MOTELS
HOTELS
RESTAURANTS
AND BARS

MOTELS
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RESTAURANTS
AND BARS

SECOND EDITION

An Architectural Record Book



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FOREWORD

The success or motels, hotels, restaurants, and bars depends almost entirely on the attraction (and retention) of customers. Many factors may contribute to this success, but none is more important than skillful planning and design of the buildings.

This book is primarily concerned with good planning and design. Almost all of the articles in it originally appeared in *Architectural Record,* and were chosen by its editors to illustrate these principles.

Since the first edition appeared in 1953, much has happened. Growing numbers of people, with increased leisure and income, are spending more time and money on travel and recreation than ever before. In order to meet this demand, many new buildings have been constructed. Competition has increased. There have been numerous improvements and innovations in building technology.

In spite of these changes, much of the material of the first edition remains valid and informative, and this portion has been retained in the present volume. To it has been added a large amount of additional information, including a number of new examples.

Only the architect — along with his coworkers, the engineers and other consultants — has had the training and possesses the technical and design ability to create successful motels, hotels, restaurants, and bars. This book should be of value to these professionals as a source of information and examples. However, architects need knowledgeable clients (owners, operators, investors, and others) in order to achieve successful buildings in these fields. The book should be of value to all of these people. It should provide them with useful background information and help them gain further understanding of the role of the architect in the design of buildings. Finally, the book should aid them in cooperating more fully with their architects to achieve success in their own operations.

WILLIAM DUDLEY HUNT, JR., A.I.A.
Senior Editor, Architectural Record

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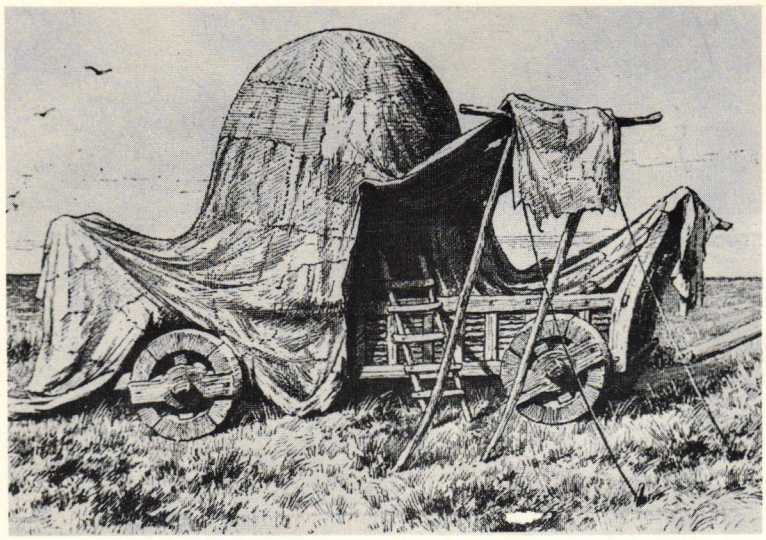
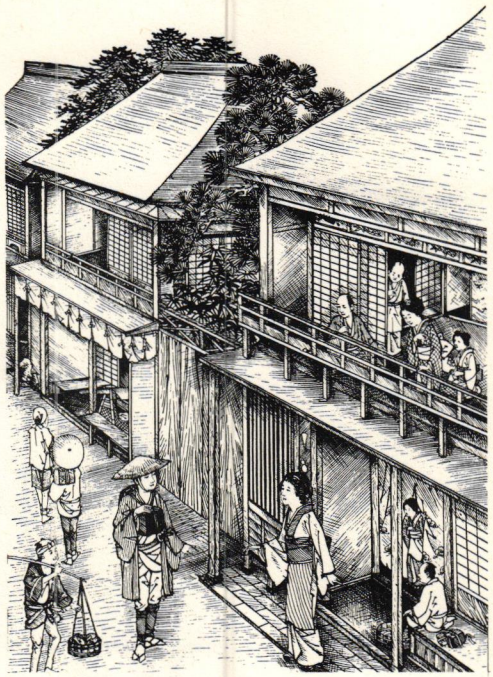
SECTION 1



Wagon-mounted tent of the wandering Huns (Bettman Archive)



Even the town-dwelling Japanese had roadside hotels (Culver Service)

LODGINGS FOR TRAVELERS

NATURE OF LODGINGS PARALLELS FORM AND PURPOSE OF TRAVEL

Historically, the form lodgings en route has taken has developed to accommodate the needs of the common method of travel. Examples both earlier and later than those shown here abound: until fairly recent times the North African nomad carried as he moved from place to place the frame of a light shelter made of saplings bent and tied to a dome shape; over this skins and brush were placed. Compare these and the dome-tented wagons of the warring nomad Huns, above, with the spheres so painstakingly devised by Bucky Fuller for modern American military purposes! But travel for business or pleasure seems to demand more formal accommodations

COMPARED TO the modest hostelries of earlier days, the lodgings we now provide for travelers are very big business indeed. Although motel rates are not low, the demand grows and more profitable motels are built. There can be only one reason: more travelers want the kind of facilities the motel provides.

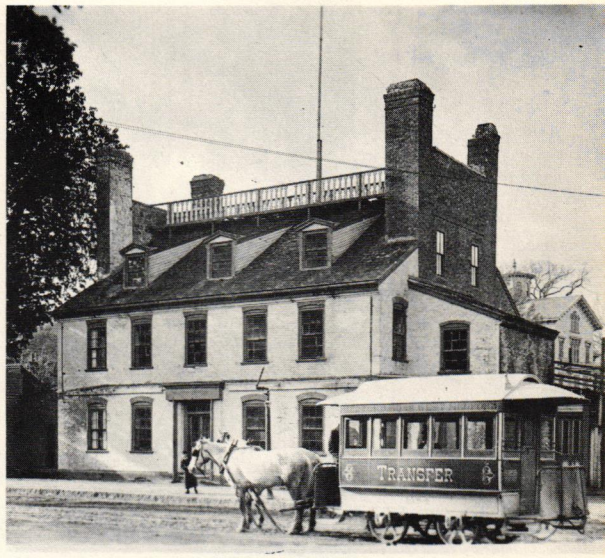
If proof is needed it can be found in the sum of a number of apparent trends. One of the soundest seems to be the emerging highway hotel, in which refinement and quality of design, construction, equipment, type of facilities, operation and service spell permanence, stability and continued well-paying patronage. Often highway hotels are run by dyed-in-the-wool experts, men who after years spent learning the hotel trade have seen horizons beyond the downtown commercial hotels' limits and have enthusiastically embraced the new opportunities. Nearly half the high-quality motor hotels, we are told, are operated by hotel men or owned by hotel capital.

Another publicized development is the downtown motel, possibly of less certain long-term worth though at present apparently profitable. Since it is smaller than the big commercial hotel it has some of the intimate appeal of the highway motel; but high land costs force it into a multi-story pattern and raise parking problems which highway sites do not ordinarily cause. Again, "motels" are being built at airports for the comfort of delayed passengers; construction is less expensive than a hotel would be, and plane take-offs and landings necessitate height restrictions.



The famous Hospice du Mt. St. Gothard sheltered the traveler of a later European day (Culver Service)

Simpson House, formerly Seccomb Tavern, Medford, Mass., typical of more sophisticated Eastern inns, lasted through the day of the horse-trolley (Bettman Archive)



In the early 19th century, American travelers by Conestoga wagon or stagecoach stopped at country inns (Bettman Archive)



While on our Western frontier woodsmen found ruder accommodations (Culver Service)



Nor do automobile travelers, whose increase has brought all this about (even the airport "motel" is reached on wheels!), any longer regard the roadside tourist cabin as merely an overnight convenience. Some years ago patrons began staying at tourist cabins for weekends and then for entire vacations. Today the motel, whether at a recognized resort or not, is likely to be both a terminal vacation spot and a tourist's temporary rest.

Commercial hotel operators have at times tried to fight the trend. Latterly they have turned instead to seeking ways to meet these demonstrated needs, and the devices for parking cars on land almost nonexistent, for making the tired, road-dirty traveler comfortable and inconspicuous, have sorely taxed their — and their architects' — ingenuity.

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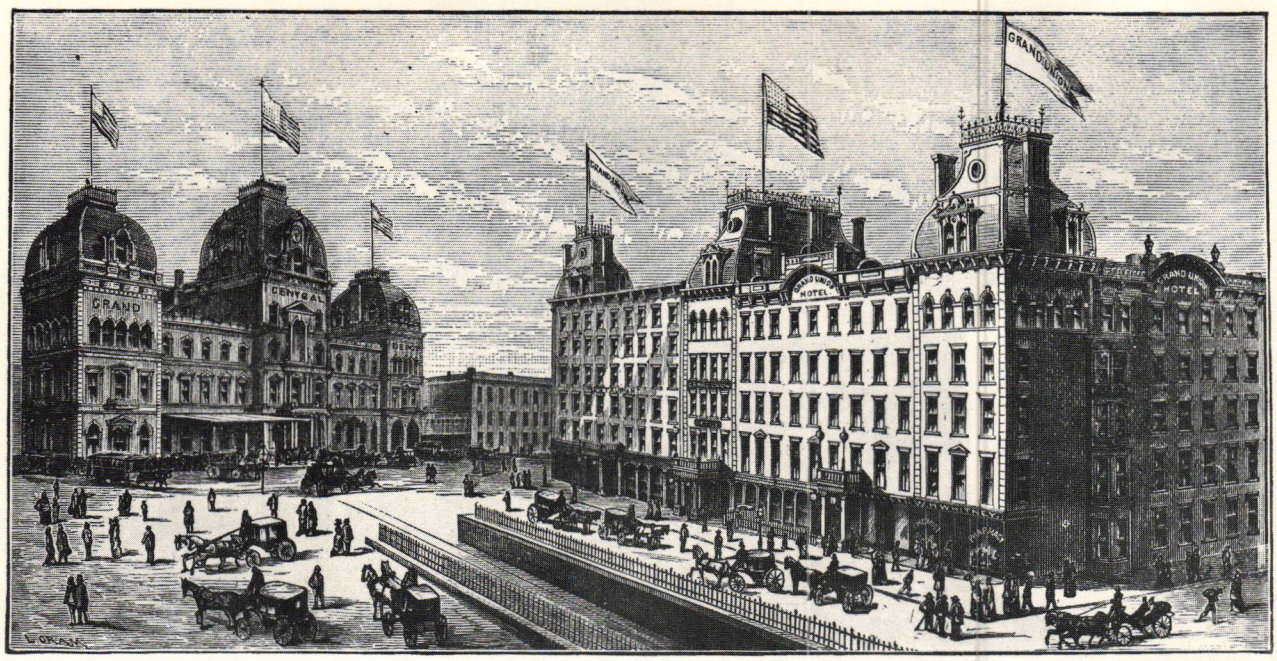


