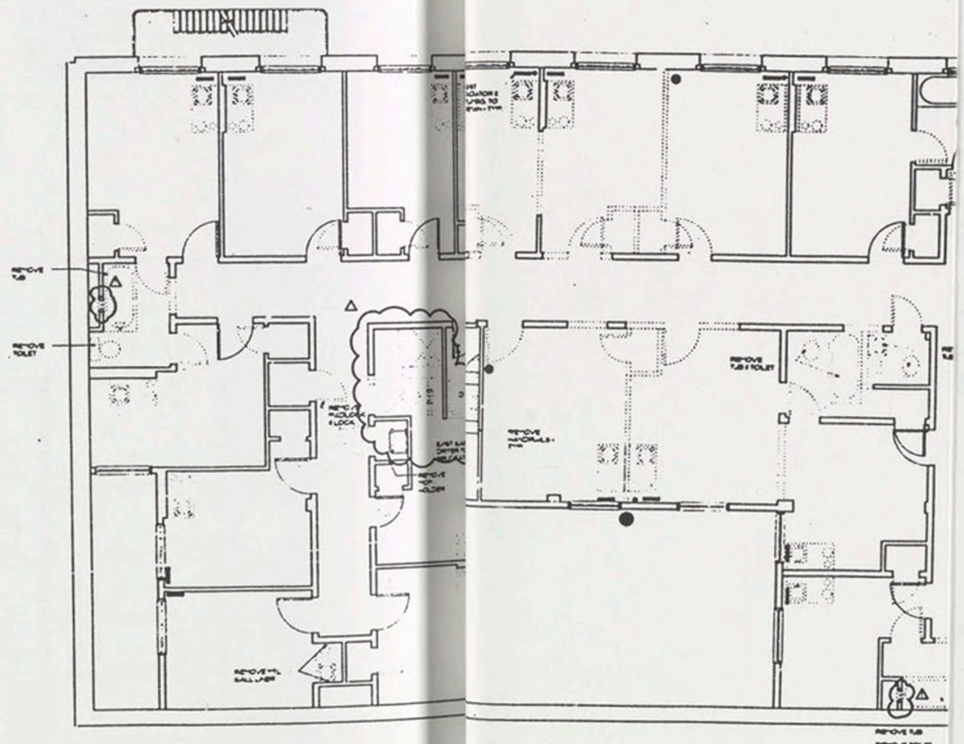
ARCHITECTURE

GENERAL NOTES

1. COORDINATE EXACT DEMOLITION REQUIREMENTS WITH NEW WORK. PROVIDE ALL DEMOLITION WHETHER SHOWN OR NOT, NECESSARY TO ACCOMODATE NEW CONSTRUCTION
2. SEE REFLECTED CEILING PLANS FOR LIGHTING FIXTURES TO BE REMOVED
3. SALVAGE PLUMBING FIXTURES, WOOD DOORS AND WOOD TRIM FOR USE BY OWNER. COORDINATE W/ ARCHITECT THOSE ITEMS WHICH COULD BE REUSED IN PROJECT.
4. CAP OFF REMOVED PLUMBING LINES WITHIN WALL OR FLOOR STRUCTURE. PROVIDE DOCUMENTATION OF PIPING LOCATION.
5. REMOVE ALL ABANDONED WATER LINES

GENERAL NOTES FOR SECOND AND THIRD FLOORS

6. PULLMAN UNITS TO BE REMOVED BY OWNER.
7. REMOVE EXISTING FLOOR FINISH MATERIALS.
8. REMOVE CROWN MOLDING AND BASE.
9. REMOVE ALL CLOSET DOORS AND DOOR FRAMES WITHIN APT. UNITS.
10. REMOVE ALL DOORS
11. DOOR TRIM AT RESIDENT UNITS - REMOVE CASING AT RESIDENT ROOM SIDE (TO BE REPLACED) - REMOVE CASING AT CORRIDOR SIDE (TO BE REINSTALLED)
12. REMOVE TRANSOMS
13. REMOVE TRIM AT DOOR HEADERS TO BE REINSTALLED.
14. REMOVE VENT WINDOWS AT TOILET ROOMS



27. (1) THIRD FLOOR DEMOLITION PLAN
1/4" = 1'-0"

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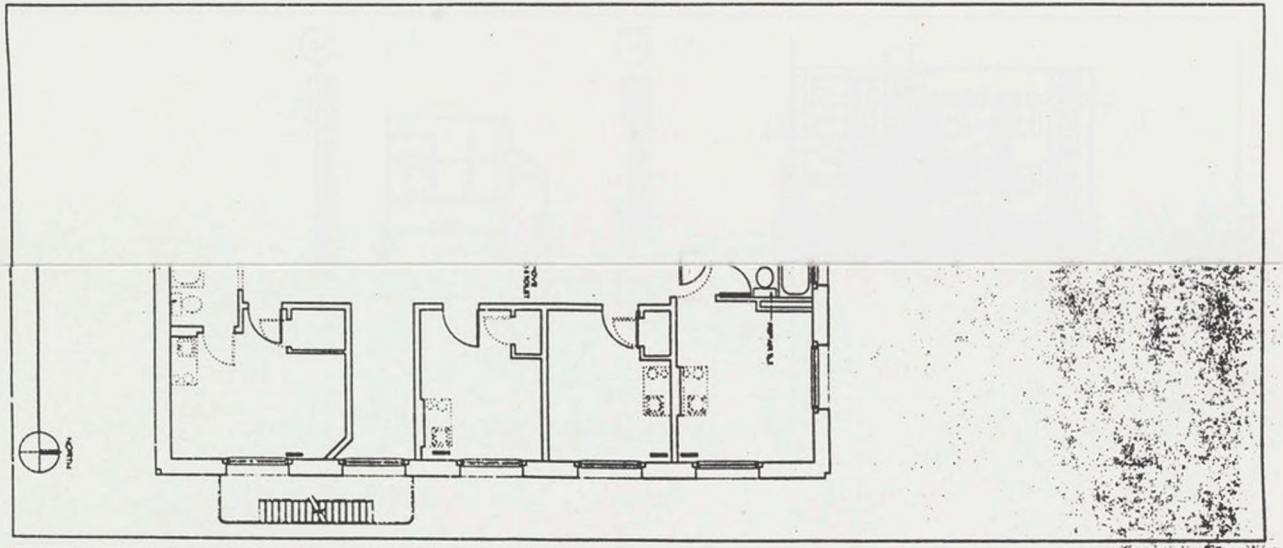

A1.5

THIRD FLOOR
DEMOLITION PLAN

ROYAL PALM

MENTAL HEALTH SERVICES WEST

310 N.W. FLANDERS - PORTLAND, OREGON

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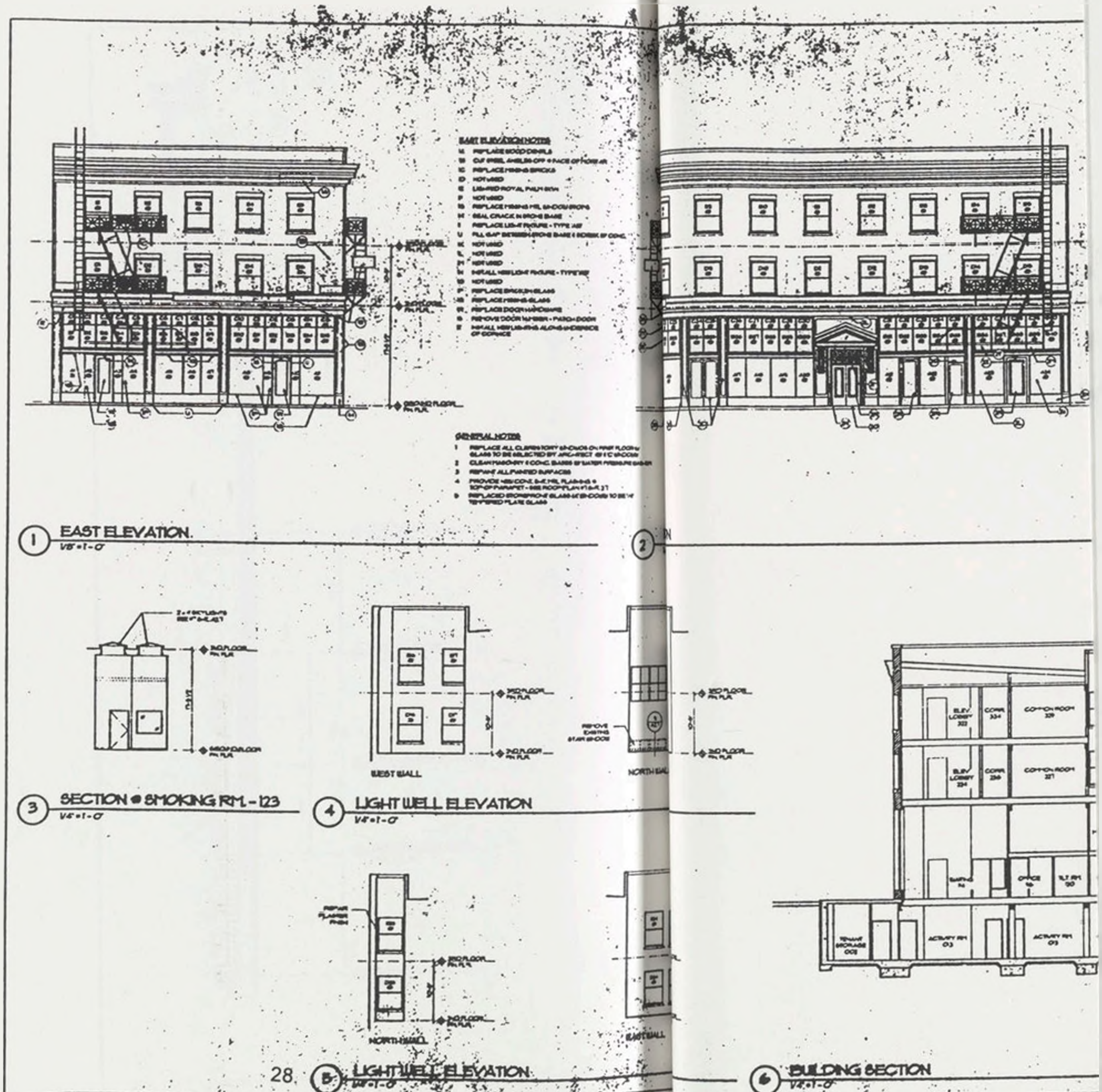

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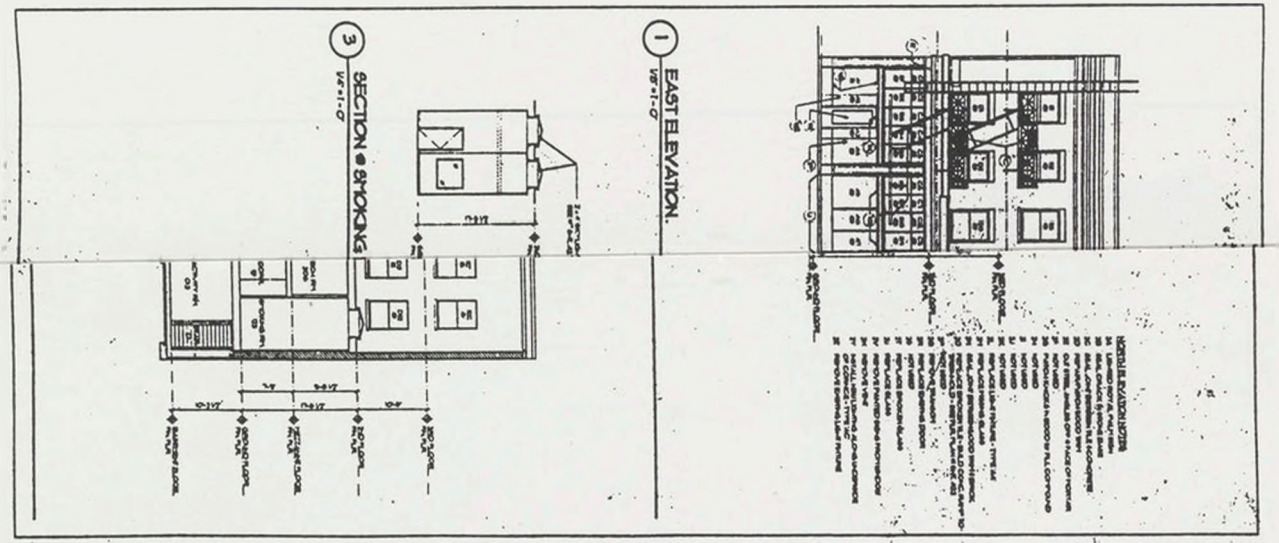

A3.1

BUILDING
ELEVATIONS/ SECTIONS

ROYAL PALM
MENTAL HEALTH SERVICES WEST
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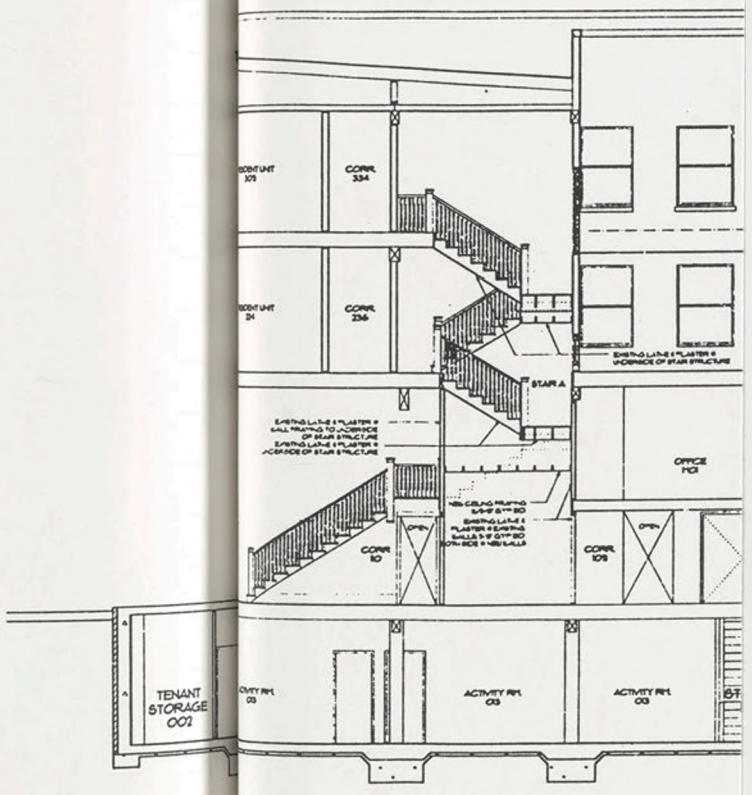
REGISTERED ARCHITECT
STATE OF OREGON

1 FLOOR/CEILING ASSEMBLY
1 1/2"=1'-0"



29. A BUILDING SECTION
1/4"=1'-0"

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A33

STAIR SECTION

ROYAL PALM

MENTAL HEALTH SERVICES WEST

310 N.W. FLANDERS - PORTLAND, OREGON

CARLETON ♦ HART
ARCHITECTURE, P.C.

REGISTERED ARCHITECT
STATE OF OREGON

CHAPTER 4:

Technical Information

Technical Information Introduction

The following excerpts were used as references during the design process. The information contained within this section comes from codes, regulations, and specifications, and is meant to be less open to interpretation than the guidelines, such as those for development in the River District, which are included in the Appendix.

SPECIFICATIONS FOR BARRIER-FREE PUBLIC INTERIORS

The material in this chapter is based on standards developed by federal agencies in order to comply with Public Law 90-480 and the American National Standard A 117.1-1980 titled "Specifications for Making Buildings and Facilities Accessible to, and Usable by, the Physically Handicapped."[1]

Due to an increased public awareness about accessibility problems, many buildings, though not government owned or financed, are being planned with barrier-free environments for physically disabled people. During the past decade this concern has been reflected in the numerous state and city codes dealing with barrier-free regulations that have been adopted.

A person confined to a wheelchair is the usual stereotyped image of the "physically disabled" person. The General Services Administration defines a physical disabled person as "any individual who despite a physical disability, can be expected, without assistance from another person, to visit and utilize a building."[2] Another federal agency further expands the definition to include the following categories:

1. Nonambulatory disabilities: those where people are confined to wheelchairs.
2. Semiambulatory disabilities: those which allow a person to walk with difficulty. This includes people who walk with crutches, braces, or walkers.
3. Disabilities of incoordination or palsy: those due to brain or nerve damage.
4. Hearing disabilities: those which impair a person's ability to detect warning signals.
5. Sight disabilities: those which prevent people from perceiving signals or dangerous situations.
6. Temporary disabilities: those due to injury, illness, or pregnancy.
7. General disabilities: those due to aging which reduce a person's mobility, coordination, and perception.[3]

Reviewing this list, designers will agree that "barrier-free" does not merely imply ramps and adequate door widths, but expands to include a whole range of considerations. Aside from the obvious architectural barriers which have limited the free movement of physically disabled people, society is now becoming aware of the *psychological barriers* that physical space imposes upon those who are handicapped. When a handicapped person must enter by a service entrance or ask assistance in opening a door, he or she is made to feel humiliated and helpless. Millions of dollars are spent each year rehabilitating and training physically disabled people to function and contribute to society, but our buildings have made it impossible for them to move about, contribute, and enjoy the same privileges that able-bodied people take for granted. When reduced to the status of second-class citizens, those who are handicapped feel discriminated against.

The design of barrier-free public spaces involves concern for two major categories of users: visitors and employees. The general purpose of the building indicates the type of people who will be using the facility. Theaters, federal buildings (such as post offices), banks, libraries, and restaurants, will require clearly marked exit routes, rest rooms, and other accessibility factors for visitors not familiar with the building. Office buildings will require more detailed planning to accommodate both visitors and employees who are handicapped.

The following guidelines for the specification of barrier-free public interiors are arranged as a checklist for use during the planning phase. Federal requirements are starred (*) and the remaining criteria are recommended. Designers should remember that requirements are minimum; therefore every effort should be made to incorporate the additional recommended guidelines.

GENERAL REQUIREMENTS FOR INTERIOR ACCESSIBILITY

1. Walls and partitions
   - *a. Provide fixed or nonfixed partitions that are sturdy and will withstand a 60-lb (28-kg) force applied from any direction.
   - *b. Mount decorations, hardware, and equipment with the capability of withstanding but not necessarily supporting a 60-lb force applied from any direction.
   - *c. Provide markings at heights of 36 in. (91.4 cm) and 60 in. (152.4 cm) on large expanses of glass.
   - d. Avoid abrasive wall surfaces within 60 in. (152.4 cm) of the floor in heavy traffic areas.
   - e. Avoid hazardous glare in corridors and stairways by specifying matted surfaces, low-glare lighting fixtures, and window coverings.
2. Windows
   - a. Avoid strong contrast between window and wall surface. Provide drapery or window coverings that will eliminate glare in work areas and points of directional decisions, such as lobbies, corridors, and intersection points.
   - b. Provide window coverings that will prevent drafts and reduce radiant heat loss in areas where people will spend extended lengths of time.
   - c. Provide long wand sticks for the manual operation of drapery and blinds.
3. Doors
   - *a. Doors must have a clear opening of at least 32 in. (81.3 cm) when open and must be operable by a single effort. The weight required to open a door should be 5 lbs but should not exceed 8 lbs (2.3 to 3.7 kgs). (Note: two-leaf doors are not recommended unless they open with a single effort or one of the leaves provides a clear opening of 32 in.)
   - *b. The floor on both sides of the door must be level for at least 60 in. (152.4 cm) and the floor must extend at least 12 in. (30.5 cm) beyond each side of the door.

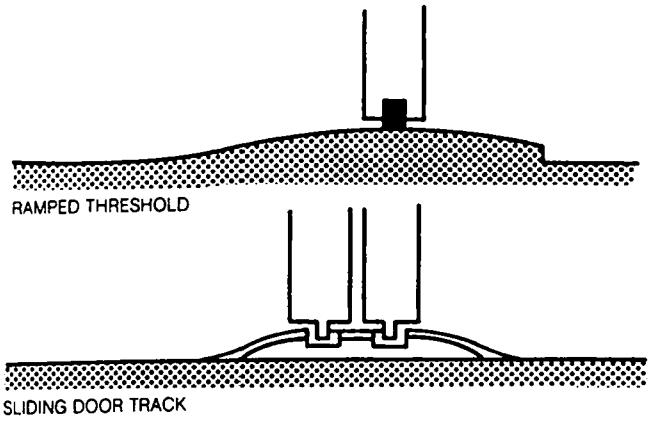

Figure 14.1 Thresholds. Unless otherwise credited, illustrations in this chapter were adapted from Design Criteria: New Public Building Accessibility, *PBS (PCD). DG5.*

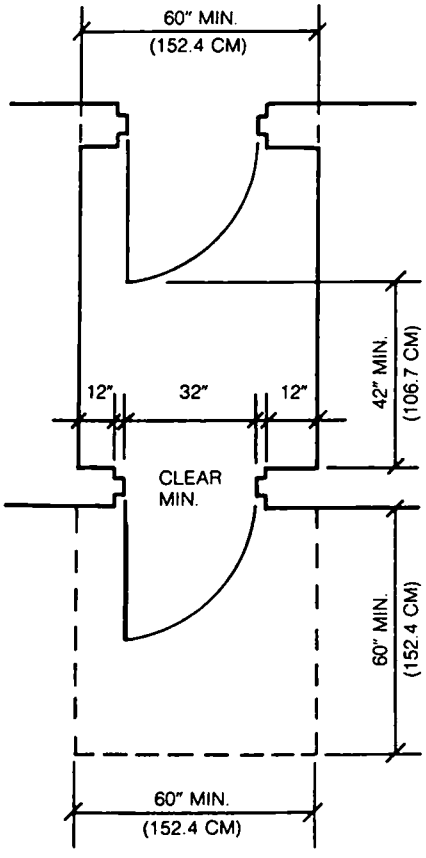

Figure 14.2 Vestibule door swing. Source: Department of Health and Human Services, Office of Facilities Engineering.

Figure 14.3 Flooring transition strip. Source: Department of Health and Human Services, Office of Facilities Engineering.

*c. Thresholds shall be flush with the floor if possible. When a raised threshold is necessary, it must be beveled or ramped gradually on both sides of the door. (See Figure 14.1.)

*d. Vestibules: the inner and outer doors of a vestibule must be separated by at least 42 in. (106.7 cm) in addition to the door swing. Both doors must swing in the same direction. (See Figure 14.2.)

*e. Handles shall be mounted at a maximum height of 42 in. Panic bars shall be placed 32 in. above the floor. Kickplates at least 16 in. (40.6 cm) high are recommended for all doors. Door closers with a 4- to 6-second time delay are recommended.

f. Vision panels are desirable to all swinging doors. Safety glass should be placed a maximum of 36 in. (91.4 cm) above the floor.

g. Sliding doors should have top-hung self-lubricating tracks and bottom guides. Doors should be easy to operate. Nylon wheels or roller bearings on metal tracks are recommended.

h. Door openings should not be placed directly opposite a stairway.

*i. Provide protection for doors opening into corridors.

*j. Provide outswing doors to storage rooms, closets, and accessible restroom stalls.

4. Hardware

*a. Provide hardware, both latching and nonlatching, operable with a single hand that does not require wrist action or fine finger manipulation.

*b. Position operating hardware between 32 in. (81.3 cm) and 42 in. (106.7 cm) above the floor. A 36-in. (91.4-cm) center line is recommended.

c. Provide a clearance of 1 ¾ to ¼ in. (44.4 to 57.4 mm) between operating hardware and door jambs. (A wider clearance is not recommended.)

d. Provide texture on door hardware for identification.

e. Use lever handles or panic hardware on all side-hung latched doors.

5. Floorcovering

*a. Firmly attach all coverings to base floor.

b. Flush mount floorcovering where it joins another flooring material. (See Figure 14.3.)

*c. Floors must be on a common level throughout a given story or be connected by ramps. Variations no greater than plus or minus ¼ to ⅛ in. (6.4 to 3.2 mm).

*d. Floors must have nonslip surfaces. Friction coefficient: no less than .5 when wet or dry, measured by static means. (See page 88 for the discussion of resilient flooring in Chapter 8.)

e. Floors should withstand a load of 125 psi and deflection shall not exceed ½ in. (12.7 mm).

*f. Carpeting must be heavy-duty contract quality, high-density, tight-weave, low-looped pile. Padding when used should be dense and firm. Broadloom should be tightly stretched and carpet tiles should be securely in place.

*g. Floors of primary circulation paths shall have a hard surface, such as vinyl-asbestos tile, to permit ease of movement for wheelchairs. Travel distance over carpet to reach such a path should not exceed 50 ft (15.2 m).

h. Flooring materials should not produce sharp reflections or glossy surfaces.

i. Select single colors or muted patterns for floorcoverings. Highly contrasting patterns create visual confusion for people with visual impairments.

6. Furniture
   a. Furniture legs or supports should not present a tripping hazard.
   b. Furniture selected for public use should contrast (in value) with the background so it is distinguishable by people with sight disabilities.
   c. Seating depth may vary:
      (1) Lobby: minimum 12 in. (30.5 cm) for short-term seating.
      (2) Assembly seating: minimum 13 to 16 in. (33 to 40.6 cm).
      (3) Short-term seating: maximum 16 in. (40.6 cm) for use with backrest.
   d. Seat widths should be no less than 16 in. (40.6 cm).
   e. Fixed seating should be no less than 15 in. (38.1 cm) from the floor (17 in. [43.2 cm] preferred).
   f. Recommended seating angles vary according to use:
      (1) Backrest to seat angle: 95° to 120°.
      (2) Backrest to vertical angle: 10° to 30° measured from a vertical extended from base of seat. If the back has more than a 30° angle from the vertical line, a headrest should be provided. (See Figure 14.4.)
   g. Upper back support should be provided on lounge chairs and tilted lounge chairs that have more than a 30° angle from the vertical.
   h. Armrest widths should be no less than 2 in. (5.1 cm); 2 ½ to 3 ½ in. (6.4 to 8.9 cm) are preferred widths.
   i. The length of an armrest varies with use:
      (1) Casual seating: full armrest of 11 to 13 in. (27.9 to 33 cm).
      (2) Assembly seating and desk or table seating: short armrests about 8 ½ in. (21.6 cm) long.
   j. The space between the armrests may range between 19 and 22 in. (48.3 and 55.9 cm). Assembly seating should not be wider than 20 ½ in. (52.1 cm).
   k. Height of armrests are usually 8 ½ in. (21.6 cm) above the seat. (See Figure 14.5.)
   l. Padding for upholstered furniture should be firm to prevent bottoming out of the seat area.
   m. Upholstery should be neither rough nor slippery. Material should be porous and of a medium weave. Welt cording should not be placed along the front edge of seat cushions because it may hamper blood circulation.

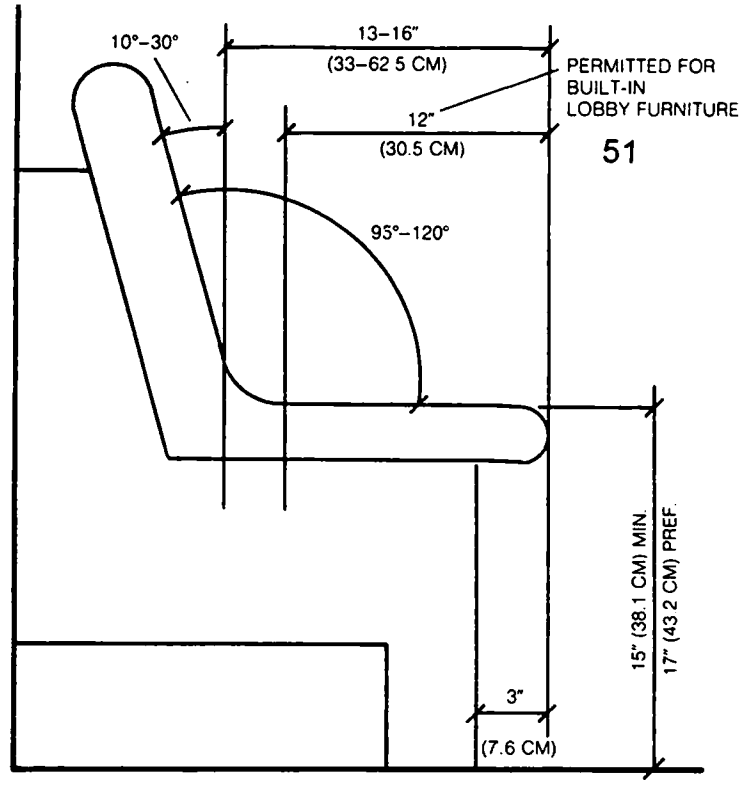

Figure 14.4 Built-in seating.

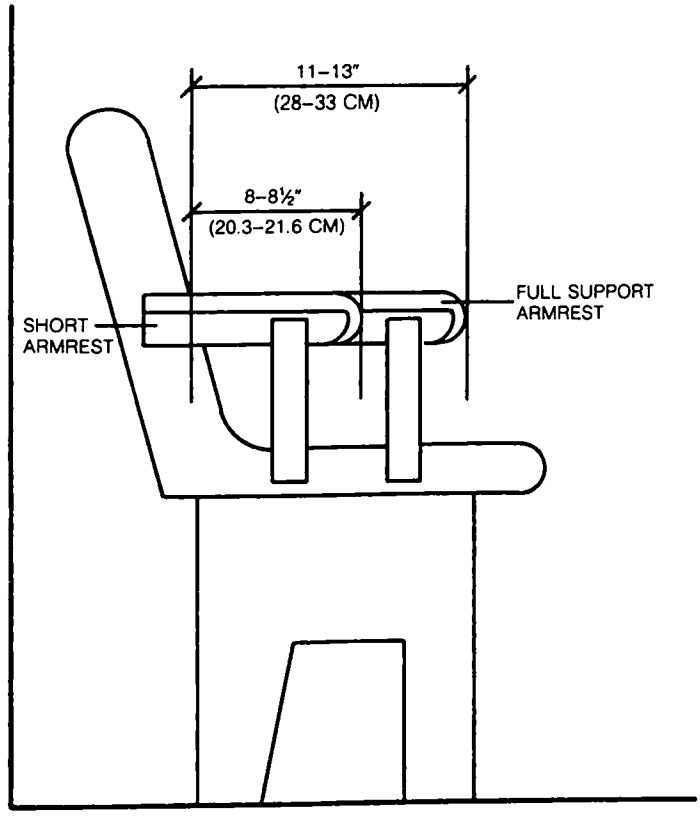

Figure 14.5 Assembly seating armrests.

Communication and Signage for Accessibility

The General Services Administration offers some very effective recommendations for communication or cuing systems to provide directional, emergency, and safety information. Cuing systems make use of changes or contrast in color, texture, and lighting to reinforce communication. An effective communication is based on four criteria: (1) unambiguity: distinct elevator lobbies for various floors; (2) consistency: room numbers and directional signs placed in the same location on each floor; (3) reinforcement of information through coded textural and color cuing: warning danger signals; (4) predictability factors, such as having all room numbers on one side of the corridor.[4]

The following suggestions include areas of concern such as general circulation; emergency safety information; the use of lighting, tactile, and sound cues; and signage design.

1. Circulation
   a. Provide for directional information to accessible areas, such as transportation points; drop-off zones; car parking for people who are handicapped.

b. Provide information along accessible routes to the entry; to vertical access (stairs, ramps, elevators). For visitors, provide directions at vertical access to various floors and levels.
c. Signage to accessible interior circulation; to public facilities and conveniences (restrooms, assembly areas, lobbies, offices, and dining facilities).
d. Mark accessibility of conveniences; e.g., indicate the provision of a chairbound water closet on the *exterior* rest room door.
e. Number all rooms including conference rooms and dining rooms.
f. Provide floor numbers at vertical access areas (stairs, elevators, or ramps).
g. Provide warnings if there is a level change in corridors.

2. Emergency safety information
   a. Provide both visual and audible alarms when required by local codes. (Flashing light next to exit sign.)
   b. Emergency exit signage must be distinct from regular circulation information. Routes to accessible holding areas (for fire emergency) should be clearly marked.
   c. Mark areas not recommended for chairbound people during an emergency.
   d. Plaques bearing raised letters or numbers shall be used to identify rooms or offices. They shall be placed on the corridor wall on the latch side of the doorway approximately 60 in. (152.4 cm) above the floor. Letters should be $\frac{5}{8}$ in. (15.9 mm) in height and should be raised at least $\frac{1}{32}$ in. (.8 mm) above the surface.
   e. Doors leading to dangerous areas not normally used by the public, such as mechanical rooms, loading platforms, and fire escapes, should be identified by handles with knurled finish.

3. Signage design
   a. Uniform format, color, and wording.
   b. Use of short familiar phrases.
   c. Simple and clear graphic designs.
   d. Use black or dark color background with white or light letters; size will also help the sign be discerned from the surrounding background.

4. Wall graphics
   a. When used as directional signage, the graphic should reinforce cues from intersections and level changes.
   b. Provide value contrast at junction of walls and flooring. A difference of 20 percent in reflectance value is recommended.

5. Lighting
   Use lighting to emphasize important areas or hazards.

6. Tactile and textural cues
   a. Handrails should provide a change in texture to indicate approaching vertical level changes, intersections, or doorways.
   b. Flooring textures may be used to indicate an approaching level change or doorway.

7. Sound cues
   Changes in the floorcovering from soft to hard can be used to warn the blind of an approaching level change.

Horizontal Circulation through Interior Space

Corridors, ramps, and other horizontal passages that accommodate physically disabled people require additional space considerations.

*1. Primary corridors allow for the passage of two wheelchairs side by side. These corridors should measure 60 in. (152.4 cm) in width.

*2. Partial or secondary corridors measure 54 in. to 60 in. (137.2 to 152.4 cm). In a very cramped situation a secondary passage may measure 42 to 44 in. (106.7 to 111.8 cm).

3. A full one-way passage should measure 36 in. (91.4 cm).

*4. Primary corridors are limited to a maximum distance of 100 ft (30.5 m) between rest stops.

*5. Rest stops are alcoves along corridors that are designed to allow parking for wheelchairs and seating. Parking for one wheelchair should measure 48 in. (121.9 cm) in length and 32 in. (81.3 cm) wide. Additional space must also be provided for approach, turning, and backing up. (See Figure 14.6.)

*6. Partial or secondary corridors are limited to a maximum of 50 ft (15.2 m) to a 360° turnaround area (60" × 60" [152.4 × 152.4 cm]).

7. One-way passages are limited to a maximum distance of 50 ft (15.2 m) to a 180° wheel-pivot turnaround. Distance to a 180° axle-pivot turn is 25 ft (7.6 m). A one-way passage that requires backing out is limited to 8 ft (243.8 cm).

8. A turn of 360° requires a diameter circle at footrest height. (See Figure 14.7.)

9. 180° turns require 75 in. (190.5 cm) by 64 ½ in. (163.9 cm). (See Figure 14.8.)

10. A 90° turn requires an area 55" × 66" × 36" (139.7 × 167.6 × 91.4 cm). (See Figure 14.9.)

11. Overall lighting should equal 10 footcandles. Major intersections should provide 15 to 20 footcandles.

Vertical Access in Interior Spaces

Means of accessible vertical egress—stairs, elevators—are critical in the event of a fire. The following requirements should be observed:

*1. Provide two types of vertical access at all change levels.

*2. Provide ramped access for level changes from ¼ in. (6.4 mm) to the height of one step.

*3. Cue vertical changes greater than ½ in. (12.7 mm). It is recommended that level changes be avoided in heavy traffic areas. Also avoid level changes of less than three steps.

4. Stairs
   *a. Width should be 44 in. (111.8 cm).
   b. Risers should not exceed 7 in. (17.8 cm). All risers should be closed on stairs used for primary egress.
   c. Tread areas of stairs should not be less than 10 in. (25.4 cm).

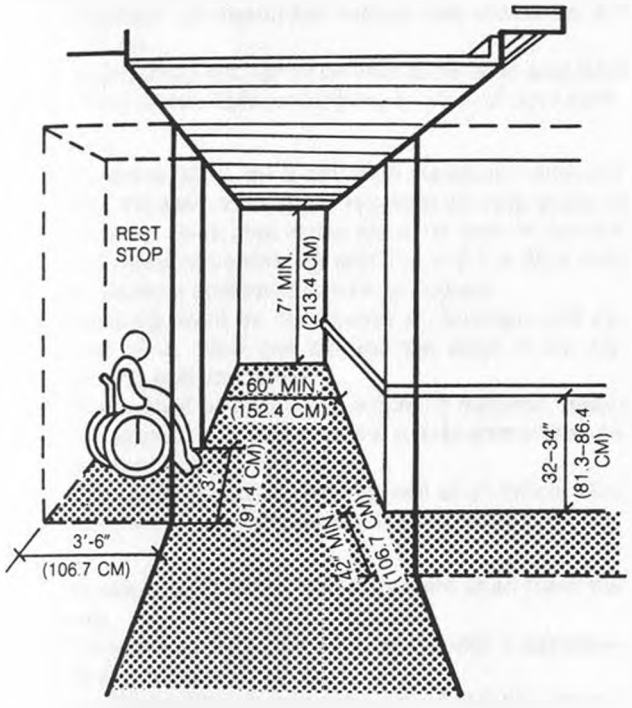

Figure 14.6 Corridors with rest stops.

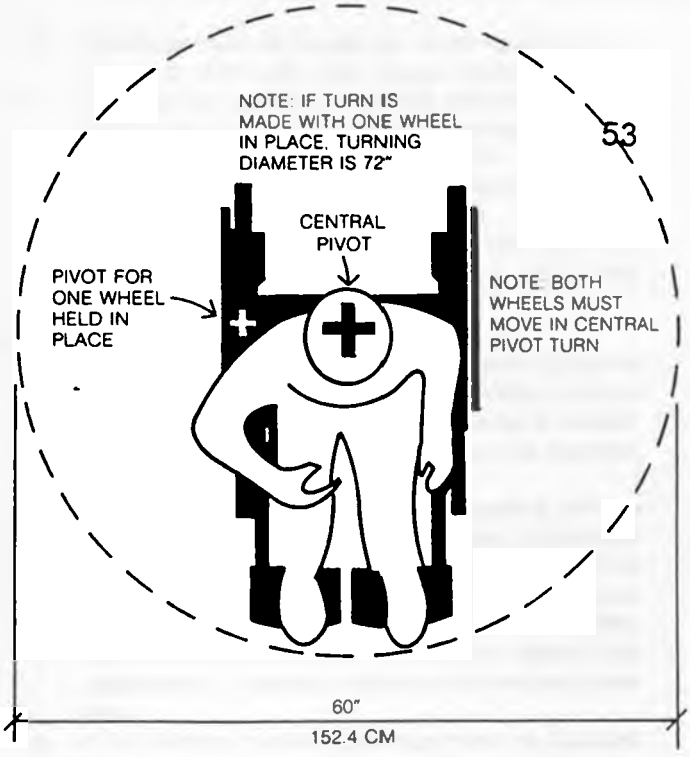

Figure 14.7 Turning requirements: 360° turn.

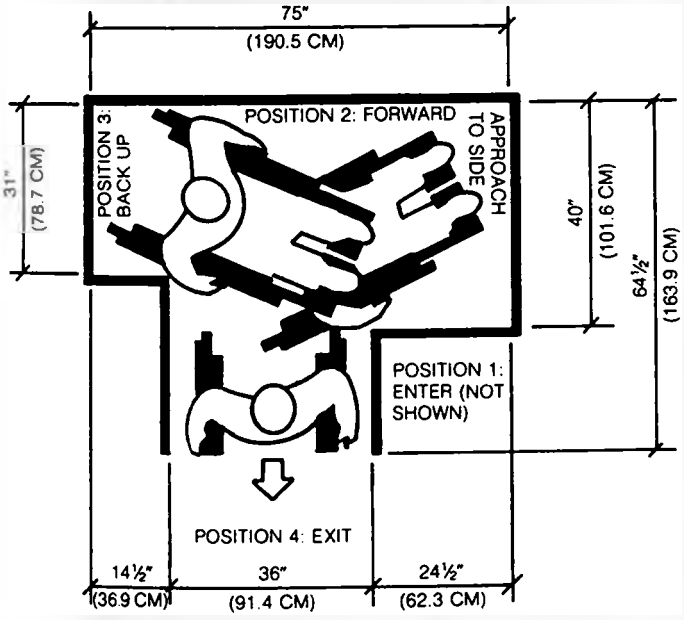

Figure 14.8 Turning requirements: 180° three-point turn.

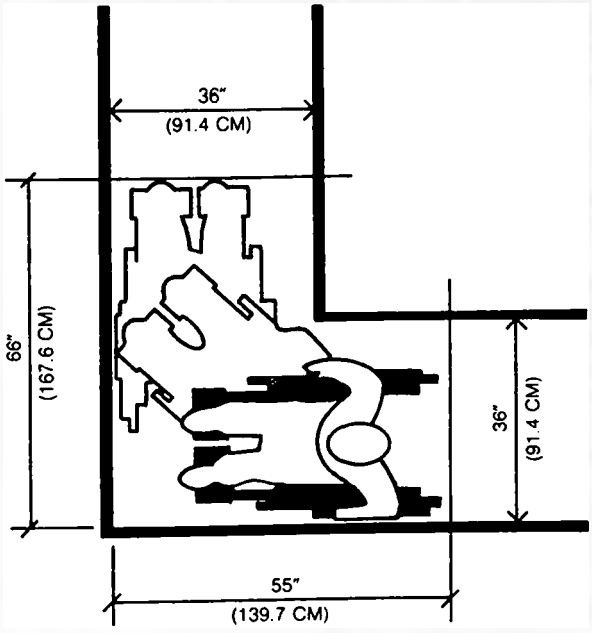

Figure 14.9 Turning requirements: 90° turn.

d. Maximum uninterrupted vertical rise should be 9 ft (2.7 m).
e. Approaches and landings should be level and have cuing (color, light, or texture) to warn of approach.

5. Handrails
*a. Handrails 32 in. (81.3 cm) high measured vertically from the stair noising are required on both sides of the stair. Rails should be round or oval in section and measure between ½ and 2 in. (12.7 to 50.8 mm) in diameter and have a nonslip surface.
*b. Handrails shall be continuous at landings and extend 12 in. (30.5 cm) beyond the edge of the beginning and final step.
*c. Treads shall be finished in a nonslip material. Heavily patterned floor surfaces are not recommended on landings.
*d. Stairs must be adequately lighted at all times. Minimum level of 5 footcandles is recommended.

6. Ramps
A ramp with a gradient of 5 to 8 percent shall have the following:
*a. The same width as the walk or corridor it serves—48 in. (121.9 cm) minimum.
*b. Shall be kept to a maximum gradient of 8.33 percent, or 1-ft (30.5-cm) rise in 12 ft (3.6 m) of run.
*c. The ramp shall be built of firm, fixed, nonslip materials. The ramp shall also not have grating or other openings.
*d. Ramp shall be provided with a level platform at the top which shall measure 60" × 60" (152.4 × 152.4 cm) and a straight level clearance of at least 72 in. (182 cm) at the bottom of the ramp.
*e. A level landing shall be provided at 30-ft (9-m) intervals and at all changes of direction and intersections with other ramps or doors. These landings shall be 60 in. (152.4 cm) in length.
*f. Ramps shall be provided with handrails on one side (and both sides if possible). The rails must be smooth and extend out from the walls at least 1½ in. (3.8 cm). Rails shall extend beyond the top and bottom of the ramp at least 12 in. (30.5 cm).
*g. Ramps shall be provided with curbs 2 in. (5.1 cm) high or guard rails or walls at least 32 in. (81.3 cm) high where there is a drop in grade at the edge of the ramp.
*h. Provide lighting for ramps at all times (5 footcandles minimum recommended).

7. Elevators
*a. Elevators must be available at the level of the major building entrance which is used by physically disabled people. The elevators must give access to all levels of the building normally used by the public.
b. Call buttons should be centered at 42 in. (106.7 cm) above the floor. A visible and audible signal indicating direction of travel is required.
*c. Cab size must allow for movement of a wheelchair. A 180° turning of the wheel is recommended.
*d. Door opening width must be a minimum of 32 in. (81.3 cm).
*e. Doors shall be fitted with a door reopening device that is capable of sensing an object in the path of the doors and that does not contact for activation.
*f. Operation must be automatic and self-leveling within ½ in. (12.7 mm) of floor levels under normal use conditions.
g. At least one wall of the car should be equipped with a handrail 32 in. (81.3 cm) above the floor.
*h. All essential controls which are designed for unilateral vertical reach from a wheelchair shall be mounted at a maximum height of 60 in. (152.4 cm). Controls shall be usable by blind people and shall feature raised numerals and symbols.
*i. An emergency telephone without dial shall be mounted at a maximum height of 48 in. (121.9 cm) above the floor.

8. Entrance lobbies
a. Provide waiting areas with seating and space for wheelchair parking within the main lobby or adjacent to the main entry. A vestibule area is acceptable, but paths of egress should not be blocked. (See Figure 14.10.)
b. The space should be provided for parking at least two wheelchairs. This space requires a minimum length of 48 in. (121.9 cm) and a minimum width of 32 in. (81.3 cm). Additional space should be provided for parking, backing, and approaching. Provide at least 24 in. (61 cm) between seating and passageway if seating is facing into the circulation area.
c. A full primary two-way passage must be provided through the lobby area (60 in. [152.4 cm]). This passage should connect the reception desk, elevators, and public conveniences (drinking fountains, telephones, restrooms) that are located near the lobby.
d. *Floorcovering* in the immediate entrance area should not be a slick surface that may result in slipping and falling. Avoid the use of terrazzo, polished stone, or hand-crafted ceramic tiles with deeply grouted seams which could make wheelchair movement difficult.
e. Provide a flush mount between hard-surfaced entry flooring and adjointing carpet. (See Figure 14.10.)
f. *Furniture* in lobby areas must be designed for use by physically disabled people. Stability of construction in seating furniture is important.
*g. Information or reception desks (counters) shall not exceed 36 in. (91.4 cm) in height. Exception: Some counters may be built higher if a section (at least 30 in. [76.2 cm] wide) is 36 in. high. If a counter is provided for writing, it should not exceed 34 in. (86.4 cm) in height. (See Figure 14.11.)
h. Reception counters should be visible from the entrance doors.
i. *Minimum lighting* levels for lobbies is 10 footcandles. Writing areas should provide 30 footcandles.

9. Exhibit and display areas
a. Exhibits in lobbies shall not create barriers or obstruct normal passage paths.
b. Display equipment (structures) should be able to withstand 250 lb (150 kg) of force applied from any direction.

Toilet Facilities

Each floor of a building shall have at least one toilet facility available to physically disabled people of each sex. The following requirements must be provided:

*1. The floor of the toilet room shall be at the same level as the corridor floor.

*2. The layout of entrance foyers, doors, and privacy screens shall allow sufficient clearance for wheelchair passage.

*3 The floor space must contain a clearance of at least 60" × 60" (152.4 × 152.4 cm) for wheelchair turning.

4. At least one toilet stall shall be the side-transfer type. (See Figure 14.12.) This type of stall shall have the following measurements:
   a. A minimum width of 66 in. (167.6 cm) and a depth of at least 60 in. (152.4 cm).
   b. A 32-in. (81.3-cm) wide clear opening to one side of the front of the stall with an outswinging door.
   c. One water closet with seat 20 in. (50.8 cm) above the floor and the centerline located 18 in. (45.7 cm) from the side wall on which the grab bar is located and away from the door. If possible, a wall-mounted water closet is preferred.
   d. The wall-mounted bar shall be 1.5 in. (3.8 cm) in diameter and be placed 1.5 in. from the wall. It shall be located 33 in. (83.8 cm) from the floor. When multiple toilet sets are provided, the grab bars and toilets should be alternated between the left and right sides of stalls.

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*5. At least one lavatory shall be wall mounted with a 29-in (73.7-cm) minimum clearance underneath the apron of the fixture (10 in. [25.4 cm] from the face of the fixture) to provide wheelchair approach. Faucets shall be easily operated with no self-closing fixtures. Single-lever or wrist-blade types that do not require hand grip should be used.

*6. Toilet rooms for men shall have wall-mounted urinals with the rim 19 in. (48.3 cm) above the floor or shall have floor-mounted urinals which are at the same level as the main floor of the toilet room.

*7. Mirrors and shelves shall be mounted above accessible lavatories as low as possible, not exceeding 40 in. (101.6 cm) from the floor. Towel racks, soap dispensers, and all other accessories should be located no higher than 40 in. above the floor.

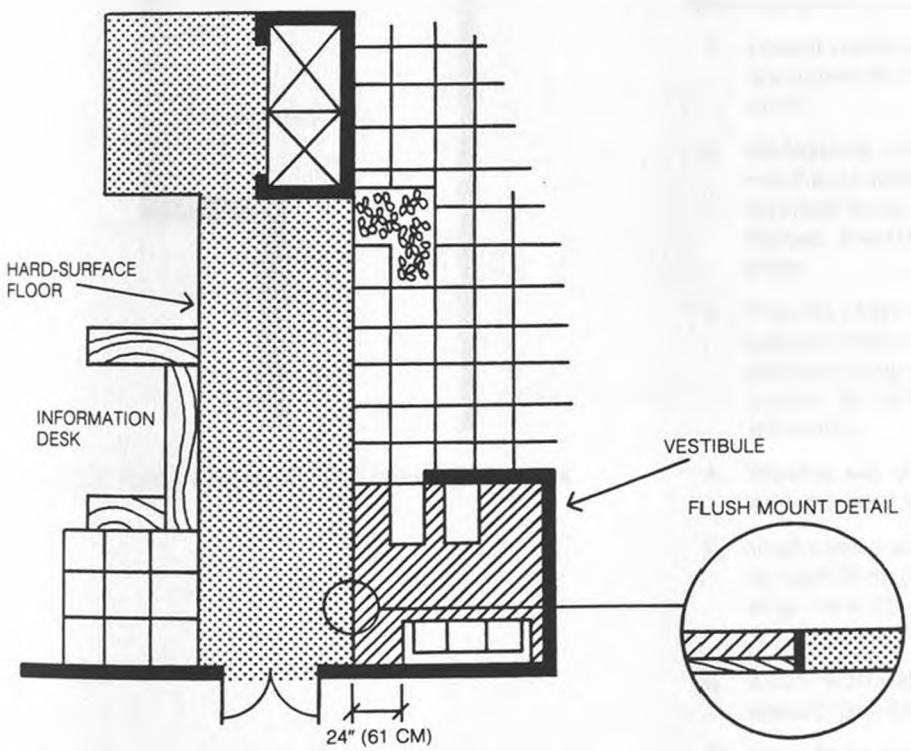

Figure 14.10 Vestibule floor surfacing.

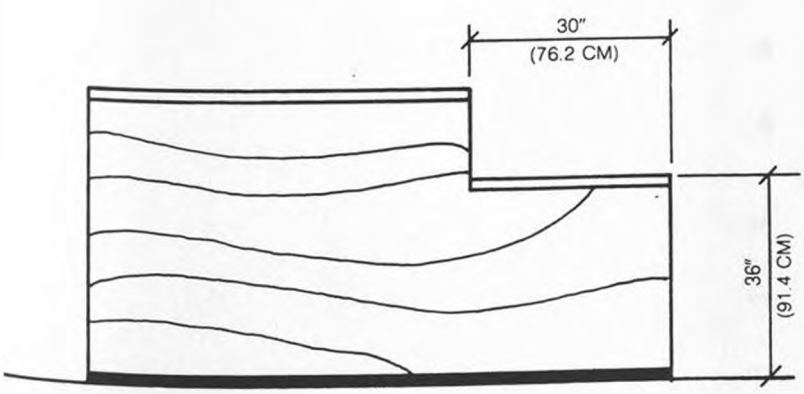

Figure 14.11 Lobby information desk.

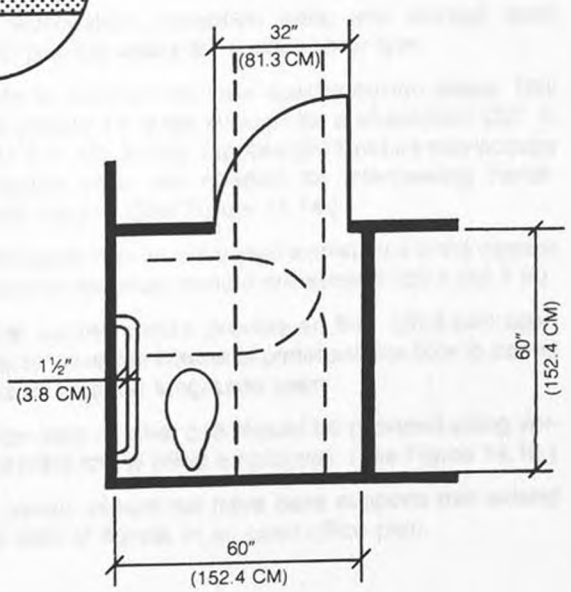

Figure 14.12 Side transfer toilet.

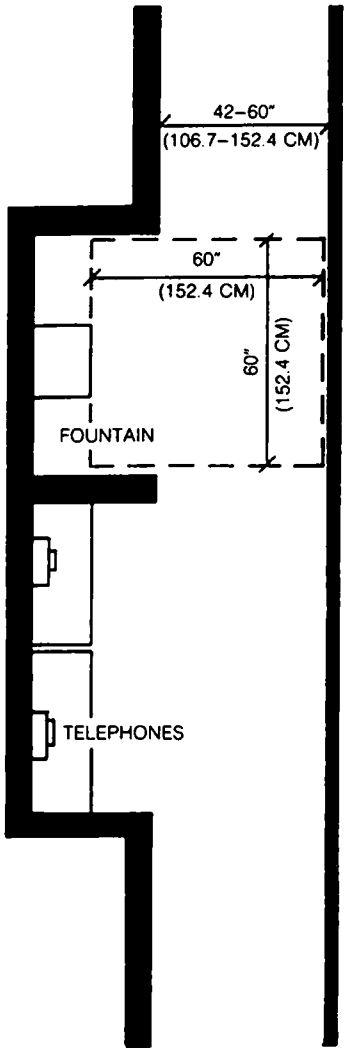

Figure 14.13 Public telephones and drinking fountains.

Drinking Fountains and Public Telephones

At least one telephone and one fountain shall be located at an accessible location on each floor of a building:

*1. The fountain shall be hand operated or hand and foot operated with up-front water and jet controls. A wall-mounted model shall have a 12-in. (30.5-cm) projecting bowl with a rim placed 30 to 36 in. (76.2 to 91.4 cm) above the floor. An alcove is desirable for the location of a fountain in a corridor. (See Figure 14.13.)

*2. Telephone dials, handsets, and coin slots shall be located no higher than 54 in. (137.2 cm) above the floor. Push-button dials are preferred and cords should be 36 in. (91.4 cm) long. Directories should be mounted 30 to 34 in. (76.2 to 86.4 cm) above the floor. At least one telephone should be equipped with an amplifier for use by those with a hearing disability.

Open Office Barrier-Free Criteria

Open offices present special problems for physically disabled people because standard corridors are not established. Therefore accessibility factors require special attention.

1. Locate conference rooms and meeting rooms so that they are convenient to main circulation routes and vertical access.
2. Accessible conference rooms should be within 50 ft (15 m) of accessible rest rooms, drinking fountains, and public telephones. Where application of conference facilities occurs, one room or area of each type should be accessible.

*3. Provide office work areas usable by physically disabled people without segregating them into one area. Allow additional linear wall space and/or floor space for storage usable by those who are handicapped in private office situations.

4. Provide two different means of access to built-up areas and elevated (vertical) computer floors.
5. Workstation access aisles should have a clear width of at least 36 in. (91.4 cm) with a wheelchair turnaround area of at least 60" × 60" (152.4 × 152.4 cm) located at 50-ft (15-m) maximum intervals. (See Figure 14.14.)
6. Each workstation, reception area, and storage room should provide space for a wheelchair turn.
7. Provide for several interview spaces beside desks. This space should be large enough for a wheelchair (32" × 48" [81.3 × 121.9 cm]). Lightweight furniture may occupy this space when not needed for interviewing handicapped people. (See Figure 14.14.)
8. The distance from an individual workstation to the nearest accessible rest room should not exceed 150 ft (45.7 m).
9. Vertical panels should provide an 8-in. (20.3-cm) open space between the bottom of panel and the floor to permit detection by blind long-cane users.
10. A guide rope or other cue should be provided along vertical panels to aid blind employees. (See Figure 14.15.)
11. Wall panels should not have base supports that extend into a path of egress in an open office plan.

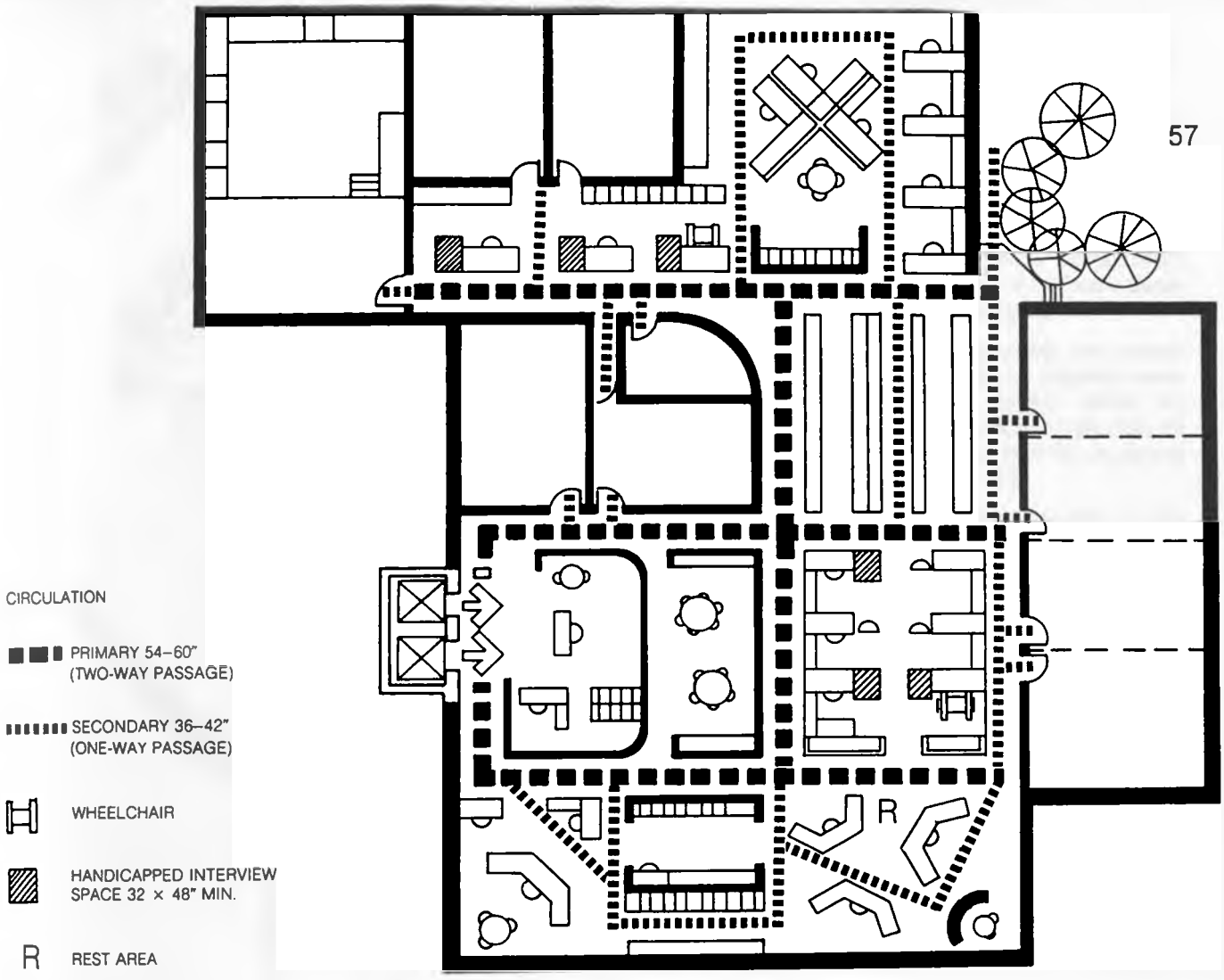

Figure 14.14 Circulation in offices.

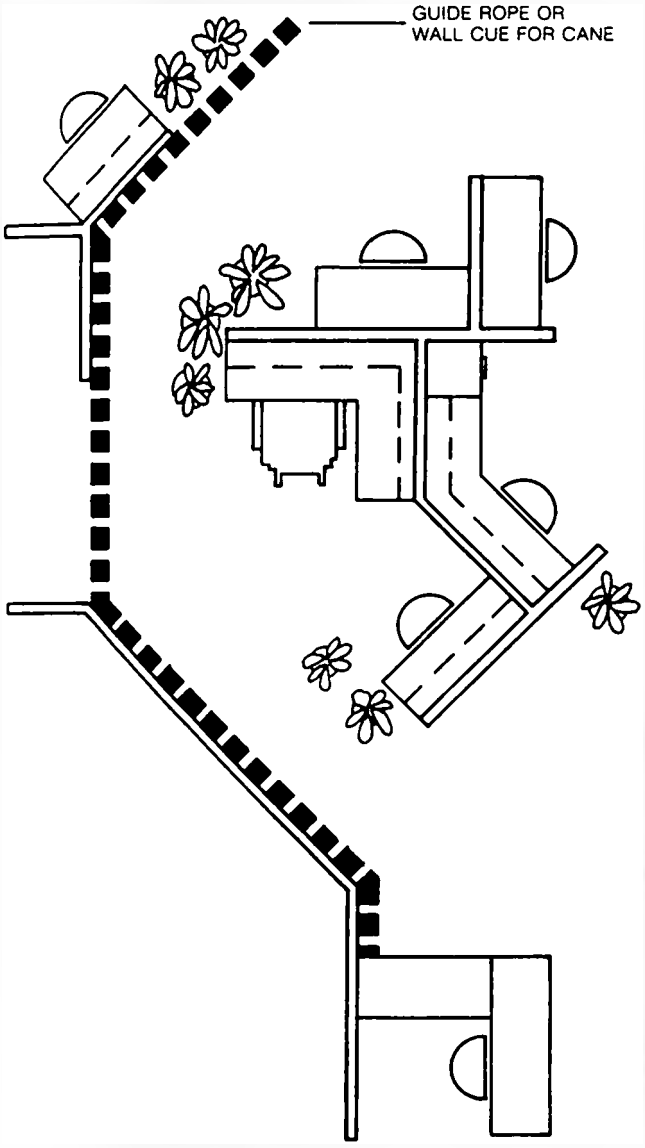

Figure 14.15 Circulation: passage through open office plan.

12. When several panels are connected in a linear assembly, there should be one stabilizing panel attached to the assembly at a 45° to 90° angle for each three panels.
13. The entire open office system, including the carpeting and permanent walls, should provide sufficient color and value contrast to permit identification of components and various means of egress by visually impaired people.
14. Worksurfaces should have a minimum undersurface kneespace width of 32 in. (81.3 cm). A leg room depth of 20 in. (50.8 cm) should also be provided.
15. Worksurfaces, storage units, typing tables, and conference tables should be capable of being adjusted incrementally in height. Other than typing tables, all worksurfaces should have an adjustable height from 25 to 30 in. (63.5 to 76.2 cm) measured from the underside of the worksurface. (See Figure 14.16.)
16. All horizontal worksurfaces should be capable of supporting a 200-lb (90-kg) load at the outer edge without tipping.
17. Worksurfaces should be provided with a nonglare top surface.
18. All edges and corners of furniture components should be rounded with a radius of ⅛ in. (3.2 mm).
19. When overhead storage is used, the worksurface width should not exceed 25 in. (63.5 cm) if kneespace is provided. When kneespace is not provided, the top width should not exceed 20 in. (50.8 cm). The bottom of the overhead shelf should not be higher than 44 in. (111.8 cm) above the floor when a kneespace is provided; without a kneespace, the height should be 46-in. (116.8 cm).
20. All doors and drawers should be operable with one hand. Use side-hung doors if they do not cause obstruction to movement within the space.
21. Provide a variety of file storage that is accessible to disabled people. A seated person may reach a filing system from 10 to 42 in. (25.4 to 106.7 cm) high; a standing person's reach is from 10 to 56 in. (25.4 to 142.2 cm) high. (See Figure 14.17.)
22. All hardware should be flush or recessed. Trim may only protrude ⅛ in. (3.2 mm). Latches and handles to overhead storage should be located at the bottom of the doors. All desk hardware should be located (if possible) at least 18 in. (45.7 cm) from the floor.
23. Hooks and hangers within wardrobes should be adjustable from 48 to 66 in. (121.9 to 167.6 cm).
24. Lighting levels at workstations should average 50 ESI footcandles for task illumination. Overall illumination for general circulation should average 10 footcandles.
25. Locate outlets to prevent potential hazards, such as raised mounts or multiple plug adaptors. Extension cords should not be allowed to run under work surfaces. All electrical power receptacles, switches, and telephone outlets which are housed in the furniture system should be located between 12 and 48 in. (30.5 and 121.9 cm) above the floor.
26. Controls on telephones shall not require wrist action or finger manipulation. Provisions should be made to add receiver volume controls to telephones when needed.

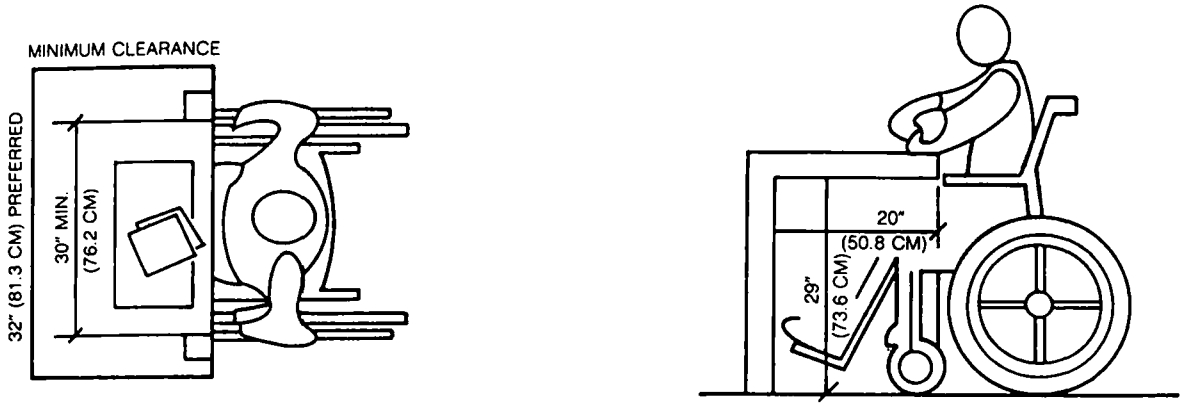

Figure 14.16 Work surfaces.

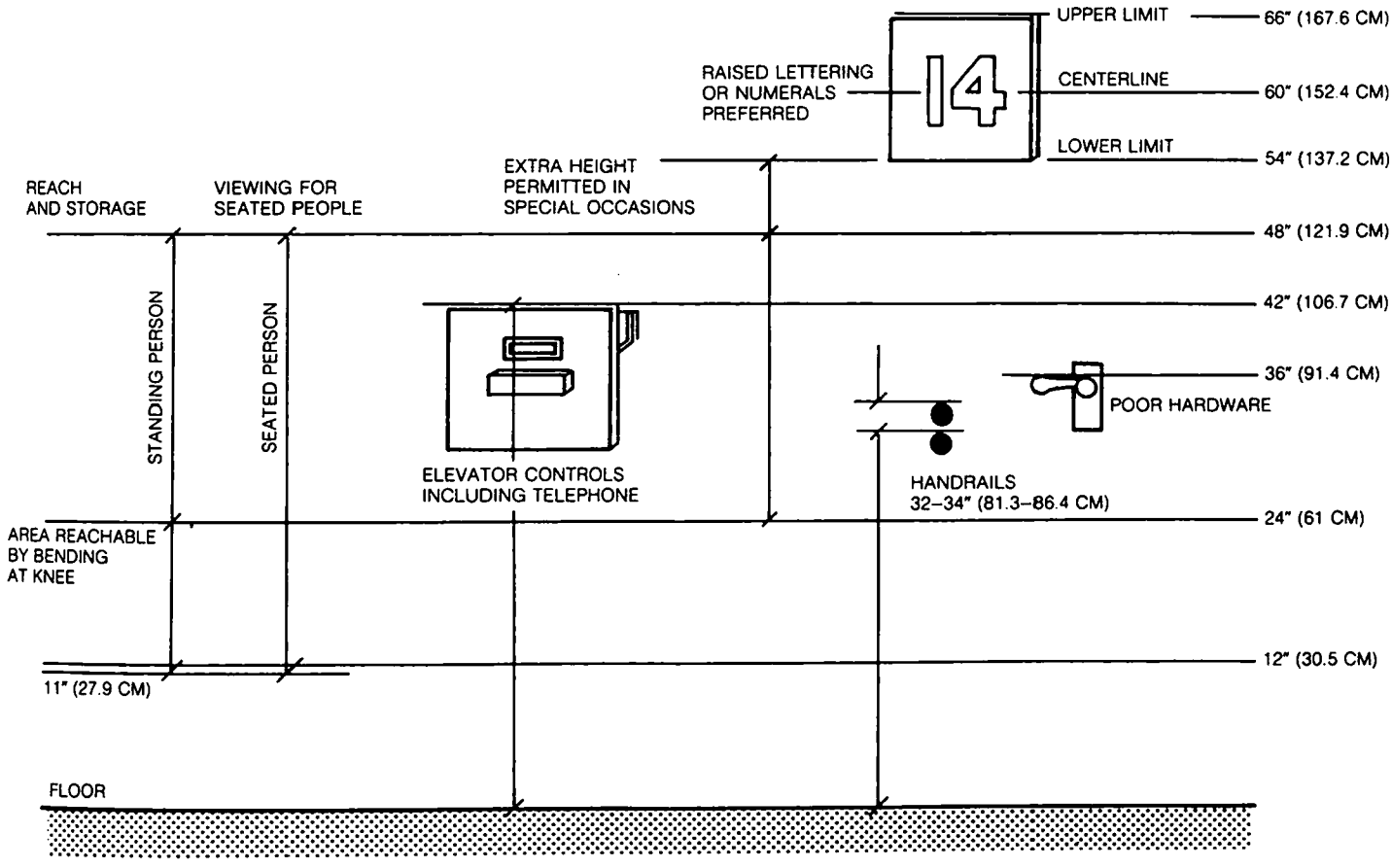

Figure 14.17 Comparative reach.

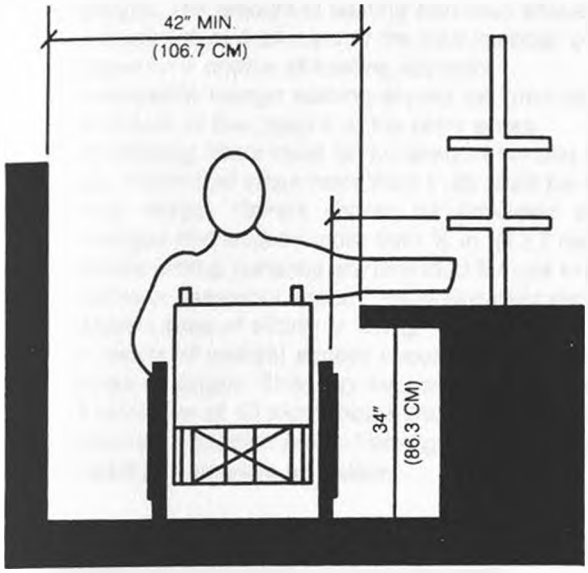

Figure 14.18 Food service.

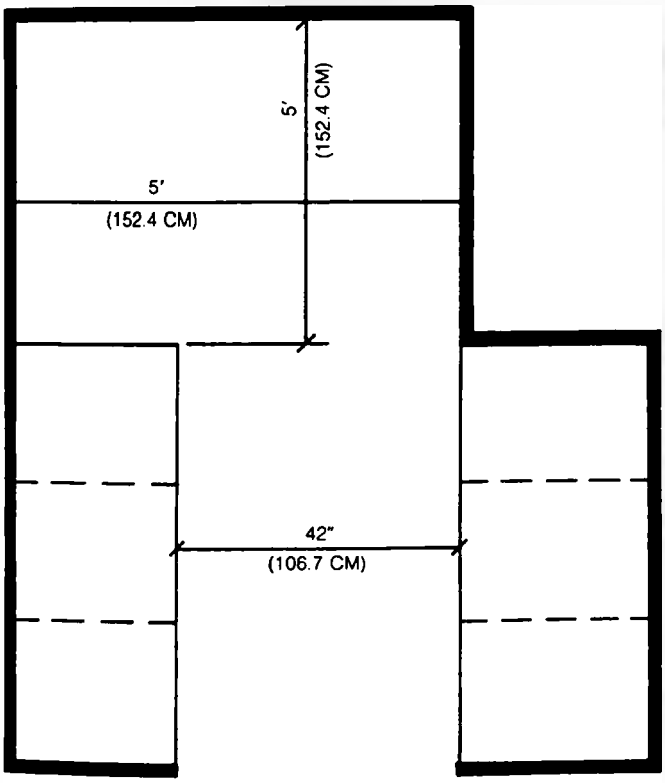

Figure 14.19 Vending machines.

Other handicapped aids should also be made available, such as a teletypewriter, speaker system, and foot controls.

Accessibility to Public Spaces

Dining areas, dormitories, and spectator spaces require the following design considerations:

1. Dining areas
   a. Dining areas should be directly accessible to physically disabled people without having to enter through a service area or kitchen.
   b. Provide a variety of dining choices within the facility. Do not segregate handicapped people in one area.
   c. Access aisles between tables or booths should be at least 36 in. (91.4 cm) wide with wheelchair turning space of no less than 60" × 60" (152.4 × 152.4 cm) located at 50-ft (15.2-m) maximum intervals.
   d. *Food service* lines should allow a minimum clear aisle width of 42 in. (106.7 cm) between food service counters (or tray slides) and control railing. Outside rail height of tray slide should not be more than 34 in. (86.4 cm). (See Figure 14.18.)
   e. Vending areas should provide a turning space of no less than 60" × 60" (152.4 × 152.4 cm). (See Figure 14.19.)
   f. Undertable clearance should measure 29 to 30 in. (73.7 to 76.2 cm). Minimum clear knee recess width of 32 in. (81.3 cm) and a depth of 20 in. (50.8 cm) should be provided.
   g. Booths, stand-up counters, and other such facilities are permitted when other alternatives are provided for those who are handicapped.
   h. Dispensers for eating utensils, glassware, and drinking water should be available to people not going through the food service line. Drinking glasses should be provided with a support shelf while they are being filled from a tap dispenser.

2. Dormitories
   a. Rooms should be large enough to allow placement of furniture with at least 52 in. (132.1 cm) between major elements. Clearance between the bed and a wall surface should be 38 in. (96.5 cm).
   b. Clothing storage rods should be adjustable to 48 in. (121.9 cm) above the floor. To be fully accessible, closet should allow partial entry of a wheelchair.
   c. Mattress top should be 22 in. (55.9 cm) above the floor.
   d. Rooms should be adequately ventilated in bedrooms where wheelchairs may be recharged.

3. Spectator spaces
   a. Lecture halls, auditoriums, and theaters should have areas set aside for wheelchair users. Wheelchair stations should be level, be out of the traffic zone, and provide good visibility. (See Figure 14.20.)
   b. The number of wheelchair stations varies with the capacity of the assembly space.

Assembly Space	Number of Wheelchair Stations
Up to 75	Minimum 1
76 to 500	Minimum 2
501 to 1000	Minimum 3
1001 to 1500	Minimum 4
Over 1500	Minimum 4 plus 1 for each 400 people over 1500

c. Seating should also be provided for semiambulant people. The amount of seating provided should equal a minimum of 1 percent of the total number of seats. Allow for a choice of seating location.
d. Accessible lounge seating should be provided for a minimum of two people in the entry areas.
*e. All sloping floors must be covered in nonslip materials. Floors that slope more than 1:20 shall be considered ramps. Ramps should be provided at level changes that exceed more than ½ in. (12.7 mm).
f. Where writing surfaces are provided for use in lecture rooms or assembly spaces, the equipment should not prevent ease of sitting or rising.
g. A means of vertical access should be provided to all podia or stages. This may be portable or temporary.
h. A minimum of 10 footcandles should be provided for general circulation areas. Foot lighting should be provided on stairways and aisles.

PROCEDURES FOR COMPLIANCE WITH BARRIER-FREE REQUIREMENTS

Designers involved in the design and specification of interior components for federal buildings or public spaces that must comply with Public Law 90-480 should obtain procedures for compliance from regional offices of the General Services Administration or the Office of Facilities Engineering of the Department of Health and Human Services. Currently these federal agencies employ a checklist for documenting compliances; and after a final inspection to certify that the facilities meet the requirements, a certificate of compliance is issued. State and local governing agencies should also be consulted on compliance procedures.

Exceptions and Waivers

The following exceptions are currently allowed by federal regulations:

1. The design, construction, or alteration of any portion of a building which need not, because of its intended use, be made accessible to, or usable by, the public or by physically disabled people.
2. The alteration of an existing building if the alteration does not involve the installation of, or work on, existing stairs, doors, elevators, toilets, entrances, drinking fountains, floors, telephone location, curbs, parking areas, or any other facilities susceptible of installation or improvements to accommodate physically disabled people.

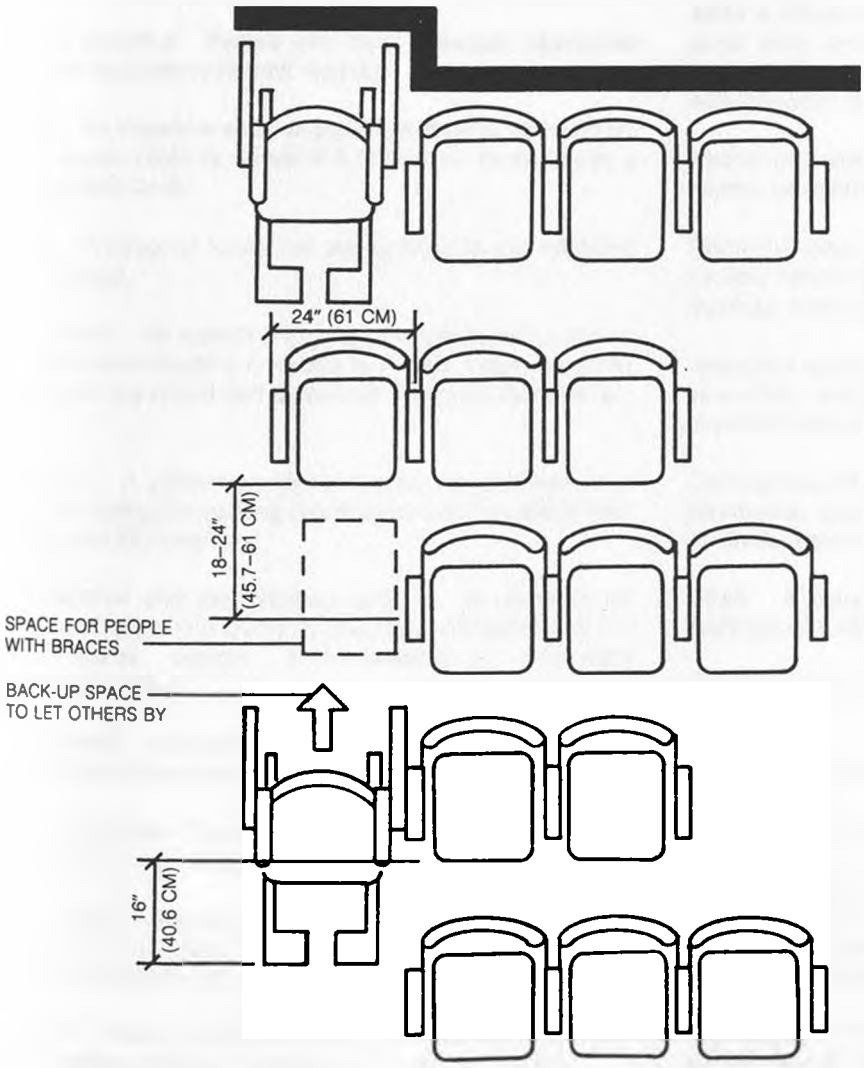

Figure 14.20 Assembly seating.

3. The alteration of an existing building, or of such portions thereof, to which application of the standard is not structurally possible.
4. The construction or alteration of a building for which plans and specifications were completed or substantially completed on or before September 2, 1969. However, any building constructed under the National Transportation Act of 1960, the National Capital Transportation Act of 1965, or Title III of the Washington Metropolitan Area Transit Regulation Compact shall be designed, constructed, or altered in accordance with ANSI standards regardless of design status or bid solicitation as of date required by law.[5]

All exception and waiver requests submitted for approval shall be fully supported by documentation outlining the conditions which generated the request and the reasons for submittal.

GLOSSARY

Accessible: A means or condition of approach, admittance and use, intended for use by physically handicapped people.

Ambulant disabled: People who have physical disabilities that do not necessarily restrict walking.

Balcony: An interior or exterior portion of seating, circulation, or work space which is raised 4 ft (1.2 m) or more above a floor or ground level.

Barriers: Physical or functional obstructions to the intended use of a space.

Built-up level: An elevation change in floor level of one or more risers not exceeding 4 vertical feet. Note: Less than three risers are not recommended as vertical access to built-up levels.

Chairbound: A person or persons who are confined to a wheelchair during the working day or who elect to use a wheelchair for ease of movement.

Communication and identification system: A standard organization of signs and cuing for purposes of identifying circulation routes, spaces, and hazards to physically handicapped people.

Corridor lobby: A wheelchair turnaround space in corridors; where seating is provided, it qualifies as a rest stop.

Corridor rest stops: Seating and wheelchair parking at specific intervals along a corridor.

Cues or cuing: Materials or components which communicate information by nonliteral means, including textures, color, graphics, and audible signals.

Equipment: Fixed or nonfixed building hardware and accessories. Example: mirrors, dispensers, or lighting fixtures.

Exception: A term indicating an accessible alternative to a requirement.

Flush: Within ⅛ in. (3.2 mm) maximum protrusion from surrounding surfaces.

Governing codes: Any codes applicable to a project, including basic federal criteria documents and state and city codes.

Hazards: Protrusions, obstructions, changes in materials or levels, exposed structural or mechanical components, or the effects of inclement weather which are likely to cause personal injury, confusion, or discomfort.

Leisure run stairs: Stairs having unusually shallow slope or small ruse-to-run ratio.

Loop circulation: Passageway for one-way circulation.

Mounting height: The distance from the floor to the top edge or surface of an object, except as noted.

Physically disabled or handicapped: Any individual who despite a physical disability, can be expected, without assistance from another person, to visit and utilize a building, including its services; the disabled; the handicapped; people with physical disabilities.

Public conveniences: Facilities for public use, such as rest rooms, telephones, and drinking fountains.

Ramping device: A permanent or temporary inclined plane usually ramping a small level change (½ in. [12.7 mm] or less) such as metal plate attached to a threshold.

Required accessible areas: Specified areas which must be physically accessible and functionally usable by physically disabled people.

Semi-ambulant disabled: People with partial mobility impairments, such as difficulty in walking, breathing, strength, stamina, balance, and/or coordination problems.

Shall: A manditory regulation; indicates that an item must conform to a standard.

Should: Recommendations or that which is advised but not required.

Stairway: Three or more risers shall constitute a stairway.

Steps: One to three consecutive treads or risers.

Vertical access: Means of traveling from one floor level to another. Example: ramps, stairs, elevators, and other lifts. Escalators are usually not considered as vertical means of access for physically handicapped people.

Workstation: Floor areas, furniture and/or equipment used by employees for periods of time longer than one-half hour.

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OREGON ADMINISTRATIVES RULES CHAPTER 333

FOOD SANITATION RULES

(5) Game meat which has been donated to a charitable organization and has been inspected and processed as provided in ORS 619.095 may be served for human consumption by that charitable organization.

(6) Notwithstanding subsections (1) through (4) above, an extraordinary situation exists where private persons, businesses or volunteer groups may donate food to benevolent organizations shall inspect all donated food to ensure its fitness for human consumption; discarding all food which is unwholesome. The following donated food items are approved for use by benevolent organizations.

(a) Commercially prepared foods, canned goods, and milk products, marine and freshwater fisheries products or meat animals; i.e., cattle, sheep, goats, equine, swine, poultry or rabbits obtained from facilities licensed by the Department of Agriculture or the Health Division according to Oregon Revised Statutes 603, 616, 621, 622, 624, 625 and 635.

(b) Home baked bread, rolls, pies, cakes, doughnuts or pastries not having perishable fillings, icings, toppings or glazes.

(c) Fresh fruit and produce from private gardens or commercial growers.

(d) Salvageable food which has lost the label or which has been subjected to possible damage due to accident, fire, flood, adverse weather or similar cause. Reconditioning of salvageable food shall be conducted according to the 1984 Model Food Salvage Code recommended by the Association of Food and Drug Officials and U.S. Department of Health and Human Services.

(e) Other food as may be approved by the Assistant Director upon prior notification by the donator or benevolent organization.

(f) A sign with letters at least 2-1/2" in height shall be posted in public view that states, "Food items served at this location may have been obtained from unlicensed, non-inspected sources."

Reason:

To control foodborne illness and prevent food spoilage which may result from improperly processed, handled, or transported food, food service establishments must be concerned with the sources of the food they use. The sound condition, proper labeling, and safety of food are basic requirements for the protection of the public health. Accordingly, the provisions of this section are intended to ensure that food in general, especially potentially hazardous food is obtained from sources considered satisfactory by the regulatory authority.

The use of hermetically sealed, noncommercially packaged food is prohibited because of the history of such food in causing foodborne illness. Additional specific requirements for food supplies, such as the pasteuriza-

tion of milk and milk products or the use of only clean, whole-shell eggs, are included because these products are exceptionally good media for the growth of pathogens. Labeling requirements, particularly for shellfish, provide assurance that the source of any such food is under the control of a regulatory authority, thus providing for the protection of the public health.

Food Protection

333-151-020 FOOD PROTECTION, GENERAL

At all times, including while being stored, prepared, displayed, served, or transported, food shall be protected from potential contamination, including dust, insects, rodents, unclean equipment and utensils, unnecessary handling, coughs and sneezes, flooding, drainage, and overhead leakage or overhead drippage from condensation. The temperature of potentially hazardous food shall be 45 degrees F or below or 140 degrees F or above at all times, except as otherwise provided in these rules.

333-151-030 EMERGENCY OCCURRENCES

In the event of a fire, flood, power outage, or similar event that might result in the contamination of food, or that might prevent potentially hazardous food from being held at required temperatures, the person in charge shall immediately contact the regulatory authority. Upon receiving notice of this occurrence, the regulatory authority shall take whatever action it deems necessary to protect the public health.

Reason:

Food, if mishandled, can become contaminated with filth, pathogenic microorganisms and toxic chemicals from a number of sources. Therefore, food protection measures are designed to protect food from being contaminated at all times within the establishment and during transportation. These measures are also intended to prevent the rapid and progressive growth of disease-causing organisms that are naturally present in foods as well as those introduced through incidental contamination in the operation of a food service establishment.

Proper food protection measures should include: (1) application of good sanitation practices in the handling of food; (2) strict observation of personal hygiene by all food service employees; (3) keeping potentially hazardous food refrigerated or heated to temperatures that minimize the growth of pathogenic microorganisms; (4) inspecting food products as to their sanitary condition prior to acceptance at the establishment; and (5) provision of adequate equipment and facilities for the conduct of sanitary operations.

Food Storage

333-151-040 FOOD STORAGE, GENERAL

(1) Food, whether raw or prepared, if removed from the container or package in which it was obtained, shall be stored in a clean covered

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container except during necessary periods of preparation or service. Container covers shall be impervious and nonabsorbent, except that linens or napkins may be used for lining or covering bread or roll containers. Solid cuts of meat shall be protected by being covered in storage, except that quarters or sides of meat may be hung uncovered on clean hooks if no food product is stored beneath the meat.

(2) Containers of food shall be stored a minimum of 6 inches above the floor in a manner that protects the food from splash and other contamination, and that permits easy cleaning of the storage area, except that:

(a) Metal pressurized beverage containers, and cased food packaged in cans, glass or other waterproof containers need not be elevated when the food container is not exposed to floor moisture;

(b) Containers may be stored on dollies, racks or a 4" platform with a sealed base.

(3) Food and containers of food shall not be stored under exposed or unprotected sewer lines or water lines, except for automatic fire protection sprinkler heads that may be required by law. The storage of food in toilet rooms or vestibules is prohibited.

(4) Food not subject to further washing or cooking before serving shall be stored in a way that protects it against cross-contamination from food requiring washing or cooking.

(5) Packaged food shall not be stored in contact with water or undrained ice. Wrapped sandwiches shall not be stored in direct contact with ice.

(6) Unless its identity is unmistakable, bulk food such as cooking oil, syrup, salt, sugar or flour not stored in the product container or package in which it was obtained, shall be stored in a container identifying the food by common name.

333-151-050 REFRIGERATED STORAGE

(1) Enough conveniently located refrigeration facilities or effectively insulated facilities shall be provided to assure the maintenance of potentially hazardous food at required temperatures during storage. Each mechanically refrigerated facility storing potentially hazardous food shall be provided with a numerically scaled spirit stem indicating thermometer accurate to ±3 degrees F, located to measure the air temperature in the warmest part of the facility and located to be easily readable. Recording thermometers, accurate to ±3 degrees F may be used in lieu of indicating thermometers. Refrigerators equipped with a temparature gauge visible from the exterior are acceptable.

(2) Potentially hazardous food requiring refrigeration after preparation shall be rapidly cooled to an internal temperature of 45 degrees F or below. Potentially hazardous foods of large vol-

ume or prepared in large quantities shall be rapidly cooled, utilizing such methods as shallow pans, agitation, quick chilling or water circulation external to the food container so that the cooling period shall not exceed 4 hours. Potentially hazardous food to be transported shall be prechilled and held at a temperature of 45 degrees F or below unless maintained in accordance with OAR 333-151-060.

(3) Ice intended for human consumption shall not be used as a medium for cooling stored food, food containers or food utensils, except that such ice may be used for cooling tubes conveying beverages or beverage ingredients to a dispenser head. Ice used for cooling stored food and food containers shall not be used for human comsumption.

333-151-060 HOT STORAGE

(1) Enough conveniently located hot food storage facilities shall be provided to assure the maintenance of food at the required temperature during storage. Each hot food facility storing potentially hazardous food shall be provided with a numerically scaled indicating thermometer, accurate to ±3 degrees F, located to measure the air temperature in the coolest part of the facility and located to be easily readable. Recording Thermometers, accurate to ±3 degrees F, may be used in lieu of indicating thermometers. Where it is impractical to install thermometers on equipment such as bainmaries, steam tables, steam kettles, hot lamps, cal-rod units, or insulated food transport carriers, a product thermometer must be available and used to check internal food temperature.

(2) The internal temperature of potentially hazardous foods requiring hot storage shall be 140 degrees F or above except during necessary periods of preparation. Potentially hazardous food to be transported shall be held at a temperature of 140 degrees F or above unless maintained in accordance with OAR 333-151-050 (2).

Reason:

Proper storage of food assures that there will be minimal contamination of the food from any source, and that the natural growth of microorganisms in the food will not result in foodborne illness. Therefore, measures to prevent the contamination of food must consider the environment in which food is stored and the potential for contamination under these conditions.

These measures are divided into several basic categories which include:

(1) Containers. Food must be covered in order to provide physical protection of the food. In addition, these covers must be impervious and nonabsorbent to eliminate the possibility of the container being a vector for contamination.

(2) Location. Food must be stored in a manner that permits cleaning of the storage area and in locations that do not result in a high risk of contamination from [illegible] food or from the conduct of normal operations.

(3) Labeling. To avoid the inadvertent contamination of food in the preparation process, bulk ingredients must be labeled to prevent confusion due to possible similar appearances.

(4) Temperature. Proper storage temperatures, and the availability of facilities to maintain temperatures are the best available means to control the growth of pathogens. A means for continuously monitoring air (ambient) temperatures is provided by requiring thermometers in or on the equipment.

(5) Cooling. Since any temperature between 45 degrees F and 140 degrees F presents a hazard to public health in terms of microbial growth, food must remain in the critical temperature zone as little time as possible. The parameters defining the cooling period for foods in storage following preparation set forth procedures and conditions that minimize risk to the public health. Frozen food should be stored at a temperature of 0 degrees F. or below.

333-151-065 TIMING

During holding for display and service, time rather than temperature may be approved as a public health control if the following conditions are adhered to and if written notification is submitted to the Assistant Director:

(1) Foods for which time is used as a public health control under this rule shall be:
   (a) Cold foods not previously held above 45 degrees F for any reason; or
   (b) Hot foods, being time marked immediately after initial cooking.

(2) Elapsed time which potentially hazardous foods are between 140 degrees F and 45 degrees F shall not exceed one (1) hour;

(3) The food containers or packages, at the time the food is removed from temperature control, shall be marked or otherwise positively indicate when the food shall be served or discarded; and

(4) Food in unmarked containers or for which the time has expired shall be discarded.

(5) Temporary restaurants, mobile food units and pushcarts shall not use time rather than temperature as a public health control.

Food Preparation

333-151-070 FOOD PREPARATION, GENERAL

(1) Food shall be prepared with a minimum of manual contact. Food shall be prepared on food-contact surfaces and with utensils which are clean and have been sanitized.

(2) Each time there is a change in processing between raw beef, raw pork, raw poultry, or raw seafood, or a change in processing from raw to ready-to-eat foods, each new operation shall begin with food-contact surfaces and utensils which are clean and have been sanitized.

(3) Potentially hazardous foods that are in a form to be consumed without further cooking such as salads, sandwiches, and filled pastry products should be prepared from chilled products.

333-151-080 RAW FRUITS AND RAW VEGETABLES

Raw fruits and raw vegetables shall be thoroughly washed with potable water before being cooked or served.

333-151-090 COOKING POTENTIALLY HAZARDOUS FOODS

Potentially hazardous foods requiring cooking shall be cooked to heat all parts of the food to a temperature of at least 140 degrees F except that:

(1) Poultry, poultry stuffings, stuffed meats and stuffings containing meat shall be cooked to heat all parts of the food to at least 165 degrees F with no interruption of the cooking process.

(2) Pork and any food containing pork shall be cooked to heat all parts of the food to at least 150 degrees F. When such products are cooked in a microwave oven the internal temperature shall reveal at least 170 degrees F.

(3) Rare roast beef shall be cooked to an internal temperature of at least 130 degrees F, and rare beef steak shall be cooked to a temperature of 130 degrees F unless otherwise ordered by the immediate consumer. When beef roasts are cooked in a microwave oven the internal temperature shall read at least 145 degrees F.

333-151-100 DEHYDRATED MILK AND DEHYDRATED MILK PRODUCTS

Dehydrated milk and milk products may be used under the following circumstance:

(1) Such products shall be obtained from approved sources licensed by the Department of Agriculture;

(2) All dehydrated milk products and ingredients shall be made only from pasteurized milk;

(3) Such products shall be stored dry and handled in a manner which precludes contamination.

333-151-110 LIQUID, FROZEN, DRY EGGS AND EGG PRODUCTS

Liquid, frozen, dry eggs and egg products shall be used only for cooking and baking purposes.

333-151-120 REHEATING

Potentially hazardous foods that have been cooked and then refrigerated, shall be reheated rapidly to 165 degrees F or higher throughout before being served or before being placed in a hot food storage facility. Steam tables, bainmaries, warmers, and similar hot food holding facilities are prohibited for the rapid reheating of potentially hazardous foods.

333-151-130 NONDAIRY PRODUCTS

Nondairy creaming, whitening, or whipping agents may be reconstituted on the premises only when they will be stored in sanitized, covered containers not exceeding one gallon in capacity and cooled to 45 degrees F or below within 4 hours after preparation.

333-151-140 PRODUCT THERMOMETERS

Metal stem-type numerically scaled indicating thermometers, accurate to ±2 degrees F, shall be provided and used to assure the attainment and maintenance of proper internal cooking, holding, or refrigeration temperatures of all potentially hazardous foods.

333-151-150 THAWING POTENTIALLY HAZARDOUS FOODS

Potentially hazardous foods shall be thawed:

(1) In refrigerated units at a temperature not to exceed 45 degrees F; or

(2) Under potable running water of a temperature of 70 degrees F or below, with sufficient water velocity to agitate and float off loose food particles into the overflow; or

(3) In a microwave oven only when the food will be immediately transferred to conventional cooking facilities as part of a continuous cooking process or when the entire, uninterrupted cooking process takes place in the microwave oven; or

(4) As part of the conventional cooking process.

Reason:

Food preparation is the process during which food is least protected due to necessary manipulation and is subjected to potential contamination from many sources within the establishment. Once the food has been contaminated, improper procedures for cooking, reheating or cooling permit the survival as well as the rapid and progressive growth of pathogenic microorganisms. Without adherence to proper sanitary procedures and the maximum use of adequate utensils and facilities, the preparation of a sound, appealing food is impossible. The preparation process should include:

(1) strict observation of personal hygiene by all food service employees;

(2) continuous application of sanitary food-handling techniques;

(3) cooking and reheating procedures that ensure pathogen destruction;

(4) thorough washing of all foods to be consumed in the raw state;

(5) minimal handling of the food before, during, and after preparation.

Food Display and Service

333-151-160 HOLDING TEMPERATURES OF POTENTIALLY HAZARDOUS FOOD

Potentially hazardous food shall be kept at an internal temperature of 45 degrees F or below or at an internal temperature of 140 degrees F or

above during display and service, except that rare roast beef shall be held for service at a temperature of at least 130 degrees F.

333-151-170 MILK AND CREAM DISPENSING

(1) Pasteurized milk and milk products for drinking purposes shall be provided to the consumer in an unopened, commercially filled package not exceeding one pint in capacity, or dispensed from a commercially filled container of not more than one gallon capacity which can be opened without manual contact on the pour spout, or dispensed from a commercially filled container stored in a mechanically refrigerated bulk milk dispenser.

(2) Cream or half-and-half shall be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser designed for such service.

(3) When unpasteurized milk is provided in a food service establishment, the following provisions must be met:

(a) Unpasteurized milk must be obtained from a raw milk dairy licensed by the Oregon State Department of Agriculture;

(b) It may be used only for drinking purposes;

(c) It must be served in the original individual portion container in which it is obtained from the producer or distributor;

(d) Under no circumstances may unpasteurized milk be used as an ingredient in foods or beverages nor may other ingredients be added to unpasteurized milk;

(e) The container in which unpasteurized milk is served must bear the original label required by the Department of Agriculture as specified in OAR 603-24-542 (4);

(f) Any facility where unpasteurized milk is served must identify the product as "unpasteurized milk" on each menu.

333-151-180 NONDAIRY PRODUCT DISPENSING

Nondairy creaming or whitening agents shall be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser designed for such service.

333-151-190 CONDIMENT DISPENSING

(1) Condiments, seasonings and dressings for self-service use shall be provided in individual packages, from dispensers, or from containers protected in accordance with OAR 333-151-230 of these rules.

(2) Condiments provided for table or counter service shall be individually portioned, except that catsup and other sauces may be served in the original container or pour-type dispenser. Sugar for con-

sumer use shall be provided in individual packages or in pour-type dispensers.

333-151-200 ICE DISPENSING

(1) All ice shall be from a source licensed by the Division or the Department.

(2) Ice for consumer use shall be dispensed only by employees with scoops, tongs, or other ice-dispensing utensils or through automatic self-service, ice-dispensing equipment. Ice-dispensing utensils shall be stored on a clean surface or in the ice with the dispensing utensil's handle extended out of the ice. Between uses, ice transfer receptacles shall be stored in a way that protects them from contamination. Ice storage bins shall be drained through an air gap.