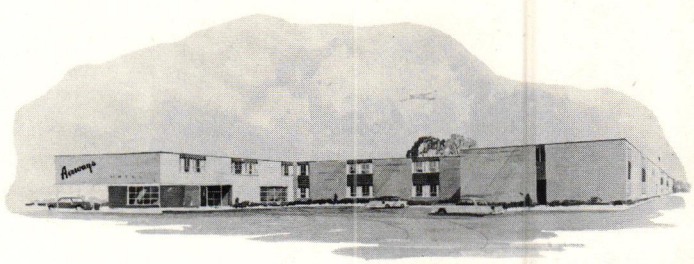
City hotels: New York's Grand Union Hotel catered to carriage trade; its site adjoined Grand Central Depot; the hotel collected rail passengers' baggage quickly and free (Bettman Archive)

LODGING TYPES AND TRAVEL NEEDS

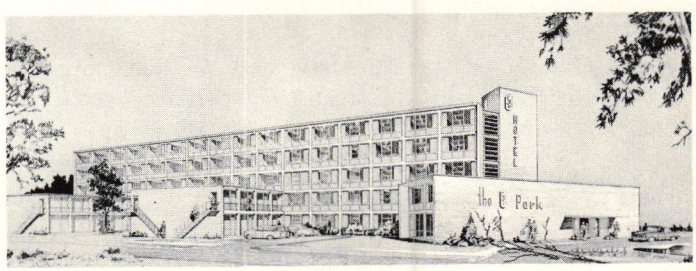
From pioneer days through the era of the horse and buggy the country inn changed little; railroads carried people from city to city and those who traveled by wagon train camped at night. But in the city great hostelries rose, their locations and their nature dictated in some part by the mobility of their patrons. Thus the Plaza could be built next to New York's Central Park, far from transportation, business or amusement centers, only because the automobile had come to stay. As paved roads and cars invaded the countryside tourist cabins rose. Once transient facilities, they have often become terminal resorts; and now we have motels at airports for the convenience of delayed air travelers



Today's motels: The Terrace, Atlanta, Ga.; Willner & Millkey, Archts. (Molitor)



Above, Airways Hotel at Buffalo, N. Y., Airport, Backus, Crane & Love, Archts.; below, Park Motor Hotel, Silver Spring, Md., R. S. Senseman, Archt.





"Camp Grounds", Alton Bay, N. H., a typical religious retreat (Culver Service)



"Tip End of the Season", an 1890 cartoon (Culver Service)



Seaside resort hotel of the '90s; its counterpart could be found in shore, mountain or lake country (Culver Service)

THE RETREAT FROM HOME

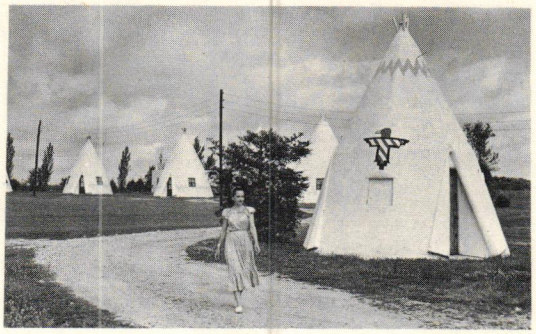
That well established American institution, the resort hotel, has begun to awaken to the impact of the automobile. Here it is not so much a matter of reducing expense to travelers as it is the necessity of providing comfort and, above all, convenience. The resort patron no longer arrives by train or even by chauffeured limousine; he wants the same mobility at a vacation spot that he has at home — perhaps more. Only the unique island in the Caribbean or the Great Lakes seems able successfully to buck the trend toward combining motel and hotel facilities



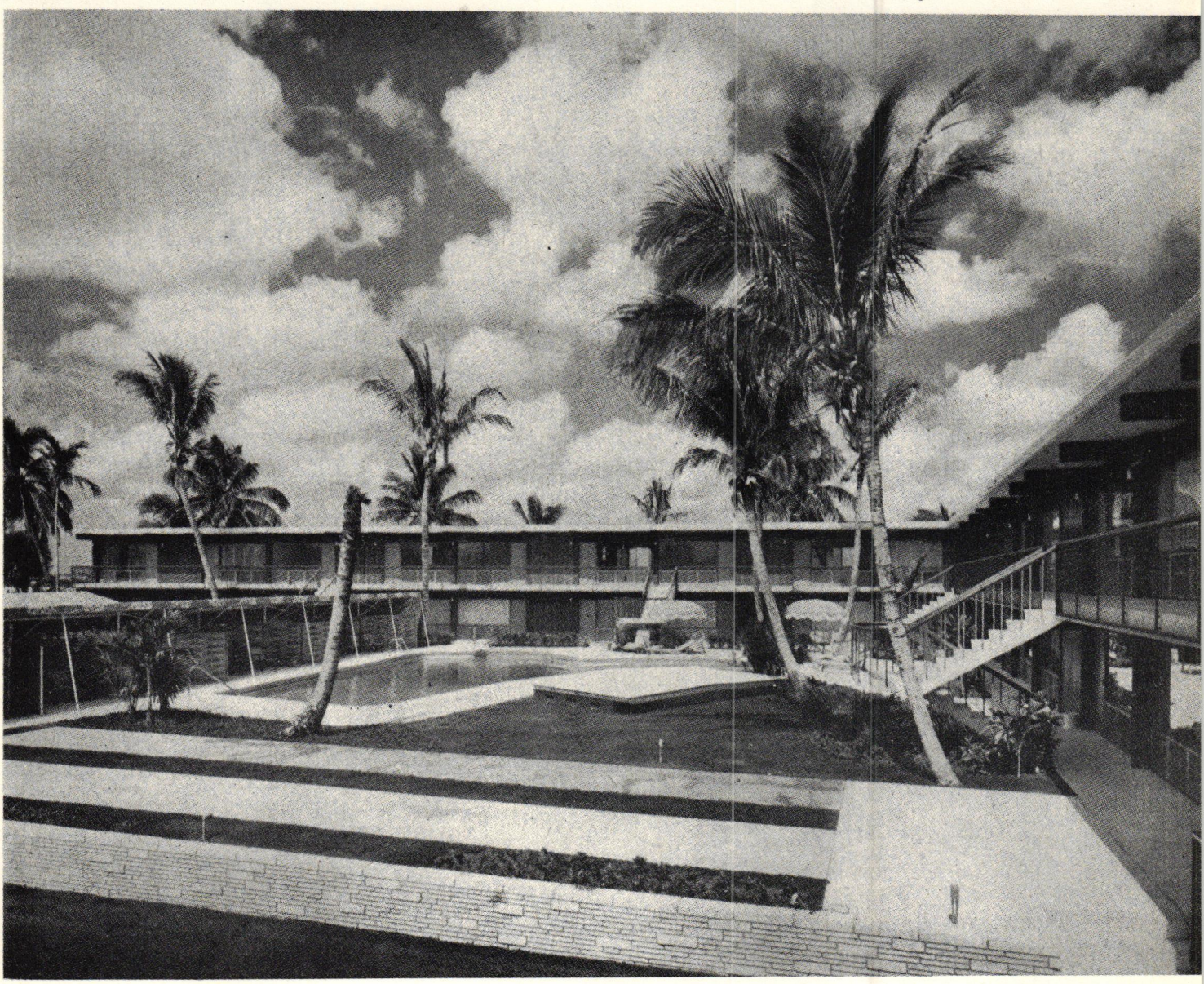
Automobiles made hotels like New York's Plaza profitable (Bettman Archive)



By the mid-1930's tourist cabins began to spring up in rows across New England hay fields. Soon their banality led owners to strange lengths in the competition for travelers' attention, as in the concrete tepees below (both photos, Black Star)



To combat high cost of accommodations at resorts this cooperative motel-apartment-hotel was built recently at Fort Lauderdale, Fla., Robert Hanson, Archt. (Alexandre Georges)



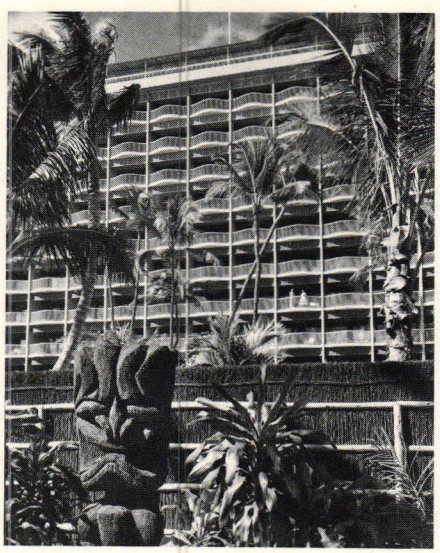


Above, one portion of the Golden Gate, new Miami Beach resort which also includes villas, motorists' accommodations, apartments, cottages, clubs; Igor Polevitzky, Archt.
Photo below: old Halcyon Hotel, Miami, Fla., when the auto was displacing the horse (Culver Service).



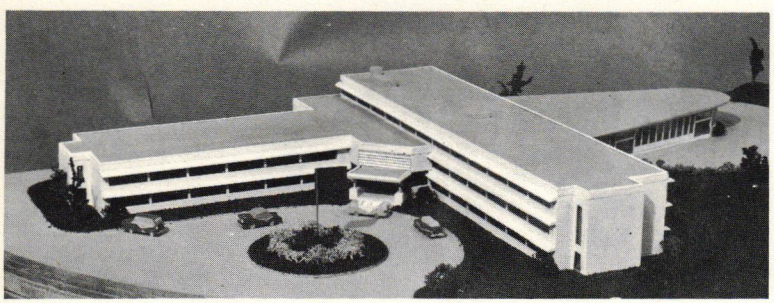
THE RETREAT FROM HOME

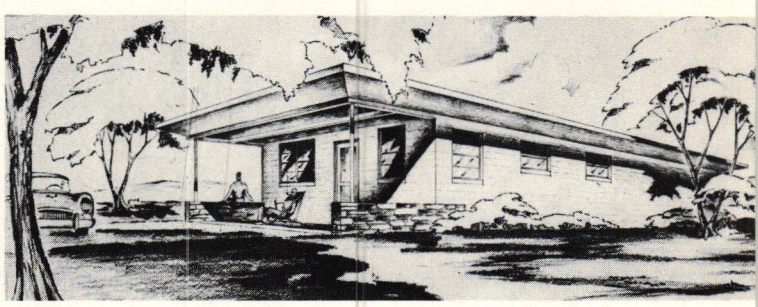
Whether a resort caters to the recluse, the explorer or the show-off, its patron does not expect to stay put after he has arrived. Even after a long trip by boat, train or plane, he's likely to hire a car and set out to see the countryside. At Lake Texoma, illustrated below, he'll hire a boat and go fishing, or a horse and go riding. Larger than the family camps that dot New England and other scenic areas, Lake Texoma's facilities consist primarily of a main lodge, numerous scattered cabins and a dining room seating 250; its ballroom will seat 500 at a banquet, 700 for a meeting, so it provides convention accommodations as well

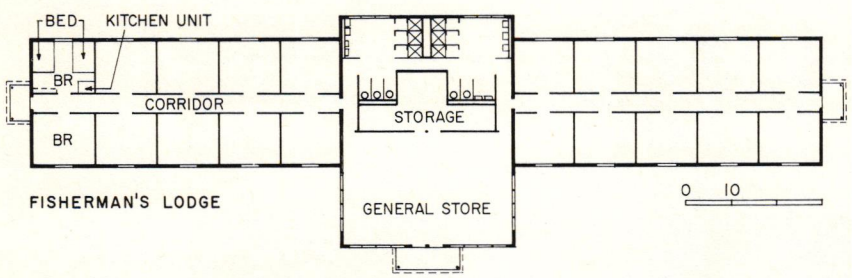


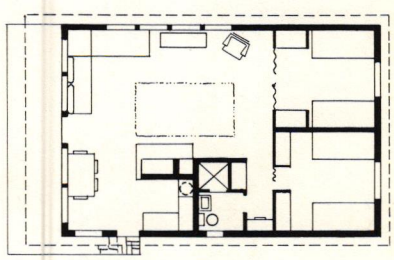
Shipping interests, too, find resort hotels profitable, above, Matson Line's Princess Kaiulani in Hawaii

Facilities at Lake Texoma State Park in Oklahoma include 106-room lodge (left), 30 de luxe cabins (exterior and interior below), 20 duplex fishing cabins, 20-room fishing lodge, numerous public areas,

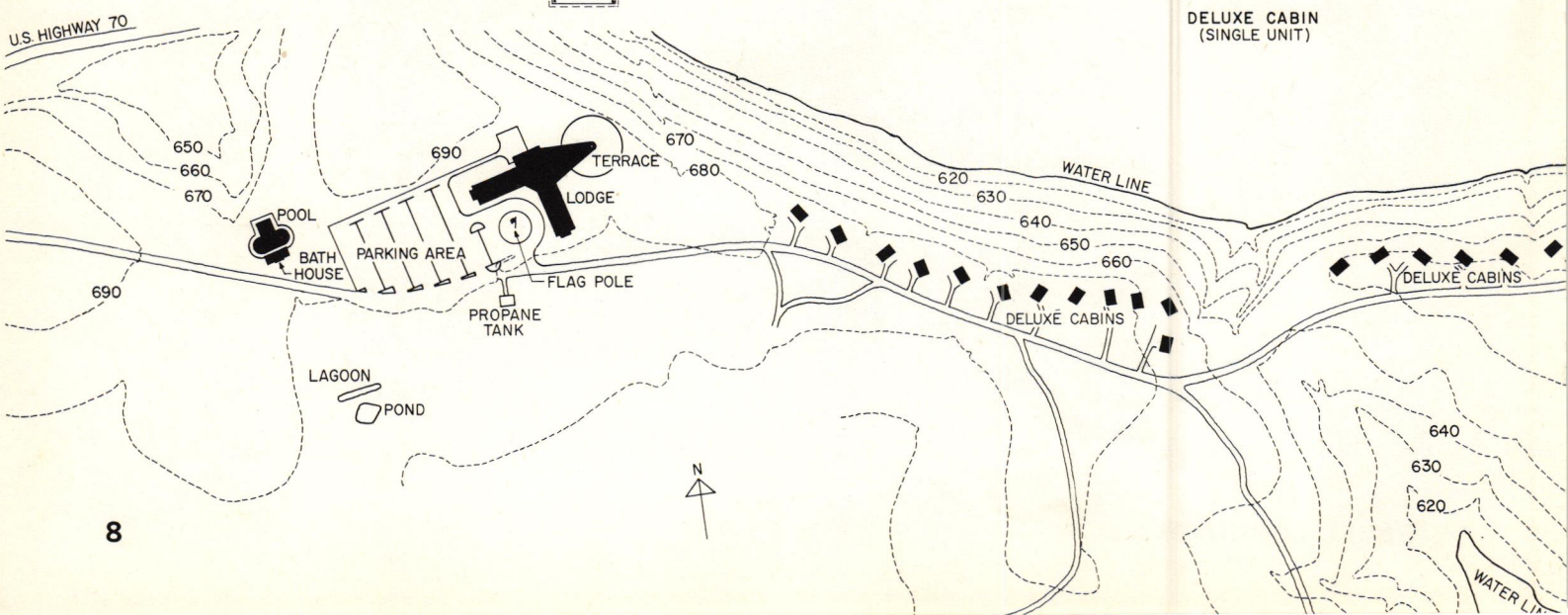


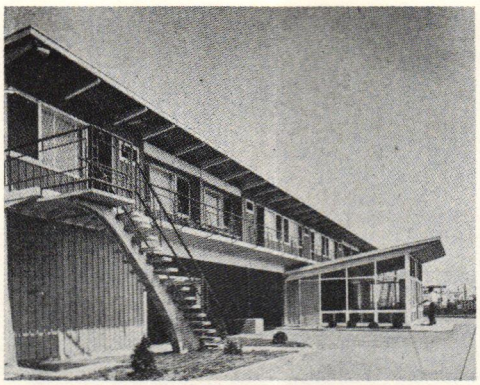


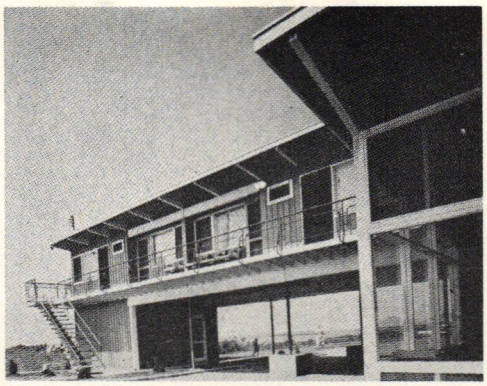




DELUXE CABIN
(SINGLE UNIT)

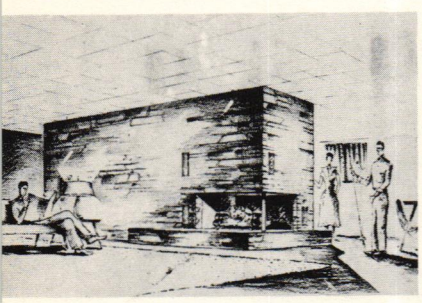


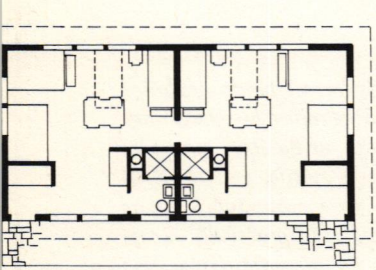




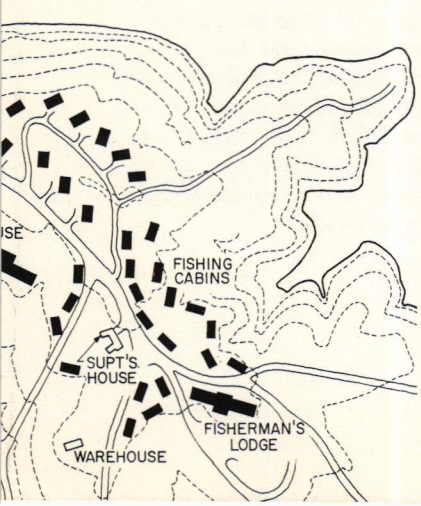
Small site and view caused elevated rooms at Seaboard Motel, an Ocean City, Md., resort, R. S. Senseman, Archt. (Fred Maroon)

services, etc. Dow Gumerson, Archt.