333-151-210 DISPENSING UTENSILS

To avoid unnecessary manual contact with food, suitable dispensing utensils shall be used by employees or provided to consumers who serve themselves. Between uses during service, dispensing utensils shall be;

(1) Stored in the food with the dispensing utensil handle extended out of the food.

(2) Stored clean and dry.

(3) Stored in an approved running water dipper well.

333-151-220 RE-SERVICE

Once served to a consumer, portions of leftover food shall not be served again except that packaged food, other than potentially hazardous food, that is still packaged and is still in sound condition, may be re-served.

333-151-230 DISPLAY EQUIPMENT

Food on display shall be protected from consumer contamination by the use of packaging or by the use of easily cleanable counter, serving line or salad bar protector devices, display cases, or by other effective means. Enough hot or cold food facilities shall be available to maintain the required temperature of potentially hazardous food on display.

333-151-240 RE-USE OF TABLEWARE

Re-use of soiled tableware by self-service consumers returning to the service area for additional food is prohibited. Beverage cups and glasses are exempt from this requirement. Notwithstanding this section, a pitcher used in serving malt beverages, carbonated beverages, or water may be refilled without being washed, provided the same person, or groups of persons, is being served and the pitcher has not been used as a container from which to consume. A pitcher must be washed before new or different persons are served.

Reason:

Contamination of, and microbial growth in food during service and display results from contaminated equipment, improper control of food temperatures, or insanitary display and service procedures that fail to provide adequate protection for food. Any lapse in sanitary procedures during this stage can negate all the effort in buying, storing, and preparing a quality product that is both aesthetically pleasing and safe for human consumption.

The sanitary requirements for the display and service of food to the consumer must address themselves to two basic areas to provide the necessary protection of the food offered to the consumer. First, the protection of food from external contamination and from the rapid and progressive growth of microorganisms must be assured by directing the efforts of establishment's employees toward sanitary practices in service and display. Second, protection of food from the consuming public during the display and service process necessitates requirements such as protector devices and good operational procedures for dispensing that preclude any incidental contamination.

Food Transportation

333-151-250 GENERAL

During transportation, food and food utensils shall be kept in covered containers or completely wrapped or packaged so as to be protected from contamination. Foods in original individual packages do not need to be overwrapped or covered if the original package has not been torn or broken. During transportation, including transportation to another location for service, food shall meet the requirements of this ordinance relating to food protection and food storage. Vehicles utilized for food and utensil transportation shall not be used in activities incompatible with safe and sanitary food service operations.

Reason:

The protection of food from contamination and the maintenance of food at the proper temperatures are critical for the safety and quality of transported food. The special circumstances that arise during the transportation of food make the protection of the food and the maintenance of proper temperatures very difficult and correspondingly increase the possibility of contamination and microbial growth. For these reasons, special attention to sanitary requirements is essential during the food transportation process to provide the necessary protection to the consumer.

Applications \ Lamps	HID*			Fluorescent													
	/R Mercury Vapor	/4 Metal Halide Clear	/C Metal Halide Phosphor	/N Natural Soft White	/SMW Supermarket White	/3000U Ultralume	/4100U Ultralume	/5000U Ultralume	/WW Warm White	/W White	/CW Cool White	/D Daylight	/CWX Deluxe Cool White	/WWX Deluxe Warm White	/LW Living White	/MWX Merchandising White	
Banks	X			X										X		X	
Beauty salons														X	X		
Boutiques						X											
Color-matching areas								X									
Computer rooms										X							
Conference rooms													X		X		
Corridors											X						
Department stores						X											
Factories										X	X	X					
Jewelry stores								X									
Libraries	X								X		X				X		
Lobbies	X			X											X		
Meat showcases				X	X												
Museums								X									
Offices	X					X			X	X	X		X		X		
Restaurants	X			X					X				X	X	X		
Schools											X		X		X		
Stores	X	X	X	X		X	X		X		X	X	X		X	X	
Supermarkets	X				X								X				

*HID = high intensity discharge.

EFFECT OF LAMP COLORS ON OBJECT COLORS (COLOR RENDITION)

Color	Incandescent	Cool White Fluorescent	Warm White Fluorescent	Deluxe White Mercury Vapor	Ceramalux High Pressure Sodium	Metal Halide
Red	Red	Grayish red	Red	Grayish red	Rust Red orange	Dull red
Orange	Orange	Grayish orange	Slightly yellow orange	Yellow orange	Dark yellow	Grayish orange
Yellow	Yellow	Light greenish yellow	Yellow	Light yellow	Yellow	Yellow
Green	Green	Green	Green	Grayish green	Blue green	Green
Blue	Blue	Blue	Blue violet	Dark blue	Dark blue Violet	Blue
Violet	Violet	Violet	Violet	Light blue Violet	Brownish violet	Violet
Brown	Brown	Brown	Gray brown	Brown	Golden yellow Brown	Brown
White	White	White	Pinkish white	White	Pinkish white	White
Skin (whites) complexion	Ruddy	Pale	Natural	Pale tan	Suntan look	Pale
Skin (blacks) complexion	Natural	Grayish brown	Yellowish brown	Grayish brown	Yellowish brown	Pale

RECOMMENDED HID LAMP COLORS TO BLEND WITH FLUORESCENT (CHROMATICITY)

Lamp color now in use	HID choice to blend with present lamp in appearance	Notes*
Cool White Fluorescent or Supermarket White	Beauty Lite	Close enough. Beauty Lite is more violet. Cool White is more green.
	Metal Halide (Clear)	Similar to Beauty Lite.
	Deluxe White	Close enough. Deluxe White is warmer. Cool White is more blue.
Cool White Deluxe	Beauty Lite	Close.
Natural	Beauty Lite	Fairly close. Beauty Lite is less violet.
Warm White	Metal Halide/C (phosphor coated)	Close.
	Deluxe White	Close enough. Deluxe White is slightly more green. Warm White is slightly more yellow.
	Style-Tone	Close enough. Style-Tone is more yellow.
Warm White Deluxe	Deluxe White	Fairly close. Deluxe White is slightly more yellow-green.
	Style-Tone	Close enough. Style-Tone is more yellow.
Merchandising White	Deluxe White	Fairly close. Deluxe White is more yellow-green.
	Style-Tone	Close enough. Style-Tone is more yellow.
Incandescent	Style-Tone	Close enough. Style-Tone is more yellow and green; incandescent is more orange.

*Remarks concern source as per original color appearance and have nothing to do with color rendition.

2. 2.

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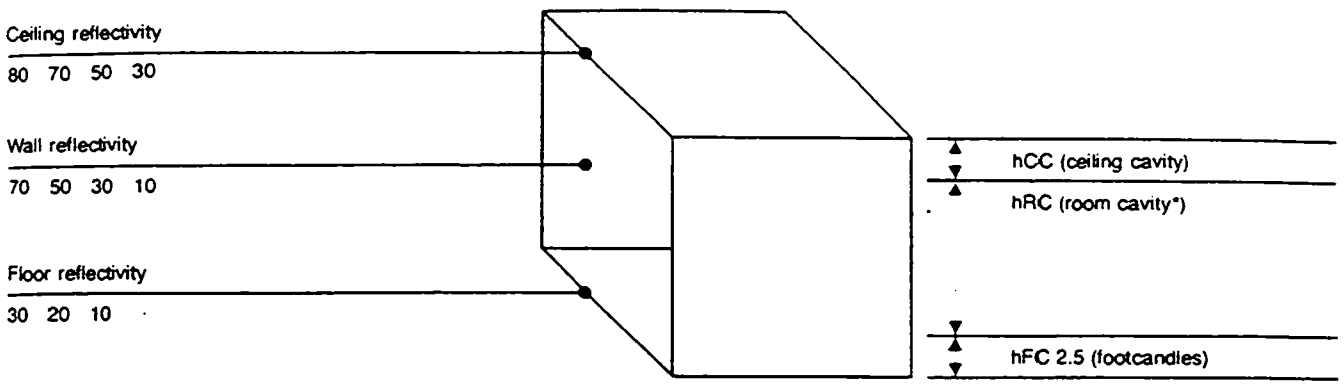
Typical reflectance percentages



Most precalculated fixture quantity charts assume the following reflectance percentages:

Commercial reflectances:
- 80% ceiling
- 50% wall
- 20% floor

Industrial reflectances:
- 50% ceiling
- 50% wall
- 20% floor

School classrooms:
- 70–90% ceiling
- 40–60% wall
- 30–50% floor
- 35–50% desk top
- 20% blackboard

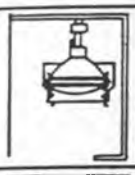
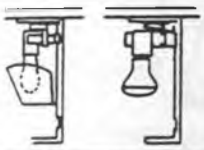
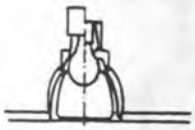
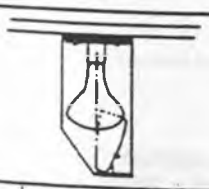
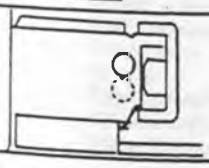
Percent of light reflected from typical walls & ceilings*

Class	Surface	Color	Percentage of light reflected
Light	Paint	White	81
	Paint	Ivory	79
	Paint	Cream	74
	Stone	Cream	69
Medium	Paint	Buff	63
	Paint	Light green	63
	Paint	Light gray	58
	Stone	Gray	56
Dark	Paint	Tan	48
	Paint	Dark gray	26
	Paint	Olive green	17
	Paint	Light oak	32
	Paint	Dark oak	13
	Paint	Mahogany	8
	Cement	Natural	25
	Brick	Red	13

*Each paint manufacturer's reflection values differ for similar colors; the above table gives some idea of the colors and their average reflecting qualities.

Note: See manufacturers' specification information for reflectance percentages on all interior finishes.

3.

Cross sections	Lamps*	Typical data* For 9' ceiling: Distance to wall (in.)	C to C distance (in.)	Fc at 5'6" above floor	Evenness rating†	For 12' ceiling: Distance to wall (in.)	C to C distance (in.)	Fc at 5'6" above floor	Evenness rating†
	200W PAR-46/3NSP	12	12	85	E	12	12	70	E
	150W PAR-38/3SP	12	12	67	E	12	12	39	VG
	150W R-40/SP	10½	12	102	G	10½	12	45	F
	75W R-30/SP	5	10	25	G				
	75W A-19	9	24	23	F				
	50W R-20/FL	8	12	21	F				
	150W PAR-38/3FL	36	36	42	VG	48	48	25	G
	150W A-21	36	36	35	E	36	36	25	VG
	100W A-19	24	24	34	VG	36	36	15	VG
	300W R-40/SP	36	36	36	E	36	36	39	E
	150W R-40/SP	24	24	31	E	36	36	19	E
	300W R-40/FL	36	36	56	E	36	36	42	VG
	150W R-40/FL	30	30	24	VG	36	36	10	F
	100W A-19	18	18	18	F				
	150W R-40/FL	36	36	43	VG	36	36	19	VG
	1 Lt.—40W T-12 (fluorescent)	Flush to wall	Continuous run (overlap)	16	VG				

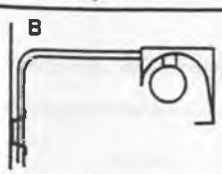
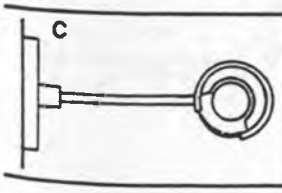
*Typical data are for multiple unit installations and for lamps listed. Footcandles are measured in the vertical plane. All values are average and rounded off.

†Evenness rating is ratio of maximum to minimum footcandles. E (excellent) = 2:1; VG (very good) = 4:1; G (good) = 6:1; and F (fair) = 8:1. Values are rounded off to nearest ratio.

4.

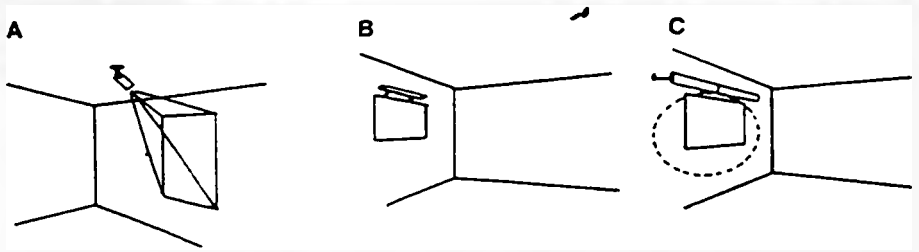
4.

Courtesy Lightolier

Cross sections	Lamps*	Typical data* For 9' ceiling: Distance to wall (in.)	Fc at 5'6" above floor	Vertical beam spread†	Horizontal beam spread†	For 12' ceiling: Distance to wall (in.)	Fc at 5'6" above floor	Vertical beam spread†	Horizontal beam spread†
 A	100W T-4 (tungsten-halogen)	24	25	62 max.	24 max.	48	6	127 max.	49 max.
	100W T-4 (tungsten-halogen)	24	22	65 max.	25 max.	48	6	131 max.	50 max.
	150W PAR-38/SP	24	344	38	22	46	94	74	41
	150W R-40/SP	24	219	42	23	46	60	81	44
	75W R-30/SP	24	54	48	28	46	15	92	54
	75W R-30/FL	24	13	66	54	46	4	127	104
	150W PAR-38/SP	24	344	38	22	46	94	74	41
	150W PAR-38/FL	24	219	42	23	46	60	81	44
	75W R-30/SP	24	54	48	28	46	15	92	54
	75W R-30/FL	24	13	66	54	46	4	127	104
	300W T-3 (tungsten-halogen)	24	98	86	125	46	27	166	239
 B	3 Lt. 40W T-10	7	30	28	48	7	30	28	48
	2 Lt. 40W T-10	7	30	24	40	7	30	24	40
 C	1 Lt. 40W T-12 (fluorescent)	18	19	48	62	18	19	48	62

*Typical data are for single-unit installations (except undershelf flood lights) for lamps listed. Footcandles are measured on the vertical plane. All values are averaged and rounded off.

†Beam spread is where illumination drops to approximately 10 percent of maximum or where illumination becomes insignificant.

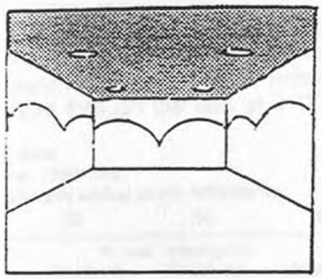


These examples are keyed to luminaires shown above.

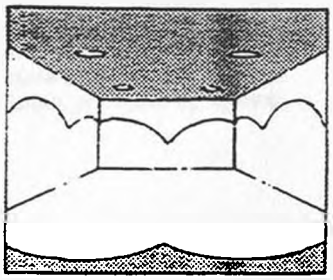
Courtesy Lightol

BEAM SPREAD

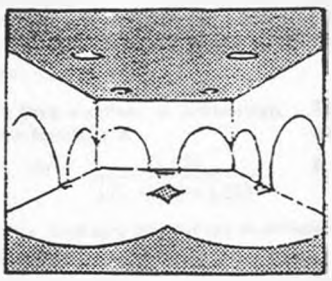
The downward distribution of light varies from concentrated to very widespread. The spread is controlled by the reflector design, the shielding, and the light source. The ratio of the mounting height to the spacing of the fixtures must be included in design decisions.



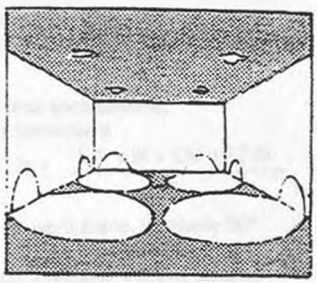
Widespread distribution, best uniformity



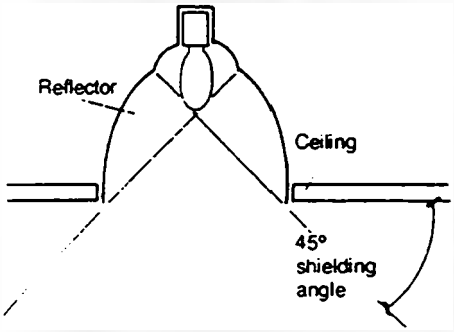
Spread distribution, good uniformity

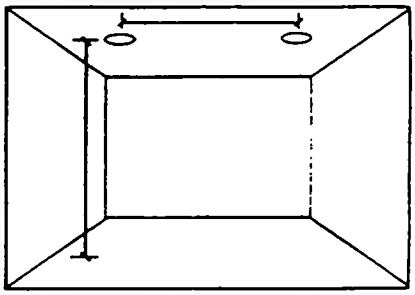


Medium distribution, moderate uniformity

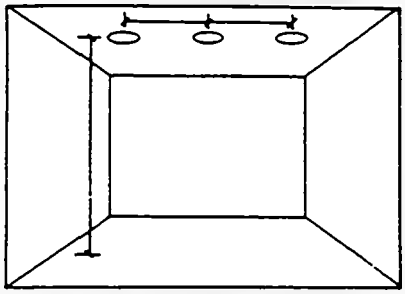


Concentrated distribution, nonuniformity





Widespread distribution
Distance between fixtures may reach 1.5 times the room height



Concentrated distribution
Distance between fixtures may reach 0.7 times the room height

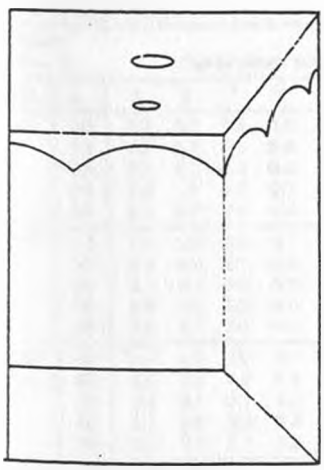
Shielding angle

Glare can be controlled by the shielding angle. Usually a 45° angle corrects most glare problems. The angle is formed by the ceiling line and the connecting line between the reflector edge and the lamp. Special applications may require other angles. (See page 318.)

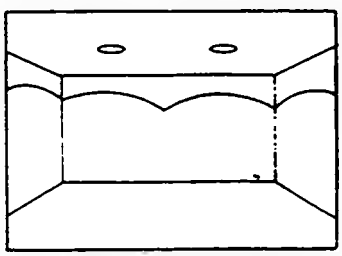
Spacing to mounting height (S/MH) ratio

Mounting distances between luminaires are expressed by a ratio of spacing to mounting height (S/MH) that is related to beam spread. For uniform illumination, concentrated beam spread types should be located at comparatively close intervals while widespread beams can be spaced farther apart.

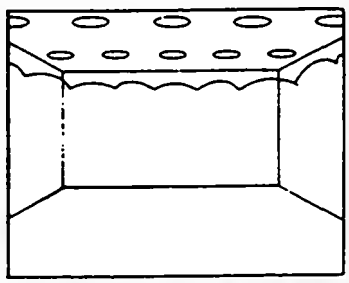
PARTIAL ROOM ILLUMINATION



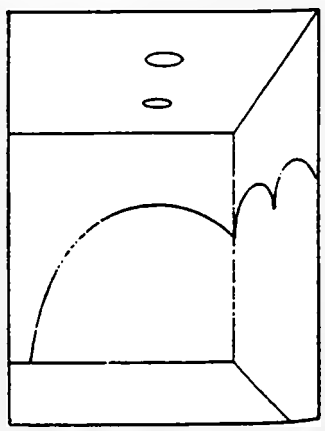
Complete illumination for a narrow space or single wall produces uniformity of illumination



Light "scalloped" on walls can be created by the degree of shielding angle in relation to the distance of the luminaire from the wall



To clearly define the space and create a transparent room impression, do not exceed the S/MH ratio. Use of a wide beam spread will provide better overlapping and avoid harsh shadows



Hallways or foyers are best with narrow beams and wide fixture spacing

COEFFICIENT OF UTILIZATION (CU)

The coefficient of utilization (CU) is the percentage of light from a fixture that reaches the seeing task. It is a function of the fixture, each having its own CUs depending on a wide range of the following factors: fixture efficiency, distribution, and mounting height; room proportions; room surface reflectancies. It is calculated through the use of a CU table, provided by lighting manufacturers. The table below provides the reflectance percentages of ceilings and walls. Each column contains CUs, and each row identifies the RCR (room cavity ratio). Where the two cross lies the CU. Each lamp-fixture combination requires its own CU table.

75

CU table
Lamp: 150W A-21
% effective ceiling cavity reflectance

	80			50			10		
	% wall reflectance								
Room cavity ratio	50	30	10	50	30	10	50	30	10
1	.82	.80	.79	.77	.76	.75	.72	.72	.71
2	.77	.74	.72	.73	.72	.70	.69	.68	.67
3	.72	.69	.66	.69	.67	.65	.67	.64	.63
4	.68	.65	.62	.66	.63	.61	.63	.61	.59
5	.64	.60	.57	.62	.59	.57	.60	.58	.55
6	.60	.56	.53	.58	.55	.53	.57	.54	.52
7	.56	.52	.50	.55	.51	.49	.53	.50	.48
8	.53	.49	.46	.52	.48	.46	.50	.47	.46
9	.49	.45	.42	.48	.45	.42	.47	.44	.42
10	.46	.42	.39	.45	.42	.39	.44	.41	.39

Conversion factors:
100W A-19 (Clear): CU x 1.0.
100W A-19/150W A-21 (Gold): CU x 0.9.

To find number of luminaires, use formula A

$$A \quad N = \frac{A \times fc}{L/L \times CU \times LDD}$$

To find footcandles, use formula B

$$B \quad fc = \frac{L/L \times N \times CU \times LDD}{A}$$

fc (footcandles) = average *maintained* illumination at work plane, normally 30" (76.20 cm) above floor

L/L (Lumens per Luminaire) = number of lamps per luminaire X initial lumens per lamp (see lamp data provided by manufacturers).

CU (Coefficient of Utilization) = the percentage of lamp lumens that falls on work plane. To obtain the CU, first find the RCR (Room Cavity Ratio) for the room (see below). Then enter CU table at the RCR and at the effective ceiling cavity reflectance and wall reflectance column. Use 80% ceiling, 50% walls, and 20% floor when room surface reflectances are unknown but room has white ceiling and light walls. Note: CU table in catalogs are for typical 20% effective floor cavity reflectance

LDD (Luminaire Dirt Depreciation = light loss due to the accumulation of dirt on luminaire.

A (Area) = room length x room width, in feet.

N = number of luminaires.

Example

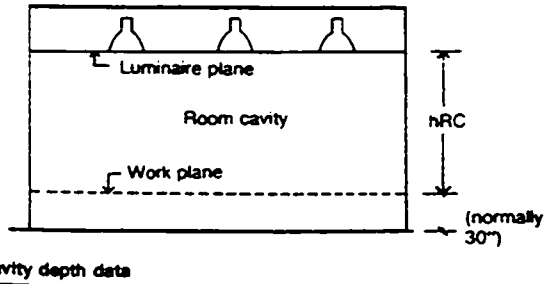
Given	Luminaires: lamp: 150W A-21 Room: 20' x 60' x 8½', clean area with white ceiling and light walls
Find	A No. of luminaires required for 50 fc, avg. maint. | B Avg. maint. fc with luminaires on 5' x 5' centers
Solution	RCR for 20' x 60' x 6' = 2.0. Assume room refl. = 80%, 50%, 20%. CU = .77. L/L = 1 x 2880 = 2880. LDD = .75

$$A \text{ No. of luminaires} = \frac{20 \times 60 \times 50}{2880 \times .77 \times .75} = 36$$

$$\text{No. of luminaires} = \frac{\text{area}}{\text{area/lum.}} = \frac{20 \times 60}{5 \times 5} = 48$$

$$B \quad fc = \frac{2880 \times 48 \times .77 \times .75}{20 \times 60} = 67$$

FINDING THE ROOM CAVITY RATIO (RCR)



Find RCR from table below or determine as follows:

$$RCR = \frac{5hrc\ (L + W)}{LW}$$

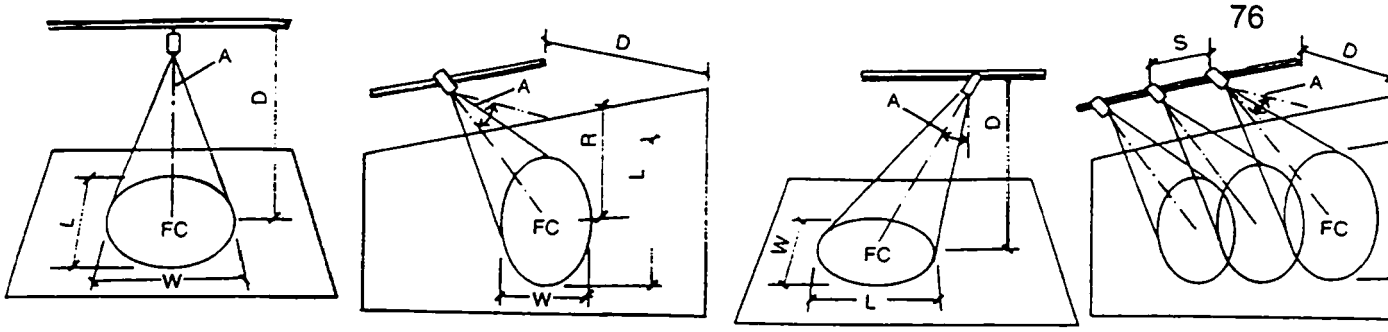
Cavity depth data

Room dim., ft		Cavity depth (hRC), ft								
W	L	5	6	7	8	9	11	14	20	30
10	10	5.0	6.0	7.0	8.0	9.0	11.0			
	14	4.3	5.1	6.0	6.9	7.8	9.5	12.0		
	20	3.7	4.5	5.3	6.0	6.8	8.3	10.5		
	30	3.3	.0	4.7	5.3	6.0	7.3	9.4		
	40	3.1	3.7	4.4	5.0	5.6	6.9	8.7	12.5	
12	12	4.2	5.0	5.8	6.7	7.5	9.2	11.7		
	16	3.6	4.4	5.1	5.8	6.5	8.0	10.2		
	24	3.1	3.7	4.4	5.0	5.6	6.9	8.7	12.5	
	36	2.8	3.3	3.9	4.4	5.0	6.0	7.8	11.0	
	50	2.6	3.1	3.6	4.1	4.6	5.6	7.2	10.2	
14	14	3.6	4.3	5.0	5.7	6.4	7.8	10.0		
	20	3.0	3.6	4.2	4.9	5.5	6.7	8.6	12.3	
	30	2.6	3.1	3.7	4.2	4.7	5.8	7.3	10.5	
	42	2.4	2.9	3.3	3.8	4.3	5.2	6.7	9.5	
	60	2.2	2.6	3.1	3.5	3.9	4.8	6.1	8.8	
17	17	2.9	3.5	4.1	4.7	5.3	6.5	8.2	11.7	
	25	2.5	3.0	3.5	4.0	4.5	5.5	7.0	10.0	
	35	2.2	2.6	3.1	3.5	3.9	4.8	6.1	8.7	
	50	2.0	2.4	2.8	3.1	3.5	4.3	5.4	7.7	11.6
	80	1.8	2.1	2.5	2.9	3.3	4.0	5.1	7.2	10.9
20	20	2.5	3.0	3.5	4.0	4.5	5.5	7.0	10.0	
	30	2.1	2.5	2.9	3.3	3.7	4.5	5.8	8.2	12.4
	45	1.8	2.2	2.5	2.9	3.3	4.0	5.1	7.2	10.9
	60	1.7	2.0	2.3	2.7	3.0	3.7	4.7	6.7	10.1

Room dim., ft		Cavity depth (hRC), ft								
W	L	5	6	7	8	9	11	14	20	30
24	24	2.1	2.5	2.9	3.3	3.7	4.5	5.8	8.2	12.4
	32	1.8	2.2	2.6	2.9	3.3	4.0	5.1	7.2	11.0
	50	1.5	1.8	2.2	2.5	2.8	3.4	4.4	6.2	9.4
	70	1.4	1.7	2.0	2.2	2.5	3.0	3.8	5.5	8.2
	100	1.3	1.6	1.8	2.1	2.4	2.9	3.7	5.2	7.9
30	30	1.7	2.0	2.3	2.7	3.0	3.7	4.7	6.7	10.0
	45	1.4	1.7	1.9	2.2	2.5	3.0	3.8	5.5	8.2
	60	1.2	1.5	1.7	2.0	2.2	2.7	3.5	5.0	7.4
	90	1.1	1.3	1.6	1.8	2.0	2.5	3.1	4.5	6.7
	150	1.0	1.2	1.4	1.6	1.8	2.2	2.8	4.0	5.9
42	42	1.2	1.4	1.6	1.9	2.1	2.6	3.3	4.7	7.1
	60	1.0	1.2	1.4	1.6	1.8	2.2	2.8	4.0	6.0
	90	0.9	1.0	1.2	1.4	1.6	1.9	2.4	3.5	5.2
	140	0.8	0.9	1.1	1.2	1.4	1.7	2.2	3.1	4.6
	200	0.7	0.9	1.0	1.1	1.3	1.6	2.0	2.9	4.3
60	60	0.8	1.0	1.2	1.3	1.5	1.8	2.3	3.3	5.0
	100	0.7	0.8	0.9	1.1	1.2	1.5	1.9	2.7	4.0
	150	0.6	0.7	0.8	0.9	1.0	1.3	1.6	2.3	3.5
100	100	0.5	0.6	0.7	0.8	0.9	1.1	1.4	2.0	3.0
	200	0.4	0.4	0.5	0.6	0.7	0.8	1.0	1.5	2.2
	300	0.3	0.4	0.5	0.6	0.6	0.7	0.9	1.3	2.0

7.

TRACK LIGHTING APPLICATIONS



A = aiming angle
D = distance
FC = initial footcandles at the center of the beam
L & W for narrow and medium beam lamps = point that the candlepower drops to 10 percent of maximum
L & W for wide beam lamps = the point that the candlepower drops to 50 percent of maximum
R = beam center location
S = maximum spacing of spots for even illumination

TO DETERMINE BEAM LOCATION, FOOTCANDLES, BEAM SIZE, & SPACING

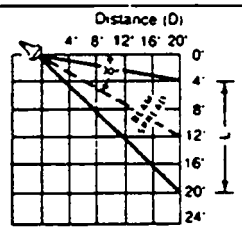
Known: track location, lamp, & aiming angle*

Given: Track located 5' (1.52 m) from the wall. 150W PAR-38 Spot Lamp aimed at 45°	
Find	**Solution**
Beam center location (R)	Using the 45° aiming angle chart, the beam center location (R) is 5' from the ceiling
Footcandles (FC) at beam center	The data show footcandles (FC) at beam center = 156 FC
Length (L) and width (W) of beam	Length (L) of beam = 5.8' (1.75 m) Width (W) = 3.8' (1.14 m)
Spacing (S) for even illumination on a large area	Spacing (S) for even illumination = 2.5' (0.76 m)

*See typical lighting performance data provided by manufacturers.

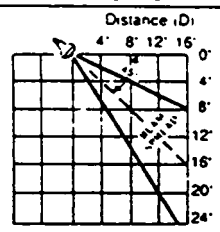
Performance data example

30° aiming angle (A)



Distance* (D)	FC	Beam length* (L)	Beam width* (W)	Spacing* (S)
7	146	5.1	4.3	2.8
10	71	7.3	6.2	4.0
13	42	9.5	8.0	5.3
16	28	11.7	10.0	6.5

45° aiming angle (A)



Distance* (D)	FC	Beam length* (L)	Beam width* (W)	Sp...
5	156	5.8	3.8	2
7	79	8.1	5.3	3
9	48	10.4	6.8	4
11	32	12.7	8.3	5

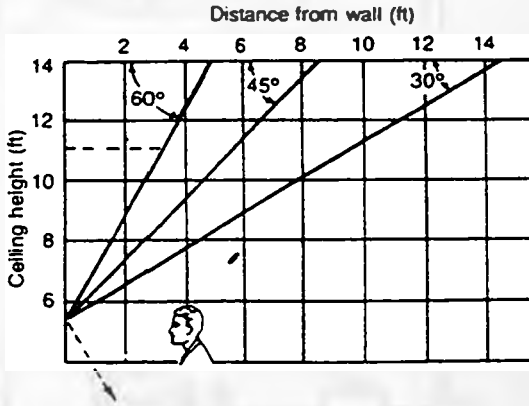
*In feet.

TO DETERMINE TRACK PLACEMENT & LAMP (FOR A GIVEN AIMING ANGLE)

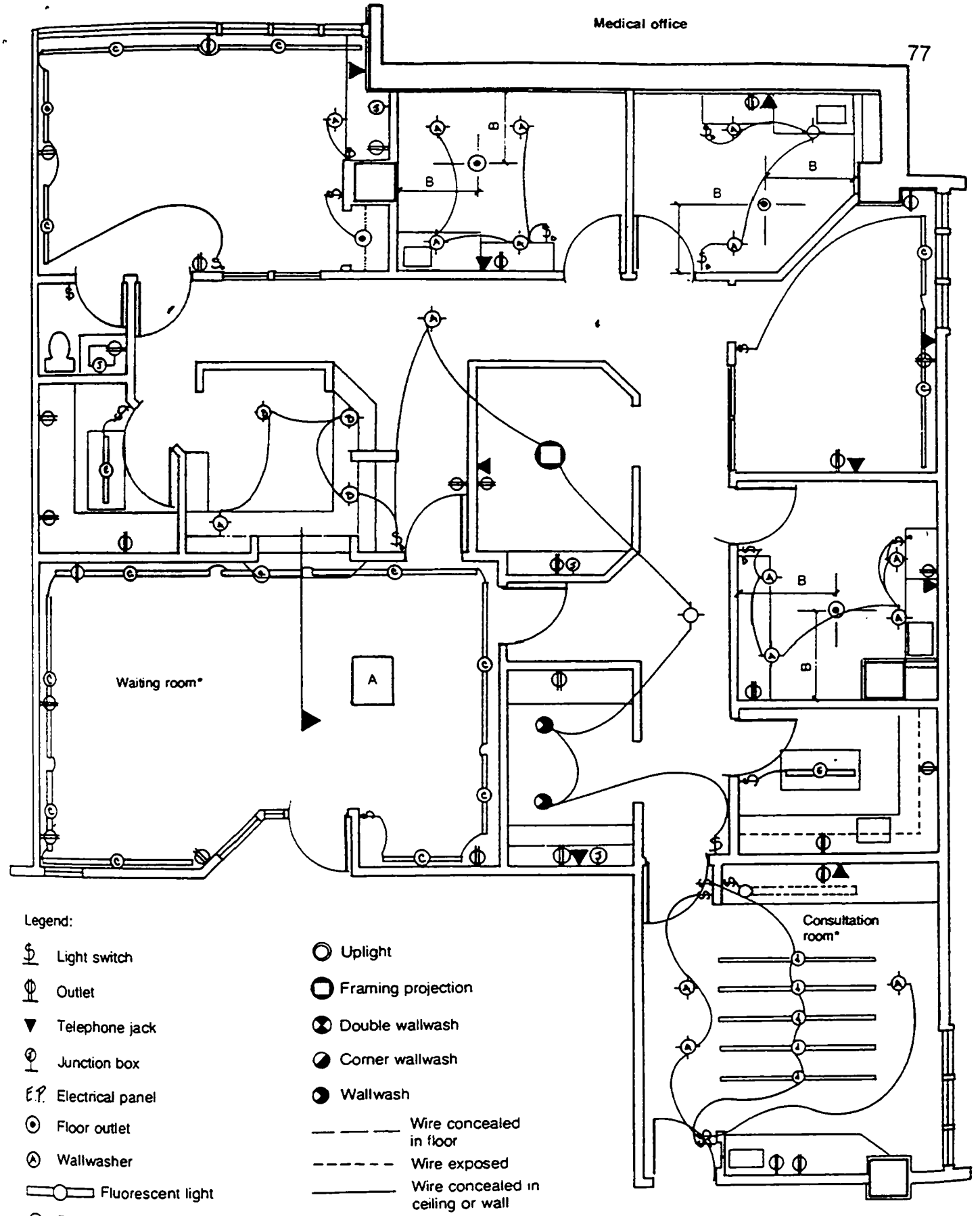
Known: object to be lighted, footcandles required, & ceiling height*

Given	Lamp aiming at 60° from horizontal; painting 6' long and 2' wide (1.83 and 0.61 m) to be lighted to 150 footcandles; ceiling height 11' (3.35 m)	
Find	**Track placement**	**Lamp**
Solution	Enter the chart at 11' ceiling height, move to the right to the 60° line, and proceed vertically to read approximately 3' (0.91 m) from the wall.	Scanning the lighting performance data shown for the 60' aiming angle shows that a narrow distribution is required. The 150W PAR-38 Spot Lamp is selected. This lamp provides 153 footcandles and lights an area 8.2' long by 2.1' wide (2.50 X 0.64 m), which is more than enough to cover the painting.

*See typical lighting performance data provided by manufacturers.



The preferred aiming angle to minimize reflected glare from paintings and other shiny objects is 60° from the horizontal. This chart shows where to place the track for various ceiling heights. Track locations are also shown for other aiming angles.



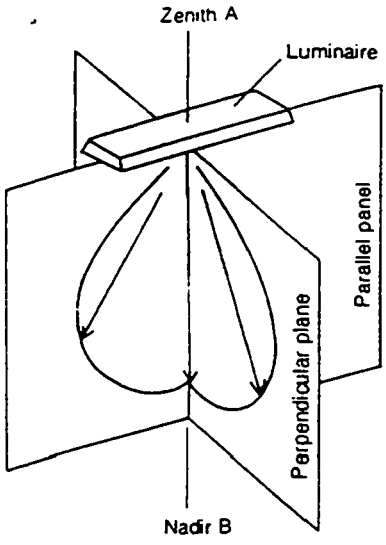
Legend:

- Light switch
- Outlet
- Telephone jack
- Junction box
- E.P. Electrical panel
- Floor outlet
- Wallwasher
- Fluorescent light
- Downlight
- Dimmer switch
- Uplight
- Framing projection
- Double wallwash
- Corner wallwash
- Wallwash
- Wire concealed in floor
- Wire exposed
- Wire concealed in ceiling or wall

A = column (see next page)

B = 3' (0.91 m)

*See details on next page.



Candlepower direction

The nadir B is the point directly below the light source or luminaire. In the drawings immediately below, the nadir is any point along line AB, and the direction of the candlepower is measured by angle ϕ.

In the CP curve (candlepower curve) diagram below left, the curve is that of a 400-watt mercury vapor, 2' (0.61 m) round, recessed luminaire. The curve illustrates that the candlepower at 40° is about 6250 CP. At 60° it is almost 3000 CP, while at 0° (nadir), it is slightly under 5000 CP.

Note: The readings obtained from the candlepower curve represent the initial CP and not maintained values. Visual comfort is usually attained with values of 70 or more VCP (visual comfort probability).

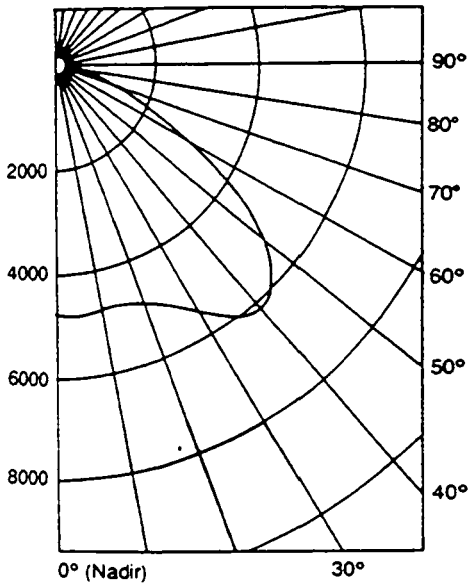
Direct glare is minimized if luminaire luminance values and the ratio:

$$\frac{\text{Maximum luminaire luminance}}{\text{Average luminaire luminance}}$$

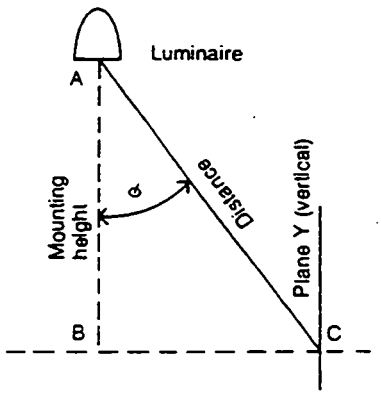
is less than 5 (3 is preferred), all in accordance with the following table:

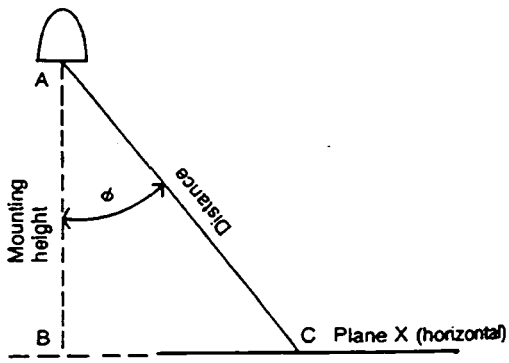
ϕ Angle from nadir	Maximum allowable luminance
45°	2250
55°	1605
65°	1125
75°	750
85°	495

CP curve

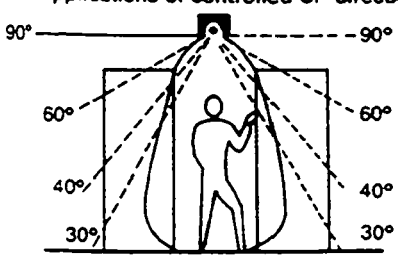


Calculations of vertical & horizontal footcandles



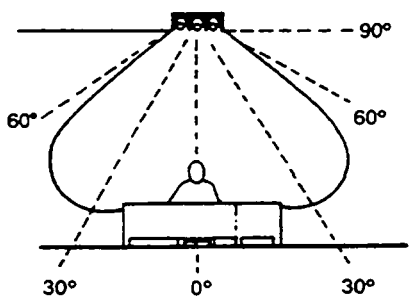


Applications of controlled CP direction

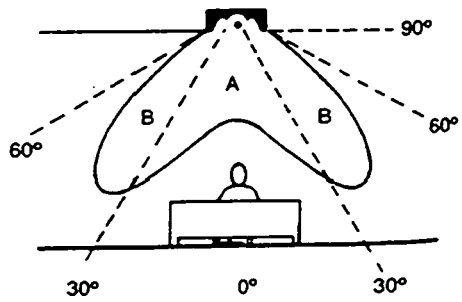


Narrow or stack lens

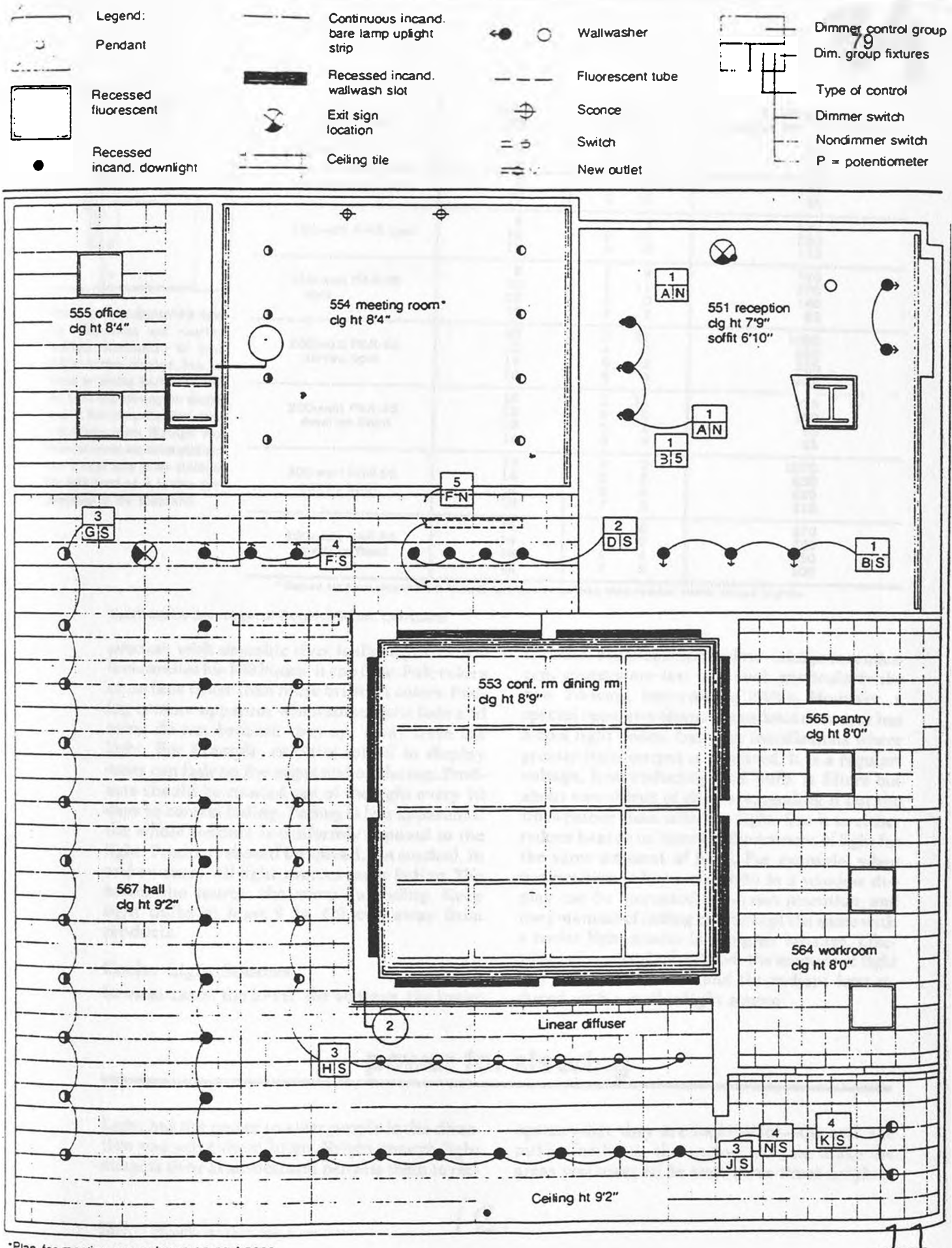
Parabolic lens controls light distribution for even lighting of vertical surfaces in high, narrow areas such as library stacks.



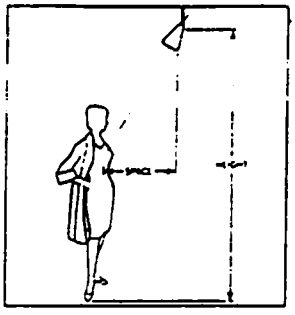
Wide parabolic lens



Batwing light control
A = veiling reflection zone
B = energy-efficient zone



*Plan for meeting room shown on next page.



This table shows appropriate spacing relationships and resultant highlight illumination for spotlighting vertical displays. Data are based on aiming each lamp with the beam axis striking the display about 5 feet above the floor, from a 60-degree angle. Highlight illumination values are those obtained over a small area in the center of the light beam on a surface perpendicular to the beam axis.

Lamp Type	Height (ft)	Space (ft. in.)	To Obtain These Average Max. Footcandles*
50-watt R-20	8	1 9	50
	10	2 11	20
75-watt R-30 spot	8	1 9	155
	10	2 11	55
150-watt R-40 spot	8	1 9	620
	10	2 11	220
	12	4 0	115
150-watt PAR-38 spot	8	1 9	760
	10	2 11	270
	12	4 0	140
	14	5 2	85
200-watt PAR-46 narrow spot	10	2 11	1080
	12	4 0	550
	14	5 2	335
	16	6 4	225
200-watt PAR-46 medium flood	10	2 11	325
	12	4 0	160
	14	5 2	95
	16	6 4	65
300-watt PAR-56 narrow spot	12	4 0	1070
	14	5 2	650
	16	6 4	435
	18	7 6	310
300-watt PAR-56 medium flood	12	4 0	370
	14	5 2	220
	16	6 4	150
	18	7 6	105

* Based on new, unshielded lamps. Louvers or baffles may reduce these values slightly.

product with unstable dyes is displayed at 500 footcandles for 100 hours, it can fade. Pale colors often fade faster than more brilliant colors. Fading is more apparent when some parts fade and some do not because they are away from the light. For example, neckties folded in display cases can fade on the edges and on the top. Products should be rotated out of the light every 10 days to control fading. Fading is less apparent if the whole product is uniformly exposed to the light. Products should be spread, not stacked, in and on cases. All light sources cause fading. The hotter the source, the more the fading. Keep light bulbs at least 9 in. (23 cm) away from products.

Cooler Light Sources

In most cases, the lower the wattage, the lower the heat. Fluorescent and low-voltage incandescent sources are low and cool, particularly the new 20-watt, low-voltage PAR's. However, a special regular-voltage incandescent source has a cool light beam. Use it in installations where greater light output is required. It is a regular-voltage, heat-reducing PAR bulb. It filters out about two-thirds of the heat, sending it out the sides rather than with the light. Use it to either reduce heat or to increase the amount of light for the same amount of heat. For example, when competition is keen, the light in a window display can be increased to attract attention, and the potential of fading can be kept the same with a cooler light source in a higher wattage. Likewise, when displaying food, the amount of light can be kept the same and the radiant heat reduced with a cooler light source.

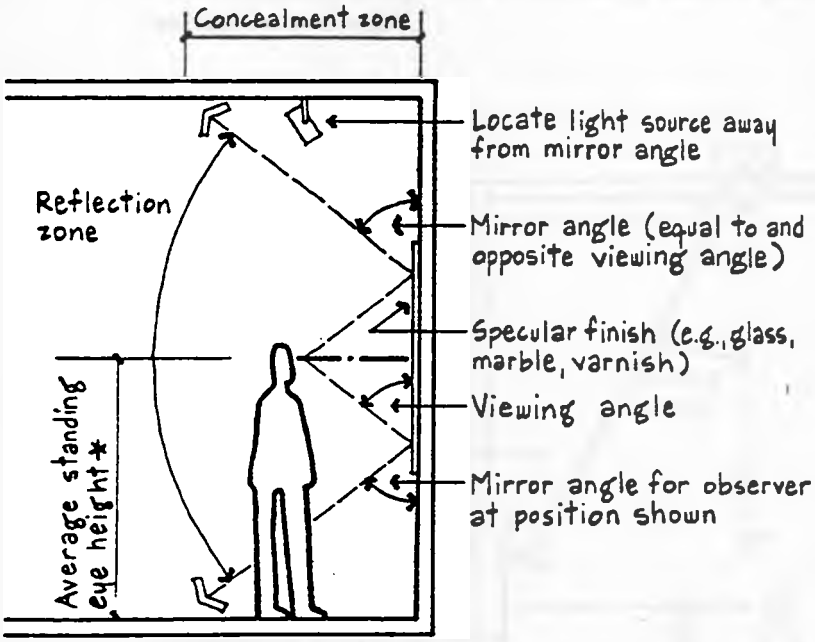
power for steering

Light has the power to steer people in the direction you want them to go. Bright enough light attracts their attention and permits them to recognize what they are looking for—the exit, the public facilities, the cashier station. Make the areas you want to be seen three times brighter

12.