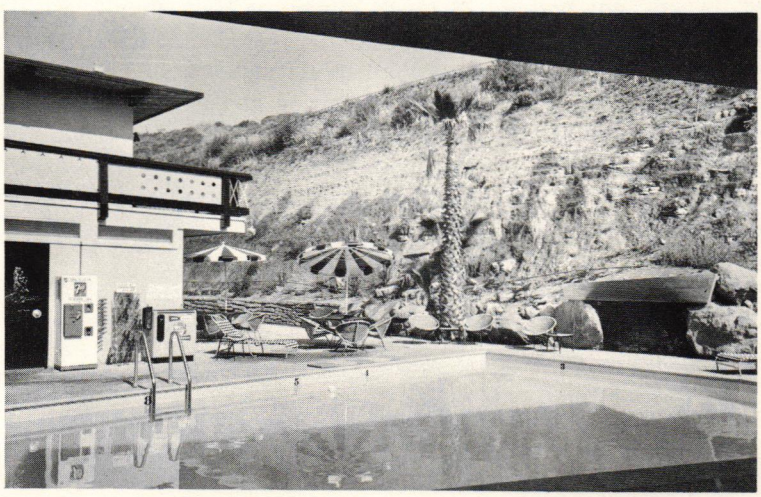


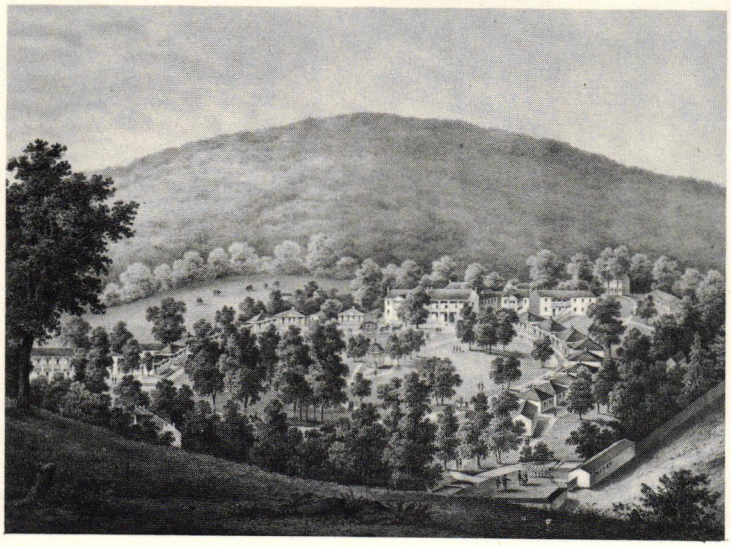
FISHING CABIN
(DOUBLE UNIT)



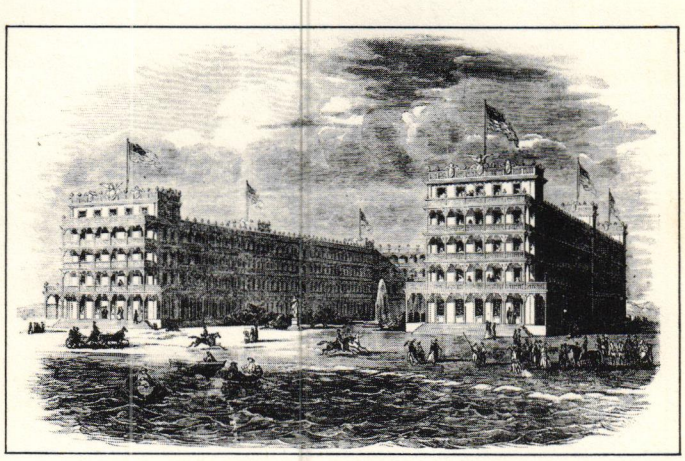
$300,000 Malibu Sands Motel, 34-room motel-apartment project, Malibu, Calif. A. T. Gilman, Archt. (Robt. C. Cleveland)







Rockbridge Alum Spring, Va., as seen in 1857 (Bettman Archive)



Mt. Vernon Hotel, Cape May, N. J. (Bettman Archive)

Motels cost a lot to build; hotels cost more, per unit or in toto. Figures are hard to arrive at because estimates of averages differ and because available valuations include establishments built in depression and prewar years when costs were much lower. The average capital investment in motels is said to range from $72,000 to $80,800; the average per room about $4000. Actually, motel cost per room to build now varies from $6000 to $8000 (before the war it was about $2500) and the usual motel has 20 or more rooms; the number of units has been increasing.

Comparatively, the average hotel investment is about $4¾ million; 35 new hotels in 1955 cost $166,712,000, averaging about $4½ million each and a little over $18,000 per room. The hotels being built, with a few noteworthy exceptions, are smaller than those we used to build. Motels have made money on a 70 per cent occupancy. Hotels, busy though they may have seemed, had 72 per cent occupancy in 1954, and owners, not making as much money as they should, worried about the decline in patronage.

Such an investment warrants careful planning in every sense. Physically, design starts with site selection and development. Each site has inherent values to exploit and drawbacks to be countered: in the city, convenience to the things the city has to offer; on the highway, scenic values, convenience regarding traffic and proximity to major attractions. Among the items to be checked are:

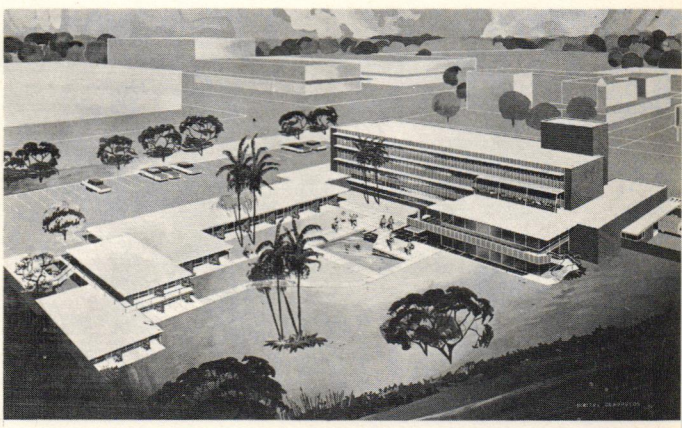
Recognition or advertising value
Quality and nature of surroundings
Ease of access — by car, remember!
Advisability of compact or spread-out plan
Visibility vs. seclusion
Soil conditions for construction
Grades for drives, etc.
Possibilities for expansion

SITE PROBLEMS: WHAT NATURAL BEAUTY TO DESPOIL

Some of the early resort hotels exploited fully the natural beauties to which they owed their existence, as the three examples above show. The Virginia spa owed at least as much to its surrounding hills as to its bitter waters, and gracefully recognized the debt in the pleasant disposition of its cottages around its central building. The Cape May hotel had something of a problem in this respect; the solution was found in providing balconies for rooms that faced its main attraction, the sea — doubtless these rooms were high priced. The Antlers, sitting as it still does beneath Pike's Peak, commands tremendous views. Congestion and high realty values, concomitants of auto-mobility, pose serious site problems for modern resorts and for the small city hotel-motel

Above, *The Antlers, Colorado Springs, Colo., in 1886 (Culver Service). Below, Orange Hotel, Orange, Tex.; Golemon & Rolfe, Archts.*

The Golden Gate, Miami Beach, Fla.; Igor Polevitzky, Archt.





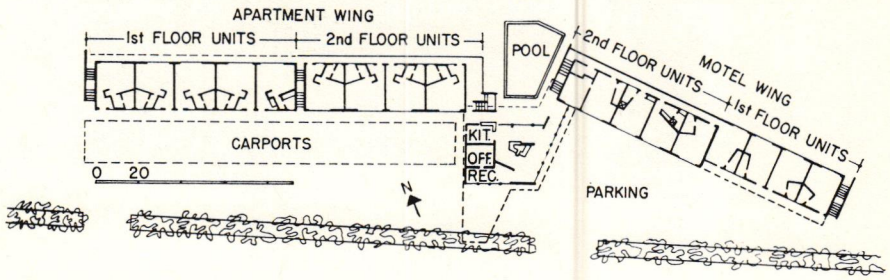
Howard Johnson's has started a motel chain; Haag & d'Entremont, Archts. (L. S. Williams photo)





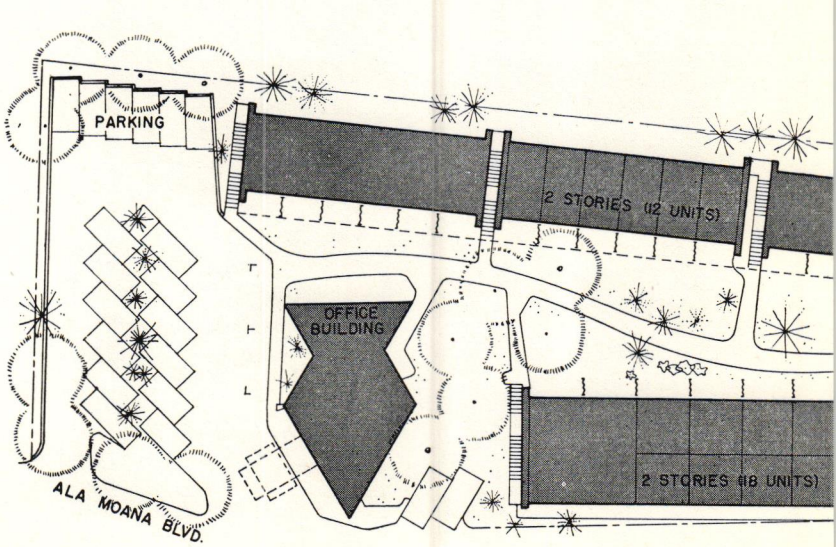


Malibu Sands Motel in California has a long thin site between the Pacific Coastal Highway and steep bluffs