3/4 81

Glossy surfaces can act like a mirror by reflecting light sources or bright objects into the view of observers. Consequently, light sources should be located away from mirror angle in concealment zone as shown below. The mirror angle is the angle equal to (and opposite) the viewing angle between line of sight and plane of surface under observation.



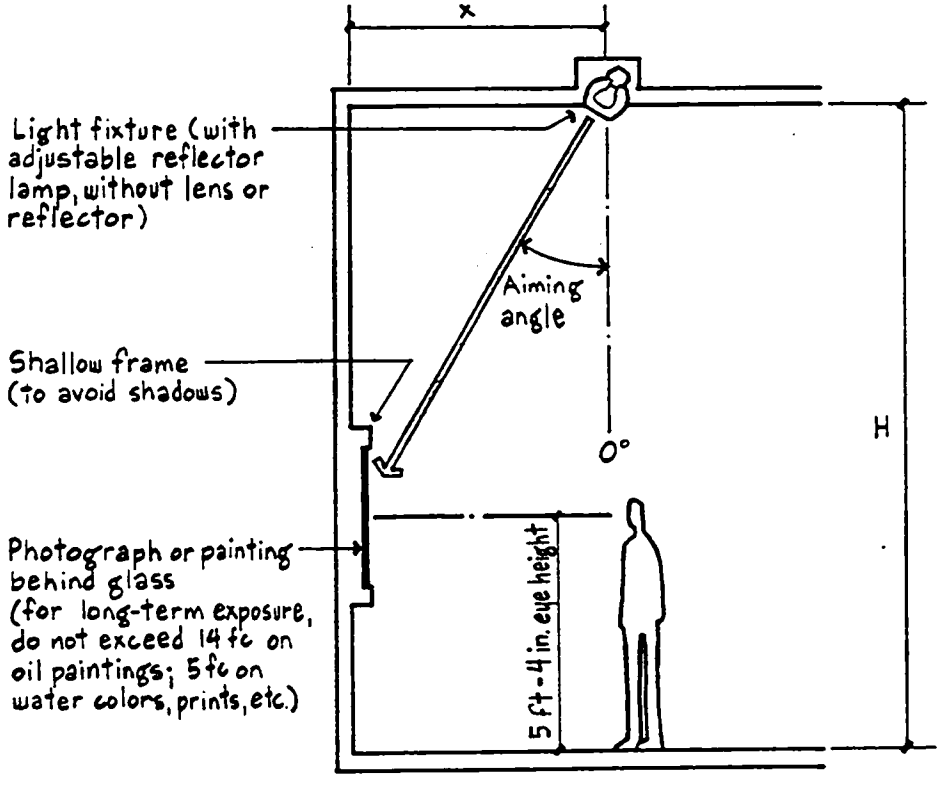
*Average standing eye height can vary from 56 to 69 inches. It depends on sex, ethnicity, age, and shoes worn.

Note: To reduce veiling reflections, minimize bright sources, objects, and surfaces at mirror angle.

21.

ACCENT LIGHT

Accent or focal light is used to emphasize objects such as paintings, graphics, etc., or to draw attention to a part of the visual field. Most recessed adjustable and "eyeball" fixtures have aiming angles of 0 to 35°. At aiming angles > 50°, hot spots or streaks of light will occur on ceilings. Damage to sensitive objects from light depends on the illumination level and duration of the exposure to light. UV filters can be used on glazing to mitigate the damage from daylight.



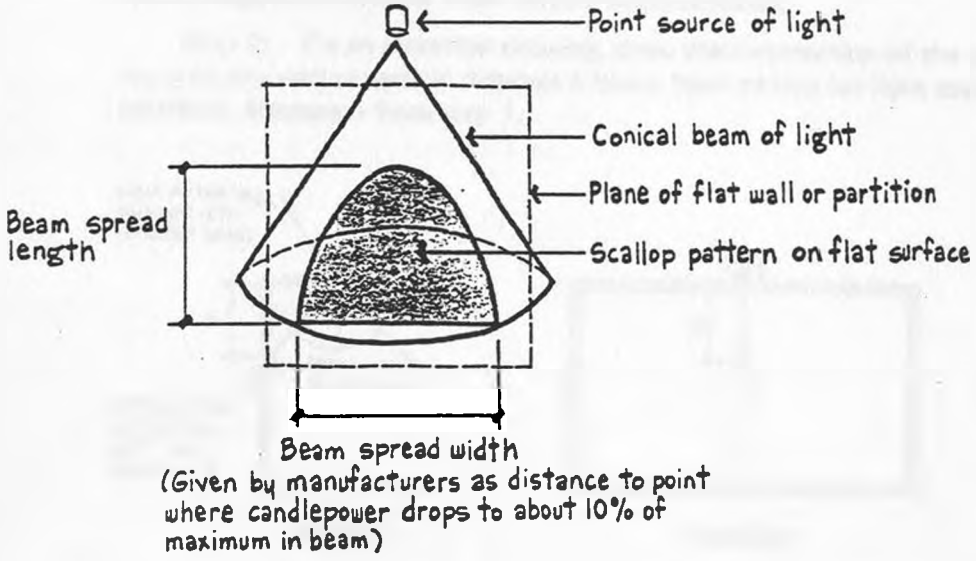
To prevent specular reflections at the mirror angle, accent light should be positioned away from walls as suggested by the following formula.

$$x = 0.6H - 3$$

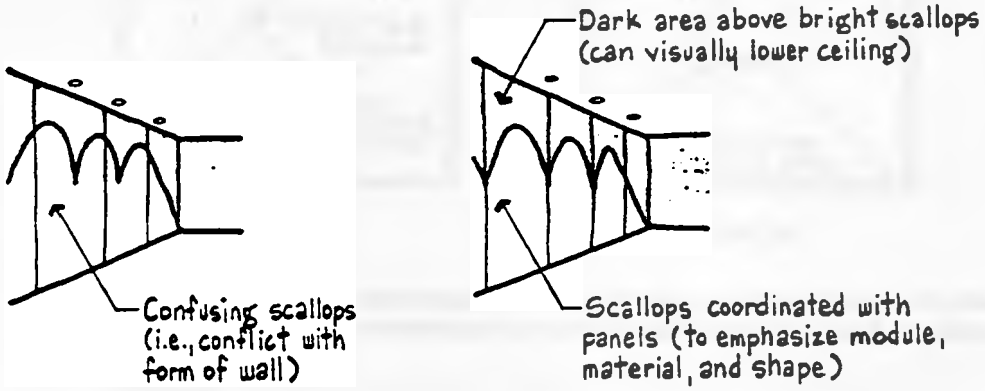
where x = distance from wall (ft)

H = floor-to-ceiling height (ft)

A scallop pattern of light occurs when a conical beam of light encounters room surfaces. As shown by the sketch below, room surfaces can "slice" through the cone of light, creating scallops.



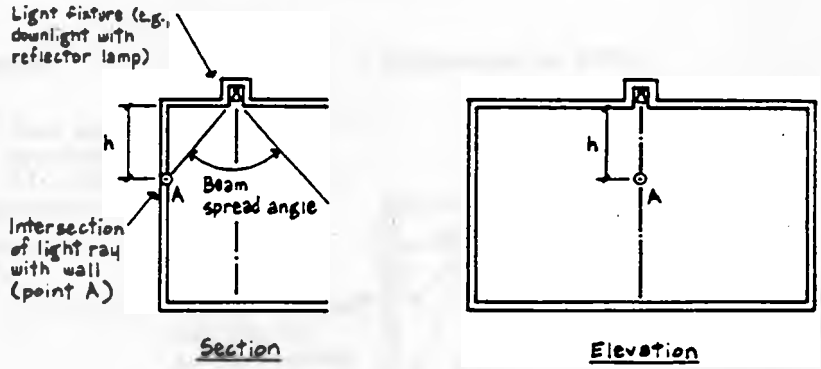
Continuous, flat surfaces normally should be perceived as having even illumination. The scallop patterns on the planar form of the wall surface shown on the left below distort its form. On the example wall on the right, distinct scallop patterns of light are coordinated with individual panel elements to emphasize their repetitive pattern. Distinct patterns of light also can be used to define entrances and to highlight paintings, sculpture, or plants.



HOW TO PLOT SCALLOP PATTERNS OF LIGHT

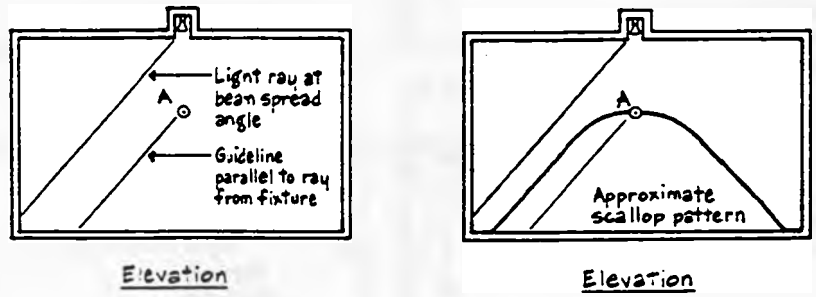
Step 1: Draw the beam spread on a section drawing of a room. The beam spread of a fixture or lamp is the angle (in degrees) within which most of its light is produced. Candlepower distribution curves and beam spread angles are available from fixture manufacturers.

Step 2: On an elevation drawing, draw the intersection of the light ray with the wall at vertical distance *h* down from ceiling (or light source position). Measure *h* from step 1.



Step 3: Draw two rays, one from the light fixture at the beam spread angle and the second line parallel to this ray, intersecting point *A* from step 2.

Step 4: Draw a line between the parallel lines from step 3. Curve the line to point *A*. This plotted shape approximates the actual shape of the scallop pattern.



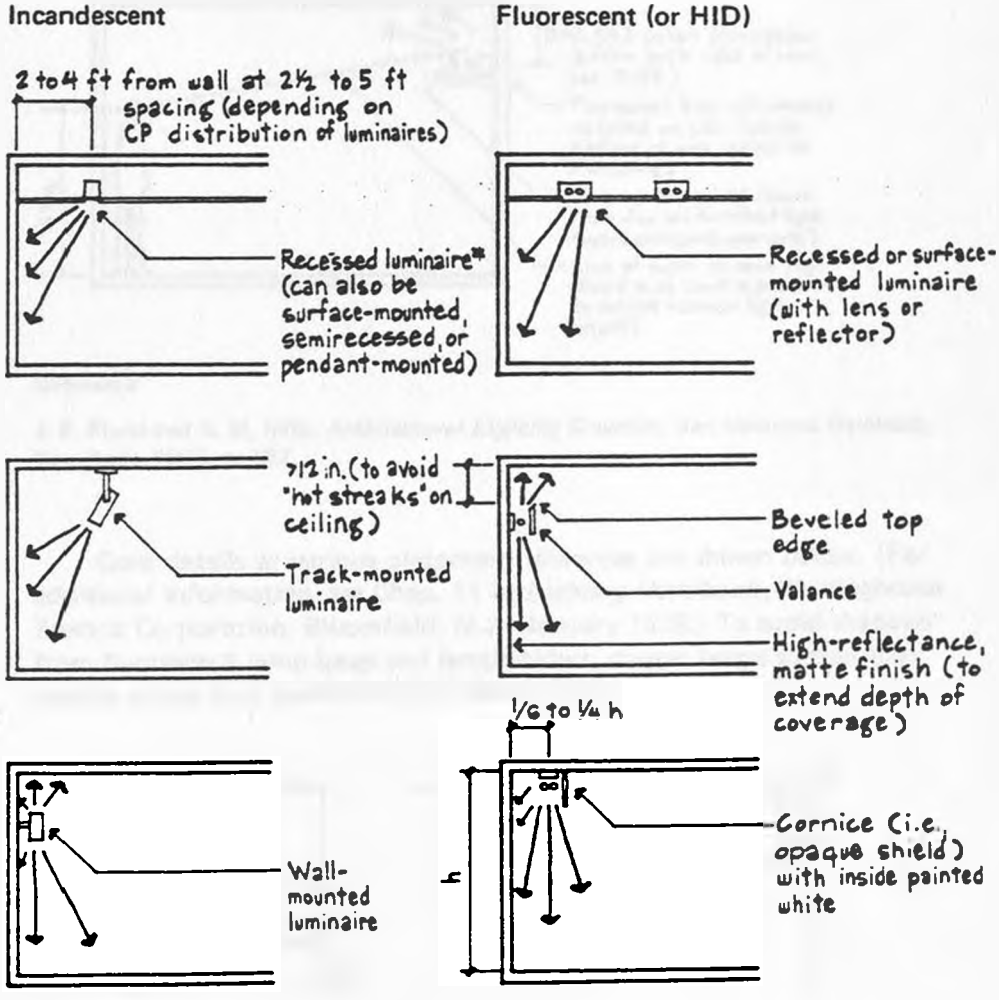
Note: As condition of beam edge, interreflected light, and other factors will affect scallop pattern, an illuminated model or full-scale mock-up can be used if precision is critical. (See Chap. 7.)

Reference

G. Zekowski, "The Art of Lighting is a Science/The Science of Lighting is an Art," *Lighting Design & Application,* March 1981.

WALL WASHERS

Wall washers can provide relatively uniform illumination on vertical surfaces to give the visual impression of enlarged space, emphasize texture, accentuate entrances and exits, and so on. The eye perceives vertical surface brightness more readily than horizontal surface brightness. Use matte wall finishes to avoid specular reflections. Do not place light sources opposite doors or windows or at corridor intersections where they can become sources of direct glare. As shown below, grazing light can emphasize texture, joints, and the like. To avoid highlighting construction joints, orient the joints parallel to the direction of incident light.



*For grazing light (to accent unfinished wood, rough brick, concrete, or stucco), wall washers should be approximately 1 ft from wall.

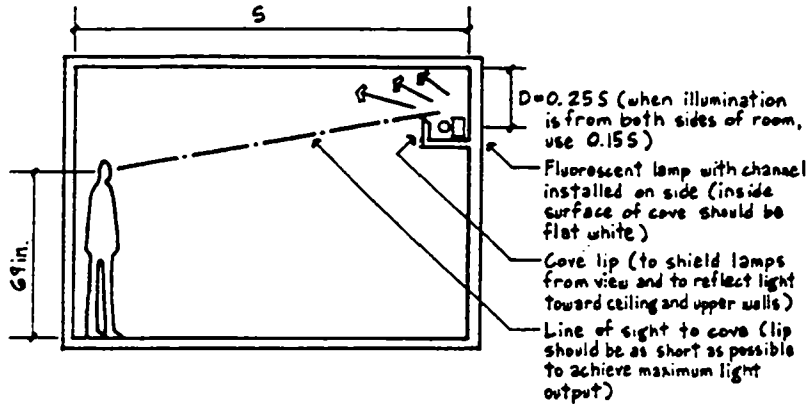
Reference

S. R. Shemitz, "Lighting: Tools that Suit Architectural Objectives," *Architectural Record*, March 1968.

24.

COVE LIGHTING

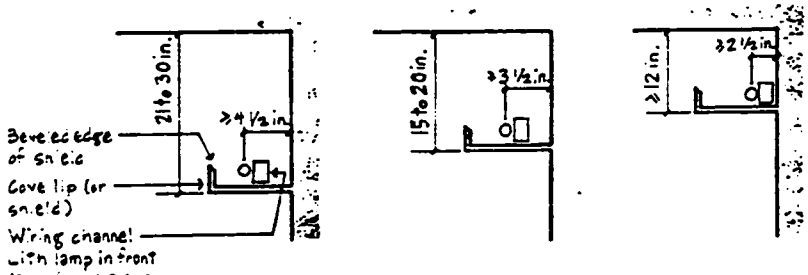
Coves can be used to direct light toward ceilings, providing overall diffuse illumination (called *ambient luminescence*). Often bright ceiling surfaces will seem to recede, giving occupants a sense of place or orientation in large spaces. In addition, reflected light from ceilings can soften hot spots from direct light sources in rooms. The sketch below presents cove placement distance *D* from ceiling in terms of ceiling span *S* to be illuminated. As *D* increases, the uniformity of ceiling brightness increases.



Reference

J. E. Flynn and S. M. Mills, *Architectural Lighting Graphics,* Van Nostrand Reinhold, New York, 1962, p. 182.

Cove details at various placement distances are shown below. (For additional information, see Chap. 11 in *Lighting Handbook*, Westinghouse Electric Corporation, Bloomfield, N.J., January 1978.) To avoid shadows from fluorescent lamp bases and lampholders, stagger lamps so that they overlap or use two rows with their bases offset.



Note: For valance or wall bracket lighting, light shield should not extend above top of wiring channel.

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ELECTRICAL FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NO.	MOUNTING	LAMP	FINISH	REMARKS
1	LITHONIA	5-140 RS	SURFACE	1-40W	WHITE	MOUNT BEHIND VALANCE BOARD
2	LIGHTOLIER	40847	SURFACE	1-G40-6RW	CHROME	
3	HALO	H-7-410	RECESSED	1-150W-R40	White	

SYMBOLS LIST

- ⊢①⊣ — FLUORESCENT LIGHT STRIP (CODE LETTER SHOWN).
- ⊕ — LIGHT FIXTURE OUTLET. CEILING MOUNTED.
- ⊢② — LIGHT FIXTURE OUTLET. WALL MOUNTED. (CODE LETTER SHOWN).
- ⊖ — DUPLEX RECEPTACLE. GROUNDING TYPE WITH CHILD PROOF COVER.
- $ — SWITCH
- ◀ — TELEPHONE

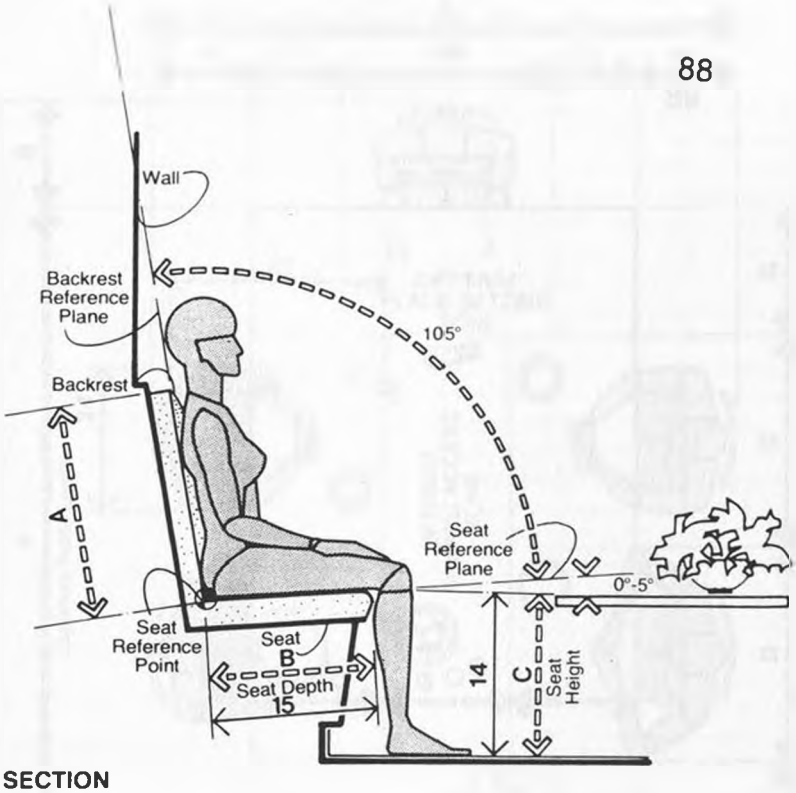
26.

IARC 409

1 SEATING

The drawings at the bottom show the basic dimensions for the design of banquette seating. The lack of armrests makes it difficult to define seat boundaries. The user, therefore, tends to establish his own territory by assuming a desired sitting posture and placing personal articles next to him, such as a briefcase, purse, or package. Since the nature of this type of seating can permit some form of body contact, hidden dimensions and personal space also play an important part in how close the users sharing the banquette will sit.

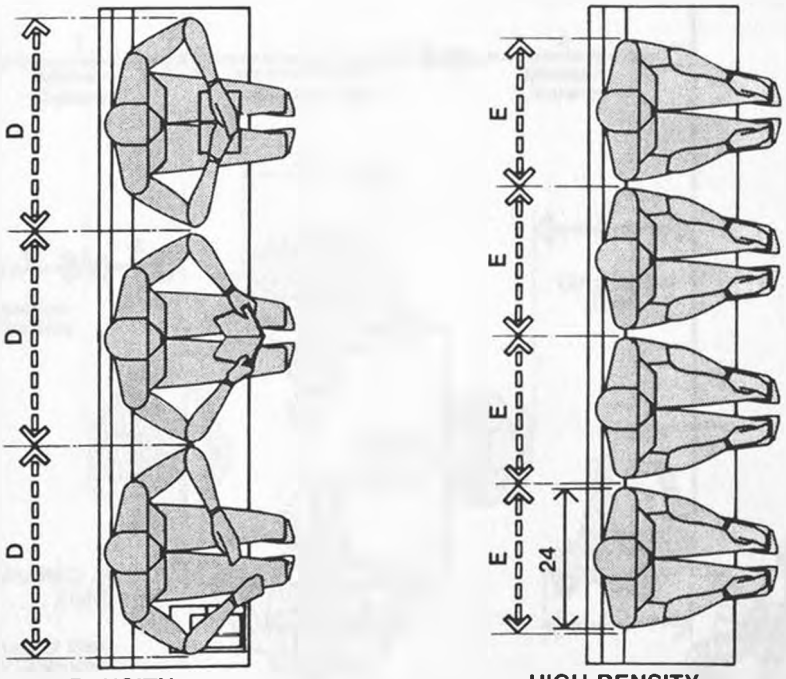
Because of the many hidden psychological factors involved, the actual efficiency of this seating type in terms of capacity is questionable. The diagrams indicate two possible seating situations, each dictated by the anthropometrics involved. One arrangement is based on the premise that the user's elbows will be extended, possibly in conjunction with some activity, such as reading, or simply as an attempt to stake out additional territory, as would be the case in the strategic positioning of some personal article on the seat. In this situation it would be reasonable to assume that each user would take up about 30 in, or 76.2 cm, of space. The other diagram shows a more compact seating arrangement. The diagram at the top shows a section through a typical banquette.



SECTION

BANQUETTE SEATING

	in	cm
A	18–24	45.7–61.0
B	15.5–16	39.4–40.6
C	16–17	40.6–43.2
D	30	76.2
E	24	61.0



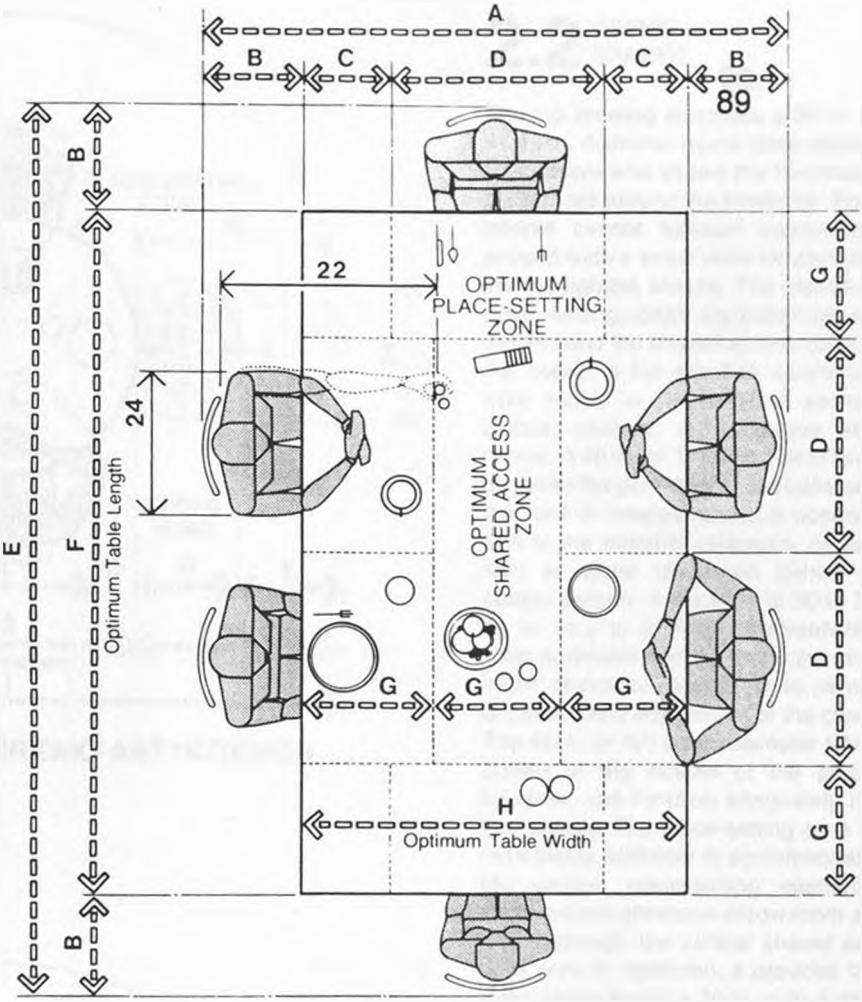
LOW DENSITY HIGH DENSITY

BANQUETTE SEATING

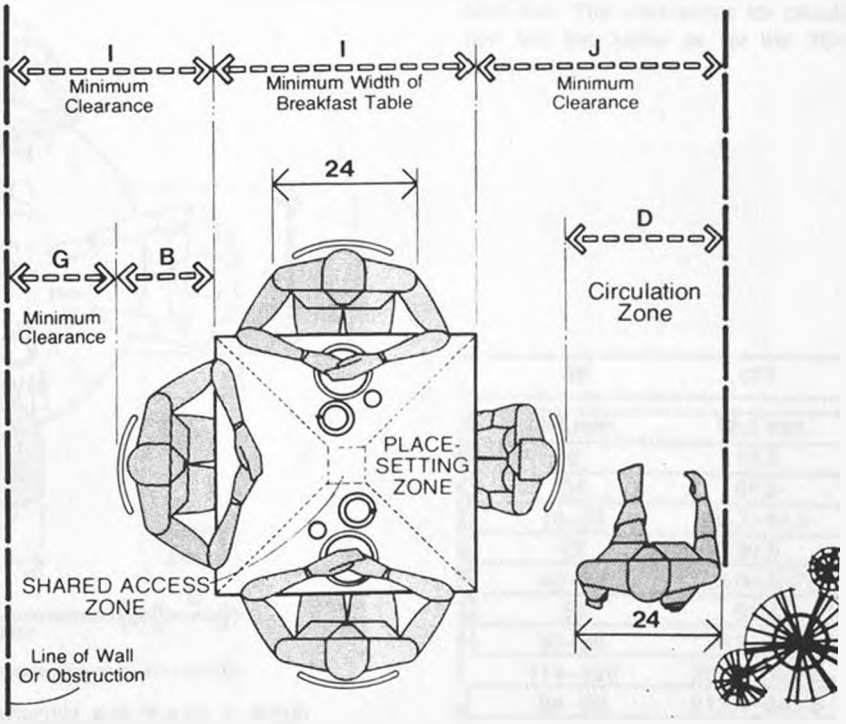
2.2 DINING SPACES

The top drawing applies the optimal incremental unit discussed on the preceding page to a rectangular table for formal dining for six. The table size shown is 54 by 96 in, or 137.2 by 243.8 cm. This size will provide each person with an individual place-setting zone of 18 by 30 in, or 45.7 by 76.2 cm, and will allow a shared access zone at the center of the table with a depth of 18 in. The 30-in width provided for each person allows for elbow room.

The bottom drawing, in contrast, shows a minimal, square general purpose table for informal dining. Although the width and depth of the place-setting zones are the same as in the larger rectangular tables, their angular configuration reduces the area significantly as well as the area of the shared access zone. To allow clearance for the chair and head-on circulation behind the chair, a minimum distance of 48 in, or 121.9 cm, must be maintained between the edge of the table and the wall or nearest physical obstruction. A clearance of 36 to 42 in, or 91.4 to 106.7 cm, can be provided to allow restricted circulation. This will require a person to sidestep or the seated person to adjust the chair to allow passage.

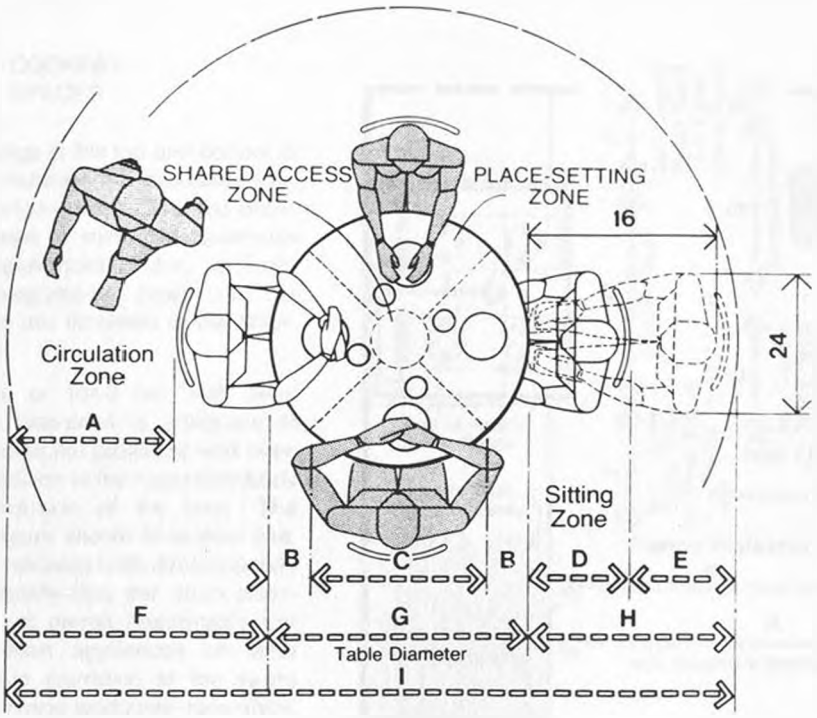


RECTANGULAR TABLE/OPTIMUM LENGTH AND WIDTH/DINING FOR SIX

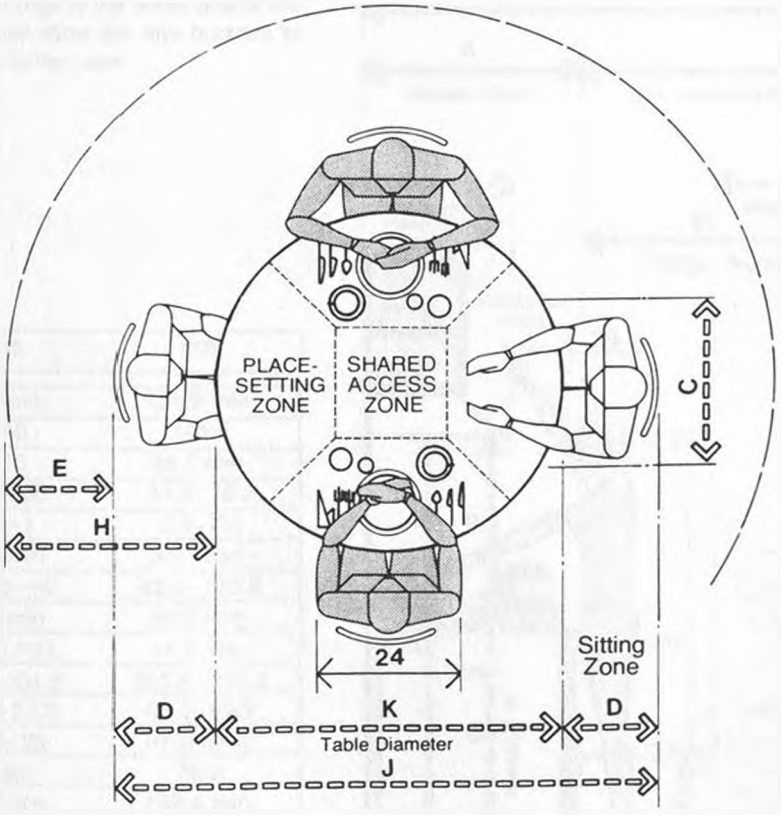


BREAKFAST/KITCHEN TABLE FOR FOUR

	in	cm
A	96–102	243.8–259.1
B	18–24	45.7–61.0
C	12	30.5
D	30	76.2
E	132–144	335.3–365.8
F	96	243.8
G	18	45.7
H	54	137.2
I	36–42	91.4–106.7
J	48 min.	121.9 min.
K	18 min.	45.7 min.



36-IN (91.4-CM) DIAMETER BREAKFAST/KITCHEN TABLE FOR FOUR



48-IN (121.9-CM) DIAMETER CIRCULAR TABLE FOR FOUR/MINIMUM SCHEME

The top drawing illustrates a 36-in, or 91.4-cm, diameter round table seating four people and shows the necessary clearances around the perimeter. Four people cannot function comfortably around such a small table for anything but the lightest snacks. The individual place-setting zones are extremely restricted and the shared access zone at the center is too small to accommodate much in the way of serving dishes, platters, or decorative elements. A 48-in, or 121.9-cm, clearance between the perimeter of the table and the wall or nearest physical obstruction is the minimal clearance necessary to allow circulation behind a seated person. A distance of 30 to 36 in, or 76.2 to 91.4 cm, between the table perimeter and the wall is the minimum clearance necessary to permit access to and adjustment of the chair. The 48-in, or 121.9-cm, diameter table shown at the bottom of the page, however, can function adequately for four people. The place-setting zone is reasonably sufficient to accommodate the various place-setting elements and provides generous elbow room as well. Although the central shared access zone is restricted, it provides far more space than the 36-in, or 91.4-cm, diameter table shown above. If used for light snacks or coffee, the table can seat five. The clearances for circulation are the same as for the 36-in table.

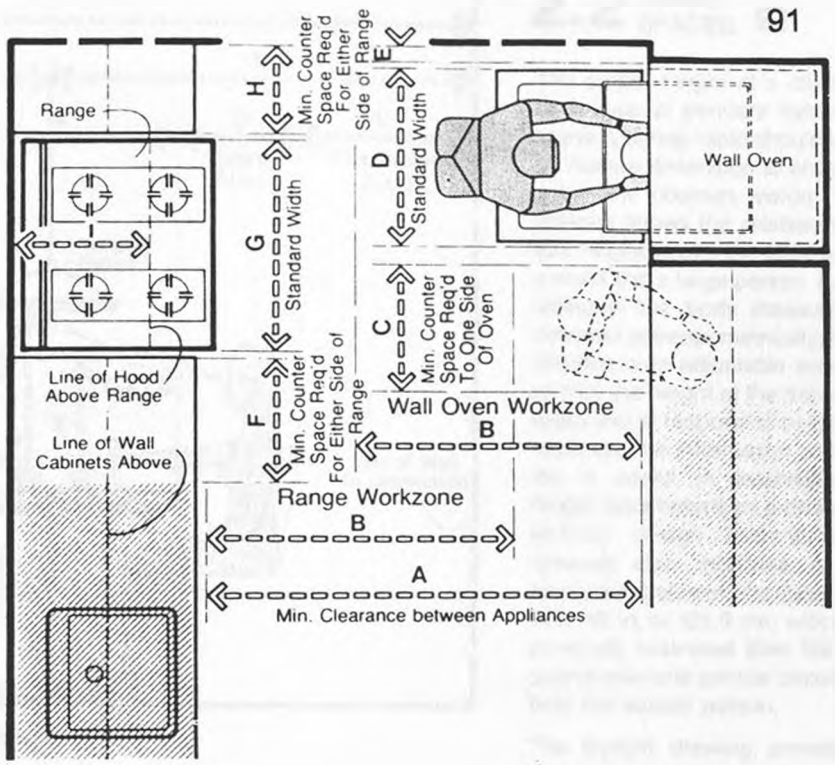
	in	cm
A	30 min.	76.2 min.
B	6	15.2
C	24	61.0
D	18–24	45.7–61.0
E	12	30.5
F	48–54	121.9–137.2
G	36	91.4
H	30–36	76.2–91.4
I	114–126	289.6–320.0
J	84–96	213.4–243.8
K	48	121.9

2.4 COOKING SPACES

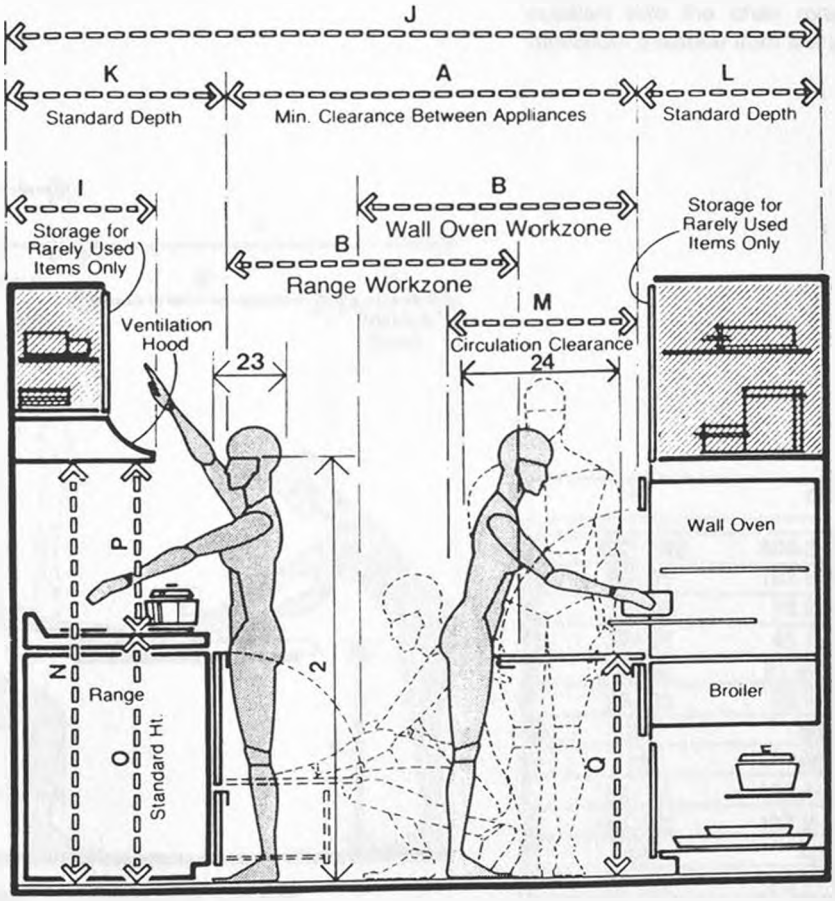
The drawings at the top and bottom of the page illustrate the clearances related to range centers. The top drawing indicates a minimum clearance between appliances of 48 in, 121.9 cm. The anthropometric basis for the clearances are amplified in the drawing below.

The 40-in. or 101.6 cm, wall oven workzone clearance is adequate to accommodate the projected wall oven door, in addition to the maximum body depth dimension of the user. The standing figure shown in broken line, however, indicates both dimensionally and graphically that the 40-in clearance will not permit comfortable circulation when appliances on both sides are in operation at the same time. The range workzone clearance, also 40-in, is adequate to accommodate the open range door and the body size of the kneeling user.

An extremely important, but frequently overlooked, anthropometric consideration in kitchen design is eye height. In this regard, the distance from the top of the range to the underside of the hood should allow the rear burners to be visible to the user.

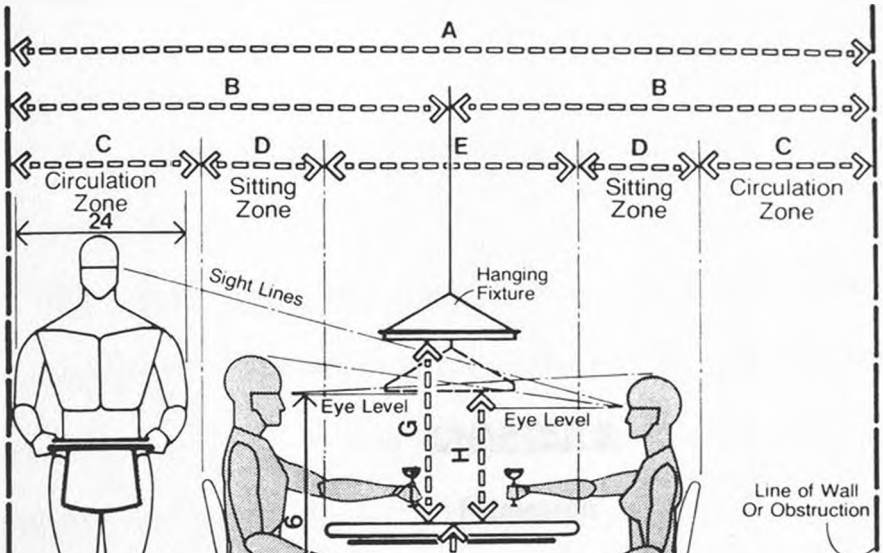


RANGE CENTER



RANGE CENTER

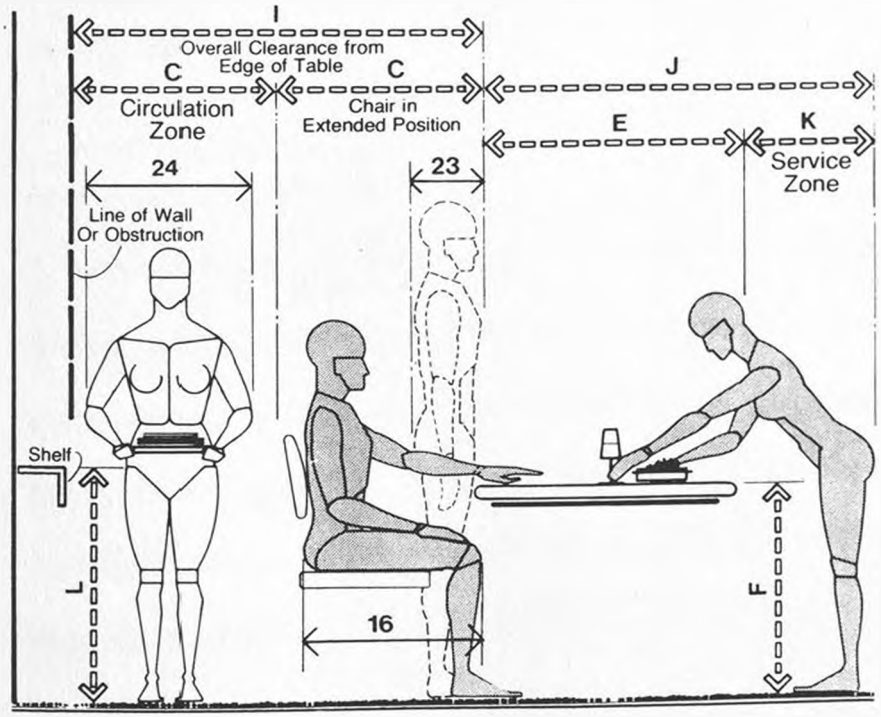
	in	cm
A	48 min.	121.9 min.
B	40	101.6
C	15	38.1 min.
D	21–30	53.3–76.2
E	1–3	2.5–7.6
F	15 min.	38.1 min.
G	19.5–46	49.5–116.8
H	12 min.	30.5 min.
I	17.5 max.	44.5 max
J	96–101.5	243.8–257.8
K	24–27.5	61.0–69.9
L	24–26	61.0–66.0
M	30	76.2
N	60 min.	152.4 min.
O	35–36.25	88.9–92.1
P	24 min.	61.0 min.
Q	35 max.	88.9 max.



MINIMUM DINING AREA WIDTH

The proper height of a chandelier o other type of pendant lighting fixture above a dining table should be based on human dimension to ensure that i does not obstruct vision. The top drawing shows the relationship of fix ture height above the table surface to a small and a large person. Eye heigh sitting is the body measurement to consider anthropometrically. The idea solution is an adjustable arrangemen so that the height of the fixture can be regulated to respond to personal pref erences. The information on the draw ing is useful in establishing initia height parameters as a basis for pre liminary design assumptions. The drawing also indicates a minima clearance between the table and the wall 48 in, or 121.9 cm, with the chai minimally extended from the table to permit one-lane service circulation be hind the seated person.

The bottom drawing provides addi tional clearance information and sug gests a minimum distance of 60 in, o 152.4 cm, between table and wall to accommodate one-lane head-on cir culation with the chair extended a maximum distance from the table.



MINIMUM CLEARANCE BEHIND EXTENDED CHAIR

	in	cm
A	132–162	335.3–411.5
B	66–81	167.6–205.7
C	30–36	76.2–91.4
D	18–24	45.7–61.0
E	36–42	91.4–106.7
F	29–30	73.7–76.2
G	27	68.6
H	19	48.3
I	60–72	152.4–182.9
J	54–60	137.2–152.4
K	18	45.7
L	29–36	73.7–91.4

CHAPTER 5:

Research

Case Study I: Hybrid Building, Seaside FL, by Steven Holl

A. Spatial Issues

This building consists of elements that need spatial separation. The first floor is comprised of retail spaces, the second offices, and the third and fourth levels area made up of apartments. Circulation systems reinforce the distinction between the spaces. Each retail space has its own entrance, as do the offices. An elevator, placed on the outside of the building, links the first through the third floors, but is emphasized less than the stairways, which form two vertical cores in the interior of the building. The stairs land on an open courtyard on the third floor. This courtyard allows each apartment two open sides, instead of having an interior, double-loaded corridor. The courtyard also separates the two types of dwellings. Holl designed the apartments on the west side with boisterous personality types in mind, and the apartments on the east side for early-rising melancholic types.

B. Program and Activities

This building is part of a new planned community, and the developers are instilling a bit of urban density into this otherwise resort community. In addition to expressing an urban character, this building brings together, as Holl describes, "a society of strangers". He defines certain personality types imagined as residents, and lets both the architecture and the interior development express these personalities.

C. Interior Development

Special efforts are made here to let the architecture and interior development support certain personality types. There are two main types of dwellings, those for boisterous personalities, outgoing revelers, whose apartments are oriented west, to the setting sun. Apartments for the melancholy personalities have windows facing east, to the cool light of early morning. The boisterous units are designed to facilitate entertaining, with space for parties and upscale amenities. The three melancholy units are imagined as being for a tragic poet, a musician, and a mathematician. The house of the tragic poet has dim light, with tall and narrow windows, all of the same dimension. In the house of the musician, a wall is allowed to flow between floors to symbolize the flow of music. The mathematician's residence has slightly warped surfaces. In all of the units, surfaces are treated simply, but with care, letting finishes and materials be of primary interest.

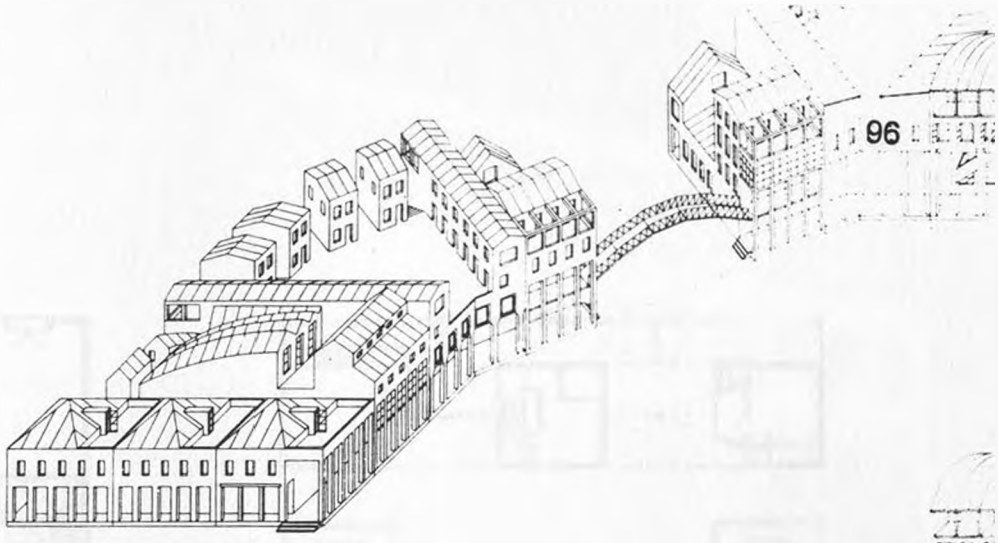
Seaside, Florida
1984–88

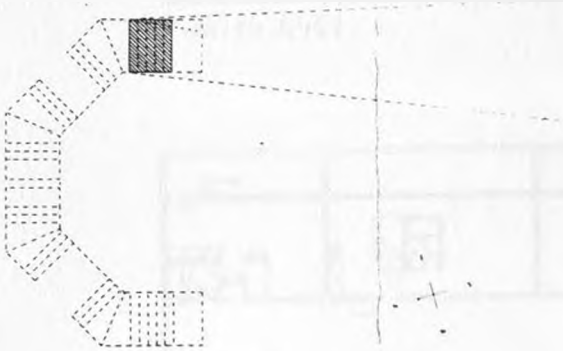
Seaside is a new town on the Gulf of Mexico. The planners have established height restrictions, design guidelines, and easements. By their code, this project and adjoining buildings are required to form a continuous public arcade around the square.