SITE PROBLEMS: WHAT NATURAL BEAUTY TO DESPOIL

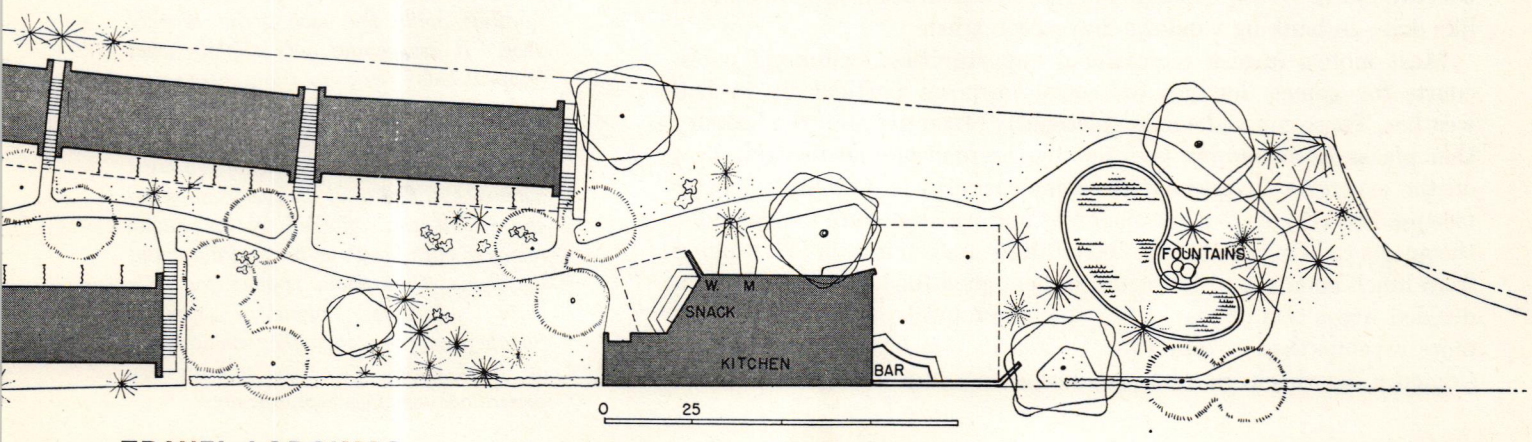
Whether a motel is a unit in an eastern chain or an individual enterprise on the West Coast, the sign, it appears, must command attention if not esthetic respect. In competition with each other, prominent signs seem to blossom most frequently where realty is expensive or where a unique location does not serve to provide an establishment with its own identity. Examples of site plans for congested areas are the Malibu Sands and the Waikikian, both shown here, where the problems of long, narrow lots have been met head on. Jackson Lodge, on the other hand, suffers only from the competition of the mountains; in an attempt at harmony with its rugged surroundings it is built of concrete poured against rough wood forms and stained brown to look rough-hewn

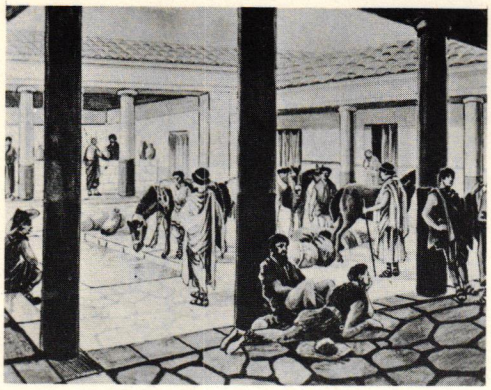


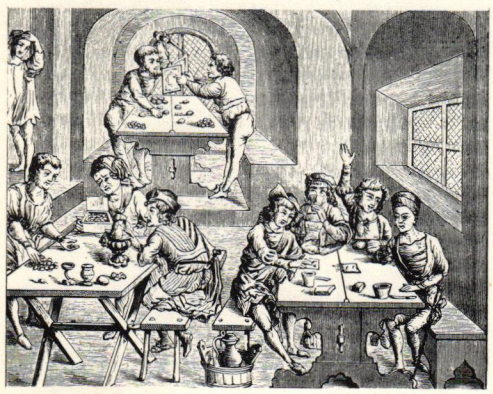
Jackson Lake Lodge, Jackson Hole, Wyo., has the Grand Tetons as a backdrop; Gilbert Stanley Underwood, Arch. (Herb Pownall photos)



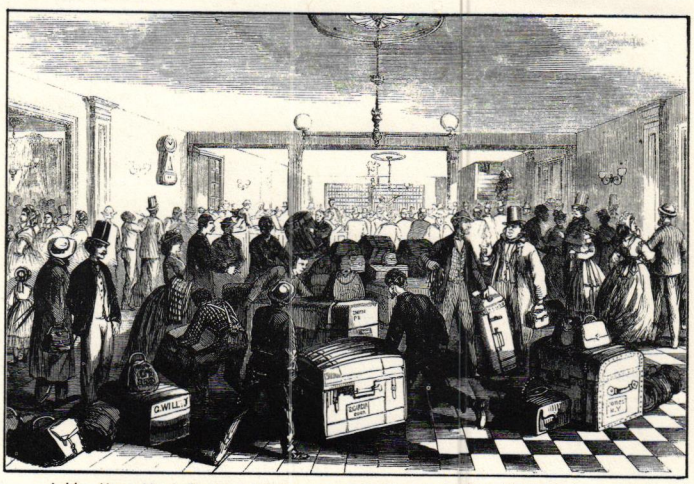
The Waikikian in Hawaii, also on a long narrow lot but with a narrow end to the street; Wimberly & Cook, Archts; Paul D. Jones, Assoc.







Top, horses being watered in a tavern in ancient Greece (Bettman Archive). Lower, common room, medieval inn (Culver Service)



Lobby, Union Hotel, Saratoga, N. Y., on arrival of boat train from Albany (Culver Service)

We are considering the comfort and convenience of the traveler by automobile. When he arrives at his lodgings he needs, first of all, protection from the elements as he and his family alight. A marquee or porte-cochere at the main building is fairly common. Occasionally one used to see a similar provision at the door of each guest room; but as rooms became joined into rows or wings these have tended to disappear. Is this sensible? Is the economy of construction justified? Parking the car is the next problem; the closer it can be left to the room door, the better. It is on this score that the multi-story downtown motel parts company with its rural cousin.

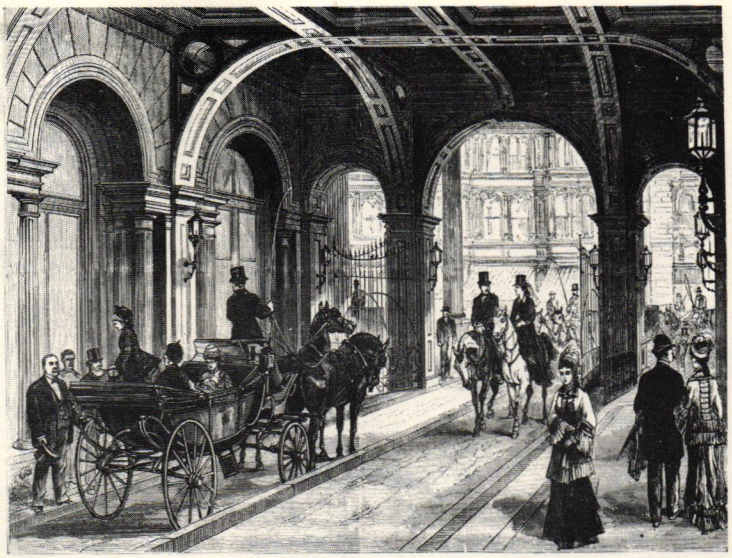
The guest must register; usually he is road-weary and rumpled. The lobby, it follows, should be intimate in scale and proportion so he will feel at home, unobserved. This does not mean that the front desk should be cramped, either small in itself or crowded as to circulation around it. In some instances drive-in registration windows, much like drive-in banking windows, have been tried.

Most motels furnish recreational opportunities: swimming pools, courts for games, lounges for social purposes particularly in bad weather. These can all be made pleasantly attractive; but the hostelry that places its swimming pool out by the roadside hardly capitalizes on the expensive investment. In some cases, as in The Shreveporter (see pp. 110-113), soft-drink machines and ice chests are available for the guests to help themselves. Restaurants are often included, ranging from lunch counters to full meal service; good food has been found a decided attraction. A bar, when it is appropriate, usually brings in more revenue than a restaurant. Ordinarily a gasoline station is considered a drawback, its dirt and noise being objectionable.

THE AMENITIES: PUBLIC AREAS

Anyone who has tried to register at a big downtown hotel at convention time is familiar with the mob scene directly above. It exaggerates only slightly what happens today. In proportion, there seems to have been as much bustle and to-do in ancient times. So much for progress, at least in the art of designing an efficient hotel lobby. The brief respite from inelegance that was afforded by the public rooms of such hostelries as the Palace and the Glacier Park Hotel is gone; for boat-train substitute "plane-bus" today. Should a lodging place make such demands of its clientele? Why shouldn't the less pretentious motel concept take over?





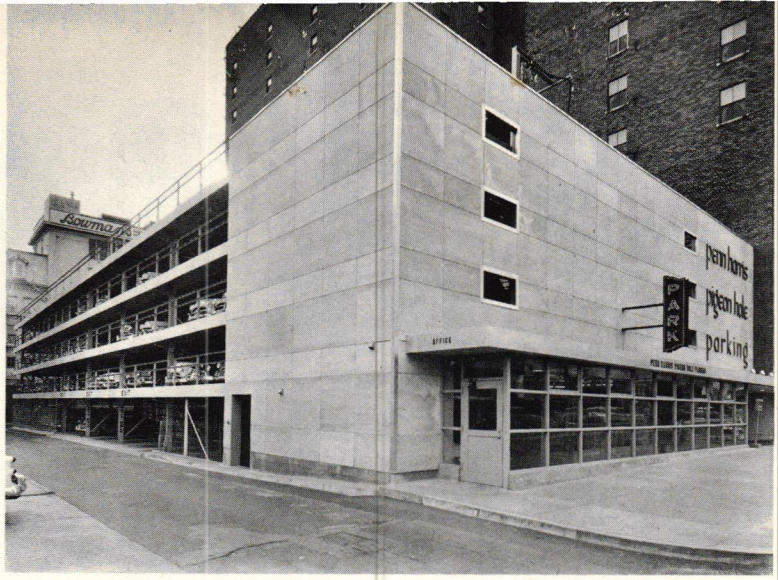
Two views, courtyard, Palace Hotel, San Francisco, as it was designed for carriage trade (left, Culver Service; right Bettman Archive)

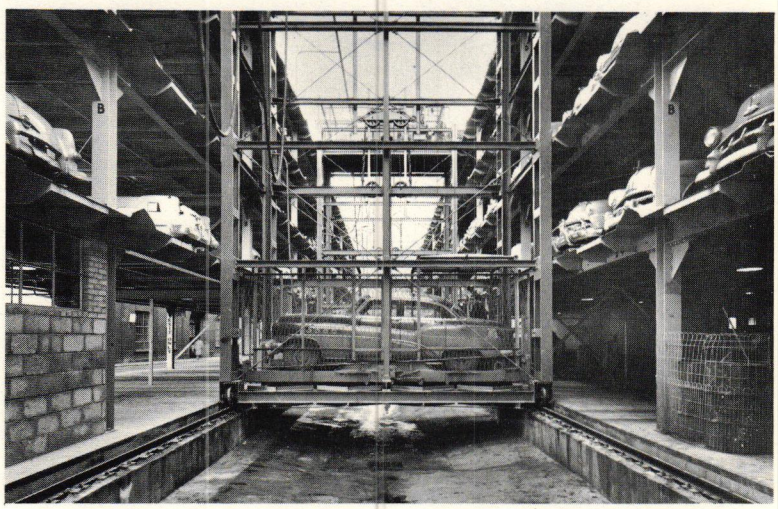
Lobby, Glacier Park Hotel, Montana; note Ionic columns formed of log sections (Culver Service)