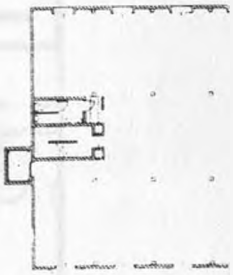
The Hybrid Building combines retail, office, and residential uses. The concentration of disjointed programs forms an incidental urbanism. Along with intensification of an urban condition, the building expresses the idea of a "society of strangers." The building forms split at the upper levels into east and west types. Rooms facing the setting sun and central square are for boisterous types, late risers who enjoy watching the action, toasting the sunset, etc. All of their two-level flats are identical. They contain luxury bathrooms, microwave ovens, and space for parties.

Facing east to the rising sun are rooms for melancholic types. These individuals are early risers, inclined to silence and solitude. Melancholic types are imagined as: a tragic poet, a musician, and a mathematician. The plans and sections of the three rear flats are characterized accordingly. The house of the tragic poet has dim light; every window is of the same narrow and tall dimension. The awning at the roof is like a rag on a peasant's table. In the house of the musician, light is cast down from the corner windows on the upper level. A black plaster wall slips from the lower to the upper floor, enhancing the flowing nature of the space. In the house of the mathematician everything is slightly warped. The stair to the second level warps over the bathroom. The warp over the ceiling joists forms a slight doubly-curved surface. At the second level is a calculating table with a skull shelf, in homage to Johannes Kepler.

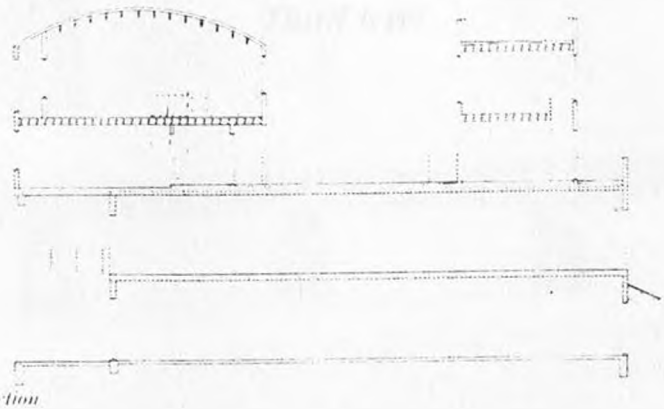
Construction is of precast concrete columns and beams, and hollow-core planks. Walls are integral-color stucco on concrete block; roofs are galvanized metal.



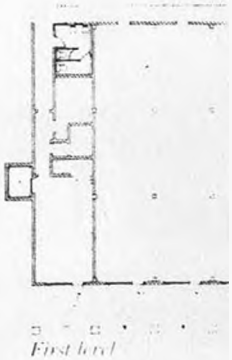




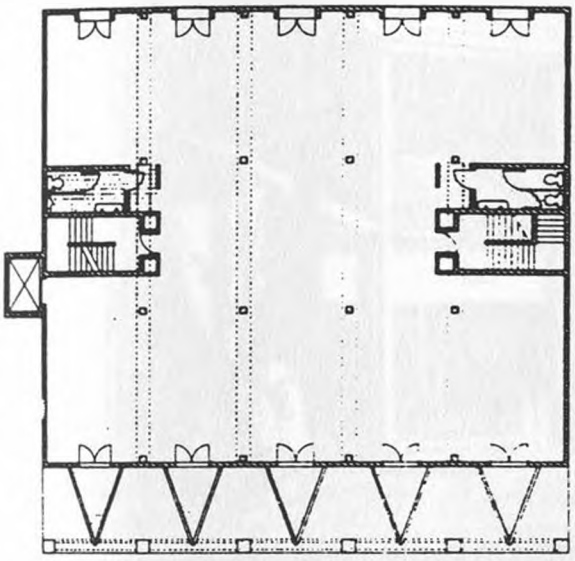
Second level



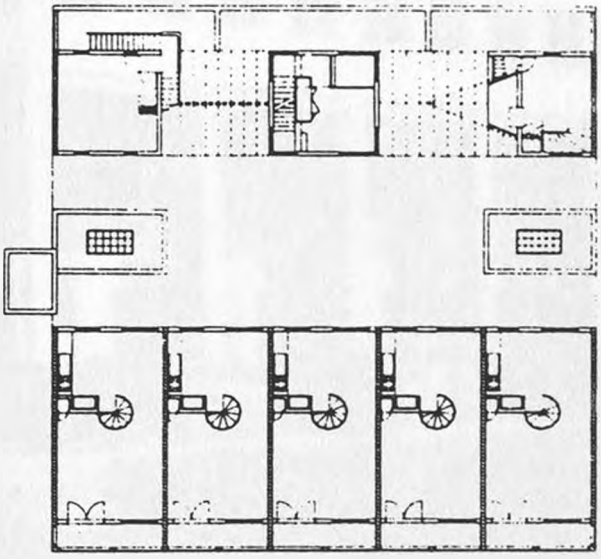
Section



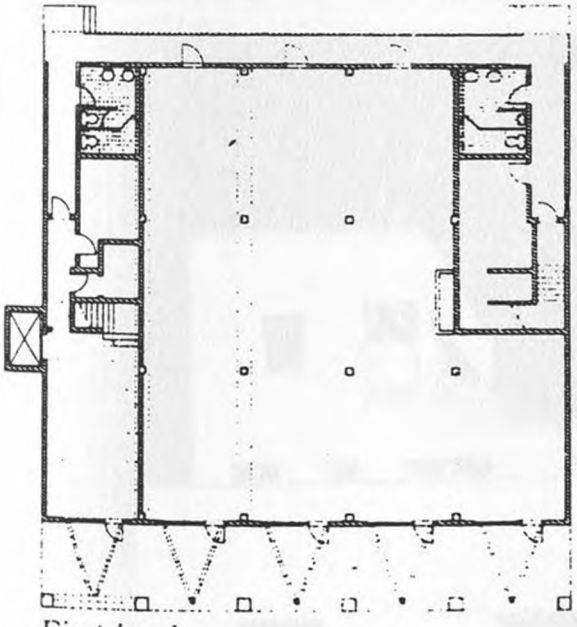
First level



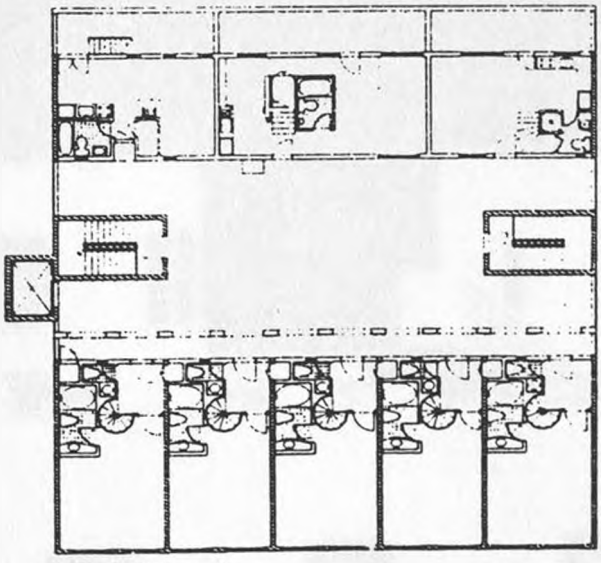
Second level



Fourth level

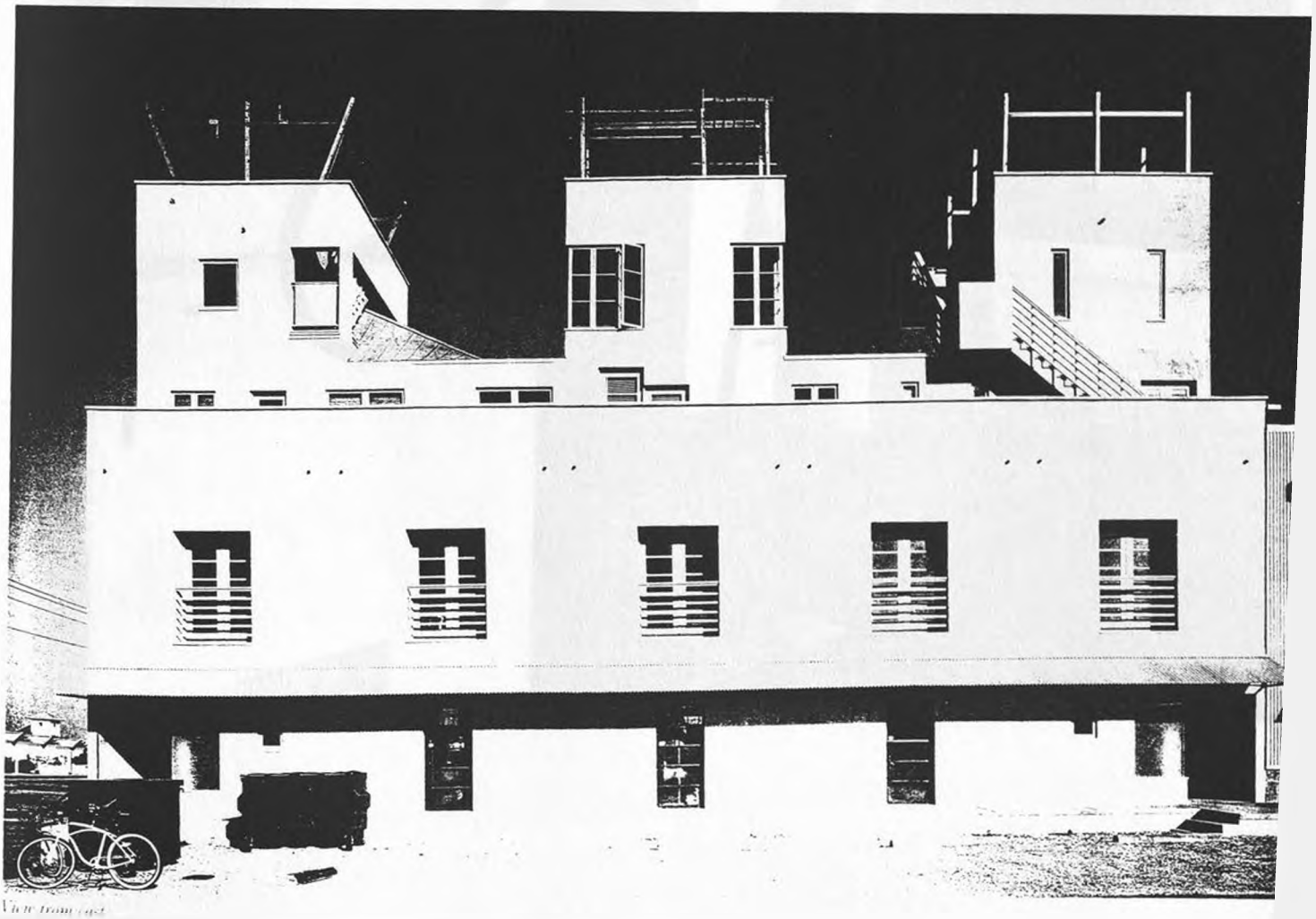


First level

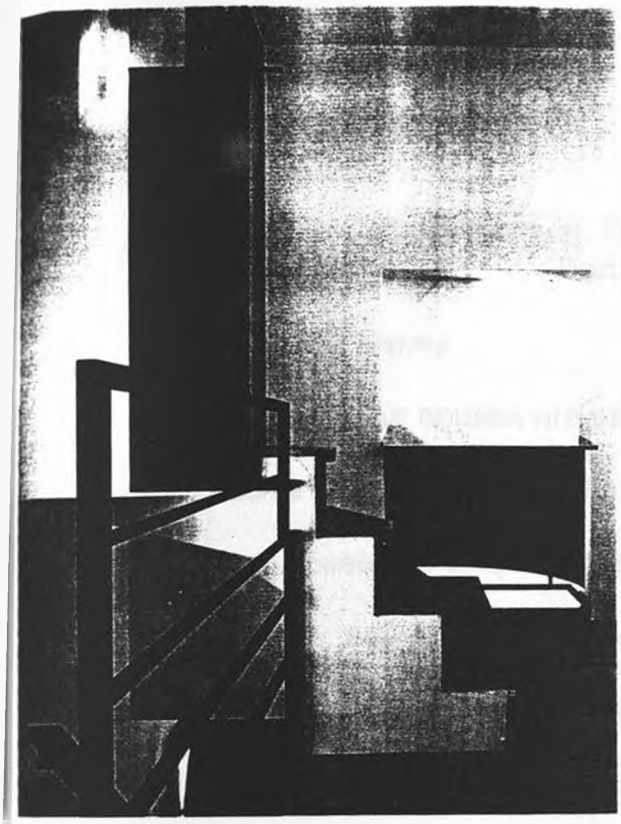


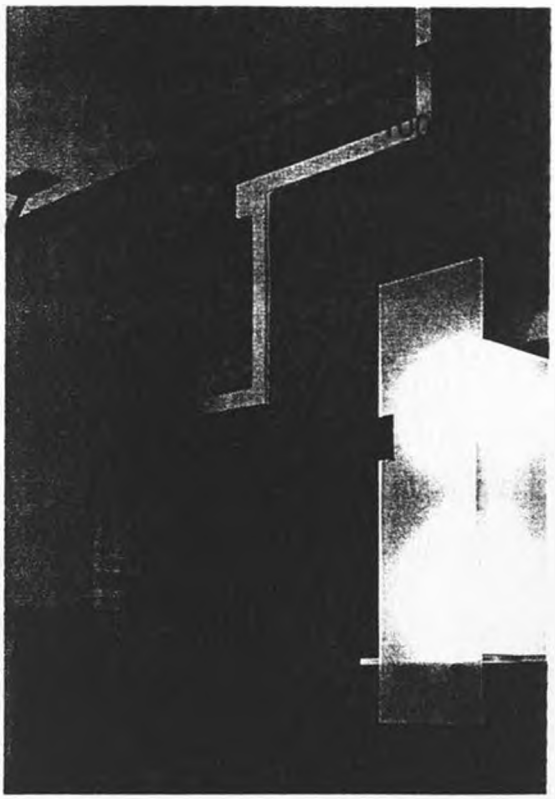
Third level

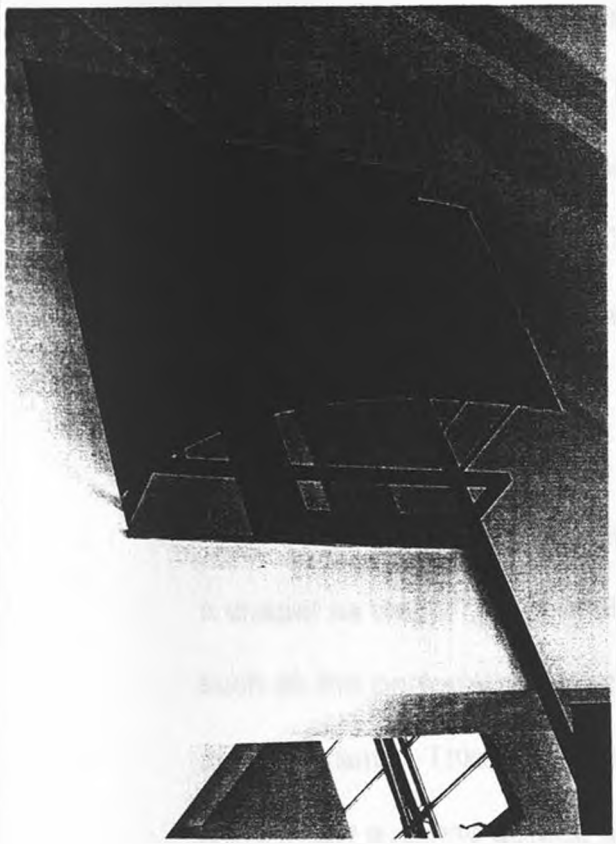
View from northwest

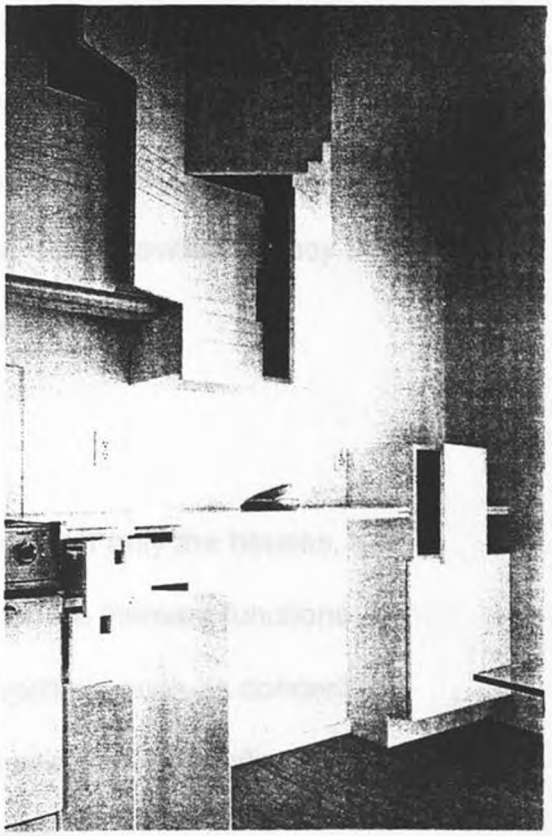


View from east









House of the Musician

Case Study II: Town Square: Four Houses and a Chapel
Port Ludlow, WA, by Steven Holl

A. Spatial Issues

These four houses are part of a public square. They have been developed in such a way as to participate in the urban setting, while at the same time, they each possess a unique expression. The four houses are physically linked together, and share a common architectural expression on the exterior, but inside, they each reflect a unique idea. Each house has its own entry porch and set of stairs. Once inside, the basic floor plans are the same, while certain elements are varied to express different themes. There are several level changes in the houses, from the lowest street entrance (on the side facing away from the public square), to the balconies overlooking the square, to the private spaces in the highest level. This circulation sequence both provides privacy from the public square and provides an opportunity to interact with it.

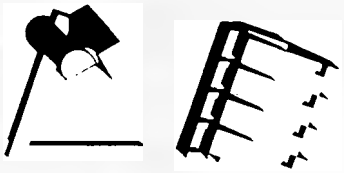
B. Program and Activities

The public square, as developed by Holl, consists of not only the houses, but a chapel as well. The chapel is designed to accommodate intimate functions such as the performing of last rites and also public functions such as concerts and programs. This project emphasizes both private and public activities, and shows how a dense setting can support private lifestyles.

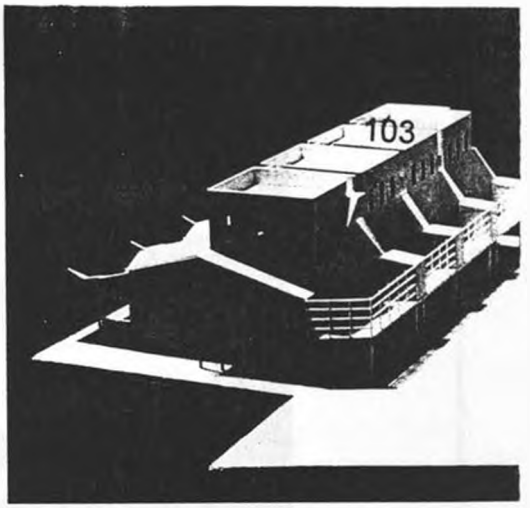
C. Interior Development

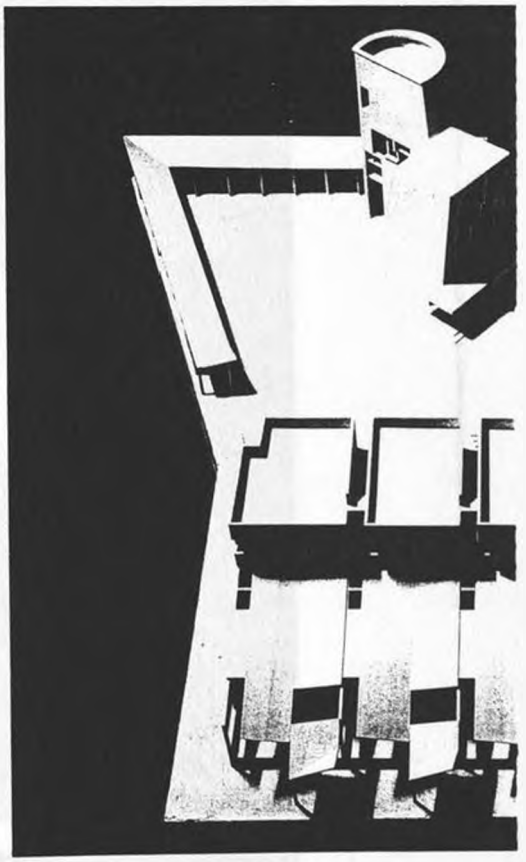
The four houses are each the same size and the same general configuration, but they have certain variations meant to express different themes: a walk through the forest, melancholia, free spirit, and a gaze at the mountains. It is not clear how each of these certain themes is expressed, but there are architectural variations in each of the floor plans. Two of the units have rectangular stair configurations, one has an irregular shape, and one is circular. The upper floors each have different bedroom and bathroom configurations. This treatment helps to bring character and uniqueness to urban dwellings.

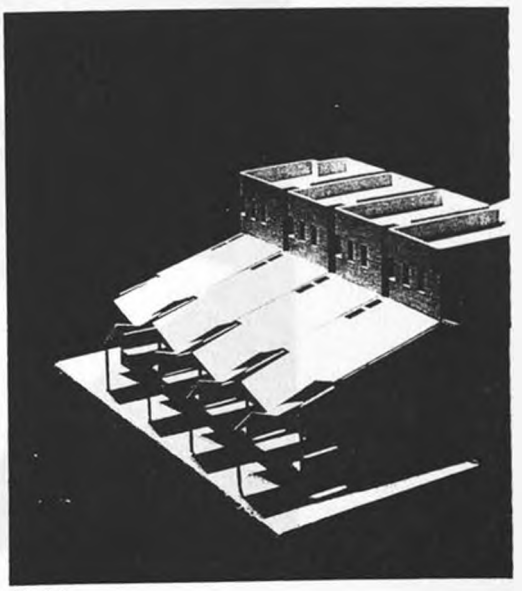
Town Square
Four Houses and Chapel
Port Ludlow, Washington
1991-92



Site plan







Port Ludlow is a new community being built on the site of a former saw mill, on a small, deep-water bay in Washington State. Different architects are at work on various parts of the town. The town square by Steven Holl and Don Carlson, is a parallelogram with its acute angles oriented to Admiralty Bay to the north and the Cascade Mountains to the south-west.

One side of the town square is formed by four houses which are a four part "Ode to the Pacific Northwest": 1) "A walk through the forest," 2) "Melancholia," 3) "Free spirit," and 4) "A gaze at the mountains."

The exteriors reinforce a collective space while the interiors are individually developed.

The Chapel is programmed as a duality. As a place of silence and reflection, it accommodates sacred events, such as small weddings, vigils or last rights. As a meeting house it accommodates receptions, and concerts, etc.

The dual form of the building, curved and square, recalls the transformation of timber from the cylindrical trunks of the big Douglas firs to their final milled form, rectangular in section. The round tower is also inspired by the old saw mill burners, such as the one that existed in Port Ludlow.

The curved space recalls the mythical time of the ancient trees and the first inhabitants of the site. The square section embodies the profane: on-going historical time. The curved wall of the round tower is washed by sunlight from the tall south-facing window. The square tower is lit by the morning light from the east, which filters through a window of clear and cast colored glass, playing onto interior walls and the stained concrete floor. A light wooden stair, passing inside the curved wall, leads to the upper roof.

From the observation point at the top, one can see the whole bay of Port Ludlow and beyond to the mountains. The steel structure, with scratch-coat stucco interior, will be skinned in lead-coated copper; weathered to a silvery blue gray.

タウン・スクエア／4つの住宅と礼拝堂

ポートラドロウは，かつて製材加工場のあった土地で，ワシントン州の，小さな奥まった湾に面する小ぢんまりとしたコミュニティである。町の各所にはそれぞれ別の建築家が仕事をしている。スティーヴン・ホールとドン・カールソンによるタウン・スクエアは平行四辺形をなし，その鋭角のひとつは北のアドミラルティ湾を指し，他のひとつは南西のカスケード山を向いている。

広場の一辺は，4部構成の「北西太平洋沿岸州の頌歌」と呼ぶ4つの住宅で構成され，それぞれ，1）森を歩く，2）メランコリア，3）自由な精神，4）山々を凝視める，と名づけられた。

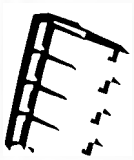
住宅の外形は広場の公共の性格を強めるものでありながら，内部はそれぞれに個性的である。

チャペルは2重の性格を持つよう計画された。静寂と思索の場として使われる時には，小規模な結婚式，徹夜の祈り，葬式などの宗教的な儀式が行われるが，にぎやかな集会場としては，レセプションやコンサートが開かれる。

曲線と四角で構成されるこの建築のもつ2重の形態は，ダグラスファーの巨木の円筒形が製材されて直角の断面に形を変える様を思わせるところがある。円筒形の塔は，ポートラドロウにあった製材工場の焼却炉をもとにしたものである。

曲線で作られた空間は，太古の樹々とともにこの地の先住者が暮した神話時代を思わせる。正方形の断面は世俗の世界，現代を含めて歴史に記された時代をあらわす。円筒形の塔の曲面が南向きの高い窓から降り注ぐ陽の光に照らされる。四角い塔は，東からの朝の光に洗われ，透明ガラスと色ガラスの窓に濾された光が内壁とスタイン塗のコンクリートの床に戯れる。その中を軽やかな木の階段が内壁の曲面に沿って上の屋根へ昇ってゆく。

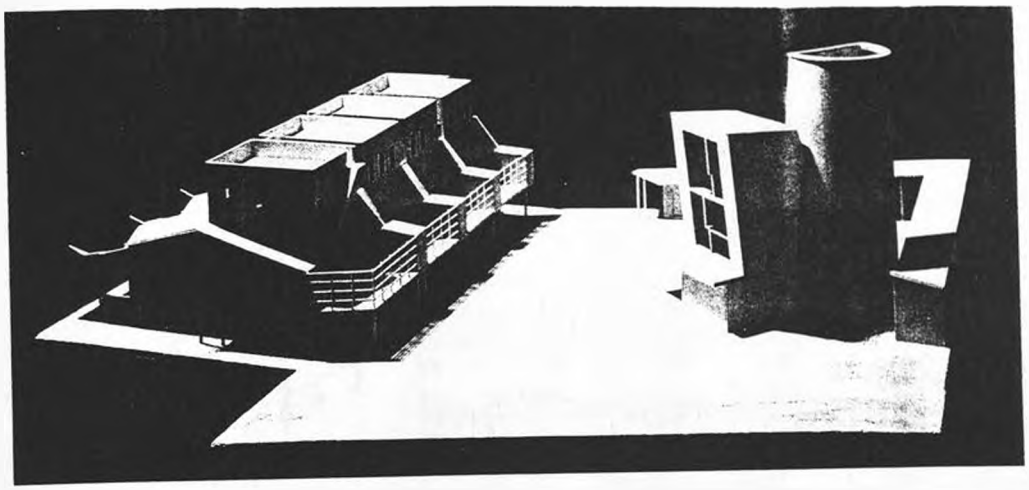
頂上の展望台に立てば，ポートラドロウの湾とそしてその向こうの山並みを一望に納める。鉄骨の構造体にスタッコのかき落しで内壁を仕上げ，銀色を帯びたブルーグレーに腐蝕させた鉛を張った銅板で外壁を包む。

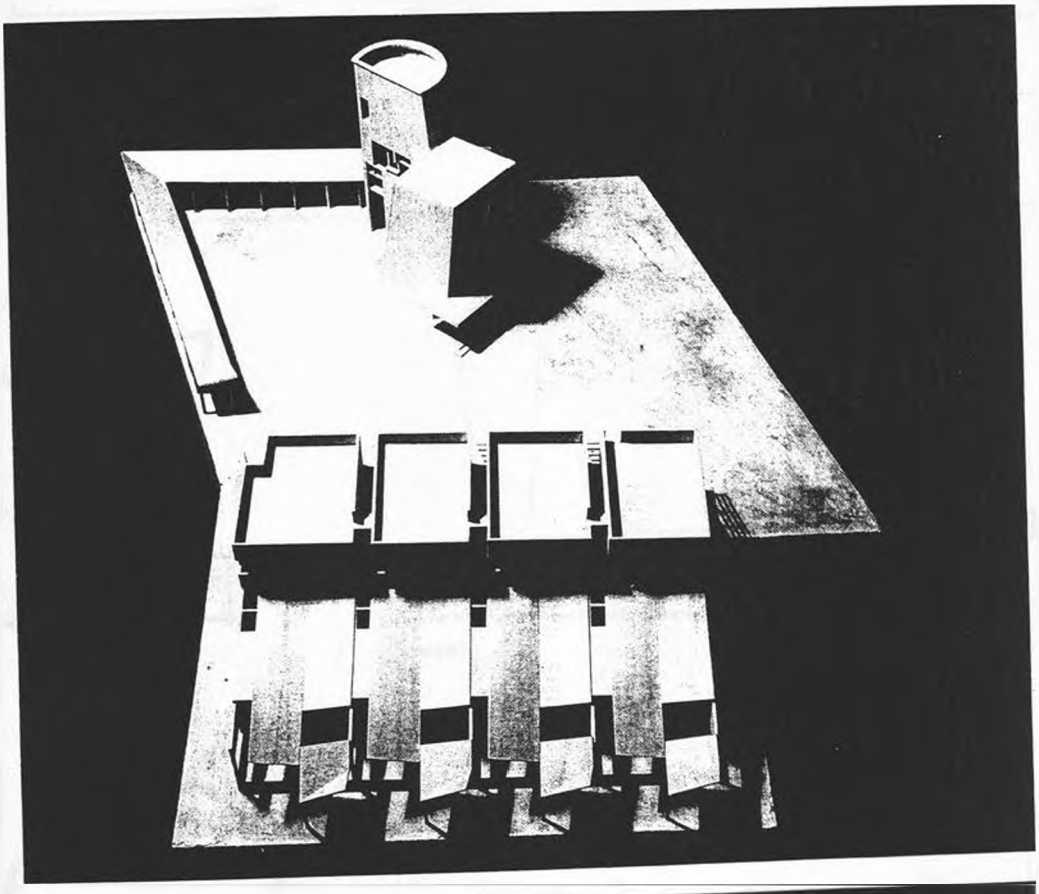


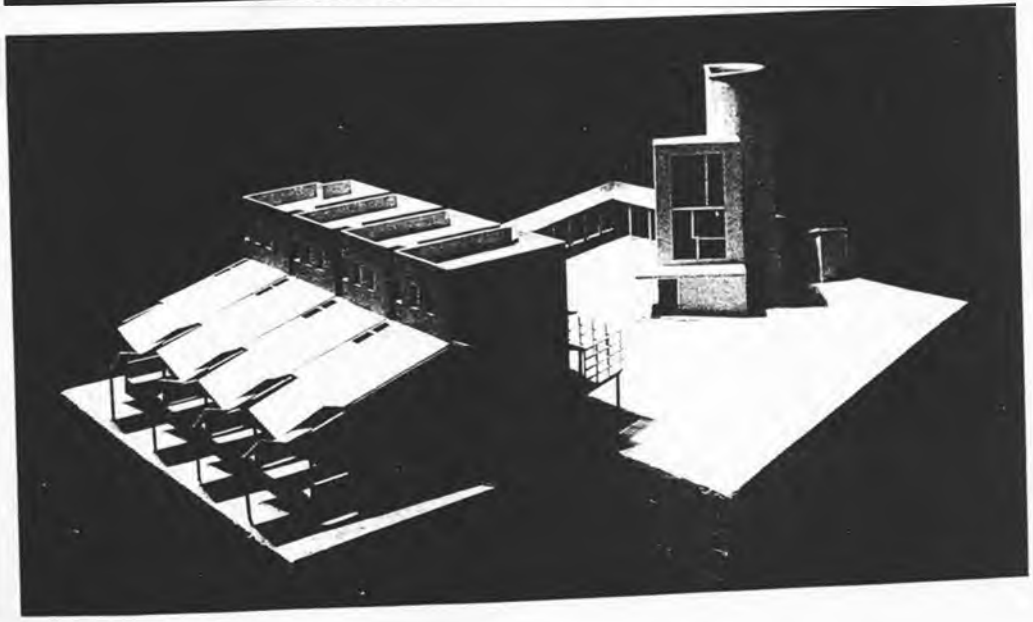
Site plan

の住宅と礼拝堂
で製材加工場のあった
小さな奥まった湾に
コミュニティである。
の建築家が仕事をして
ールとドン・カールソン
は平行四辺形をなし，そ
トミラルティ湾を指し，
ケード山を向いている。
構成の「北西太平洋沿岸州
宅で構成され，それぞれ，
コリア，3）自由な精神，
と名づけられた。
公共の性格を強めるもの
それぞれに個性的である。
格を持つよう計画された。
使われる時には，小規模
，葬式などの宗教的な儀
やかな集会場としては，
ートが開かれる。
されるこの建築のもつ2重
ァーの巨木の円筒形が製
材を変える様を思わせる
塔は，ポートラドロウ
案図をもとにしたもので

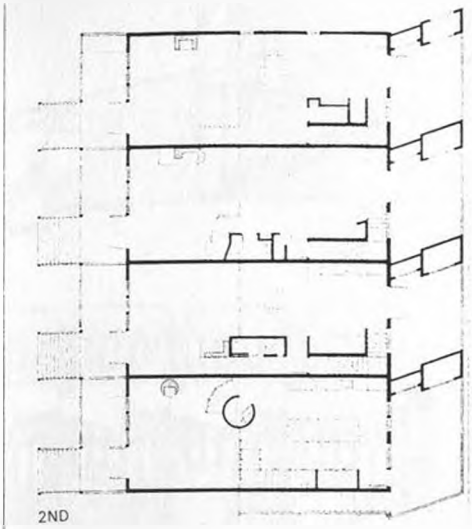
際に，太古の樹々とともに
た神話時代を思わせる。
世界，現代を含めて歴史
。円筒形の塔の曲面
降り注ぐ陽の光に照らさ
，東からの朝の光に洗わ
ラスの窓に濾された光
コンクリートの床に戯れ
る階段が内壁の曲面に
。
，ポートラドロウの湾
空間に納める。鉄骨の
で内壁を仕上げ，
腐蝕させた鉛を張っ

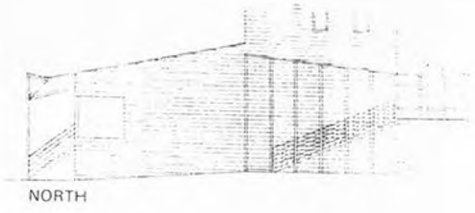


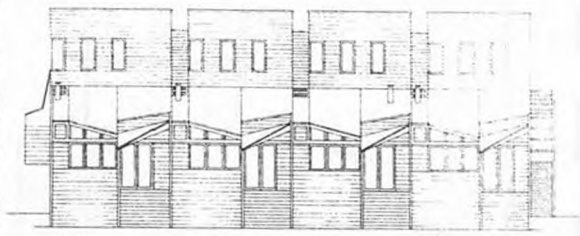


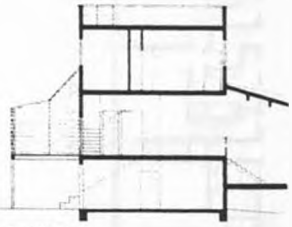


Model

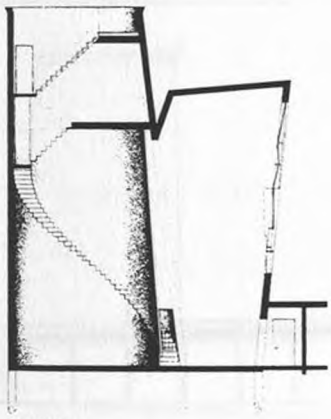


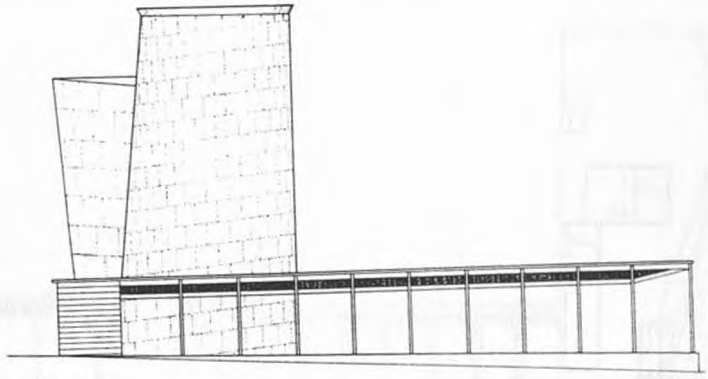


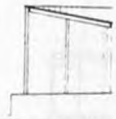


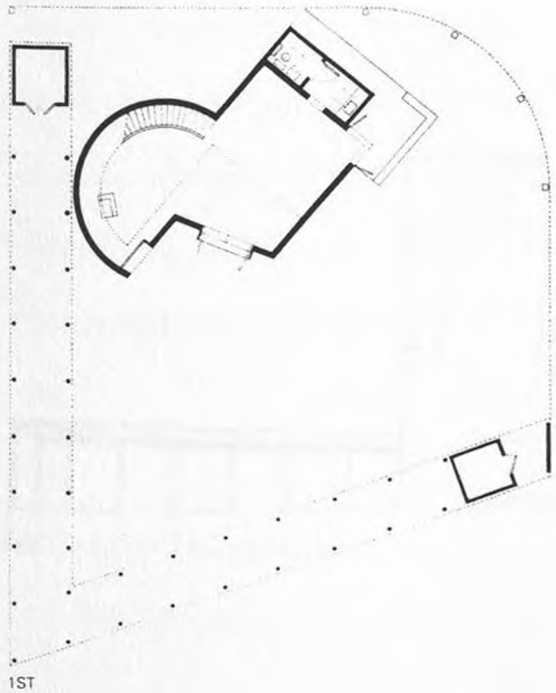


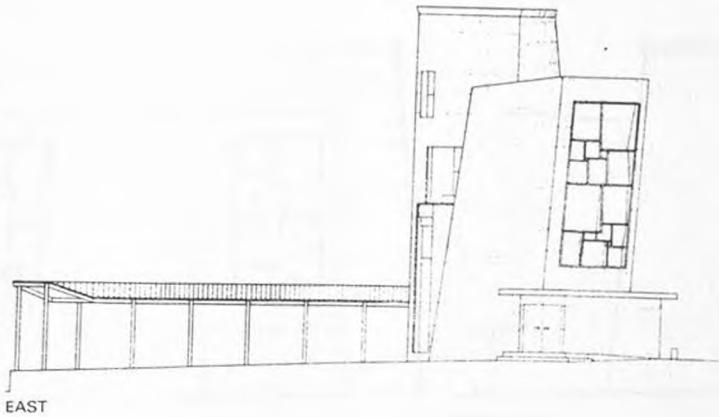
Housing



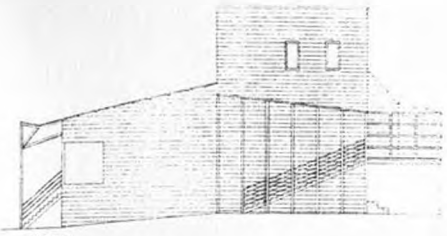




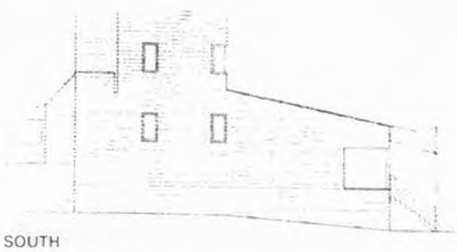




Meeting House



NORTH



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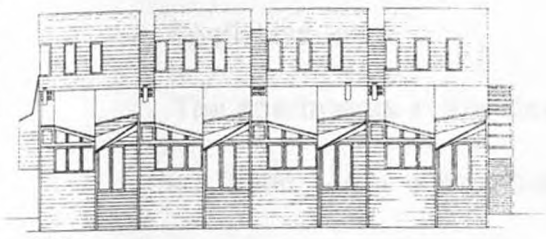

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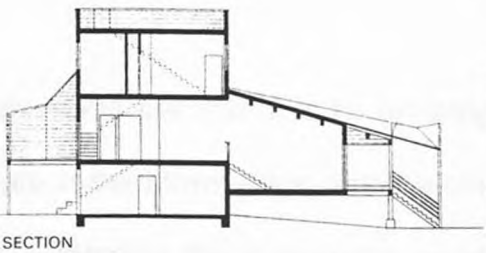

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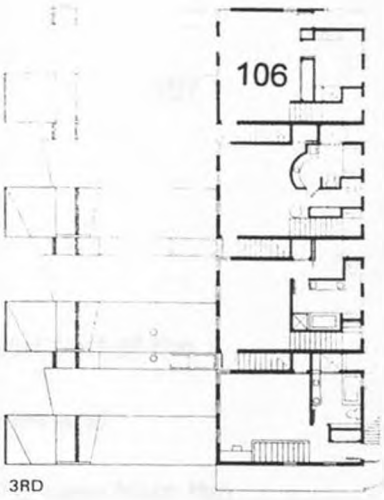

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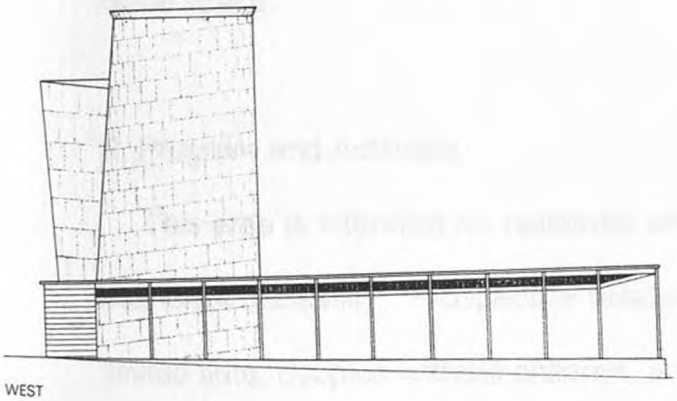

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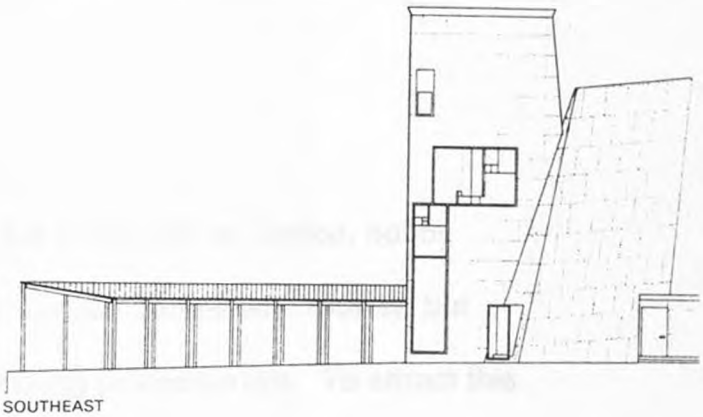

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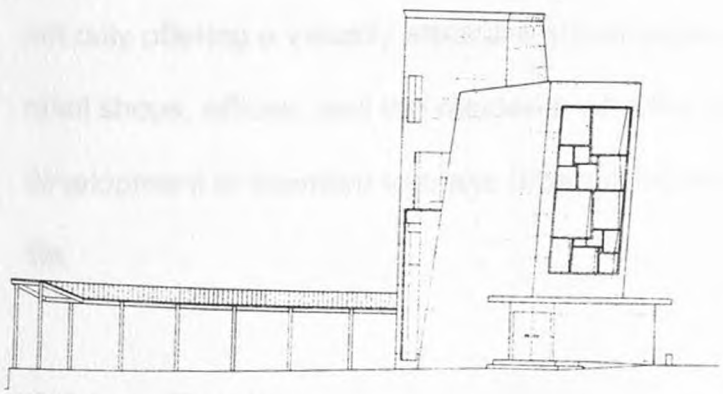

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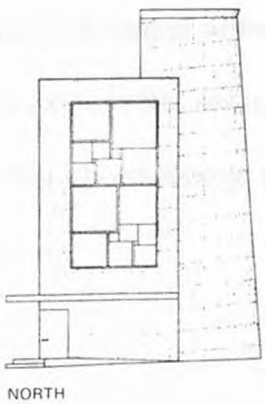

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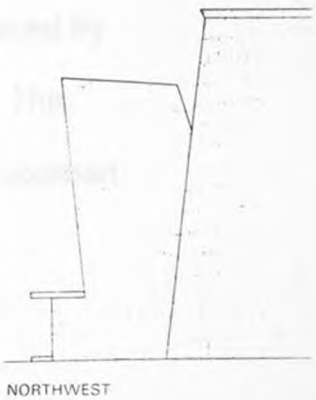


NORTHWEST

Case Study III: Addison Circle
a suburb of Dallas, TX

A. Spatial Issues

The apartments in this development are meant to be an integral part of the urban fabric. They will participate in the street edge, with balconies and overlooks, and landscaping that enhances the street edge and the view from the apartments. The buildings will be limited in height to three or four stories, with a medium density of residents. Some buildings will incorporate retail and home office space.

B. Program and Activities

This area is intended for residents who live in the city by choice, not by economic necessity. Prospective residents include people with money, but limited time, couples without children, and young professionals. To attract this market, apartments will be architecturally distinctive and of high quality construction and materials. The neighborhood will support pedestrian traffic by not only offering a visually attractive street edge, but one that is enlivened by retail shops, offices, and the residents who live and work in the area. This development is intended to make urban living a viable alternative to suburban life.

C. Interior Development

This plan calls for high quality development of the apartments as well as the

street edge. The budget for the streetscape and landscape elements is three times that of a regular street edge. The apartments are meant to participate in the street edge, with balconies and overlooks, so the investment in the streetscape will enhance the general quality of the apartments overall.

A dynamic example of a public/private sector initiative, Addison Circle is a sustainable and cohesive community that typifies a new breed of mixed-use projects.

Addison Circle

Beyond New Urbanism

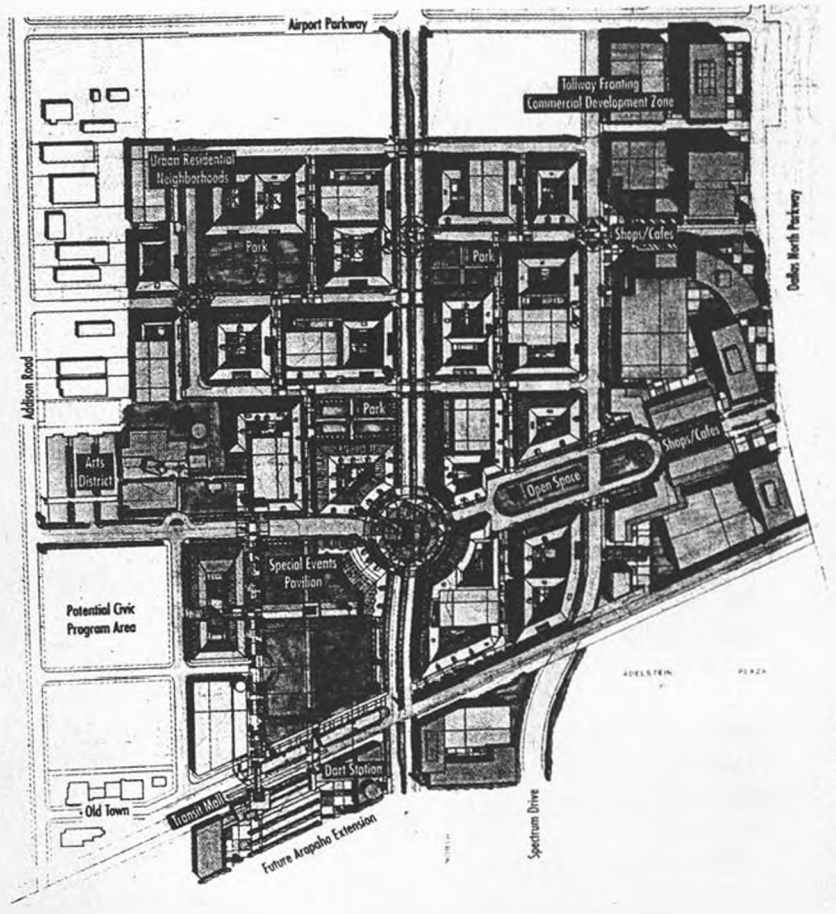
JOHN R. GOSLING

The town of Addison, a suburb of Dallas, has recently created a groundbreaking new mixed-use district called Addison Circle. The result of several years of planning, this 80-acre, planned development district is an example of a public/private sector initiative aimed at creating a sustainable 3,000-unit, high-density urban neighborhood with supporting retail and employment within a classic "edge city" setting.

Unlike other dormitory suburbs of North Dallas with their sprawling subdivisions and acres of undeveloped land, Addison is a land-locked community of approximately four square miles that is 80 percent built out. Despite its small size, Addison has always attracted more than its fair share of commercial development. Permitting liquor by the drink long before other North Dallas suburbs, it became a focus for restaurant and hotel development and has been at the epicenter of Dallas's northward growth corridor since the mid-1970s.

Today, the town has a land use pattern skewed to commercial development, a small resident population of approximately 10,000, over 150 restaurants, and a dozen hotels. It is surrounded by the largest center of retail activity in the Dallas area including three regional malls, and it employs more than 160,000 workers daily, constituting one-seventh of the jobs in the Dallas area.

However, in the early 1990s, sales tax revenues from the restaurant business in Addison were beginning to decline; competition was emerging from new restaurant clusters following the residential growth in suburbs such as Plano, Richardson, and



The master plan for Addison Circle, an 80-acre, mixed-use district in the town of Addison, a suburb of Dallas.

Lewisville. Addison town officials decided to create a special urban district to increase the local population base and support the town's restaurant and entertainment business.

An Urban District

The idea for a special mixed-use urban residential district was suggested first in Addison's 1991 Comprehensive Plan, and more recently in a community-based visioning program (Vision 2020). These studies identified several public policy goals, including the need to create a physical focal point that engendered a sense of community and place for Addison's citizens.