There's good reason for Jackson Lake Lodge's 60-ft picture window (Herb Pownall)

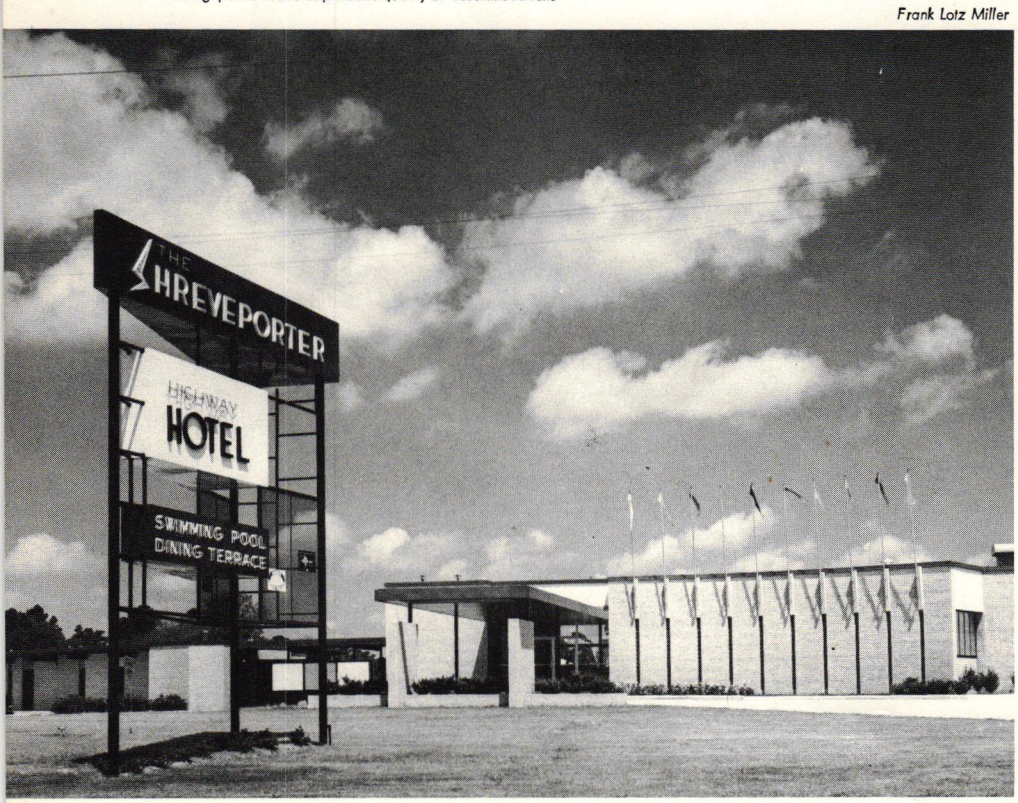




Downtown Penn Harris Hotel, Harrisburg, Pa., cars mechanically parked in pigeon-holes (Brown's Studio)

At The Shreveporter, new highway hotel in Louisiana, design of unit containing public rooms emphasizes quality of accommodations

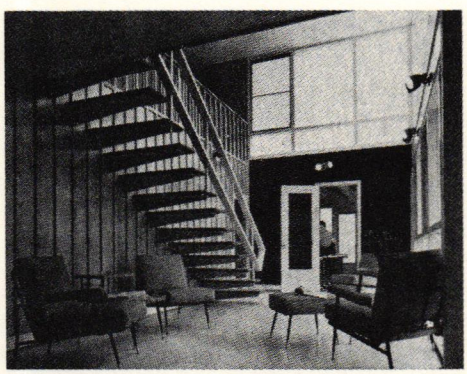
Frank Lotz Miller



THE AMENITIES: PUBLIC AREAS

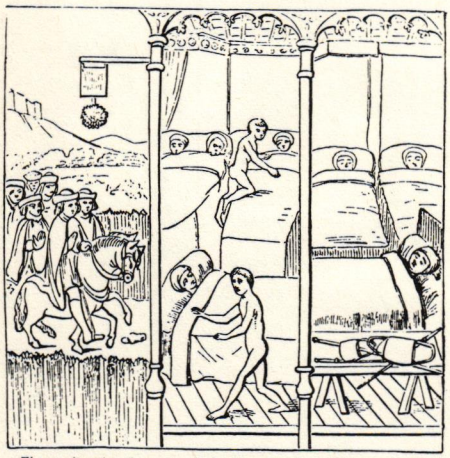
The approach, the lobby and parking facilities help form an arriving patron's opinion of a hostelry. Dignified or whimsical, the appearance of the establishment tells in advance what a guest may expect; an intimate lobby foretells coziness and personal attention while impressive ornateness betokens something different. Parking — there's a tough one! If the grassy meadow would stay green and its winding ruts remain dry (though not dusty) what could be more pleasant? But they won't, so our motels sit in asphalt seas. The city hotels' parking plight is worse. Some have underground garages. At the Penn-Harris, above, a car is driven onto a dolly on an elevator which, moving horizontally as well as vertically, automatically parks the car in a pre-selected pigeon-hole; once more the hotel owner has ingeniously circumvented realty costs

Terrace Motel in Atlanta: two-story bedroom wings directly accessible from paved parking area (J. W. Molitor)

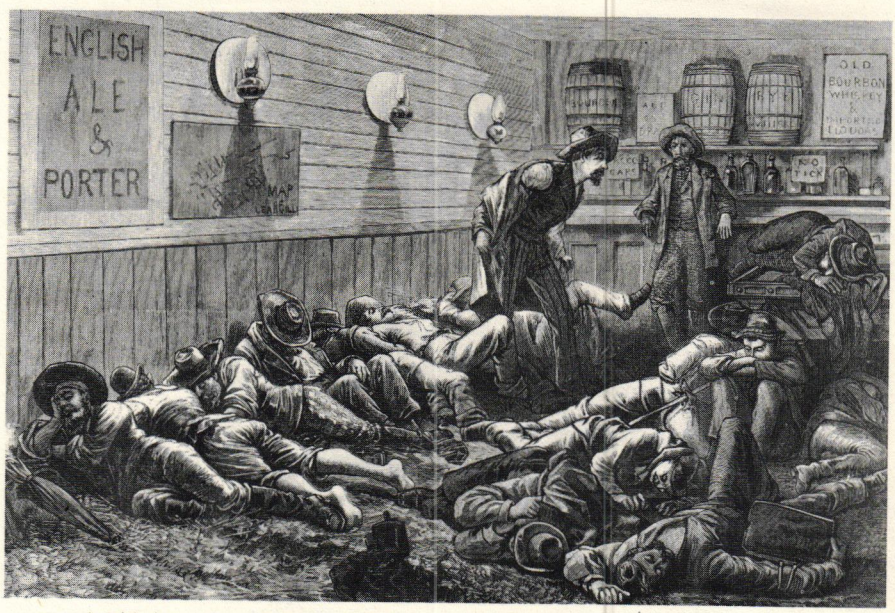


Above, Ocean View Motel, Ocean City, Md.; small lobby for reception only, snack bar adjoins (Fred Maroon). Below, spacious lounge of Malibu Sands Motel in California, obviously more expensive (R. C. Cleveland)





The medieval inn's guests climbed into any bed (Bettman Archive)



A night's sleep on the sawdust in a Leadville, Colo. saloon cost "two bits" (Bettman Archive)

While the average number of motel rental units is about 20, the high-quality establishment is likely to be uneconomical at that small size, particularly if it offers any quantity of typical hotel services. The larger highway hotels, like their downtown counterparts, may find it wise to provide a range of accommodations at varying rates.

One motel at a Florida resort has apartment units with cooking facilities; the apartments are sold on a cooperative basis much as cooperative city apartments are. The objective has been called a means of circumventing the high cost of vacationing at a popular resort. The owners, we hear, can sublease in the off season or whenever they are not using their quarters themselves.

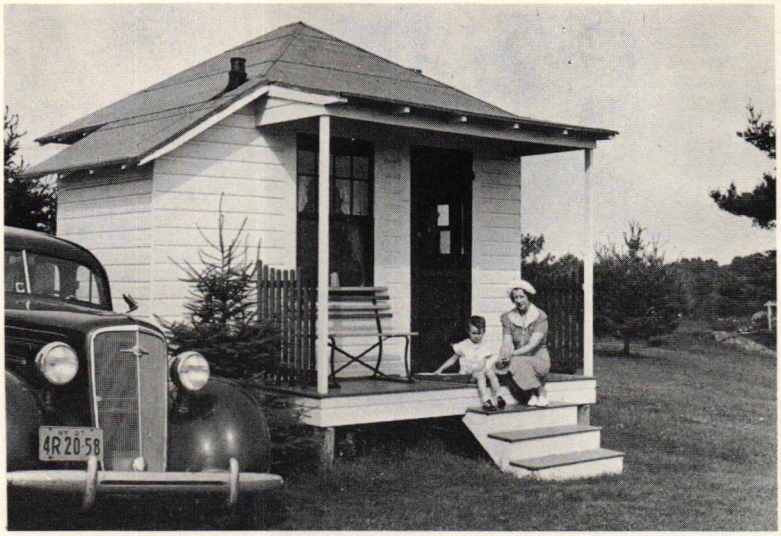
Maid service, too, has developed far since the early days of motels. Linen rooms are necessary, sometimes maids' quarters. Laundry and valet service may be necessary; so may simple shops for maintenance, repairs and landscape care.

But the heart of the job remains the private room. It needs identification — room number or name — for convenience; it is, according to nearly universal current practice, large enough to be furnished as a double room even if it is ordinarily regarded as a single. The family on vacation is a family, not an individual person, and vacationing is still the principal reason for automobile travel. In fact, the room is often large enough to take additional temporary beds or cots.

Since much business is still one-night, complete closets are not always needed. On the other hand we have graduated from the nail-in-the-wall era; and if resort trade is anticipated to any degree, closets may be mandatory.

THE AMENITIES: THE IMPORTANCE OF PRIVACY

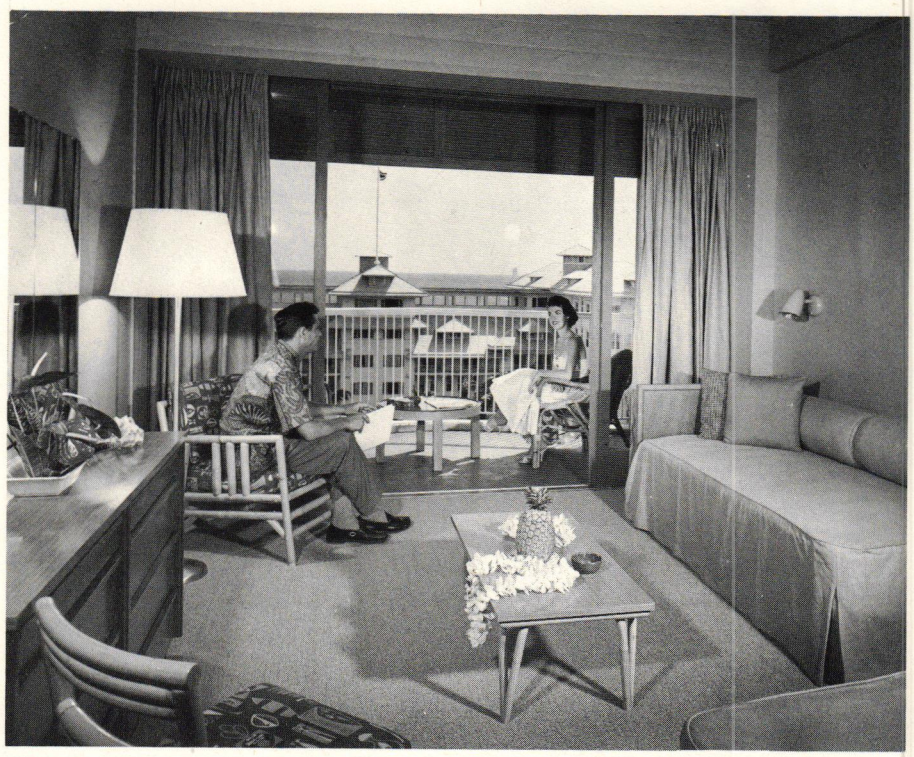
As Lewis Mumford remarked some time ago in The Culture of Cities, *privacy is a modern phenomenon and its relative importance is almost an index of the development of urban culture. Not to debate the point, only very recently has this been true of either travel or lodgings en route. In unselfconscious fashion the 1935 tourist cabin gave the confirmed auto-dweller — which by now means most of us — the same overnight control of his immediate environment that he enjoyed on the road. If he was just as cramped in the tiny quarters (with the brass-bound, lumpy-mattressed bed, wire clothes hangers hidden perhaps by a length of gingham, hand-me-down rocker with no room to rock in and bare electric bulb) as in his car, he could nevertheless lay down his head, master for the night of what he surveyed. And the price was fittingly modest*



One thing the typical tourist cabin of the '30s provided at low cost: privacy (Black Star)

Even the huge Jackson Lake Lodge in Wyoming offers a measure of privacy in its 250 guest cottages — some of them multiple units, it is true (Herb Pownall)



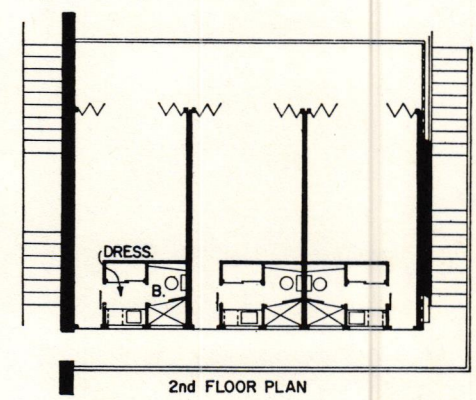


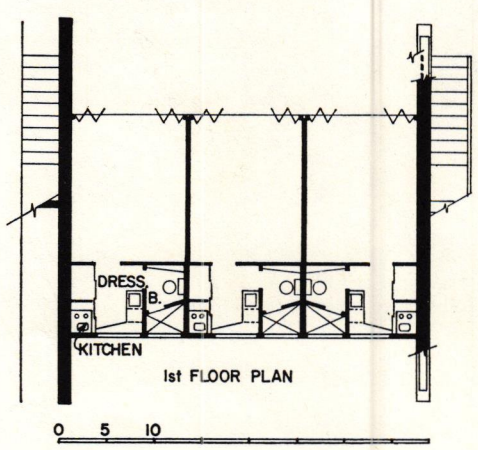
Double room, Princess Kaiulani Hotel, Hawaii; convertible from sitting room to studio bedroom (Matson Lines)

THE AMENITIES: THE IMPORTANCE OF PRIVACY

In contrast with the tourist cabin today's guest rooms for travelers, whether in resort hotels, commercial hostelries, motels or highway hotels, tend toward the luxurious. They are tastefully appointed; wall-to-wall carpeting is quite common; they benefit from the latest in mechanical equipment. Possibly in the name of economy, however, or possibly for a more impressive appearance, it became common a few years back to unite the once separate cabins into rows, and the tourist court was born. Too often this produced monotony and a re-invasion of privacy, which nowadays we are at some pains to remedy by careful site layout, sound-resistant partitions, wings in which bedrooms are offset, sawtooth fashion. The higher quality costs more to build and operate, and leads to higher room rates

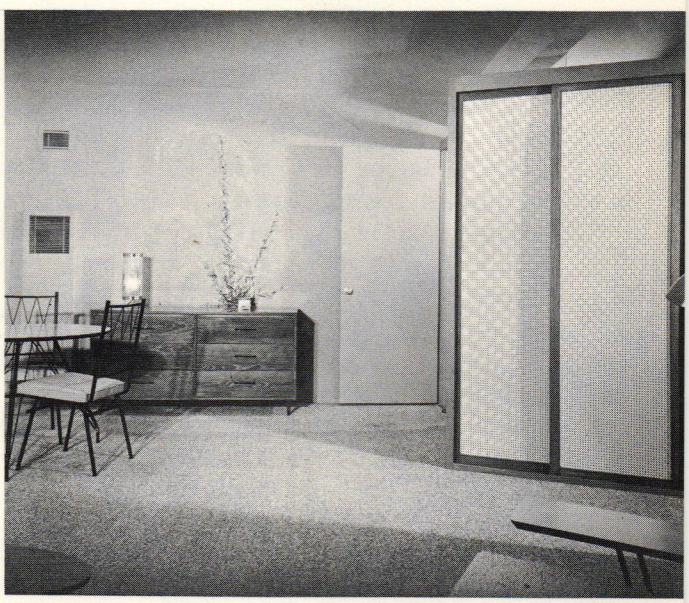
Guest rooms on two floors, The Waikikian, Hawaii; planned for privacy yet openable to the breeze, with deep overhangs and lanais to protect from tropical sun and rain



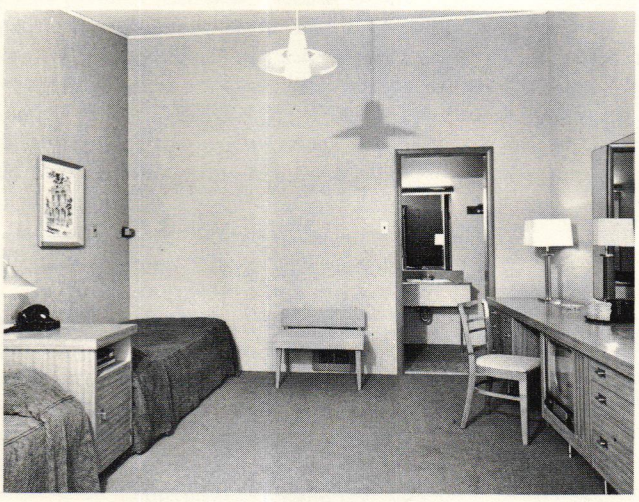


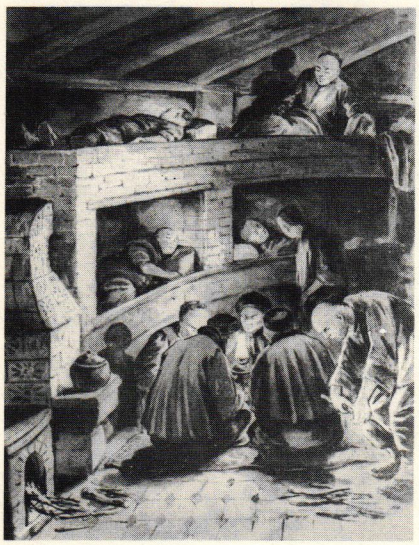
Studio bedrooms, Malibu Sands Motel, California. have fenced private patios for sunbathing (R. C. Cleveland)

Malibu Sands guest rooms; interior screened from entry by angled wardrobes (R. C. Cleveland)

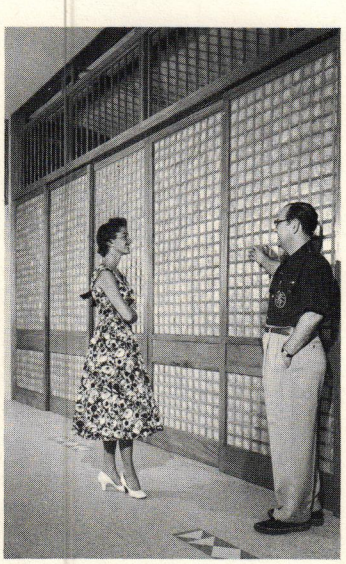


Guest room, Howard Johnson Motor Lodge (L. S. Williams)









Left, Chinese Rest House: masonry bunks surrounded by hot air chambers heated by a stove (Bettman Archive). Center and right, pierced walls, sliding panels, admit cooling trade winds, Princess Kaiulani Hotel, Hawaii (Matson Lines)

The best of our motels provide in their guest rooms an interior having a less "institutional" look than most hotels. Colors, textures, furniture and furnishings are carefully selected, often with competent professional advice. Custom furniture, sometimes specially designed and built, is employed. Finishes are domestic in character; paint, wall paper, wood panelling and exposed masonry are all used. The success of the result is more a matter of design quality than of the materials themselves. Lighting fixtures, TV sets, radios and room telephones — sometimes in color now that colors are available — all have the same high standards to live up to. Baths are preferably fully tiled, with a shower or tub-shower combination and, often, a water closet in its own compartment. It is common to provide a small dressing room since the guest room may serve as both living room and bedroom. For the same reason, studio beds are sometimes used.