The town, however, was not interested in attracting the typical garden apartment development (at 20 units per acre) that passes for high-density housing in much of Dallas. Rather, it was seeking a more comprehensively planned, sustainable, residential development. A likely model was found in the State/Thomas Planned Development District, a 130-acre, intown neighborhood near downtown Dallas. (See *Urban Land*, December 1991, "Setting the Stage in Dallas for Intown Housing Development.")

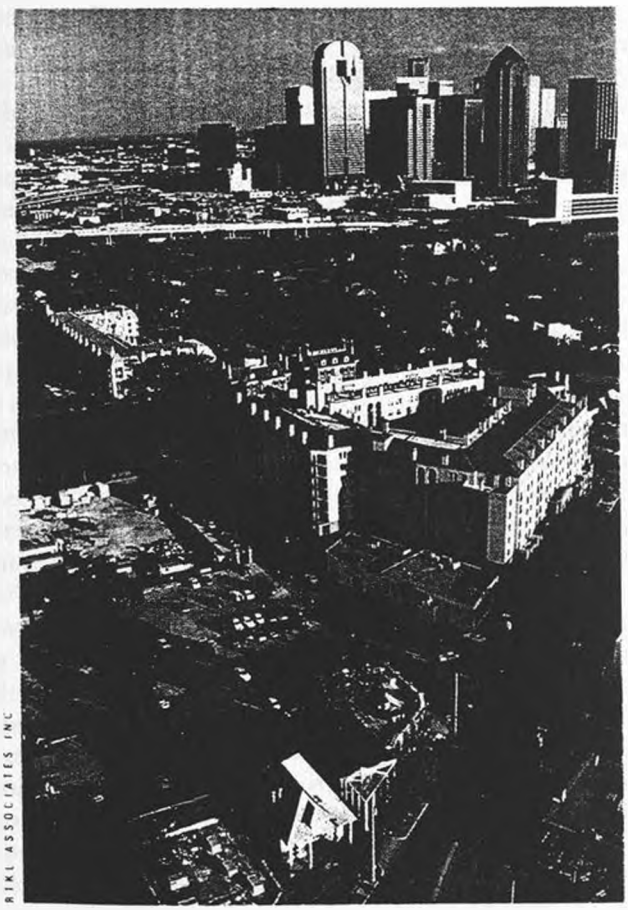
The State/Thomas district was created in 1987 as a special urban neighborhood, establishing new urbanism standards that were then new to the region. It permitted mid- to high-density housing in four- to eight-story configurations, a reduction in the size and scale of residential streets, and much higher street landscaping standards than were typical in Dallas. Integrated into the area was a careful mix of residential and commercial uses, including offices, street-level retail, and cafés.

To raise funding for these public improvements, the city of Dallas created a tax increment financing district, the first in Dallas and one of the few in Texas. Since its inception, this area of intown Dallas has seen the construction of more than 1,100 market-rate apartment units and townhomes, and several thousand square feet of new commercial space—adding over $60 million to the local tax base.

The site for this special mixed-use urban development was to be on one of the last parcels of undeveloped land adjacent to Old Town, the historic center of the original settlement in Addison. The Old Town site had several favorable characteristics:

- within walking distance of major centers of employment, retailing, and entertainment;
- adjacent to a proposed Dallas Area Rapid Transit (DART) station;
- close to Addison's conference center and arts center, which serve as the town community center and as temporary home for community activities, festivals, and special events;
- large enough to create a special district that mixed housing with employment; and
- controlled by a single landowner.

Town officials promoted the idea of creating a special urban district to the landowner, Gaylord Properties, Inc., and area developers. Columbus Realty Trust, a REIT currently developing Dallas-area higher-density housing, including several developments in the State/Thomas district, expressed an interest.



RTKL ASSOCIATES INC

State/Thomas Planned Development District, a 130-acre, intown neighborhood created in 1987 near downtown Dallas, is the model for Addison Circle.

A New Approach

Columbus Realty's approach to developing urban housing differs from traditional garden apartment developments in three important respects. First, Columbus builds housing for people who rent by choice, not from economic necessity: people with money but no time, double-income couples with no children, empty nesters, and young professionals. These people typically are from 30 to 55 years old. Since they have options other than residing in multifamily housing, they will do so only if it meets their particular needs.

Second, to attract this market, Columbus builds housing that is architecturally distinctive—primarily three- or four-story mid-rise, street-fronting projects in urban and suburban locations. Third, because it is in the neighborhood development business for the long term, Columbus builds high-quality projects, using materials and finishes with life cycles that can outlast typical garden apartment construction.

Having built and operated over 2,000 urban apartment units, Columbus Realty also has in place technical staff with experience in operating what it calls "community systems," addressing

such items as site security, mail delivery, shared amenities, trash recycling, property maintenance, and resident management.

The Planning Process

In conjunction with Gaylord Properties, Columbus put together a planning team, and, using State/Thomas as a guide, worked with consultants and town staff for eight months.

The team commissioned a survey to explore the potential demand and rental rates for urban housing in a suburban location. This step was taken to convince the town and the community that public sector investment in the project would be based on sound business and market-demand assessments. The survey reinforced the fact that North Dallas has been the leader in metropolitan Dallas's apartment absorption in recent years, and that very strong apartment demand could be anticipated in the near future.

The survey also found that the proposed urban-style, neighborhood-oriented design brings a new type of living environment to a market of suburban-style garden apartment renters. The higher-density product, offering more usable common spaces and active street life, held widespread appeal.

Columbus Realty realized that several important tactical steps had to be taken to reach an acceptable development agreement for this type of public/private enterprise. It set about creating a consensus-building planning process by educating and exposing officials and city staff not only to examples of its development practices, but also to successful examples of urban housing development from around the country. Columbus also held public workshop sessions at critical milestones in the planning process to publicize new urbanism planning concepts within the larger community.

Working with consultants hired by the town, Columbus prepared a set of mutually acceptable design/development standards that eventually were encoded into the district's final zoning ordinance. These addressed a range of items, including density, lot coverage, exterior building materials, and street landscape standards.

Columbus also hired land use attorneys and real estate consultants who worked with town staff to assist in several key aspects of the project. These included evaluating the economic benefits of the development plan and phasing strategy, and preparing a cost/benefit analysis identifying the impact of various site development options upon municipal operating and capital budgets.

Finally, Columbus Realty identified potential funding gaps that needed to be resolved to undertake private sector development and/or support public sector development projects profitably. It worked to reach agreement with the town on its contribution toward a public improvement funding strategy to provide the seed money for initial development.

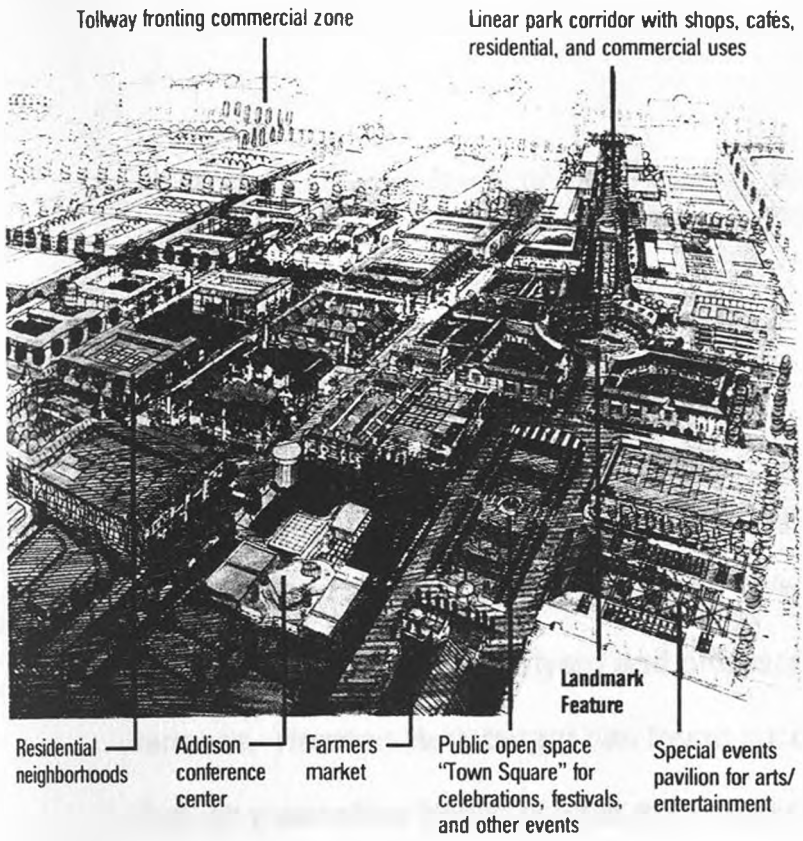
The State/Thomas district integrates a careful mix of residential and commercial uses, including offices, street-level retail, and cafés. Key features of State/Thomas (shown here) such as wide sidewalks, shade trees, benches, and outdoor lighting, are being incorporated into Addison Circle's plan.

The Plan

The final plan for the district contains several design and development components that distinguish it from typical multiuse suburban projects. The plan's framework is based on a traffic impact analysis and composed of a high quality of public infrastructure, costing three times the amount of a standard city allocation for streetscape and landscape elements. This framework incorporates a districtwide, pedestrian-friendly, street grid made up of residential collector streets, and a series of more randomly spaced garage access mews, wide sidewalks, paved crosswalks, neck-downs or curbs, shade trees, benches, signage, and outdoor lighting. The key planning imperative was to avoid the isolated self-contained development pattern of the typical North Dallas garden apartment complex. The plan therefore extends this gridded road/ sidewalk framework in meaningful links to adjacent centers of employment, entertainment, and shopping.

Next, the plan proposes creating two subareas; one, the interior mixed-use zone, is planned for approximately 3,000 to 4,000 residential units (apartments and fee simple townhouses) with life support retail and community services. This zone calls for restrictions on large-scale commercial uses to avoid generating traffic that would affect the scale and character of the pedestrian-friendly street system. The second subarea fronts on a major highway; also planned as a mixed-use zone, it permits up to 4 million square feet of space including high-density office, residential, hotel, and supporting retail uses, creating a potential employment base of approximately 10,000 jobs.

A third component of the plan calls for an urban form that employs mid-rise buildings, corridor streets, and the layering and mixing of uses with residential development over street-level supporting retail and "in-home" offices. The increased activity creates a sense of neighborhood by reclaiming the public street and building up a self-policing street life. For example, the plan avoids functionally ambiguous urban open space by using full block closure: the user is either in this



The first phase of Addison Circle's development currently is under construction and includes 500 dwelling units, the partial completion of the street grid, a community park, and the district's landmark feature, a circle.

self-policing public domain (on a street or in a public park) or within the security of a building. Not only are the apartment blocks consciously designed to address and overlook public streets and parks with front doors, balconies, and porches, but also all of the supporting amenities like health spas and leasing offices are deliberately located in retail spaces along street frontages.

Fourth, the plan sets development standards for exterior finishes; site landscaping; the compatibility of building scale, setbacks, and lot coverage; and enclosure and screening of parking for all categories of land uses. These standards go beyond typical zoning and building code requirements.

Fifth, the plan designates public spaces—designed to reflect the likely "renters-by-choice" tenant profile—for urban parks, jogging trails, town-sponsored events, and the district's signature physical feature, a rounded point or circle. This circular feature ultimately will become one of the major landmarks in the Dallas/Fort Worth Metropolitan area.

The Public/Private Partnership

Having developed an acceptable planning framework, Columbus set about finalizing a development agreement with the town. Without financial assistance, Columbus could not afford to begin constructing infrastructure and improving streets at the level of quality proposed. Addison, recognizing this, stepped forward with a public improvement funding strategy that seeded the initial development. Rather than create a special tax district, however, the town decided to provide phased public improvements from its general fund, linking public sector improvements to Columbus Realty's performance.

The key features of the final agreement include the following:

- commitment by the town to spend a total of $9 million out of its general funds over the life of the project as seed money to set the stage for various phases of development.
- agreement by the town to spend $4 million on up front infrastructure, street, and public urban space improvements during the initial phase. The developer agrees to build at least 1,500 dwelling units within four to five years.
- agreement that the remaining $5 million commitment be linked to implementing the final development phases up to a total of 3,000 units, for a total estimated investment by the developer of between $300 to $400 million.
- allocation by the town of $1 million for a limited design competition to attract national and international artists, urban designers, and landscape architects to create a corporate icon for Addison's signature center circle.

The first phase of development currently is under construction and includes 500 dwelling units, the partial completion of the street grid, a community park, and the landmark circle. Occupancy of the first units is planned for this October.

A Joint Effort

To develop good-quality housing and sustainable communities, the development process must allow time to market the concept. Background data, slides, and videos from comparable U.S. or foreign developments should be presented to illustrate proposed standards of quality, tenant profiles, and design features. The characteristics and advantages of proposed building types and the mix of uses must then be communicated to city staff, policy makers, and community leaders in a complete and cohesive manner.

Cities must play proactive roles in the development process and must agree to a number of development commitments. These include, among others, incentives to seed initial development, creation of a pedestrian-friendly environment that supports neighborhood services, and zoning flexibility that encourages mixed-use and medium-density development. Density is important as it ultimately funds the obligations of both parties.

Under this new covenant, each party wins. The developer's investment hurdle rates are achievable, and the city reaps additions to its tax rolls, which generate revenues to cover the cost of upgraded public infrastructure and city services. The outcome is a sustainable, integrated, mixed-use residential development that serves as a vibrant life force for the community and a blueprint for future projects to come. ❖

John R. Gosling *is vice president in the Dallas office of RTKL Associates Inc.*

Case Study IV: IBA Housing, West Berlin, Germany
by Herman Hertzberger

A. Spatial Issues

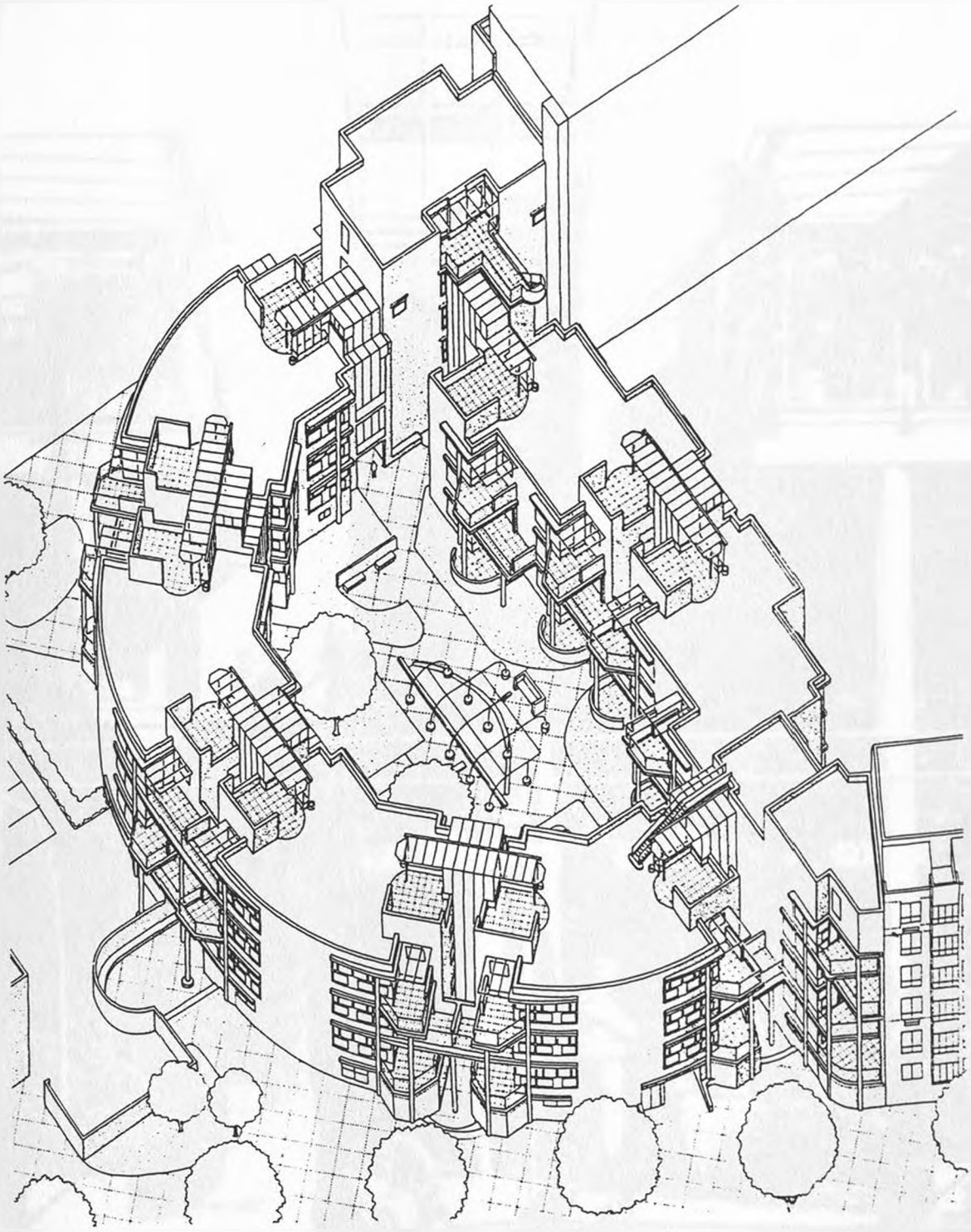
This apartment complex is designed in a D shape, with an open interior courtyard. The surrounding structure consists of a single layer of apartments, so each one has windows on two sides. The courtyard has five passages to the street and two the neighboring courtyard. Well-lit and inviting staircases are situated directly off the courtyard and offer access to the apartments and the roof terraces. Herman Hertzberger has found success in this project and in others through a sensitive linking of what are usually considered separate realms of public, semi-public, and private spaces. Instead of the ambiguous term semi-public, he thinks of more instructive words such as accessibility. Further, he likes to break down the notion of private and public spaces as being disparate ideas. He feels that by making a private space more accessible, it loses its impenetrable character. By making a public space feel private, people are more inclined to feel a sense of proprietorship, hence, care, for the place.

B. Program and Activities

Hertzberger strives, through spatial configuration, to bring people together in various public realms; the inner courtyard, the staircases, and the roof terraces. There are at least three different floor plans to attract different people, with or without children. There is an overall emphasis on the idea of community.

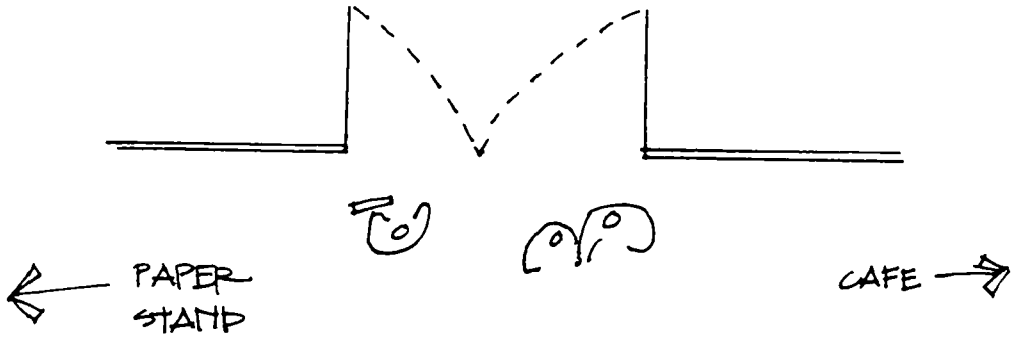
C. Interior Development

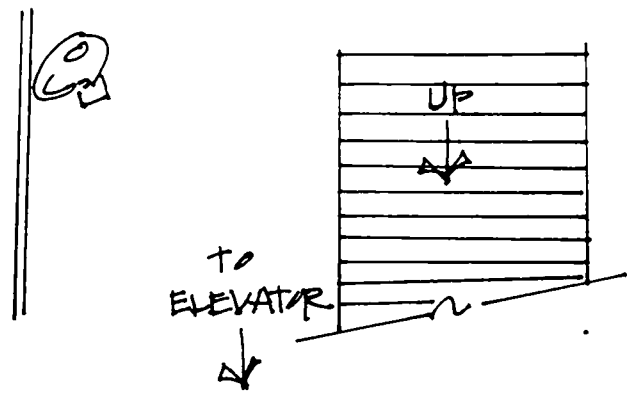
This part of the project is not well documented, but Herman Hertzberger is noted for his ability to create 'imprintable' places. This refers to people's ability to shape their environment to reflect themselves. An example from this project is a seat-height window bench. One could use it for storage, seating, or display, depending on one's preferences.



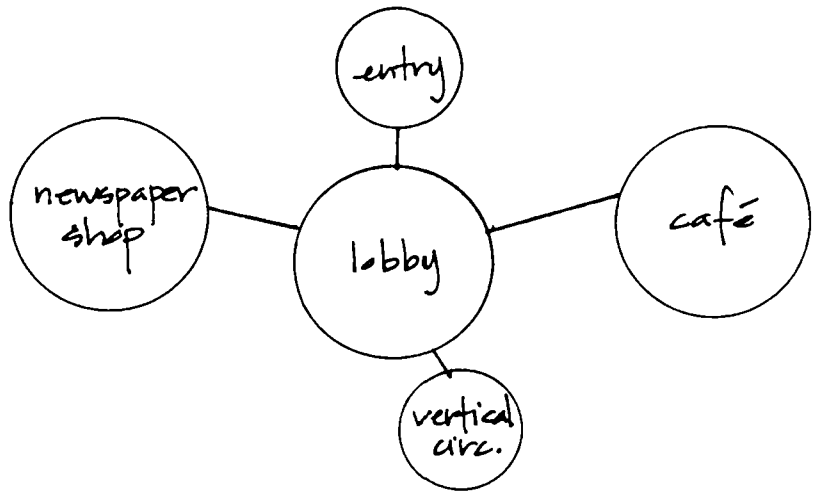
CHAPTER 6:

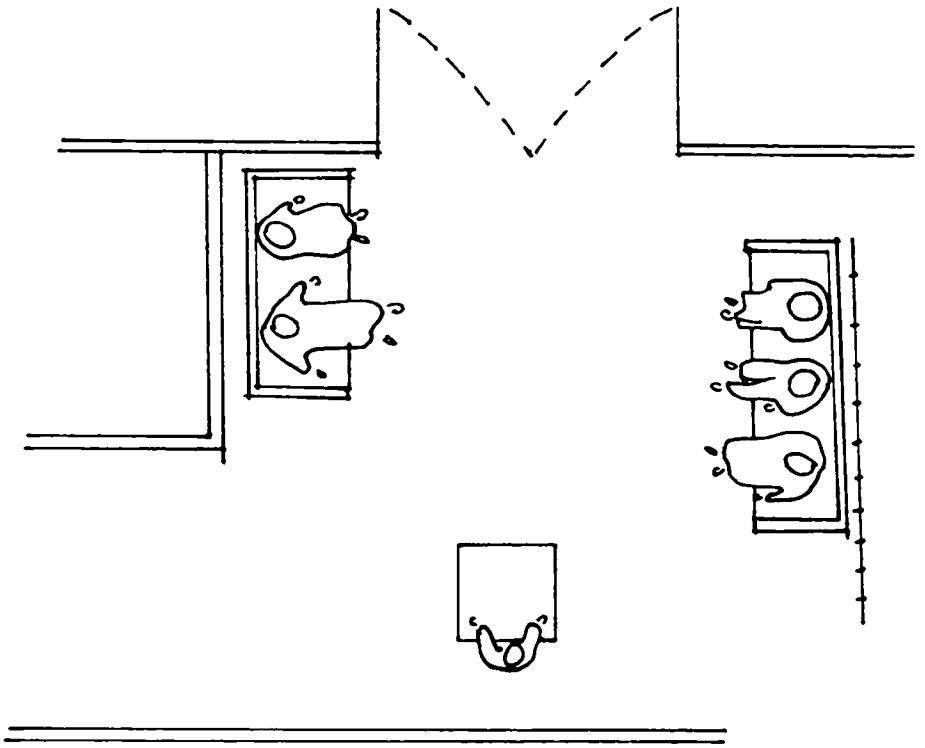
Design Programming



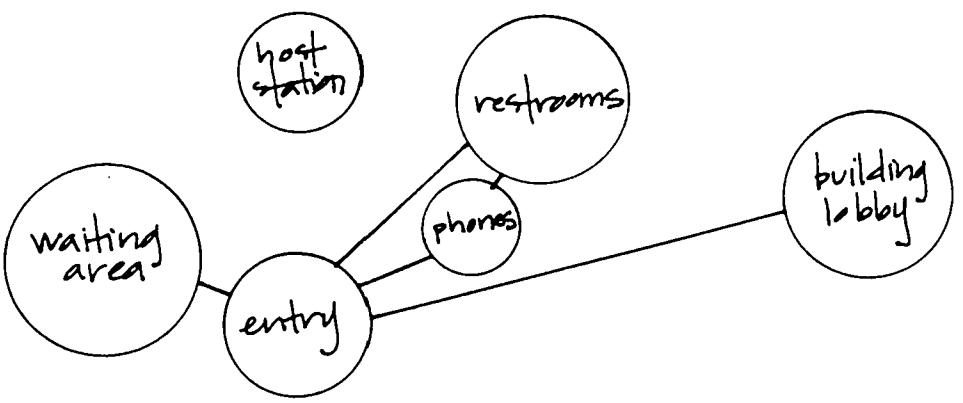


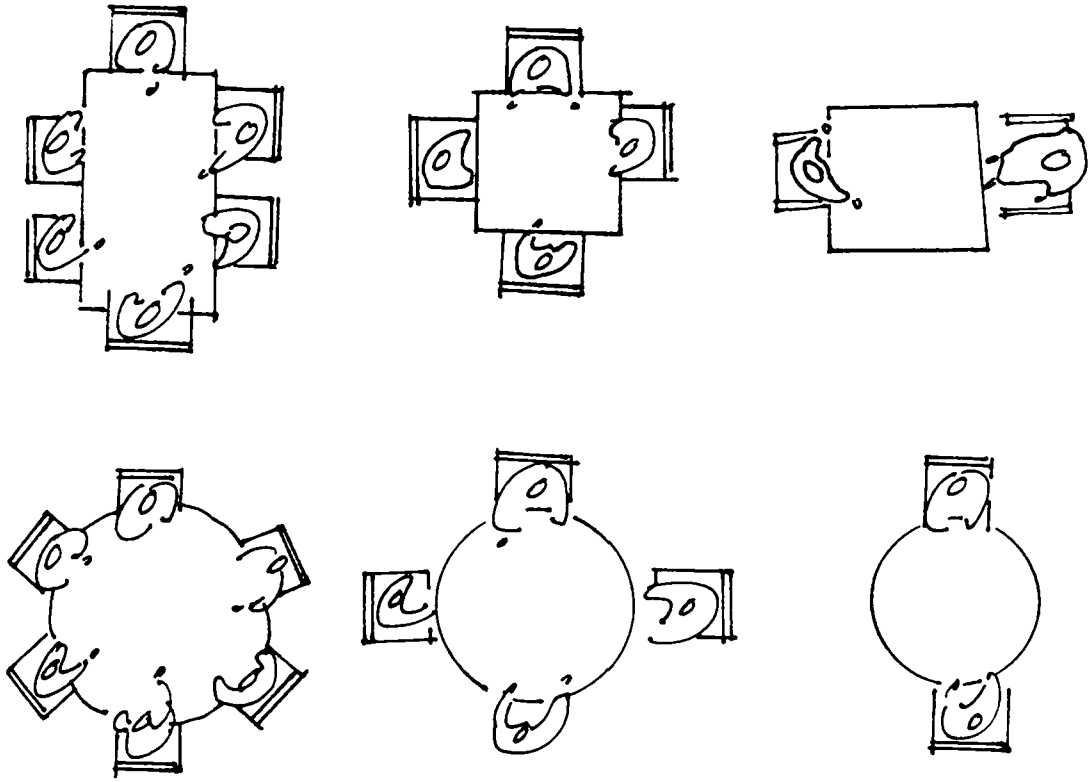
30. LOBBY AREA FOR BUILDING
1/4" = 1'-0"



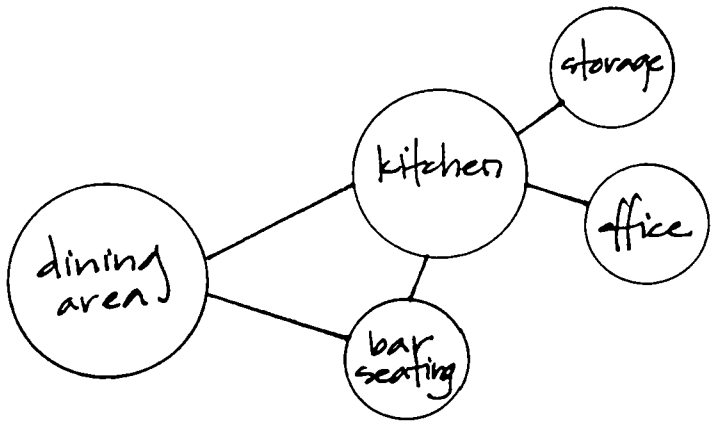


31. ENTRY AREA OF CAFÉ
1/4" = 1'-0" ~ 160 sq.ft.





32. DINING AREA OF CAFE: ACTIVITY STUDY — 2, 4, or 6 PEOPLE DINING 1/4" = 1'-0"



Detailed Programming

Name of space Office

Type of activities performed paperwork, filing, storage

Number of occupants to be accommodated 1-2

Relationship to other spaces:
in combination with
adjacent to area open to below, bathroom, hall closet
in close proximity to bedroom

Estimated minimum square footage required 80

Service requirements: water__ power X suction ___ air X gas __
oxygen ___ drain __ other

Illumination requirements: electric General, task lighting for desk daylighting yes

Fenestration Across from area open to below, north facade windows

Acoustical requirements no special requirements

Equipment requirements freestanding desk and chair, built-in storage unit, 42" high railing

Storage requirements storage for papers, books, etc. in desk and storage unit

Communication requirements: telephone X muzak ___ visual link to living room below

Surface recommendations: floor carpet
walls gypsum board, brick wall in outside apartments
ceiling gypsum board

Special requirements and/ or considerations also serves as hallway, landing for stairs, edge of open area below

Overall design character of space simple, spare, and functional

Detailed Programming

Name of space Bathroom

Type of activities performed bathing, using toilet, mirror, sink

Number of occupants to be accommodated 1-2

Relationship to other spaces:
in combination with
adjacent to bedroom
in close proximity to

Estimated minimum square footage required 80

Service requirements: water X power X suction ___ air X gas ___
oxygen ___ drain X other

Illumination requirements: electric General daylighting no

Fenestration

Acoustical requirements no special requirements

Equipment requirements bathtub/ shower, toilet, sink, built-in cabinet, built-in linen closet

Storage requirements storage for linens and personal items in cabinet and linen closet

Communication requirements: telephone ___ muzak ___ visual

Surface recommendations: floor vinyl sheet flooring
walls gypsum board
ceiling gypsum board

Special requirements and/ or considerations

Overall design character of space simple, spare, and functional

Detailed Programming

Name of space Bedroom

Type of activities performed sleeping, dressing

Number of occupants to be accommodated 1-2

Relationship to other spaces:
in combination with closet
adjacent to bathroom
in close proximity to

Estimated minimum square footage required 100

Service requirements: water___ power X suction ___ air X gas ___
oxygen ___ drain ___ other ___

Illumination requirements: electric General, with freestanding lamps daylighting yes

Fenestration windows on south wall and adjacent walls where possible, custom-design skylights

Acoustical requirements no special requirements

Equipment requirements freestanding furniture: bed, dressers, built-in closet

Storage requirements built-in closet, and in freestanding furniture pieces

Communication requirements: telephone X muzak ___ visual___

Surface recommendations: floor carpet
walls gypsum board, 1-2 walls brick with windows
ceiling gypsum board

Special requirements and/ or considerations Skylights or interior windows for second bedrooms

Overall design character of space simple, spare, and functional

Detailed Programming

Name of space Living room of apartment

Type of activities performed sitting, entertaining

Number of occupants to be accommodated 1-6

Relationship to other spaces:
in combination with stairs
adjacent to dining room
in close proximity to kitchen

Estimated minimum square footage required 190

Service requirements: water___ power X suction ___ air X gas ___
oxygen ___ drain ___ other ___

Illumination requirements: electric General, with freestanding lamps daylighting yes

Fenestration Along north edge

Acoustical requirements no special requirements

Equipment requirements freestanding furniture: sofa, chairs, small tables, etc.

Storage requirements ___

Communication requirements: telephone X muzak ___ visual link to kitchen, dining areas

Surface recommendations: floor carpet
walls gypsum board, 1-2 walls brick with windows
ceiling open to above

Special requirements and/ or considerations ___

Overall design character of space high-volume space with historic brick facade contrasted with steel and glass custom-designed stair

Detailed Programming

Name of space Dining area of apartment

Type of activities performed eating, using table as work surface

Number of occupants to be accommodated 1-5

Relationship to other spaces:
in combination with kitchen
adjacent to living room
in close proximity to half bath

Estimated minimum square footage required 60

Service requirements: water___ power X suction ___ air X gas ___
oxygen ___ drain ___ other ___

Illumination requirements: electric Hanging pendant light over table daylighting yes

Fenestration near or with view to windows

Acoustical requirements no special requirements

Equipment requirements built-in, custom-designed table, chairs

Storage requirements ___

Communication requirements: telephone ___ muzak ___ visual link to kitchen, living areas

Surface recommendations: floor carpet
walls gypsum board
ceiling gypsum board

Special requirements and/ or considerations ___

Overall design character of space Clean, simple lines, variety of materials, construction as ornament

Detailed Programming

Name of space Kitchen of apartment

Type of activities performed food preparation and cooking, gathering of people

Number of occupants to be accommodated 1-4

Relationship to other spaces:
in combination with dining area
adjacent to pantry, utility room
in close proximity to living room, half bath

Estimated minimum square footage required 80

Service requirements: water X power X suction X air X gas ___
oxygen ___ drain X other ___

Illumination requirements: electric general, some task lighting daylighting yes

Fenestration adjacent to or with view to windows

Acoustical requirements no special requirements

Equipment requirements Refrigerator, sink, dishwasher, oven, stove

Storage requirements storage in under- counter and in ceiling-hung custom-designed cabinets

Communication requirements: telephone X muzak ___ visual link to dining, living areas

Surface recommendations: floor hard surface
walls gypsum board
ceiling gypsum board

Special requirements and/ or considerations

Overall design character of space Clean, simple lines, variety of materials, construction as ornament

Detailed Programming

Name of space Half bath of apartment

Type of activities performed using toilet, mirror, sink

Number of occupants to be accommodated 1

Relationship to other spaces:
in combination with
adjacent to kitchen, utility room, entry
in close proximity to dining room, living room

Estimated minimum square footage required 40

Service requirements: water X power X suction X air X gas
oxygen drain X other

Illumination requirements: electric general daylighting no

Fenestration

Acoustical requirements acoustically isolated from living areas

Equipment requirements toilet, built-in cabinet with sink, mirror

Storage requirements limited storage within cabinet

Communication requirements: telephone muzak visual

Surface recommendations: floor hard surface
walls gypsum board
ceiling gypsum board

Special requirements and/ or considerations

Overall design character of space functional and casual

Detailed Programming

Name of space Utility room of apartment

Type of activities performed washing, drying, ironing, folding clothes

Number of occupants to be accommodated 1-2

Relationship to other spaces:
in combination with
adjacent to kitchen, half bath, entry
in close proximity to

Estimated minimum square footage required 35

Service requirements: water X power X suction X air X gas
oxygen drain X other

Illumination requirements: electric general daylighting no

Fenestration

Acoustical requirements acoustically isolated from living areas

Equipment requirements separate full- size washer and dryers

Storage requirements limited storage for laundry and cleaning products

Communication requirements: telephone muzak visual

Surface recommendations: floor hard surface
walls gypsum board
ceiling gypsum board

Special requirements and/ or considerations

Overall design character of space functional and casual

Detailed Programming

Name of space Mezzanine

Type of activities performed desk work, filing, keeping of restaurant records

Number of occupants to be accommodated 1-2

Relationship to other spaces:
in combination with _____
adjacent to main stairway
in close proximity to restaurant

Estimated minimum square footage required 72

Service requirements: water _ power X suction ___ air X gas ___
oxygen ___ drain _ other _____

Illumination requirements: electric general, task lighting daylighting no

Fenestration _____

Acoustical requirements no special requirements

Equipment requirements freestanding desk and file cabinets

Storage requirements storage of restaurant personnel and bookkeeping records

Communication requirements: telephone X muzak ___ visual_____

Surface recommendations: floor hard surface
walls gypsum board
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations _____

Overall design character of space casual and private

Detailed Programming

Name of space Produce market

Type of activities performed acceptance of deliveries, browsing, purchasing

Number of occupants to be accommodated 2- 10

Relationship to other spaces:
in combination with
adjacent to main lobby of building, newspaper/ magazine shop
in close proximity to restrooms

Estimated minimum square footage required 800

Service requirements: water X power X suction ___ air X gas ___
oxygen ___ drain X other ___

Illumination requirements: electric general, task lighting at cash/ wrap, spots daylighting yes

Fenestration windows along north edge

Acoustical requirements no special requirements

Equipment requirements cash register, refrigerator and freezer units, water sprayers

Storage requirements supplies associated with cash/ wrap counter, deliveries will be made daily
limited amount of short-term storage

Communication requirements: telephone X muzak X visual connection from counter to store and entry/ exit areas

Surface recommendations: floor hard surface, tile
walls gypsum board two sides, one brick, one window wall
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations

Overall design character of space light and open, somewhat hi-tec, custom casework
emphasis on appealing display

Detailed Programming

Name of space Newspaper/ magazine shop

Type of activities performed acceptance of deliveries, browsing, reading, purchasing

Number of occupants to be accommodated 2- 10

Relationship to other spaces:
in combination with
adjacent to main lobby of building, produce market
in close proximity to restrooms

Estimated minimum square footage required 800

Service requirements: water __ power X suction __ air X gas __
oxygen __ drain __ other

Illumination requirements: electric general lighting, task lighting at cash/ wrap daylighting yes

Fenestration windows along north edge

Acoustical requirements no special requirements

Equipment requirements cash register, built-in reading counter

Storage requirements supplies associated with cash/ wrap counter, deliveries will be made daily

Communication requirements: telephone X muzak X visual connection from counter to store and entry/ exit areas

Surface recommendations: floor hard surface, tile
walls gypsum board one side, one brick, two window walls
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations

Overall design character of space light and open, somewhat hi-tec, custom casework

Detailed Programming

Name of space Kitchen of restaurant

Type of activities performed acceptance of deliveries, food preparation, cooking, storage

Number of occupants to be accommodated 2-5

Relationship to other spaces:
in combination with storage facilities
adjacent to dining area, door to outside
in close proximity to restrooms

Estimated minimum square footage required 800

Service requirements: water X power X suction X air X gas ___
oxygen ___ drain X other _____

Illumination requirements: electric general lighting daylighting Not required, but available

Fenestration windows along east edge

Acoustical requirements separation from dining area

Equipment requirements storage, food preparation, cooking, dish washing equipment and the utilities to support them

Storage requirements food and other supply storage, clean dishes and utensils etc.

Communication requirements: telephone __ muzak __ visual _____

Surface recommendations: floor hard surface, easy to clean
walls gypsum board with water resistant splash guards
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations materials choices should be easy to maintain for optimal sanitary conditions

Overall design character of space clean and bright

Detailed Programming

Name of space Entry area of restaurant (reception, waiting)

Type of activities performed entry into building, checking in with host, waiting

Number of occupants to be accommodated 1-10

Relationship to other spaces:
in combination with lobby of building
adjacent to dining area, phone/ coat room
in close proximity to restrooms, hallway to vertical circulation

Estimated minimum square footage required 250

Service requirements: water ___ power X suction ___ air X gas ___
oxygen ___ drain ___ other ___

Illumination requirements: electric general, task light for host/ hostess daylighting yes

Fenestration windows along north facade

Acoustical requirements no special requirements

Equipment requirements built-in reception desk, chairs

Storage requirements under-counter storage for reception desk

Communication requirements: telephone X muzak X visual link to dining area

Surface recommendations: floor tile
walls windows on one side,3/4 height walls with screen elements
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations should be flexible space- able to accommodate people sitting & standing

Overall design character of space river as the design theme- spacious and open, modern but not 'hi-tec' image

Detailed Programming

Name of space Dining area of restaurant

Type of activities performed serving, eating, cleaning tables, circulation

Number of occupants to be accommodated 45-60

Relationship to other spaces:
in combination with _____
adjacent to kitchen
in close proximity to waiting area, phone/ coat room, restrooms

Estimated minimum square footage required 1150

Service requirements: water ___ power X suction ___ air X gas ___
oxygen ___ drain ___ other _____

Illumination requirements: electric general, spots on art work, some tables daylighting yes

Fenestration along two full sides, from 2' above floor to ceiling level- 16'

Acoustical requirements 18" thick ceiling will provide acoustical buffer for apartments

Equipment requirements Tables and chairs, some booth seating

Storage requirements none

Communication requirements: telephone ___ muzak X visual link to reception desk

Surface recommendations: floor tile
walls windows on two sides, back wall to be gypsum board
ceiling gypsum board with exposed HVAC, painted dark

Special requirements and/ or considerations part of dining area to be raised two steps

Overall design character of space river as the design theme- spacious and open, modern but not 'hi-tec' image

Detailed Programming

Name of space Restrooms for restaurant

Type of activities performed using toilet, mirror, sink

Number of occupants to be accommodated 1

Relationship to other spaces:
in combination with
adjacent to phone/ coat room
in close proximity to dining area, waiting area, kitchen

Estimated minimum square footage required 40

Service requirements: water X power X suction ___ air X gas ___
oxygen ___ drain X other ___

Illumination requirements: electric 1 light for mirror, 1 for general light daylighting no

Fenestration none

Acoustical requirements private- fully enclosed, lowered acoustical tile ceiling

Equipment requirements wall-mounted sink, mirror, toilet

Storage requirements paper goods to be stored in basement of building, possibly limited storage in restroom

Communication requirements: telephone ___ muzak ___ visual ___

Surface recommendations: floor same surface as dining area: tile
walls full height, gyp board or water resistant surface
ceiling acoustical tile

Special requirements and/ or considerations to meet ADA requirements

Overall design character of space private feel, somewhat dark, carries design theme of restaurant

Detailed Programming

Name of space Phone/ coat room

Type of activities performed hanging up and retrieving coats, making phone calls

Number of occupants to be accommodated 1-4

Relationship to other spaces:
in combination with _____
adjacent to restrooms, reception desk
in close proximity to dining area, waiting area

Estimated minimum square footage required 40

Service requirements: water ___ power X suction ___ air ___ gas ___
oxygen ___ drain ___ other _____

Illumination requirements: electric 1-2 recessed lights daylighting not needed

Fenestration none

Acoustical requirements semi-enclosed area for phone privacy

Equipment requirements built-in coat rack, (2) pay phones, modem hookups, built-in counter

Storage requirements shelf under counter for phone books, coat rack with storage area for parcels

Communication requirements: telephone X muzak X visual _____

Surface recommendations: floor same surface as dining area: tile
walls full height 2 sides, 3/4 height one side, open one side
ceiling acoustical tile

Special requirements and/ or considerations coat rack out of sight line from waiting area

Overall design character of space private feel, somewhat dark, but with proper illumination for phone use

CHAPTER 7:

Graphic Solution

Produce Shop

Perspective, display details, interior elevation

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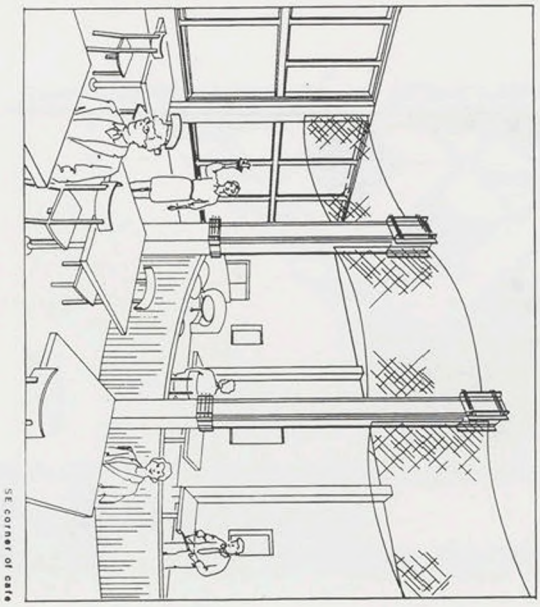
Interior Architecture
thesis project
Laura Reeves

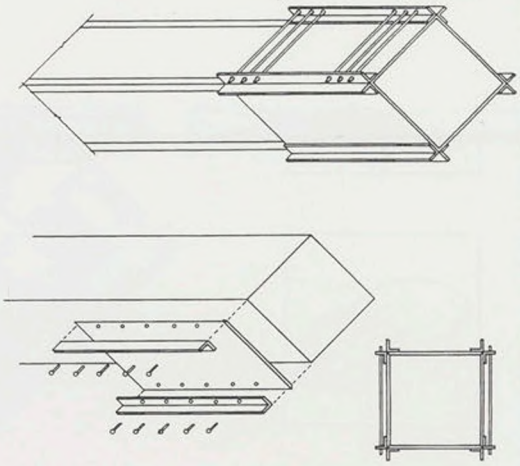
Newspaper & Magazine Shop

Perspective, display detail, interior elevation

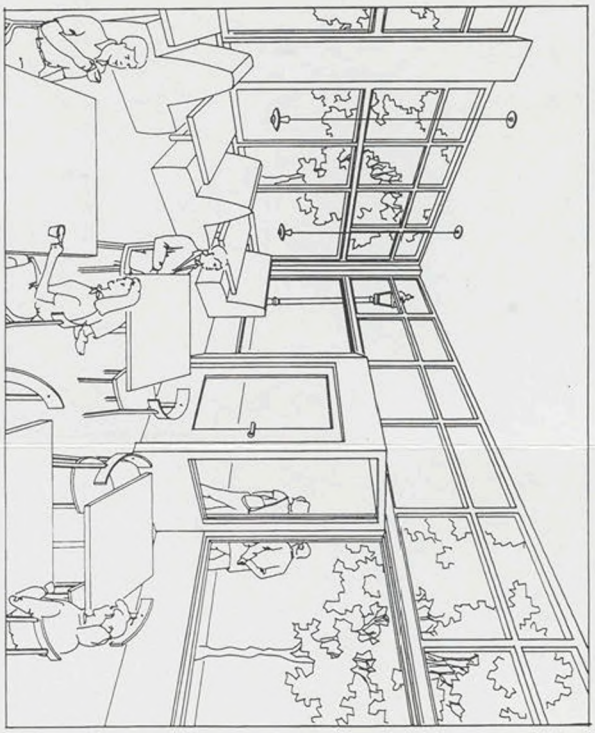
University of Oregon
Interior Architecture
thesis project
Laura Reeves



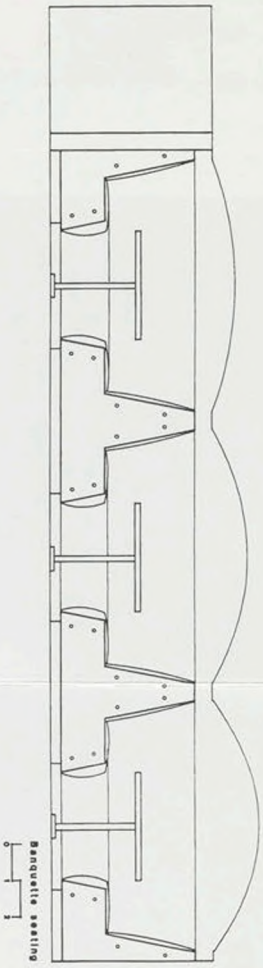
SE corner of cafe



Detail of capitals



NE corner of cafe



Banquette seating

Cafe

Perspectives, column detail, elevation of seating

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Third Floor

Plan, reflected ceiling plan, interior elevation, axon

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Second Floor

Plan, reflected ceiling plan, interior elevation, axon

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thesis project
Laura Reeves

First Floor

Plan, reflected ceiling plan, interior elevation, axon

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Apartments

Perspectives, stair detail, custom kitchen design

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Sections

Cross sections, longitudinal section

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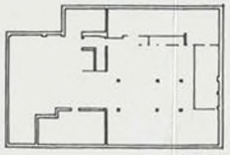
central Portland

proposed context

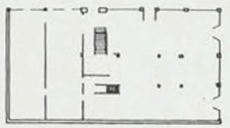
vicinity map

The Royal Palms Hotel is located in downtown Portland, on the outer boundary of the Chinatown district. It was designed to have retail shops on the first floor and hotel lodging on the second and third floors. Since 1914 it has served both of those functions. The surrounding neighborhoods have degenerated over the years to the point that the City of Portland Bureau of Planning has spent considerable time outlining a redevelopment plan for this part of downtown. The plan outlines several goals to revitalize the area, among them, providing housing for a resident population of 15,000. This project looks to the future, when mixed-use buildings and high density housing will be attractive options in this area of downtown. This proposal suggests retail spaces on the first floor that would be beneficial for a resident population, such as a cafe, a newspaper shop, and a produce market. The upper floors of the building are reconfigured into five loft apartments for permanent residents. The apartments are each two-story, with double height living rooms. Two of the upper floors of the apartments have two bedrooms and three have one bedroom and an office space.

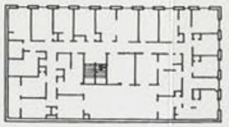
Index of Drawings



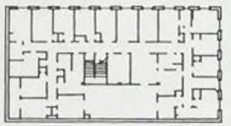
basement



ground floor



second floor



third floor

existing floor plans

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The Site

Vicinity maps, exterior perspective, existing floor plans

CHAPTER 8:

Summary

Summary

The original intent in doing this project was to find a building that already possessed many of the characteristics suggested by the programming exercises. The Royal Palms Hotel, with its strong retail street frontage and two stories above being used for short-term housing, seemed like an ideal choice. As the design development phase progressed, it became clear that a few major changes would be necessary to adapt it for long-term housing.

The proposed ground floor design retains the original division into three main spaces. A partition wall was added toward the south end of the largest space to separate the kitchen from the cafe. Also in this space, a stairway leading to the basement along the north facade was removed in order to have banquette seating along this window wall. The two narrow spaces on the ground floor were used for the newspaper and magazine and produce shops. The major change occurred when it became clear that having a landing for the stairs in the middle of the second floor would not work, so this also affected the first floor.

The existing plan of small rooms around the perimeter of the building is well served by a centrally located stairway. To compensate for the rooms on the south edge of the building being along a windowless brick fire wall, the original floor plan has a large light well. The area occupied by the light well will, in this proposal, be considered as floor space. Two main challenges arose from this situation: first; to make the stairs land elsewhere on the second floor and second; to deal with the windowless south wall. The solution to this problem was

found by moving and reconfiguring the stairs. Pulling them toward the south edge of the building allowed for the stairs to land facing the south wall and for a hallway to access the apartments along this wall.

The configuration of the apartments is meant to be clear and simple. They each have a doorway which is set back from the main hallway slightly. A single corridor along one wall accesses the utility room, kitchen, dining area, and living room. Each of the apartments has a slightly different size utility room, but each has a full-size washer and dryer. The kitchens feature a custom-designed, four-foot -high wall, off of which is cantilevered a dining table surface. This arrangement saved a couple feet, which were needed in the living room. The living rooms occupy the north end of the building. Each of the apartments has a double-height ceiling, and thus, four windows. The stairs begin at this end of the apartment, at a four-by-four-foot platform. The platform made a good transition space from the living room to the stairs.

Each of the apartments is two-story, with the area over the living rooms open to below. Two of the units have a second bedroom overlooking the living room and three of the units have an office space which is open to the living room below. The second bedrooms have small windows in the wall facing the living room to bring in light from the exterior windows on the north facade. The egress requirement for these rooms was satisfied by an opening skylight. The office spaces have 42-inch high guardrails, as specified by building codes. Each apartment has a single bathroom upstairs. In the apartments with two

bedrooms, the bathroom door is along the hallway. The apartments with the office space and a single bedroom have the bathroom access from the bedroom. The bedrooms along the south wall have been given windows that are low enough to meet the egress requirements. This was possible because the adjacent building to the south is two stories high.

While the first floor plan changed little in this proposal, the upstairs floors required a significant change in the interior partitioning to allow the apartments to be equitable amongst each other. Important factors were access to pre-existing windows and ample square footage for long-term residence. Dealing with such technical issues was both challenging and rewarding. While renovation of this scope is expensive, it is hoped that the future climate of urban high-density housing will support custom designs and the kinds of features as one would expect in a single-family home.

Appendix

- Churches -

Portland (Oregon) - Union Gospel Mission

Royal Palm Hotel

#1801-A

JAN 17 1959

JAN 17 1959

Xrefs: Portland (Oregon) - Hotels (Royal Palm)

THREE-STORY Royal Palm hotel building, NW 3d and Flanders annexed on New Year's day to expanding operations of Portland's Union Gospel mission.

Mission Buys Local Hotel

The trustee board of Portland Union Gospel mission has purchased the three-story Royal Palm hotel building, NW 3d and Flanders, across the street from its Friendly Home, announces E. G. Halwyler, board president. Purchase price was $45,000.

A loan of $12,000 has been given on the Friendly Home building, for the down payment and the owner is carrying the balance, according to Dr. R. J. Newsom, mission superintendent.

The mission took possession of the building New Year's day and is operating the hotel. Much of the space on the street floor will be used as a retail outlet for the Mission Industries. Some of the space in the building is yet rented, but will be taken over later for mission purposes.

THE MISSION has these other activities:

Mission headquarters and chapel, 318 NW 3d, Kermit Freeman, director of activities.

Mission hotel, 11 NW 3d, Kermit Freeman, manager.

Friendly Home, 332 NW 3d, Harold Langland, manager; the Rev. Arnold Fosse, religious director.

Mission Industries, 326 NW 3d, 140 SW Yamhill, 8727 N Jersey, 3650 SE Belmont; Dr. R. J. Newsom, acting manager.

Women's branch, 15 NW Third.

Child for Christ Crusade, 15 NW 3d; John Folch, director; the Rev. Arnold Fosse, field supervisor.

Family Aid, 332 NW 3d, Miss Roberta Lynch, director.

The Secretary of the Interior's

Standards for Rehabilitation

Revised 1990

U.S. Department of the Interior
National Park Service
National Center for Cultural Resource
Stewardship & Partnerships
Heritage Preservation Services
Washington, DC

The Secretary of the Interior is responsible for establishing standards for all national preservation programs under Departmental authority and for advising federal agencies on the preservation of historic properties listed in or eligible for listing in the National Register of Historic Places.

The Standards for Rehabilitation address the most prevalent historic preservation treatment today: ***rehabilitation****. Rehabilitation is defined as the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values.*

The Secretary of the Interior's Standards for Rehabilitation

The Standards that follow were originally published in 1977 and revised in 1990 as part of Department of the Interior regulations (36 CFR Part 67, Historic Preservation Certifications). They pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior of historic buildings. The Standards also encompass related landscape features and the building's site and environment as well as attached, adjacent or related new construction.

The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

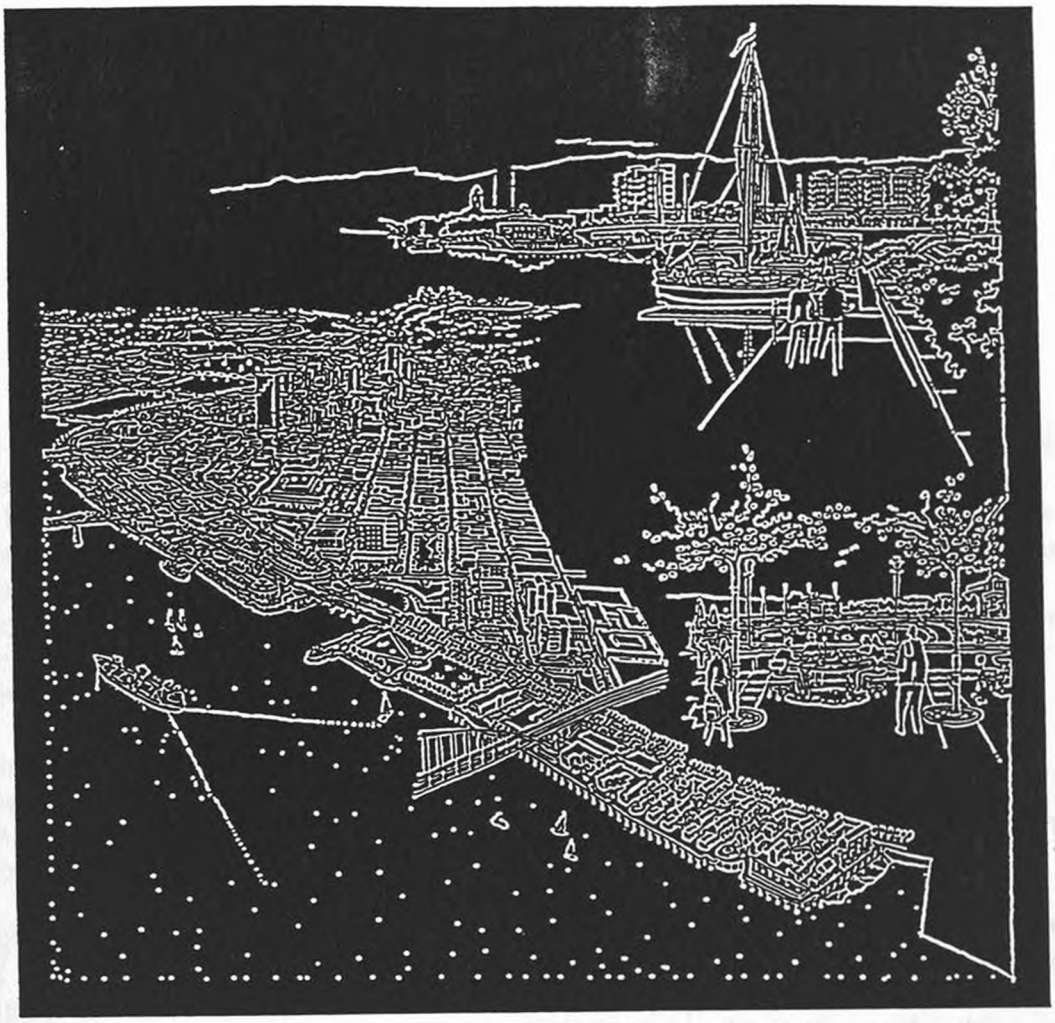
Note: To be eligible for federal tax incentives, a rehabilitation project must meet all ten Standards in 36 CFR 67.

Certain treatments, if improperly applied, or certain materials by their physical properties, may cause physical deterioration of historic buildings. Inappropriate physical treatments include, but are not limited to: improper repointing techniques; improper exterior masonry cleaning methods; or improper introduction of insulation where damage to historic fabric would result. In almost all situations, use of these materials and treatments will result in denial of certification. In addition, every effort should be made to ensure that new materials and workmanship are compatible with the materials and workmanship of the historic property.

Tax Act Applications and Preservation Tax Incentive Brochures are available from Technical Preservation Services (TPS), which administers the Preservation Tax Incentives Program in Washington, D.C. Write TPS to request a brochure, and Tax Act application, which includes the Standards for Rehabilitation (36 CFR 67): National Park Service, Heritage Preservation Services Division, Technical Preservation Services, P.O. Box 37127, Washington, D.C. 20013-7127. Applications are also available from State Historic Preservation Offices.

Guidelines to assist property owners, developers, contractors, and federal managers in applying the Secretary of the Interior's Standards for Rehabilitation (36 CFR 67) are also prepared by TPS, as well as case studies that show how the historic rehabilitation tax credit and the low-income housing tax credit may be combined to help fund building rehabilitations. These and other TPS educational publications on preserving, rehabilitating, and restoring historic buildings and landscapes, such as the *Preservation Briefs* series, are available from the Superintendent of Documents, Government Printing Office (GPO). Write TPS at the above address for a free copy of the current *Catalog of Historic Preservation Publications: Guidance on the Treatment of Historic Properties*, which includes stock numbers, prices, and convenient order forms. The Catalog is also posted at http://www.cr.nps.gov (select "Publications").

July, 1996



RIVER DISTRICT DESIGN GUIDELINES

ADOPTED BY THE PORTLAND CITY COUNCIL FEBRUARY 21, 1996

BUREAU OF PLANNING
PORTLAND, OREGON

CHAPTER 1

RIVER DISTRICT DESIGN GUIDELINES: THE FRAMEWORK

Design Review in the River District

Portland's Central City reflects decades of successful partnership between the public and private sectors. Public investments in infrastructure, parks, plazas, public art, street trees, the Transit Mall, light rail transit facilities, and freeways have fostered private investment in new office, retail, hotel, and residential developments. Together these investments have created an urban environment which has gained international prominence for its livability, humanity, and economic success. Supporting the Central City's success and growth has been the ongoing care given to the design of public and private development projects. A key aspect of this care has been design review.

During the coming years significant growth has been planned for the Central City. Much of this growth will be concentrated in the Central City's River District policy area. Development of over a million square feet of new commercial space is planned in conjunction with over 5,000 new housing units.

A new high density residential and mixed use neighborhood will emerge as obsolete rail yards and related facilities are replaced by new developments. This private investment will be supported by an estimated 140 million dollars of public infrastructure improvements. These improvements will include new roads, parks, and public attractions that will enrich not only the district, but the entire region. These improvements will help to insure the success of private investments. To protect this investment the City requires that all projects be approved through the design review process before a building or other development permit is granted.

Design Guidelines and Design Review

Design guidelines are provided for each of Portland's design zones to inform prospective applicants, and the community, of the issues that will be addressed during the design review process. This set of design guidelines is specifically for projects located in the River District. These guidelines, along with the **Central City Fundamental Design Guidelines**, are the approval criteria that will be used when conducting design review within the River District.

During the design review process the review body must find that the project being reviewed meets each of the applicable design guidelines. Projects that meet all the guidelines will be approved. Projects that fail to meet one or more of the guidelines will not be approved. The review body may approve the design, approve the design with conditions, or deny the project a development and/or building permit. When conditions

CHAPTER II

RIVER DISTRICT GOALS

Introduction

The River District is planned to become a place that is remarkable within the region. The area is intended to grow rich with special and diverse qualities that are, or will become characteristic of Portland. Further, the River District will accommodate a significant portion of the region's population growth. The plan calls for the creation of a new community of dense neighborhoods, housing a resident population of over 15,000 people, and providing jobs, services, and recreation to this population and others. This area is intended to emphasize the joy of the river, connections to it, and create a sense of community. The goals frame the urban design direction for Central City and River District development.

There are two sets of goals presented in this section. Listed first are those for the Central City as a whole. The Central City wide goals are followed by those that have been developed specifically for the River District. Both sets are considered and weighed when a reference to the goals is required. There are two circumstances in which these goals will need to be considered.

When changes are considered to the design guidelines these changes must enhance understanding of, or implementation of, the goals. The second, and most common instance that will require reference to the goals, occurs when an applicant requests waiver of one or more of the design guidelines. Requests for waiver of a design guideline will be granted when the applicant has demonstrated to the review body, in their application, that granting the waiver will better implement the goals than would a design that meets the specific guideline for which the waiver is sought. In cases where a waiver is requested the goals act as the approval criteria for consideration of the requested waiver. If the design does not accomplish each of the goals, waiver of the design guideline will not be approved. Both the Central City and River District Goals must be addressed when considering a request for waiver of a design guideline.

Central City Plan Design Goals

This set of goals are those developed to guide development throughout the Central City. They apply within the River District as well as to the other seven Central City policy areas. The nine goals for design review within the Central City are as follows:

1. **Encourage urban design excellence in the Central City.**
2. **Integrate urban design and preservation of our heritage into the process of Central City development.**
3. **Enhance the character of Portland's Central City districts.**
4. **Promote the development of diversity and areas of special character within the Central City.**
5. **Establish an urban design relationship between the Central City districts and the Central City as a whole.**
6. **Provide for a pleasant, rich and diverse pedestrian experience in the Central City.**
7. **Provide for the humanization of the Central City through promotion of the arts.**
8. **Assist in creating a 24-hour Central City which is safe, humane and prosperous.**
9. **Assure that new development is at a human scale and that it relates to the character and scale of the area and the Central City.**

River District Design Goals

An additional set of goals for the design review process augment the Central City Fundamental Goals. These are goals for design review that are specific to the River District policy area of the Central City. There are four River District Goals for design review, they are:

1. **Extend the river into the community to develop a functional and symbolic relationship with the Willamette River.**
2. **Create a community of distinct neighborhoods that accommodates a significant part of the region's residential growth.**
3. **Enhance the District's character and livability by fostering attractive design and activities that give comfort, convenience, safety and pleasure to all its residents and visitors.**
4. **Strengthen connections within River District, and to adjacent areas.**

RIVER DISTRICT DESIGN GUIDELINES APPLICABILITY CHART

SPECIAL DESIGN GUIDELINES / SPECIAL DESIGN AREAS/PROJECT TYPE	AREAS								Project Type	
	Pearl District Neighborhood	NW 13TH Ave. Hist. Dist.	Tanner Creek Area	N. Park Block Area	Skidmore/Old Town Hist. Dist.	Chinatown	Union Station Area	Waterfront Area	Signs and Awnings	Storefront Remodels
										160
PORTLAND PERSONALITY										
A1-1 Link the river to the community...			●	●			●	●		
A3-1 Provide convenient pedestrian linkages...	●		●	●		●	●	●		
A5-1 Reinforce distinct areas...	●	●	●	●	●	●	●	●	●	●
A5-1-1 Reinforce the identity of the Pearl District Neighborhood...	●									
A5-1-2 Reinforce the identity of the NW 13th Avenue Historic District...		●								
A5-1-3 Establish a new identity for the Tanner Creek Area...			●							
A5-1-4 Reinforce the identity of the North Park Blocks Area...				●						
A5-1-5 Reinforce the identity of Skidmore/Old Town Historic District...					●					
A5-1-6 Reinforce the identity of Chinatown...						●			●	
A5-1-7 Reinforce the identity of the Union Station Area...							●			
A5-1-8 Reinforce the identity of the Waterfront Area...								●		
A5-2 Enhance NW Front Avenue...			●				●	●		
A5-3 Emphasize NW Broadway's bright lights...							●		●	●
A5-4 Enhance West Burnside Street...	●			●		●	●			●
*A5-5 Incorporate water features...	●		●	●		●	●	●		
*A5-6 Incorporate works of art...	●		●	●		●	●	●		●
A8-1 Design fences, walls and gateways to be seen over...	●		●	●		●	●	●		
*A9-1 Provide a distinct sense of entry and exit...	●		●	●		●	●	●		
PEDESTRIAN EMPHASIS										
*B1-1 Provide human scale to buildings along walkways...	●		●	●		●	●	●		●
*B1-2 Orient building entries to facilitate transit connections...	●		●	●		●	●	●		●
B5-1 Recognize the dual role of the Tanner Creek Park Blocks...			●							
B5-2 Recognize the river basin...			●							
*B6-1 Provide outdoor lighting at a human scale...	●		●	●		●	●	●		●
PROJECT DESIGN										
*C1-1 Integrate parking...	●		●	●		●	●	●		
*C1-2 Integrate signs and awnings...	●		●	●		●	●	●	●	●
C2-1 Increase river and waterway view opportunities...			●					●		
*C3-1 Locate buildings to provide for future infill...	●		●	●		●	●	●		
*C7-1 Reduce the impact of residential unit garages...	●		●	●		●	●	●		

*: Recommended for future conversion as a Fundamental Design Guideline

A. PORTLAND PERSONALITY (RIVER DISTRICT)

A1 INTEGRATE THE RIVER { This is a Central City Plan Fundamental Design Guideline. The River District Design Guideline that follows is linked to this Fundamental Design Guideline. The River District Guideline elaborates, expands, and clarifies the meaning of the Fundamental Guideline as it applies within the River District.

LINK THE RIVER TO THE COMMUNITY

BACKGROUND

Since the days of the first settlers, the Willamette River has provided Portland with pleasure, passage, and profit. Its connection to the Pacific Ocean allowed Portland to become an international port which nourished the growth of the city. The river has always been the focus for Portland. It is the central feature and reason for Portland's existence.

In order to celebrate and pay tribute to the river's importance, a very special focus is desired for the River District waterfront. A major river inlet is to be created and extended inward into the heart of the District, providing river access that will stimulate and support District development. New bridges on Front Avenue crossing the inlet basin will reinforce the District's river feeling and significance. This river "gateway" for the District will enhance the relationship between the District and the Willamette. Additionally, the daylighting of Tanner Creek and its connection to the basin will be a contributing asset for the River District.

This dynamic new urban design emphasis will contribute to a distinct and clear image of the District. In effect, the new "gateway" and waterway system focuses and organizes a District Development Plan that celebrates the origin of Portland—the Willamette. The inlet bridges, basin, waterways, and the incorporation of the daylighting of historic Tanner Creek will establish a "river" personality for the District. This extension of river to community will provide the River District its centerpiece of interest and activity.

A1-1 GUIDELINE: Link the Willamette River to the community reinforcing the river's significance.

This guideline may be accomplished by:

a. **Organizing land areas, and groupings of buildings to visually define the river's linkage to the community;**

b. **Focusing and articulating road ways and pedestrian ways to emphasize the river;**

c. **Developing projects that celebrate the river, and contribute to creating centers of interest and activity that focuses on the Willamette; or**

d. **Connecting the internal areas of the District to the Willamette Greenway Trail.**

A2 EMPHASIZE PORTLAND THEMES { This is a Central City Plan Fundamental Design Guideline

A3 RESPECT THE PORTLAND BLOCK STRUCTURES { This is a Central City Plan Fundamental Design Guideline. The River District Design Guideline that follows is linked to this Fundamental Design Guideline. The River District Guideline elaborates, expands, and clarifies the meaning of the Fundamental Guideline as it applies within the River District.

PROVIDE CONVENIENT PEDESTRIAN LINKAGES

BACKGROUND

Incorporating pedestrian connections to the waterfront is critical to the transformation of the River District from an industrial area (which is currently unfriendly to pedestrian movement) to a mixed use residential community that successfully facilitates and accommodates the pedestrian. It is important to improve the safety, convenience, pleasure, and comfort of pedestrians by creating a pedestrian network throughout the District which provides easy pedestrian connections with the adjacent neighborhoods and the waterfront. These pedestrian ways should be designed to be active and well lit, providing a safe and secure environment.

Of particular importance is a connection between the northwest extended transit mall and the Greenway Trail. If possible, this pedestrian pathway should be located through the Union Station development parcel south of the Broadway Bridge, and continue through McCormick Pier to the boardwalk at the river's edge. Appropriate lighting and trees should articulate this connection.

Interstate 405 and West Burnside Street form barriers between the River District and the adjacent neighborhoods to the west and south. Look for design opportunities which will strengthen the pedestrian character of the street connections located under raised portions of the interstate, and which will better accommodate pedestrian life along Burnside.

A3-1 GUIDELINE: Provide convenient linkages throughout the River District that facilitate movement for pedestrians to and from the river, and to and from adjacent neighborhoods.

A4 USE UNIFYING ELEMENTS | This is a Central City Plan Fundamental Design Guideline

A5 ENHANCE, EMBELLISH, & IDENTIFY AREAS | This is a Central City Plan Fundamental Design Guideline. The River District Design Guidelines that follow are linked to this Fundamental Design Guideline. The River District Guidelines elaborate, expand, and clarify the meaning of the Fundamental Guideline as it applies within the River District.

REINFORCE DISTINCT AREAS

BACKGROUND

The River District is a distinctive community, containing two recognized neighborhood associations (the Pearl District and Old Town/Chinatown) and a portion of a third association - NINA (Northwest Industrial Neighborhood Association). Within these neighborhoods are distinctive areas - each characterized by a special history, or by special opportunities. While it is important to strengthen neighborhood identity and to create stronger linkages between the various parts of the River District, it is also important that project designs capitalize on and enrich the qualities and opportunities which are unique to the "communities" within the River District.

A5-1 GUIDELINE: Enhance the qualities that make each area distinctive within the River District, using the following "Area Design Guidelines" (A5-1-1 - A5-1-8).

REINFORCE THE IDENTITY OF THE SKIDMORE/OLD TOWN HISTORIC DISTRICT

BACKGROUND

The Skidmore/Old Town Historic District bridges across Burnside—linked by MAX, Waterfront Park, and an inventory of historic structures.

In September of 1975, the Portland City Council designated over 20 blocks plus the adjacent portion of Waterfront Park in Downtown Portland, as the Skidmore/Old Town Historic District. This District has also been listed on the National Register of Historic Places and is further distinguished nationally as a National Historic Landmark. The District was Portland's original center of commerce and entertainment and contains the City's largest and best collection of cast iron era structures. The City's oldest building is within the District.

Special Historic District Design Guidelines were developed at the time of district designation and have been responsible for guiding the large number and significant quality of preservation projects within the District. These special Historic Design Guidelines shall continue as the primary design guidance system for the District. They shall be used in conjunction with the special River District Design Guidelines and the Central City Fundamental Design Guidelines. However, should an original Historic District Design Guideline conflict with any of the other guidelines, the Historic District Guideline takes precedence.

A5-1-5 GUIDELINE: Use the Skidmore/Old Town Historic District Design Guidelines for projects located within the Historic District to reinforce the identity of the district. *Copies of these guidelines are available at the Bureau of Planning.*

REINFORCE THE IDENTITY OF CHINATOWN

BACKGROUND

The Central City's only visible ethnic district is identified by a people whose roots are in Portland's earliest history and by atmosphere rather than a specific architectural form or style. The District is on the National Register of Historic Places identified as "Portland New Chinatown/Japantown Historic District". Since the Asian appearance of the District is primarily the result of applied detail, streetscape appointments and graphics, it is important to maintain and enhance the District with this tradition of visual identity.

The Chinatown Gate at N.W. Fourth Avenue and Burnside marks the entry to the District. Located along Fourth Avenue between Burnside and Glisan, Chinatown has been the center of Portland's Chinese/Asian community since the 1890s (at one time, it was second only to San Francisco as the largest Chinese community in the United States).

It is still the home of dozens of Chinese restaurants, groceries, pharmacies, and cultural and family associations. Bright animated signs make this one of the city's most visually cohesive and liveliest districts at night. Signs which contribute to fit the festive Chinatown atmosphere should be encouraged even though they may be at variance with Zoning Code sign regulations. Later in this design guideline document, Guideline C1-2 "Integrate Signs" gives design guidance for the entire River District as to the intent of integrating signs with projects. It should provide additional guidance for signs in Chinatown. However, if there is a conflict between the C1-2 Integrate Signs guideline and the Chinatown sign guidelines stated below, the Chinatown guideline A5-1-7 takes priority over Guideline C1-2.

Several public investments have been made in the District to affirm its special identity. Ornamental street lights have been painted red and gold and they display special district banners. Specially designed street signs are in both Chinese and English. The CCBA Building (Chinese Consolidated Benevolent Association) has been restored and is now the District's center for cultural activities. Therefore, to strengthen Chinatown as a special area in the Central City Plan, and to maintain it as Portland's pre-eminent ethnic district, special design guidelines are important to continue and recognize the special quality and identity of the District.

A5-1-6 GUIDELINE: Reinforce the identity of Chinatown.

This guideline may be accomplished by:

a. Emphasizing the Asian ambiance of Chinatown with visual and cultural design features that relate to, and are appropriate to, the District's ethnic history and character; or

b. Using ornate signs, employing Asian motifs, symbols, traditional colors and special configurations that enhance the ethnic character of the District.

Lighted signs may be approved which exceed maximum area, number, projection, height and lighting regulations, or which flash or include exposed incandescent lamps, provided they constructively add to the festive Chinatown atmosphere of the District. Traditional sign lighting methods, such as incandescent lamps and neon tubing are preferred. If internal lighting is used, letter forms should be illuminated brighter than the sign

BACKGROUND

The River District has a rich railroad history. It once housed expansive rail yards, with Union Station as the centerpiece. With its tower, Union Station is a symbolic link between the past and future of River District. It anchors the Central City's transportation center and links the River District to the downtown core.

The people of Portland place great importance on this city's past. As the River District transforms, recognition should be given to the railroad era and the significance it had in Portland's transportation and industrial development. This may be accomplished in a variety of ways. For example, the station tower could become the area's symbolic logo. It might be outlined and articulated at night with appropriately scaled lighting. Additionally, the station's menu of exterior colors, materials, and detail could be extended to nearby development to provide visual continuity.

Although the railroad heritage provides a focus and theme for the District, the existing main rail creates a linear barrier. In addition to the need for track crossings, the visual connection between the areas located on each side of the railway is important to the area's realization. Design solutions for development in the Union Station neighborhood should allow for future crossings of the tracks and should protect important views across the tracks of key district elements such as Union Station and other features.

Because maintaining visual access across the tracks is important, it is not appropriate to construct high, free-standing, opaque walls or fences along the edge of the railway. Appropriate buffering should employ solutions that relate to the surrounding structures. There are a number of ways to design the edge bordering the tracks. Security can be achieved with wrought iron fencing or low masonry walls with open railings. To provide a filtered buffer, deciduous trees, spaced similarly to Portland street trees, can also be planted. In some cases, a degree of separation can be achieved by setting buildings back from the rail corridor and utilizing that area for uses in support of a project including landscaping, open space, parking and circulation, recreation, etc.

Buildings located adjacent to the railroad corridor will be visible from Union Station and other neighboring properties. Architectural attention should be paid to these facades as well as the other building facades to avoid the sense that these buildings are turning their back on the railway.

A5-1-7 GUIDELINE: Reinforce the identity of the Union Station Area.

This guideline may be accomplished by:

a. Designing new development to focus on the station as the area's centerpiece; or

b. Reducing the role the railroad corridor plays as an element which divides the district by creating frequent visual connections across the tracks.

BACKGROUND

Portland's waterfront has been a rich evolving environment. The original shoreline of thickets and marsh flora supported a diverse ecology. The original settlers were drawn here, where a cut through the West Hills provided farmers with access to a deep-water harbor. A jumble of wooden buildings soon lined the shore, streets ended in skid roads and ferry landings, cranes reached out - accumulating, then diminishing great piles of lumber and imported goods. All manner of craft plied the river and the sky filled with plumes of steam and smoke. The waterfront was a crowded citizenry of workers.

Today's waterfront is quieter, but change is envisioned. The area will evolve into an urban park with adjacent housing and commercial ventures. If integrated, these developments will again create a vital urban community; its vitality enhanced by the publicness of the River Basin and the Greenway Trail; its character enhanced through reference to the area's maritime, industrial and natural history.

The Waterfront area will serve as the face of the River District. This area offers the potential to recognize the maritime heritage of the District and the Central City by promoting waterfront uses and activities that contribute to its maritime character. This segment of Portland's waterfront is still a "working" harbor. New potential exists for maintaining this tradition, such as docking facilities for a cruise-line. Additionally, opportunity exists for extending the river into River District with a major river basin gateway.

In order to integrate the new public and private uses, development must be open and accessible. Buildings should orient towards the waterfront and adjacent parks. Generous fenestration, and building entries should face onto these public spaces; and porches, decks, balconies and other transitional elements are encouraged. In addition, pedestrian and visual connections should be provided into and through larger developments, and care should be taken to avoid undue shading of the Greenway Trail.

To balance the publicness of the River Basin and the Greenway Trail, the remaining waterfront park areas should be oriented to the local community. Facilities are needed for physical recreation, as well as for informal social gatherings and creative expression. As important, these areas should feel like neighborhood parks. Programming and design solutions should strive to create a sense of community proprietorship, and these parks should be differentiated from the more "public" River Basin.

Although new development will transform the waterfront, the area should be viewed as a place with its own history and artifacts. Opportunities to reference this rich heritage should be exercised. There are many opportunities to create a diverse urban waterfront, accommodating a variety of compatible water and land uses, which embrace the river's gifts of pleasure, passage and profit.

A5-1-8 GUIDELINE: Reinforce the identity of the Waterfront Area with design solutions that contribute to the character of the Waterfront and acknowledge its heritage.

B. PEDESTRIAN EMPHASIS

B1 REINFORCE AND ENHANCE THE PEDESTRIAN SYSTEM { This is a Central City Plan Fundamental Design Guideline. The River District Design Guidelines that follow are linked to this Fundamental Design Guideline. The River District Guidelines elaborate, expand, and clarify the meaning of the Fundamental Guideline as it applies within the River District.

PROVIDE HUMAN SCALE TO BUILDINGS ALONG WALKWAYS

BACKGROUND

In order to reinforce and enhance the pedestrian system in the River District, buildings have a responsibility to contribute to pedestrian comfort and enjoyment. Buildings adjacent to walkways should provide human scale and relationships which support pedestrian needs and interests. This can be accomplished with appropriate building configuration, details, proportions, materials, and activities.

In particular, door, window and wall treatments adjacent to pedestrian ways should relate and contribute to pedestrian interest and enjoyment. Large expanses of mirrored glazing and blank flat walls are discouraged due to their impersonal character. Variation and sensitive detailing, related to the pedestrian environment, is especially encouraged within building bases. Porches and balconies are particularly encouraged. These elements provide human scale, allow for interaction between residents and passers-by, and allow for informal surveillance of the street.

***B1-1 GUIDELINE: Provide human scale and interest to buildings along sidewalks and walkways.**

ORIENT BUILDING ENTRIES TO FACILITATE TRANSIT CONNECTIONS

BACKGROUND

Transit corridors and services within the River District will be established to minimize distances and obstacles between different areas of the District and the Metro area. Transit is a critical component for a successful district circulation system. In facilitating easy pedestrian movement, it is important to have direct, convenient, and active pedestrian linkages. Sensitive and supportive placement of the main entries of buildings can significantly improve pedestrian accessibility to transit, making it easy and enjoyable. It is an important urban design accommodation.

***B1-2 GUIDELINE: Orient primary building entries at pedestrian circulation points which conveniently and effectively connect pedestrians with transit services.**

C. PROJECT DESIGN

C1 RESPECT ARCHITECTURAL INTEGRITY

This is a Central City Plan Fundamental Design Guideline. The River District Design Guidelines that follow are linked to this Fundamental Design Guideline. The River District Guidelines elaborate, expand, and clarify the meaning of the Fundamental Guideline as it applies within the River District.

INTEGRATE PARKING

BACKGROUND

Surface parking lots in many cases represent real estate in transition. Parking lot design should address the appearance from the surroundings, from both street level, and elevated vantage points. Yet surface parking has a responsibility to contribute to the quality of the place as does every other activity. Therefore, it should present itself with an art and accommodation that complements its neighbors and that rationalizes its presence . . . no matter how temporary.

The design of parking structures should relate to the design context of the area as expressed in the design of nearby buildings and other features. Exterior walls of parking structures should be designed with materials, colors, and architectural articulation in a manner that provides visual compatibility with the adjacent buildings and environment.

Active uses in the sidewalk level of parking structures are encouraged. The incorporation and enhancement of active ground-level uses in parking structures helps create a more interesting and attractive environment for pedestrians. Such incorporation in new and modified parking structures near active retail and pedestrian areas will substantially improve pedestrian linkages and enrich the District's cityscape. However, if active uses cannot be initially incorporated, the design of the sidewalk level of parking structures should be done to allow for future conversion for active uses.

Portions of the street edge of parking facilities can be pedestrian activated with vending booths. This is particularly appropriate in proximity to other retail and office uses.

The siting and location of parking should minimize traffic movement and circulation throughout the River District to lessen pedestrian conflict.

*C1-1 GUIDELINE: Design surface parking and parking garage exteriors to visually integrate with their surroundings.

This guideline may be accomplished by:

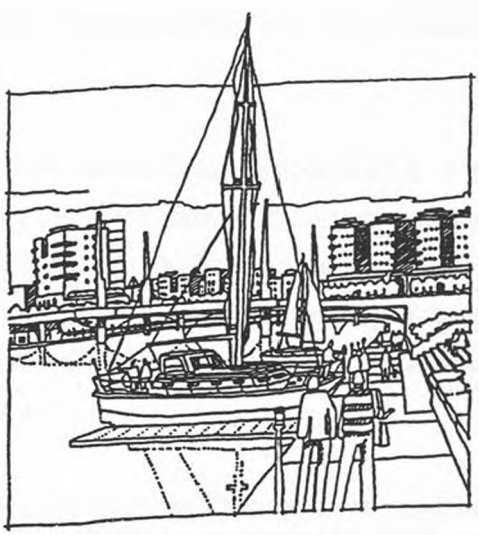
a. **Designing street facing parking garages to not express the sloping floors of the interior parking;**

b. **Designing the sidewalk level of parking structures to accommodate active uses, display windows, public art or other features which enhance the structure's relationship to pedestrians; or**

c. **Accommodating vending booths along sidewalks adjacent to parking facilities, when active ground level uses are not possible.**

River District

a Development Plan for Portland's North Downtown



In the spring of 1991, a handful of citizens gathered to consider the future of North Downtown. Many owned or controlled property in the area. All shared an inclination to make a collective contribution to its health and redevelopment. They spent six months developing a singular vision for the area. Identified as the River District Vision, it was presented to the Portland City Council for consideration. The Council members found the vision stimulating, substantial and consistent with their view of a desirable future for Portland. In response, the City Council directed the execution of a Development Plan to implement the vision.

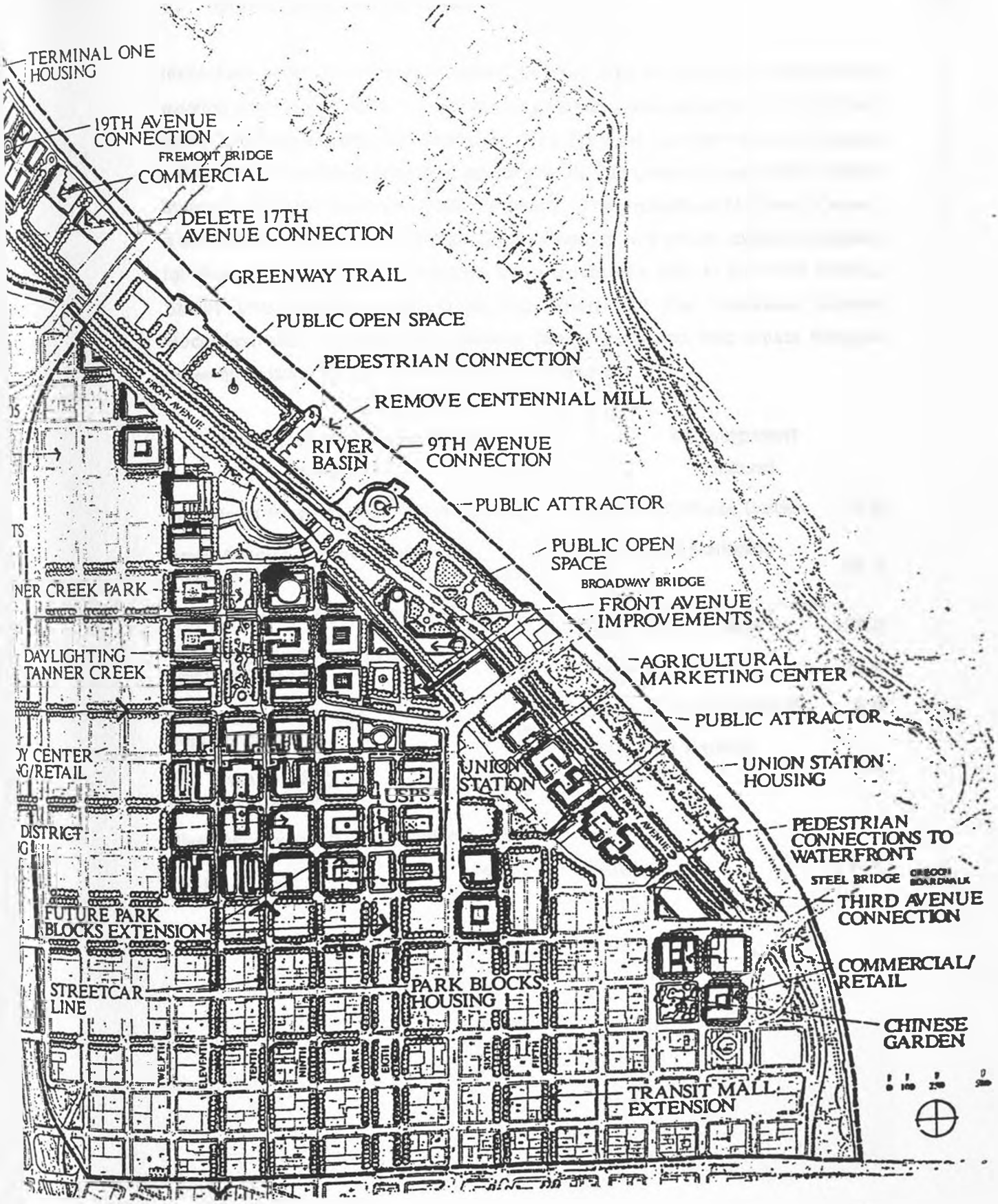
and tomorrow.

The River District Vision imagined a place that was remarkable within the region, identified by a special quality, of its own making, yet diverse as it represented a range of qualities characteristic of Portland. Further, it proposed that the River District strive to make an extraordinary contribution to the region's commitment to accommodate impending population growth.

The vision describes a community of neighborhoods, housing a resident population of 15,000 or more, providing jobs, services and recreation for all patrons of Portland's Central City. The vision outlines a community which is unique because of its image, its diversity, and most important, its embrace of the Willamette River.

The Development Plan affirms the River District Vision presented to the City Council in March and August of 1992. It identifies tools for the implementation of the vision and assigns substantial responsibilities to be born by both public and private interests. An effective solution will require not only a realistic strategy for action, but also an image so strong that it will overcome the current view of the District as an undefined and featureless area.

The City Council appointed the River District Steering Committee to oversee the creation of the Development Plan. The Steering Committee established six goals to guide its work. The pages that follow describe these goals, the plan, and the actions recommended to make the River District Vision a reality.


TERMINAL ONE HOUSING
19TH AVENUE CONNECTION
FREMONT BRIDGE
COMMERCIAL
DELETE 17TH AVENUE CONNECTION
GREENWAY TRAIL
PUBLIC OPEN SPACE
PEDESTRIAN CONNECTION
REMOVE CENTENNIAL MILL
RIVER BASIN
9TH AVENUE CONNECTION
PUBLIC ATTRACTOR
PUBLIC OPEN SPACE
BROADWAY BRIDGE
FRONT AVENUE IMPROVEMENTS
AGRICULTURAL MARKETING CENTER
PUBLIC ATTRACTOR
UNION STATION HOUSING
PEDESTRIAN CONNECTIONS TO WATERFRONT
STEEL BRIDGE
GREGON BOARDWALK
THIRD AVENUE CONNECTION
COMMERCIAL/ RETAIL
CHINESE GARDEN
TRANSIT MALL EXTENSION
PARK BLOCKS HOUSING
STREETCAR LINE
FUTURE PARK BLOCKS EXTENSION
DAYLIGHTING TANNER CREEK
UNION STATION
USPS
FRONT AVENUE
TWELFTH
ELEVENTH
TENTH
NINTH
PARK
EIGHTH
SIXTH
FIFTH

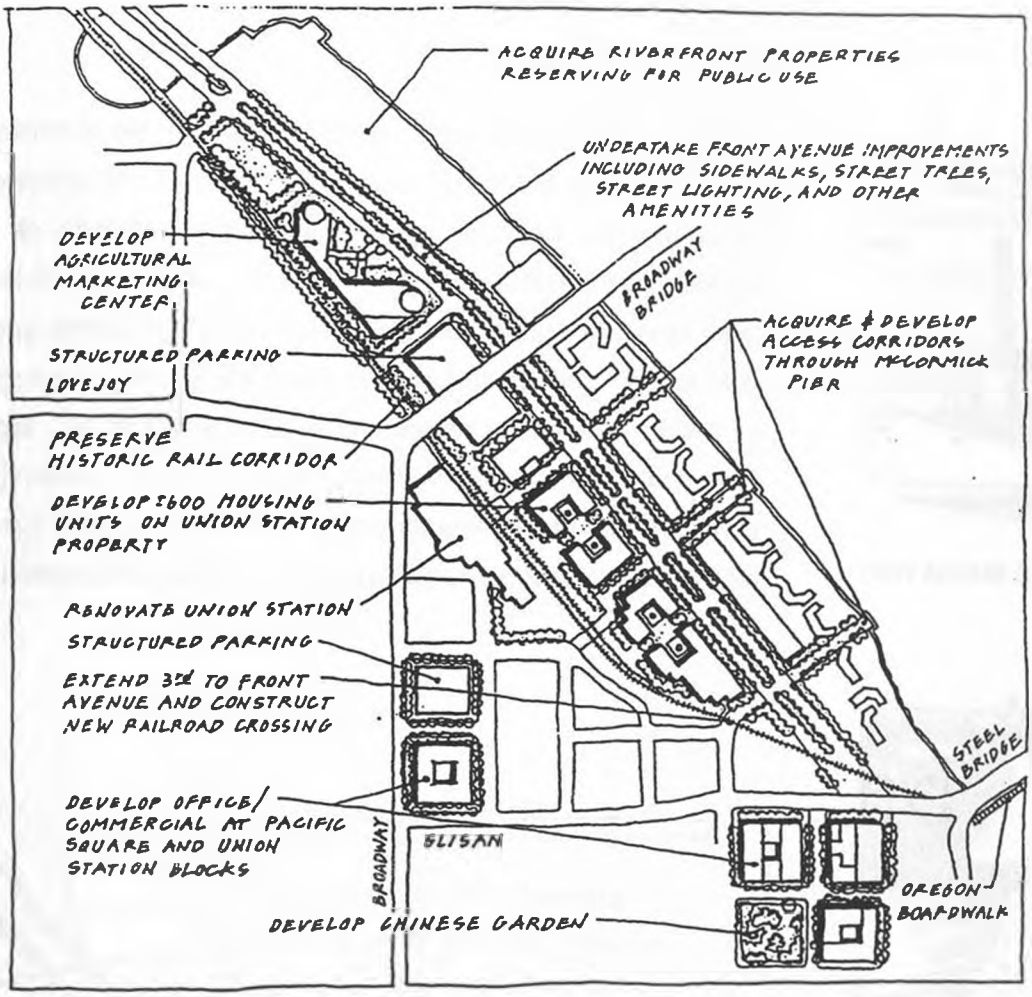
VISION

1. Union Station/Old Town

Immediate action in the Union Station/Old Town area will build on a foundation of existing private investment, it will be conspicuous, and capitalize on established and committed existing improvements. The Portland Development Commission will facilitate the development of approximately 600 units of housing and related improvements on the Union Station property. The Agricultural Marketing Center, a cooperative venture with Oregon State University, will create additional demand for Oregon's agribusiness products and provide new jobs in the River District. Street and building lighting in Old Town and the Homeless Shelter Reconfiguration Program will advance public goals and help create linkages between existing and new River District communities.

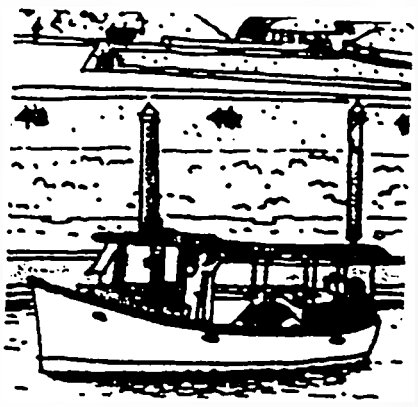
Infrastructure Investment ($ millions)	
Waterfront Property Acquisition	6.0
Front Avenue Improvements Phase 1	2.1
McCormick Pier Pedestrianways	1.4
Third Avenue Extension and Rail Crossing	1.5
Union Station On-Site Improvements	4.8
Old Town Building and Street Lighting	2.2
River Access and Transportation	3.9
Total	**21.9**

Development ($ millions)	
Classical Chinese Garden	8.0
Agricultural Marketing Center	37.4
Pacific Square and Union Station Office	155.0
600 Housing Units	54.0
Union Station Renovation	9.0
Structured Parking 950 Spaces	9.5
Total	**272.9**

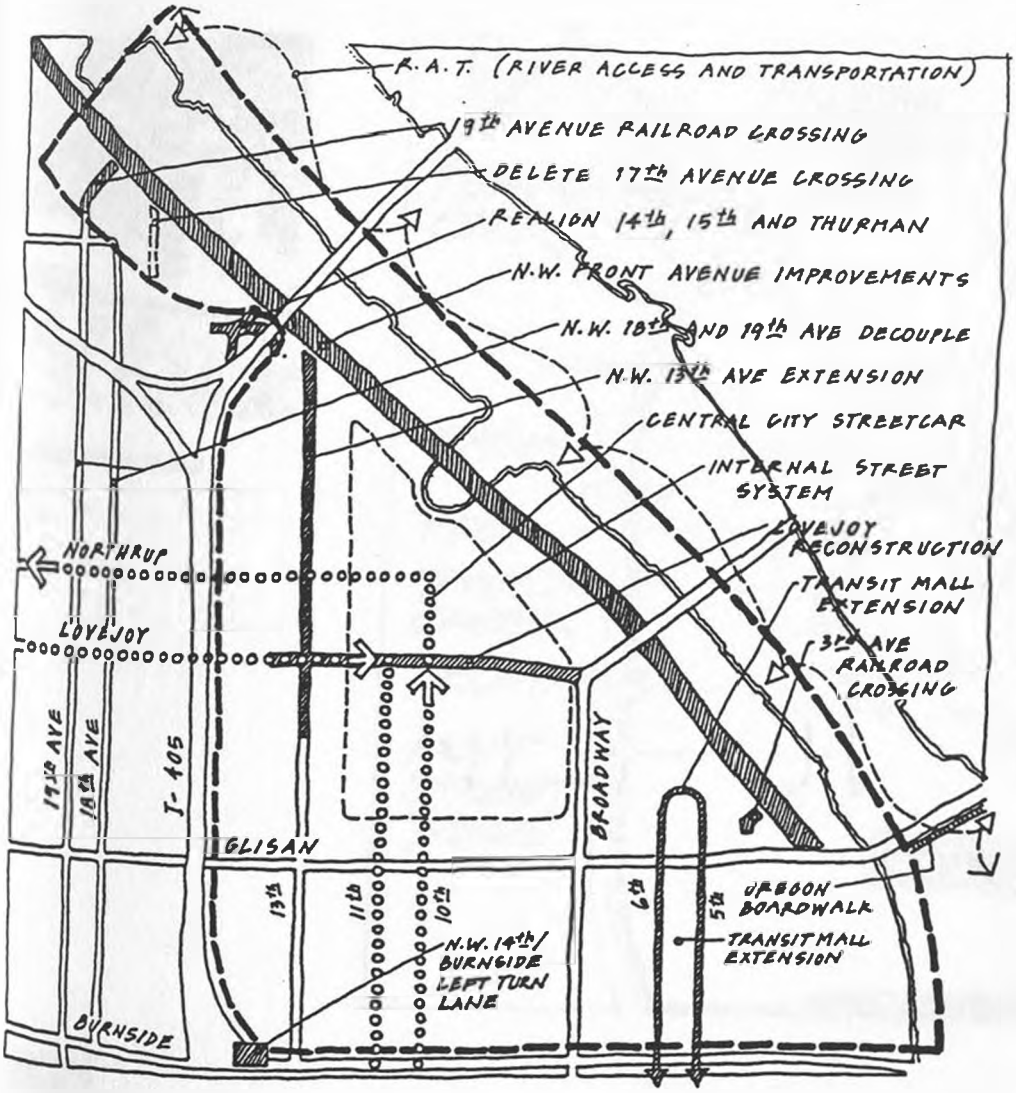

ACQUIRE RIVERFRONT PROPERTIES RESERVING FOR PUBLIC USE
UNDERTAKE FRONT AVENUE IMPROVEMENTS INCLUDING SIDEWALKS, STREET TREES, STREET LIGHTING, AND OTHER AMENITIES
DEVELOP AGRICULTURAL MARKETING CENTER
BROADWAY BRIDGE
ACQUIRE & DEVELOP ACCESS CORRIDORS THROUGH MCCORMICK PIER
STRUCTURED PARKING
LOVEJOY
PRESERVE HISTORIC RAIL CORRIDOR
DEVELOP 1600 HOUSING UNITS ON UNION STATION PROPERTY
RENOVATE UNION STATION
STRUCTURED PARKING
EXTEND 3RD TO FRONT AVENUE AND CONSTRUCT NEW RAILROAD CROSSING
STEEL BRIDGE
DEVELOP OFFICE/ COMMERCIAL AT PACIFIC SQUARE AND UNION STATION BLOCKS
BROADWAY
GLISAN
OREGON BOARDWALK
DEVELOP CHINESE GARDEN

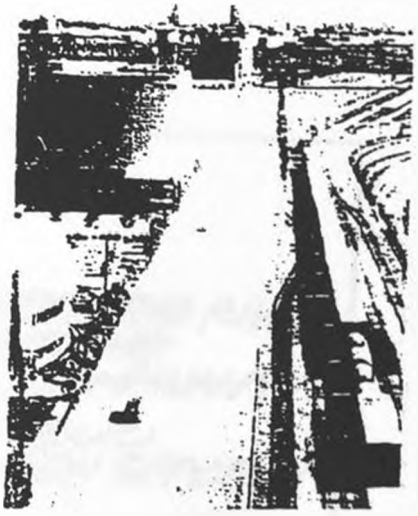

UNION STATION

People use transportation to get from here to there. By placing homes in close proximity to work, shopping, and recreation, the River District will offer Portland a unique opportunity to absorb up to 15,000 new residents with minimal investment in regional transportation systems. Projections indicate that over 50 percent of all travel originating in the River District will be pedestrian or transit trips. The proposed transportation plan for the River District includes the Transit Mall Extension, the Central City Streetcar, and improvements to District streets to provide transit, pedestrian, and auto connections to Downtown, Northwest Portland, and the Lloyd District. Railroad crossing improvements and the River Access and Transportation [RAT] program will provide connections to the river for everyone.



New access by river,





across the railroad and Front Avenue

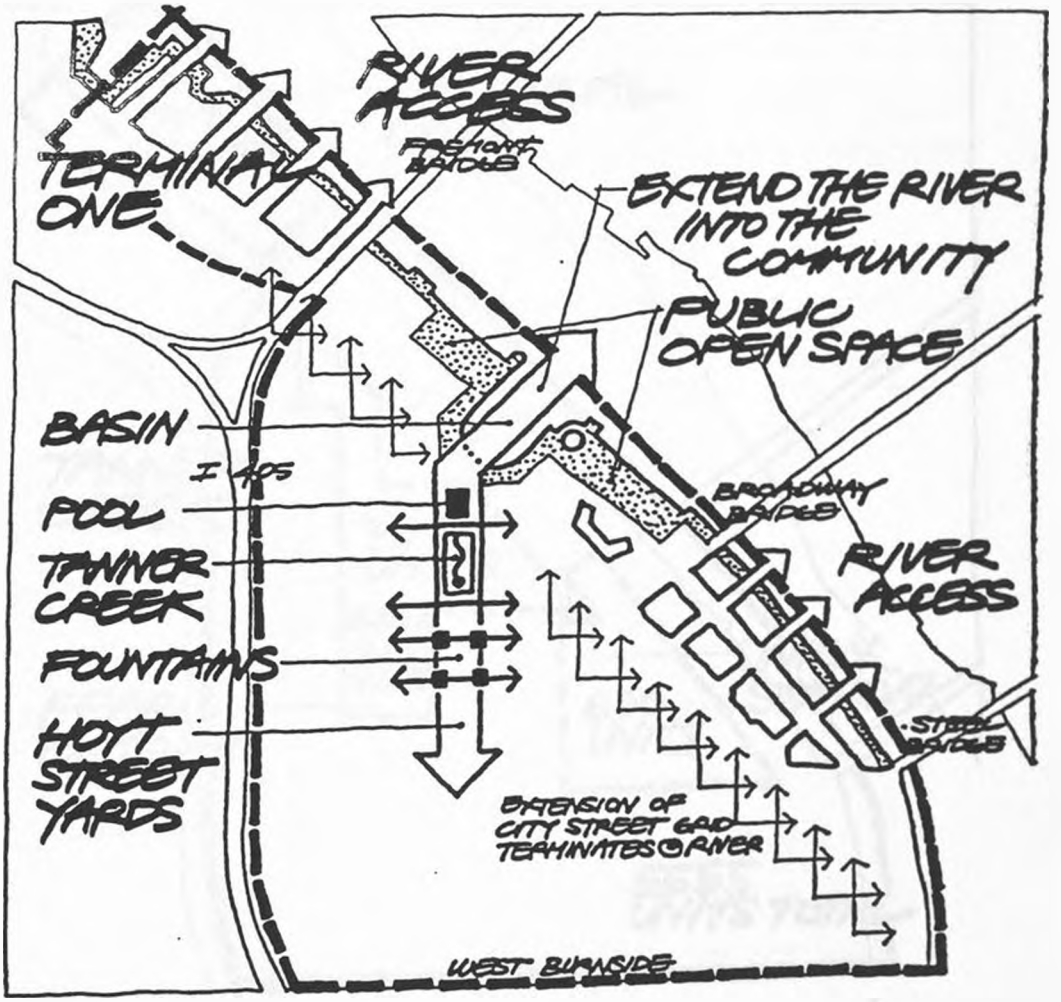
and within the community.

GOAL #1: To Develop a Functional and Symbolic Relationship with the River

ict community of the late 19th

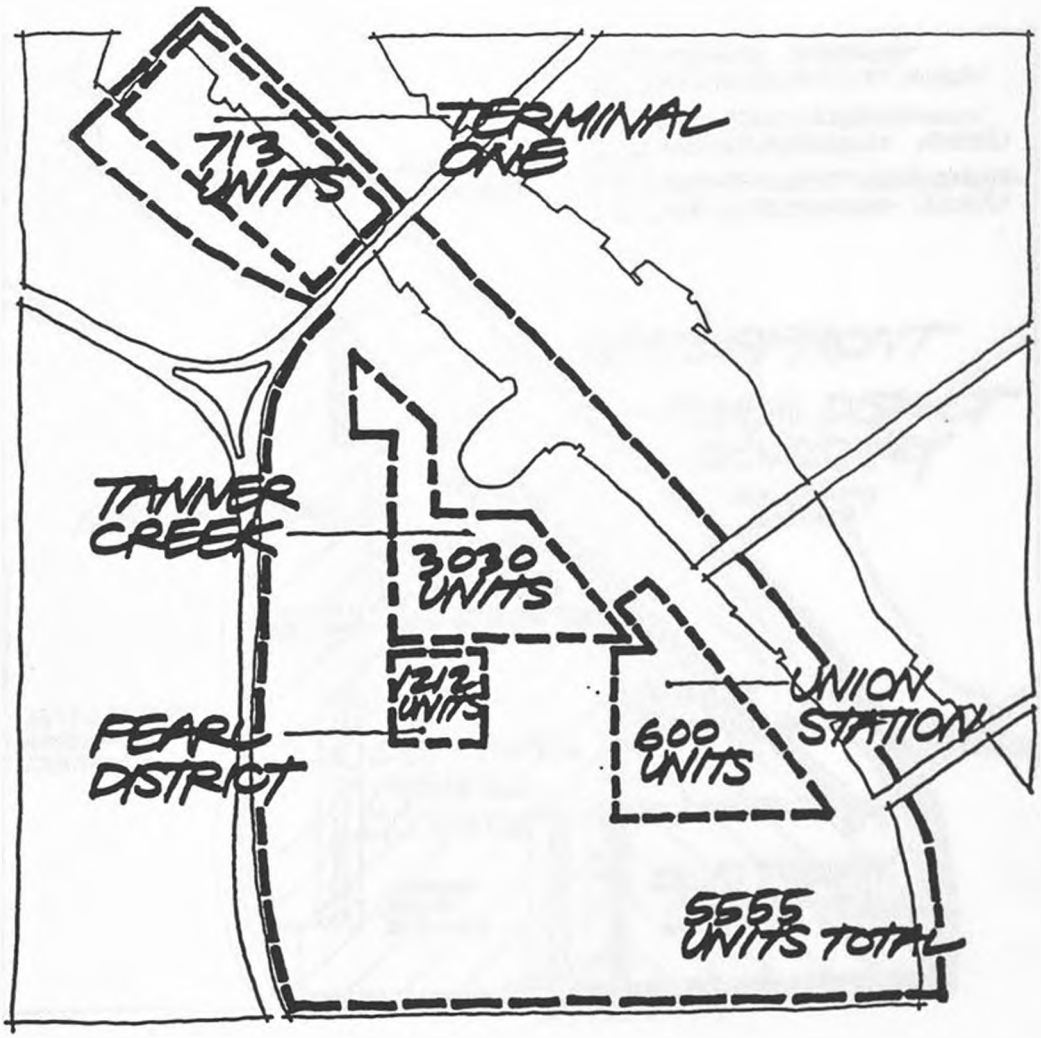
The River District enjoys one regional asset shared by no others. The biased orientation of the Willamette River to the street grid within the District provides a strong association between the river and the land that cannot be replicated in other Portland neighborhoods. The development of a significant physical and symbolic relationship between the river and the River District can provide an image and focus for development.

lost its attachment to the



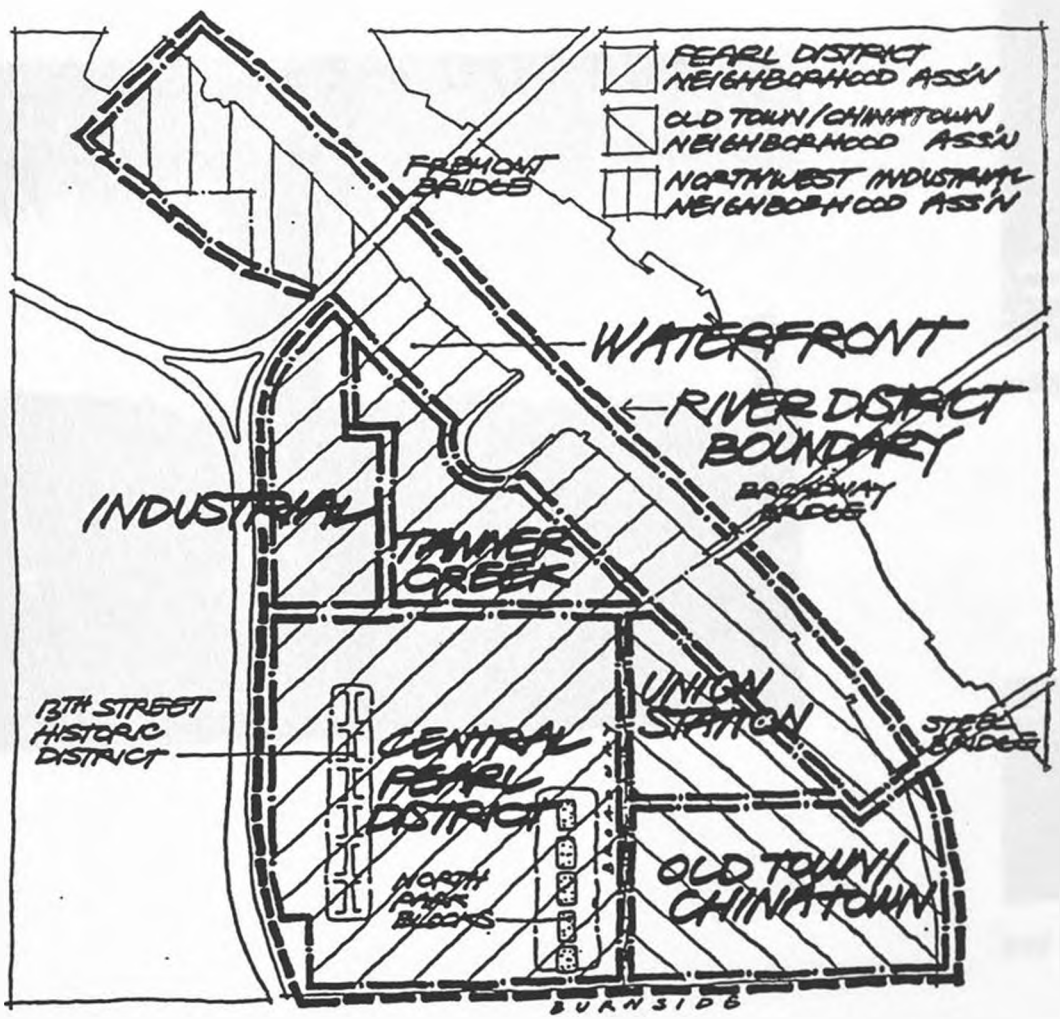
GOAL #2: To Promote the Development of a Diverse Inventory of Housing

For the past three decades, Portland has pursued a strategy to develop its downtown as the heart of a livable, sustainable city. Future growth in the region prescribes an even larger effort to attract and accommodate new residents to live and work in the Central City. The River District encourages and supports economic, social, and cultural diversity and will provide a range of multi-family housing in terms of style and economics. The opportunity for these new residents to work and play near where they live is fundamental.



GOAL #3: To Become a Community of Distinct Neighborhoods

The River District is an area of two established and several emerging neighborhoods, sub-districts of distinct physical character and varied cultural traditions. Few share social or economic links but all occupy a singular land area bordered by barriers of physical prominence. It is the goal of the River District to secure a future which binds all of these existing and potential neighborhoods while providing them with the support they require to become self-sufficient.



GOAL #4: **To Enhance the Best of What Exists**

While much of the River District is undeveloped, some areas are healthy and secure and others are demonstrating an unusual ability to renew themselves. As the River District develops, it should balance its enthusiasm for a new future with a commitment to respect and improve existing structures, activities and characteristics which are strong and indigenous. A creative and constructive use of the area's resources will accelerate its development and provide a framework which will enhance its success.

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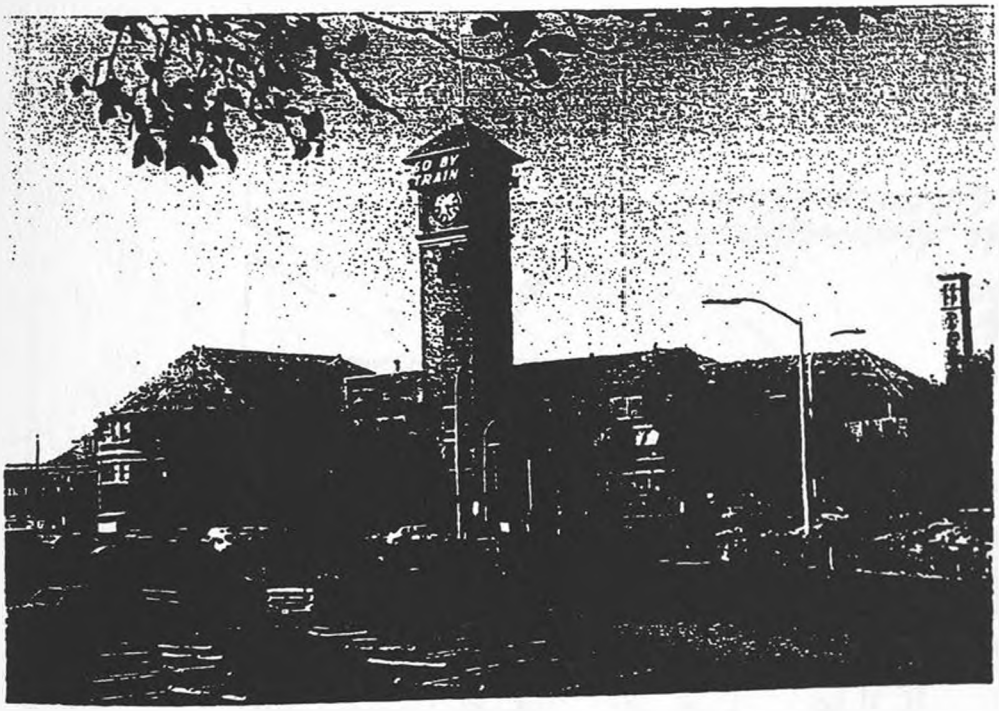

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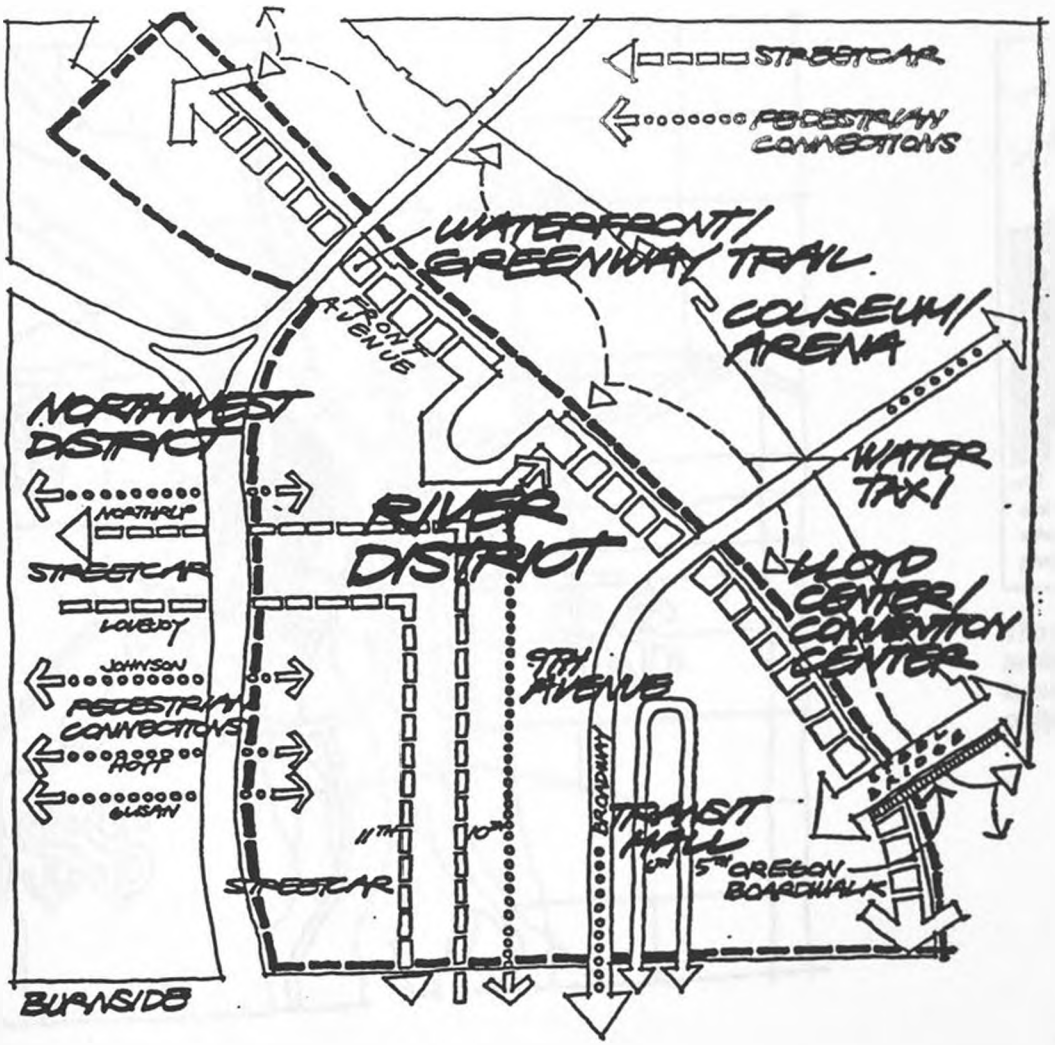
GOAL #5: To Strengthen Connections Between the River District and its Neighbors

neighbors.

The River District's distinct physical boundaries are an asset to development. However, those boundaries must be bridged by strong connections to neighboring communities to attract their support and secure complementary relationships.

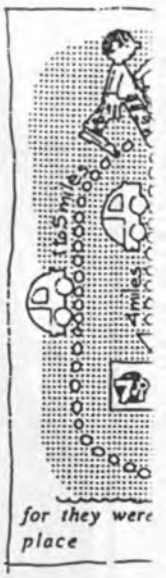
Many of the improvements which would link the District to the downtown, northwest neighborhoods, and the Lloyd District have been identified. A few have recently been completed or are underway.



ISION

GOAL #6: **To Enhance the Economy and Functional Efficiency of the City**

It is an objective of the City to provide adequate access between home, work, services and recreational destinations. It is also an objective of the City to provide that access with economy, efficiency, and sensitivity to natural and man-made environments. More than any other transportation or land use measure, the attraction and accommodation of a large residential population, proximate to the region's greatest concentration of employment, service and recreational opportunities, will effectively improve access while limiting car trips.



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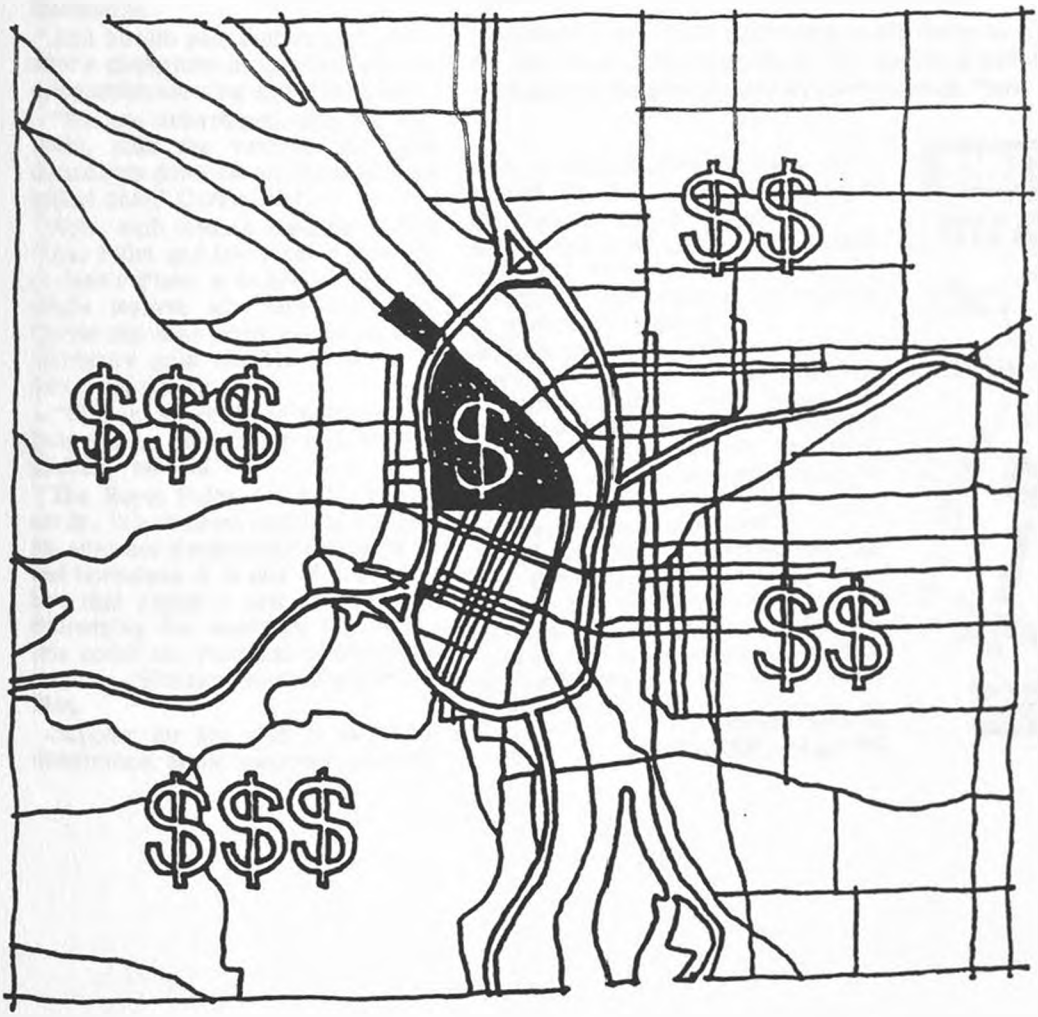


THE

SPECIAL REPORT

Royal Palm, a homeless shelter, opens today

The 50-room building in Chinatown/Old Town is part of a new county plan that not all support

By WADE NKRUMAH
of The Oregonian staff

As a central figure in the conception of a new plan to shelter Portland's homeless, Chuck Currie had the opportunity to make bold statements.

And he did just that Aug. 4, 1992, after a committee he chaired held an orientation meeting about the plan.

"We are determined, and we will insist, that the various planning documents don't sit on the shelf and collect dust," Currie said.

Now, with today's opening of The Royal Palm and last week's opening of Jean's Place, a 44-bed shelter for single women who are homeless, Currie can take pride in seeing that insistence paid off. The concept is becoming reality.

"This is one of those planning efforts where something was accomplished," he said.

The Royal Palm, 310 N.W. Flanders St., is a 50-room building for people who are chronically mentally ill and homeless. It is one of four shelters that signal a new approach to addressing the needs of the homeless under the Portland/Multnomah County Shelter Reconfiguration Plan.

Support for the plan is far from unanimous. Some business, cultural and neighborhood groups have fought it. But the plan remains groundbreaking in that it:

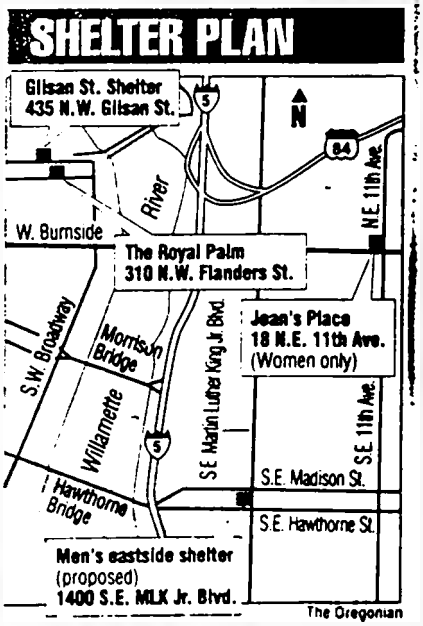
- Provides separate permanent shelters and transitional housing for single men and women, and mentally ill men and women.
- Shifts the emphasis to smaller, dispersed shelters. Previously, public-operated shelters were large, 100-plus-bed buildings such as Baloney Joe's and its successor, Recovery Inn. Both were in the same building at the east end of Burnside Bridge before closing in June 1995.

Still, as Terry Anderson can tell you, the plan has its critics. Anderson, an aide for City Commissioner Gretchen Miller Kafoury and a veteran of the siting process for shelters, said the concept has support

Please turn to SHELTER, Page B6

STEVEN NEHL/The Oregonian

The Royal Palm Hotel begins a new life today as a 50-bed homeless shelter for the chronically mentally ill. The facility is part of the new Portland/Multnomah County Shelter Reconfiguration Plan.



Shelter: Support isn't unanimous

■ **Continued from Page B1**
with most groups "until you get to the part of siting it in someone's neighborhood."

In fact, Mental Health Services West, which will operate The Royal Palm, still is trying to mend fences with some of its Chinese-American community neighbors. They include the influential Chinatown-based Chinese Consolidated Benevolent Association, a 100-year-old national organization.

The association steadfastly has opposed the shelter's location across from a site planned for a Chinese classical garden. As recently as last month, the association refused to support the Old Town/Chinatown Neighborhood Association in its efforts to work out a a good-neighbor agreement with Mental Health Services West in connection with the shelter.

Francis Wong, who represented the benevolent association in the good-neighbor process, said its decision dates to the beginning of the siting process, during which Wong said the group was not included. Thus, he said, signing the agreement would have amounted to endorsing a process and project it never has supported.

"If we recognize" the agreement, he said, "we also recognize you have to construct your mental-health clinic in front of the Chinese classical garden."

The siting process also has taken hits from the Buckman Community Association in Southeast Portland, which will be the site for a new shelter for homeless single men.

Andy Eisman, association chairman, said the plan seems shortsighted.

He also said the shelters — 90 beds each for the two men's buildings — still are not small enough, and still are too concentrated in the city's central east and west sides.

"If the city wants to make decisions to make controversial sitings, that's OK," Eisman said. "But don't have a charade of a process and spend a lot of money, and then say, 'Don't you feel good about that?' "

But advocates for homeless people and officials who are helping implement the plan differ strongly. Currie, coordinator of Burnside Advocates Group, a service organization for people who are homeless, said the plan definitely has a vision.

He said it will work better because the system is designed to serve specific groups.

"I think women are better served in our community because of it, and chronically mentally ill people will be better served," Currie said.

In large shelters, he said, people with different needs and circumstances that led to their condition of being homeless often were crammed together into inadequate space. He said that often led to health problems and high levels of tension inside, and angered business owners because of long lines and loitering outside.

Peter Finley Fry, a planning consultant for Central Eastside Industrial Council and a member of Homeless Advisory Council, said that business district cautiously and gradually is embracing the reconfiguration plan.

"I think there's still a lot of fear and concern about whether this model will work," Fry said.

"But from many businesses there's a feeling that this model can and should be given a chance to work, and I think that's based on the fact that this model is inherently a positive model," he said. "I think generally, the business community is feeling like they have more impact into the siting of facilities. As people become better aware of what is happening, they become more and more supportive, as opposed to less and less supportive."

COMING TOGETHER

Implementation of the Portland/Multnomah County Shelter Reconfiguration Plan is becoming more visible with the opening of The Royal Palm today and Jean's Place last week. The shelters in the plan are:

■ **THE ROYAL PALM:** A $2.42 million project involving conversion of a former hotel into a 50-bed building for chronically mentally ill men and women who are homeless. It is at 310 N.W. Flanders St. in Chinatown/Old Town.

■ **JEAN'S PLACE:** A $1.34 million, 44-bed building for single women at 18 N.E. 11th Ave. in the Kerns neighborhood.

■ **EASTSIDE MEN'S:** A $1.3 million, 90-bed building for single men proposed for the 1400 block of Southeast Martin Luther King Jr. Boulevard between Hawthorne Boulevard and Madison Street in Buckman neighborhood.

■ **GLISAN STREET:** A 120-bed building for single men at 435 N.W. Glisan St. in the Chinatown/Old Town/River District section of Northwest Portland. It will be reduced to 90 beds once the eastside shelter is built.

Packing Portland

After a quarter-century of public policy that says dense makes sense, the city has a bevy of buildings that are the hits and misses of urbanization

By RANDY GRAGG
of The Oregonian staff

Like a newly planted crop, Portland is growing, block by block, in new row houses, apartment houses and condominiums.

For neighborhoods of single-family homes, the city's densification can be deeply disturbing. For shoppers and lovers of urban life, however, it can be energizing, offering the variety of a mall with the ambience of a European city.

But for Portland as a whole, more people living on less land represents a quarter-century of public policy taking root. And the buildings we are seeing now are the first harvest.

A quick look around city finds some successes, some failures and plenty of room for improvement, as the accompanying collection of projects suggests. But as more people arrive and a growing number of aging baby boomers, according to the real estate industry's surveys, look to free themselves of yards and cars, the higher-density, urban living we're seeing is just the beginning. So let's look at what's working — and what's not — *now*.

Compared with other cities, according to Clifford Rone, vice president of commercial real estate for U.S. Bank, density has been slow to come to Portland. The higher rents, real estate prices and wages to support it have arrived only recently.

"What's been built so far has mostly happened out of the personal conviction of a few people," Rhone says. "The financial community hasn't offered a groundswell of support."

In the lexicon of lending, what bankers like to see before venturing a loan are

Please turn to URBAN, Page L6

Built in 1988, the George Apartments set a bold new standard for mixed-use development, with balconies overlooking a busy street of shoppers and welcoming, full-height, ground-level windows.

Photos by ROGER JENSEN of The Oregonian

Lenders look at 'comps'

■Continued from Page L1

Considered revolutionary at the time, Leavitt points out it also was "so obvious" given that Victorian houses converted into stores and apartments already were getting the neighborhood's highest rents.

Nevertheless, Leavitt says he had to "jump through enormous hoops" to get financing. And Bing Sheldon of Sera Architects recalls that even the Portland Planning Bureau resisted a zoning variance at first.

But what banker Rone describes as personal conviction prevailed, and Portland's first contemporary "mixed-use" project was built.

Timelessly modern in its architectural style, the tall glass storefront windows make the retail space an extension of the street. And above, the apartment balconies offer the kind of views over the lively urban experience below usually only found in European cities. Designed by the late Tom Cole — Sera's then-leading and still much-missed designer — the George Apartments stand up to anything of its kind past or present.

Leavitt and Sera's project has been followed by a multitude of planning documents that could be stacked in a monument to good intentions, from the Livable City Project begun in 1991 to collection of neighborhood plans still being written to the soon-to-be-adopted Community Design Guidelines.

But no amount of legislation can guarantee the success of good design. The best comes from the synergy of enlightened developers, adventurous bankers and talented architects willing to take chances. And, on that count, few if any Portland projects match the verve of their counterparts in larger cities such as San Francisco or Vancouver, British Columbia.

But there is a bottom line of what is acceptable to make the urban growth boundary and transit-oriented development work. And that comes from simple awareness of what good design can do.

While there's no shortage of truly awful, quick-buck projects, what follows is a sampling of new projects that strive for — and often meet — more acceptable standards.

Some are excellent. Almost all at least make the grade of good try. But looking at them together offers a chance to select the best seeds so that Portland's next crop of urbanization is healthier.

"comps" — or comparable projects. And even though urban-style living has proven popular and profitable in nearby San Francisco and Seattle, Rone lambastes his local peers for "parochialism" — a disbelief that success elsewhere can be translated here.

San Francisco's urbanity, however, is a geographic condition of being on the limited land of a peninsula. Seattle's recent large-scale urbanization of its downtown is largely due to an economic boom paired with poor transportation planning, a combination that made living close-in not just desirable but a mental health necessity.

Portland's urbanization, by contrast, is courtesy of public policy. With the establishment of the metropolitan region's urban growth boundary, the city planted the seeds of densification 17 years ago. But the first sprouts — the first "comps" — really only occurred in 1986, most famously in the form of developer Phil Morford's row houses, but far more elegantly in a stylish combination of housing and retail known as the George Apartments.

At Northwest 23rd Avenue and Flanders Street, the apartments broke all the molds of modern Portland development by copying one of the most traditional kinds of urban housing: apartments built over retail.

Now known categorically as "mixed-use," it was a common type of housing built before World War II, particularly along the city's trolley lines.

But in the years after the war, as Americans became infatuated with driving instead of walking or trolleying, city planners gradually separated the "uses" of retailing and housing by law. The most extreme examples, of course, can be seen best from the air — hectares of tract houses are punctuated by the occasional shopping mall.

But separation of uses also occurred in the densest districts of Portland. Consequently, when Seattle developer Tom Leavitt purchased two adjacent Northwest Portland properties in the mid-1980s, the midblock lot facing 23rd Avenue was zoned commercial while the one bordering both 23rd Avenue and Flanders Street was residential. Had he and his architectural firm Sera Architects been content, the result would have been a store and a four-plex.

But working with the neighborhood, Leavitt and Sera came up with a plan to build 10 apartments atop the retail frontage and create a parking lot for customers during the day and tenants at night.

UNDER CONSTRUCTION: One project raises the architectural bar; another has social consciousness

IRVINGTON PLAZA

Northeast Broadway and 12th Avenue
Barry Menashe developer/Sienna Architects

■ **THE IDEA:** On a rare, private development on a full city block outside the downtown core, Menashe began with the idea of 20,000 square feet of retail with a parking lot. Sienna's Gary Reddick approached him and proposed putting housing on top. The result: 57 condominiums atop retail in five stories with 80 parking spots.

■ **THE GOOD SIDE:** With a palette of elements from front stoops to bays and balconies, Sienna has designed what looks likely to be one of the city's top new housing developments. Unapologetically modern, it nonetheless beautifully bridges one of the most active retail districts in the city with one of its best traditional neighborhoods. No pitched roofs or Victorian bays here. While providing everything from front stoops to fireplaces to balconies, Sienna looks likely to prove that innovation can honor tradition.

■ **THE BAD SIDE:** The road to Los Angeles is paved with good intentions. With groundbreaking last week, let's hope that when the tough budget decisions are made, the project still looks as good as the model.

■ **THE BOTTOM LINE:** In a boom time when architects can just unlock their doors to make money, Sienna went out and found a mediocre project and made it into one of the city's most exciting developments. As the firm has lifted the architectural bar, it also has contributed to a more intelligent use of an entire city block.

McCOY VILLAGE

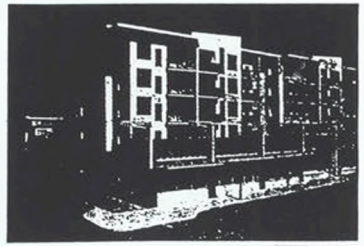
Northeast Martin Luther King Jr. Boulevard and Prescott Street
J.N.E. Company, Los Angeles/StastnyBrun Architects Inc.

■ **THE IDEA:** A 55-unit, low-income housing project with retail that fronts two long-dormant blocks of MLK Boulevard.

■ **THE GOOD SIDE:** This woman- and minority-owned Los Angeles developer has paired up with one of Portland's top urban design and architecture firms to try an entirely unique infill project. With stores anchoring the corners, the block in between will be fronted by handicap-accessible apartment units. With a ground-level parking garage tucked behind the retail and first-floor units, the project gets a lift for better views from its upper townhouses while keeping a pedestrian face to the gradually re-urbanizing MLK Boulevard. The intermingling of gable and shed roof forms and large bays are boldly articulated by differing material and colors.

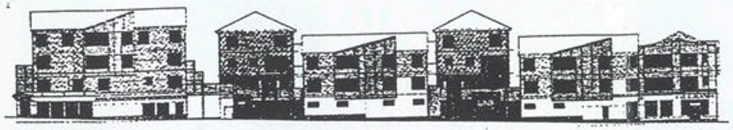
■ **THE BAD SIDE:** Just beginning construction, the project is still just plans and pictures. But it's hard to argue it won't be a drastic improvement — if not precedent-setting.

■ **THE BOTTOM LINE:** Part of an overall renovation of the MLK Boulevard corridor, McCoy Village sets an architectural standard that many of the city's densifying higher-income areas could learn from. What's more, it accomplishes it with a social consciousness — a gentle gentrification that will lift the neighborhood's standard of living.



Sienna Architects

Now under construction, Irvington Plaza will bring a boldly modern condominium project to Northeast Broadway.



StastnyBrun Architects Inc.

Occupying two, full linear blocks along Northeast Martin Luther King Jr. Boulevard, McCoy Village, which brackets Northeast Prescott Street, will be an architecturally innovative and socially progressive new housing development.

THE GRAND APARTMENT: New apartment complexes need ground-level appeal

LEGENDS

1319 S.W. 19th Ave.
Crossings Development Corp./ZGF Partnership architects

■ **THE IDEA:** Though the city needs more low-income downtown housing, it also needs places for older, wealthier people to live. Keep in mind that a key historic contributor to the success of Portland's downtown has been the direct proximity of high-income housing in the West Hills. With 75 condominiums of 1,400 to 2,250 square feet for the 55-and-older set, Legends will provide spacious urban living, near light rail, for an older population.

■ **THE GOOD SIDE:** ZGF's designers broke down the box by folding it to maximize the number of corners, creating excellent opportunities for balconies and windows overlooking the city and for interior spaces such as studies and breakfast nooks. Small details, such as rounded brick posts supporting the upper deck railings and rounded steel balconies, add nice notes of texture.

■ **THE DOWNSIDE:** It adds a monolithic form to the rising skyline of Portland Heights, like the spine of a book opened away from you. More egregiously, the tower offers the ground-level streetscape of a medieval gaol. Despite being prettified with lovely textures of brown-tinted concrete block and orange brick, Legends' parking-garage plinth presents an imposing street wall punctuated with black gaping openings covered in galvanized wire mesh, reminiscent of a kennel. Keep in mind, this is on the Westside Light Rail corridor, where the term "pedestrian-friendly" means more street amenities than Legends features: a water-spitting lion fountain and a single bench.

Above: Lloyd Place
Right: Legends

■ **THE BOTTOM LINE:** The next time you overhear someone dissing the city's design-review process, grab them by the hand and march directly to Legends. The project was approved before the creation of the Goose Hollow Station Community Plan, which mandates design review for all projects on the transit corridor. Too bad. Public review might have prevented the loss of such an important segment of the corridor's streetscape. The fix to both problems would have been simple: Add some window treatment to the monolithic east elevation and vary the street wall with terraces of planters and lots more sidewalk seating.

LLOYD PLACE

Northeast Weidler Street and 16th Avenue
Architect OTAK/Developer Enterprise Development

■ **THE IDEA:** Ground-level retail is sandwiched by 202 apartments above and 288 underground parking spaces below in adjacent four- and five-story buildings. Amenities include a garden court and athletic facilities, with some units featuring covered balconies and fireplaces.

■ **THE GOOD SIDE:** The complex is among the first to be built since the city lifted the height limit on wood-frame, "stick" construction to five stories. That brought the cost of constructing larger apartment buildings in line with market-rate rents. In a single block, Lloyd Plaza adds 202 one- and two-bedroom apartments for middle-income city dwellers to one of Portland's hottest urban neighborhoods, complete with ground-level retail.

■ **THE DOWN SIDE:** This is a full-block apartment complex trying to look like a house. It is swollen by the underground garage catering to the market-driven but absurd urban ratio of one parking space for each bedroom. The little pitched roofs and long bays fastened onto such an imposing box give it the appearance of a suburban tract house development squeezed and stretched with a computer graphics program.

■ **THE BOTTOM LINE:** Travel to any major city in the country and you can find similarly sized apartment buildings far more elegantly designed. While costs prohibit such rich materials as stucco or brick we associate with the grand apartments of old, they don't necessitate the exclusive use of lap siding. Pitched-roof hats won't make this bully fit into the Lloyd District party any better, but breaking up the heft would have. Though it might have meant losing a few units and stretching out the developer's payback, this project would be a better fit into the neighborhood if it were broken up. Terracing would be best, but more assertive bays and balconies would help, along with some shadows and textures from awnings and planter boxes.

MIXING USES: An early entry into the boom and one that somehow got away

BUILDING ON THURMAN STREET
2340 N.W. Thurman St
Fremont Development Group/Zak Miller Architects

■ **THE IDEA:** Completed in 1991, this building was not only an early entry into the mixed-use boom but it mixed three uses: commercial, office and residential. Three retail spaces are topped by two office spaces, with the whole development crowned by four town houses.

■ **THE GOOD SIDE:** A nice stack of functions boosts the apartments up for great views. The upper setback provides terraces while making the structure less imposing from the street. The corner entrance to the restaurant nicely splits the difference between catering to the street and the parking lot. The awnings further contribute to the street.

■ **THE BAD SIDE:** A bit of hodgepodge architecturally, the middle office floor might have benefited from some texture, bolder window frames, a terrace or even awnings. The parking lot would seem like less of a streetscape cavity if a space or two were sacrificed for a planting strip. That also could close down the entrance some to slow incoming cars and reduce the size of the curb cut.

■ **THE BOTTOM LINE:** A good try, especially with no "comps." Better than just housing or just retail or just office, in other words, much more than the sum of the parts.

IRVING BLOCK TOWNHOMES
Northwest Irving Street and 11th Avenue
Prendergast and Associates/MCM Architects

■ **THE IDEA:** Stretching the Pearl District northward, this new half-block of 15 town homes seeks find a middle ground between loft and house living by wedding open space to garages.

■ **THE GOOD SIDE:** Blending an industrial vernacular with the softer look of a town home, the project is nicely proportioned, its mass broken up by simple forms and bold colors.

■ **THE BAD SIDE:** Somewhere between the project's original approval by the Design Review Commission and its construction, it lost an entire floor and a series of innovative accessory apartments for home offices, grannies or au pairs. Already problematic for its garage doors facing Northwest 12th Avenue (though those at least might some day be converted to home offices) the project also mysteriously gained double garages on its north side. Falling even further short of the city's density goals for the neighborhood, the project also gained a distinctly suburban orientation to the car.

■ **THE BOTTOM LINE:** A product of the fast-paced Portland development market, the Pearl District Neighborhood Association nicknamed the project "Motel 6." It's not quite that bad but does stand as a prime example of a just-get-it-done development that sets a feeble precedent for this new neighborhood's future.

Above: 2340 Northwest Thurman Building
Right: Irving Block Townhomes

Photos by
ROGER JENSEN
The Oregonian

RECYCLING THE PAST: Good uses prove a good match for old properties

LaTorre

BELMONT DAIRY
Southeast Belmont and 33rd Avenue
GBD Architects/Belmont Dairy Development

■ **THE IDEA:** Sixty low-income apartments, 19 market-rate lofts and copious square footage of street-front retail and restaurant space built in, around and behind a derelict dairy building.

■ **THE GOOD SIDE:** It's hard to imagine a better development program: mixed-use, mixed-income and a mixture of old and new construction, built with a pioneering combination of public and private financing, in a Southeast neighborhood whose existing street frontage is matched in quality only by Southeast Hawthorne Street. The innovative financing and development is matched by the architecture, with everything from French-style balconies to nicely weighted sun screens and awnings, to a landscaped interior courtyard. Even the gnarly problem of a 100-plus-foot interior corridor lined with apartment doors has been intelligently eased by small bays that function like tiny, but psychologically important, front porches.

■ **THE DOWNSIDE:** The landscaping of the interior courtyard has its odder moments, with massive cube tree planters and fencing that looks like something from a gym. But this is reaching for a quibble. Tenants, no doubt, will adopt and adapt them.

■ **THE BOTTOM LINE:** Belmont Dairy is a model project in just about every way imaginable. Let's hope the development corporation can maintain a similar quality in the eventual 120-apartment complex it plans directly to the north.

Belmont Dairy

LaTORRE
Northwest Upshur and 26th Avenue
Venerable Properties/David Bissett, architect

■ **THE IDEA:** A long-empty storefront in one of the city's top urban neighborhoods is transformed into 10 condominium apartments and four condominium retail spaces.

■ **THE GOOD SIDE:** By recycling an old, Spanish-style building, Venerable Properties adds housing without removing history. The second-story townhouses range up to 1,200 square feet. Though the floor plans have their idiosyncratic moments, the balcony perches add to the original historicist style, as does the narrow, upper interior courtyard.

■ **THE DOWNSIDE:** Strict historic preservationists might have a fit over such a dramatic alteration of the original structure. Though most of the building continues to face the street with simple and elegant storefronts, the garage features a roll-up door more befitting a kennel. Longer overhangs could better contribute to the faux historic character.

■ **THE BOTTOM LINE:** Preserving history sometimes requires building on it. The developer contends that rehabilitating the building was not cost effective without the additional profits from the condos. Consequently, the building wasn't preserved but the historic fabric was while contributing to the city's need for housing.

VARIATIONS ON A ROW HOUSE:

New row houses innovative in established neighborhoods

SOUTHEAST 26th AVENUE ROW HOUSES

2746-2760 S.E. 26th Ave.
Designed and built by Lauren Waxman & Associates

■ **THE IDEA:** A great lover of historic buildings, Lauren Waxman has gradually evolved from being a restorer and faithful reproducer of older architectural styles to innovation. Taking a turn-of-the-century Chicago row house he spotted in an arts & crafts-style book, Waxman added garages, pergolas and a third-floor "extra" room bracketed by a sleeping porch in the front and a deck in the back.

■ **THE GOOD SIDE:** By partially sinking the garages through hauling away 60 truckloads of dirt, Waxman kept the overall height of his row homes lower than they might have been. As well, he gained 8-foot-high garages and partial basements that, for car-free owners, could be converted into apartments or offices. At 19½ feet wide, they gain the extra interior space and more pleasing exterior proportions. Doubling up the garage doors helps further, also reducing the number of curb cuts unfriendly to pedestrians. The 2,100 square feet of space and views up top help fetch Irvington- or Hawthorne-district prices that will help spur some gussying up of the surrounding Richmond area. With 48 windows dotting the project, the interiors are bright and the exteriors open and friendly.

■ **THE DOWNSIDE:** Though Waxman's flair for historical styles helps make these row houses fit into their surroundings, they are, nevertheless, massive. They tower over their early-century neighbors like a well-dressed playground bully. That comes mainly from the necessity of having a garage but is exacerbated by the addition of the third floor.

■ **THE BOTTOM LINE:** Sacrifice the rear upper deck and move the extra room back so it opens onto the sleeping porch and a front deck. With the highest point pushed back, the deck level becomes the roofline seen from the street, nearly matching those of its neighbors.

Above: Southeast 26th Avenue row houses
Left: Bungarows

BUNGAROWS

1822 S.E. 12th Ave.
Architect Lee Winn
Developer Nanette Watson

■ **THE IDEA:** In 1990, Lee Wynn conceived of a new kind of infill that might seamlessly fit into the historic Ladd's Addition neighborhood. Beneath the rooflines of two single-family houses, he designed two duplexes, further adding a pair of so-called "granny flat" studio apartments atop their alley garages. He sold the land and plans to Nanette Watson, who developed them fairly faithfully.

■ **THE GOOD SIDE:** No Portland district has tougher design restrictions than Ladd's, augmented by a neighborhood association that includes, among others, the state's historic preservation officer. By honoring the district's tradition of front porches, gable roofs, gracious 9-foot interior spaces and rear-alley garages, Wynn succeeded in adding an architectural type to the Ladd's mix.

■ **THE DOWNSIDE:** Innovative as they are, the land the bungarows are built on is zoned for 10 units, not six, a waste of valuable infill potential in a neighborhood with plenty of owner-occupied, increasingly high-end housing but a shortage of rentals and poorer people. Designwise, the widened, gable-topped elevation makes for some odd proportions. Much like some row houses look like somebody cranked the vertical dial on the TV set, the Bungarows seem stretched horizontally.

■ **THE BOTTOM LINE:** The monochrome brown paint augments the Bungarows' looming quality, making them seem more befitting of a national park than a National Historic District. Brighter colors and more variety would animate them, making them seem like a variation rather than an oddity.

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