In cold climates heating is imperative if year-round revenue is to be obtained. In southern climates, air conditioning individually controlled in each room is commonplace.

Over all these matters the hotel and motel associations and chains exercise increasing control. These organizations set high standards, which individual operator-members must maintain. Membership in a reliable association has become an inducement to patronage.

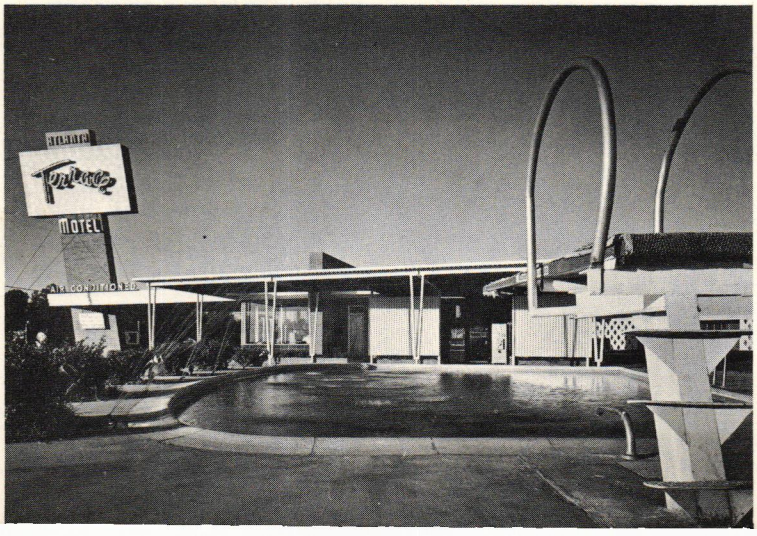
THE AMENITIES: FROM RUNNING WATER TO TV

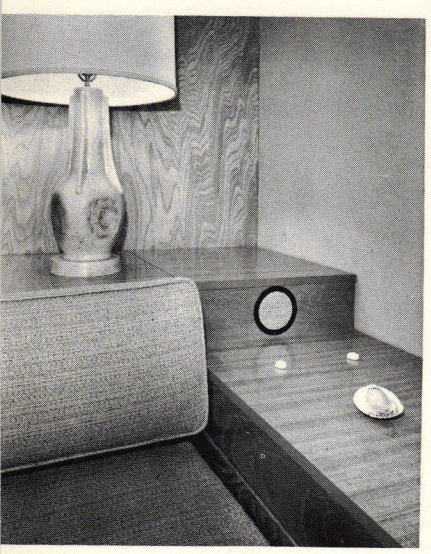
Only a few years ago occasional tourist cabins proudly advertised running water; then came signs announcing private showers; now in northerly sections some motels still exhibit signs advertising HEATED CABINS — which means winter sports enthusiasts are using motels year 'round rather than seasonally. In the south, air conditioning is proclaimed unnecessarily; how could a southern operator hope to stay in business without it? The trend to increased mechanical control of environment — heating, lighting, air conditioning — is as pronounced in this field as in any other. Now when advantage is taken of natural phenomena for the same purpose, as in the Princess Kaiulani (above), the event seems as noteworthy as the first plumbing installation



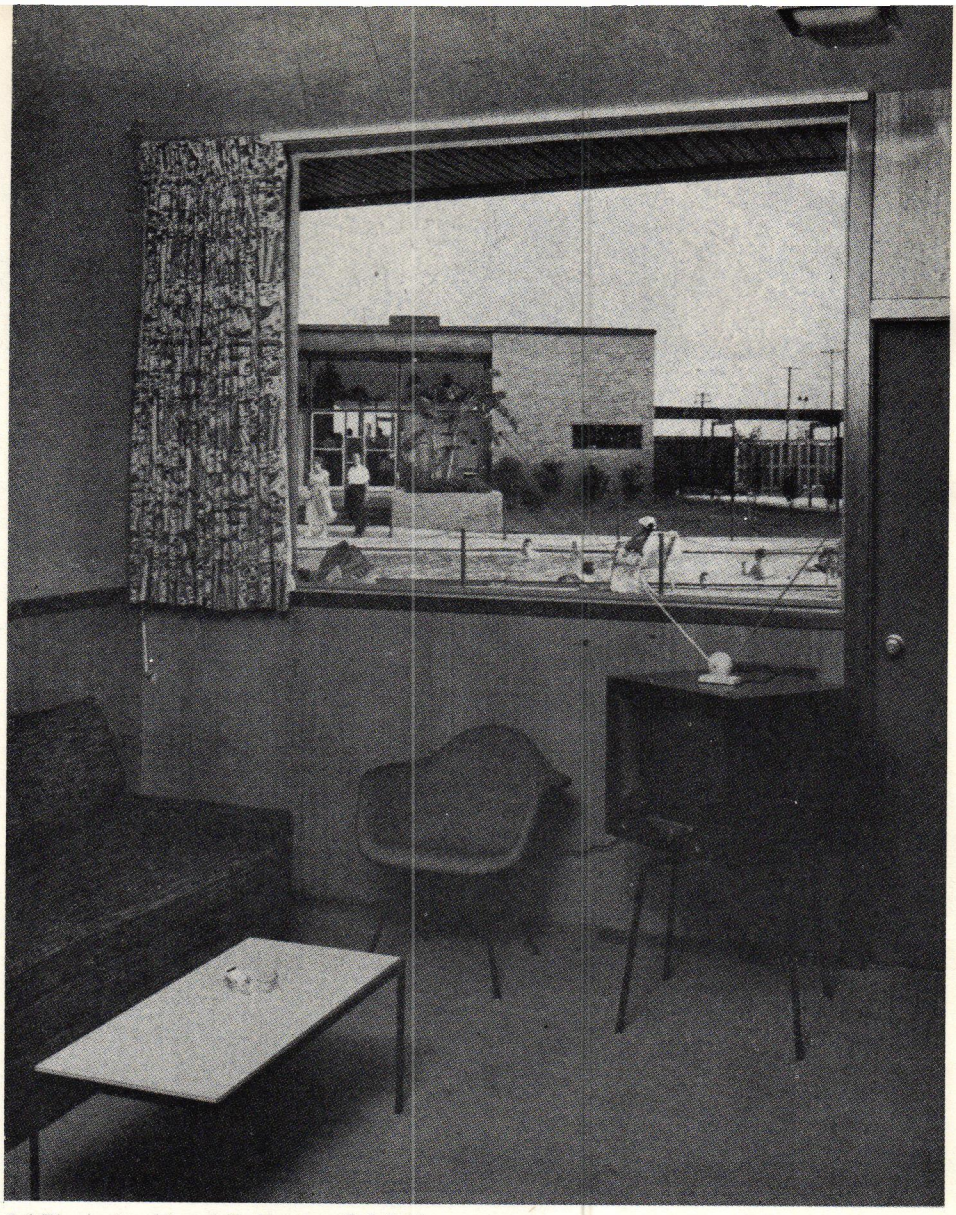
A place in the sun, Ocean View Motel, Md. (Fred Maroon)

The air conditioned Atlanta Terrace Motel in Georgia has a swimming pool too (J. W. Molitor)





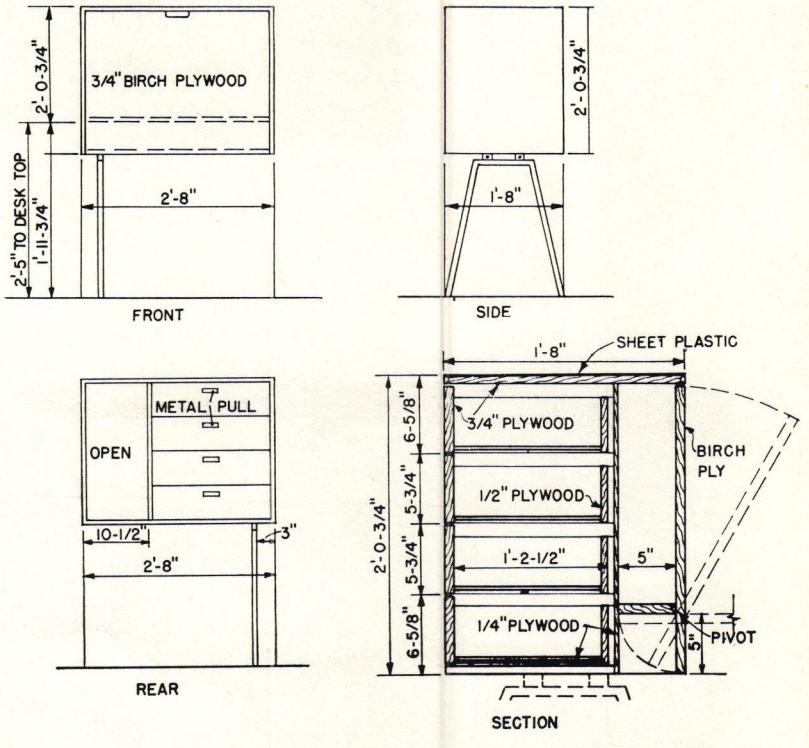
Built-in radio and bed, Malibu Sands Motel (R. C. Cleveland)



Both TV and a view of the pool, The Shreveporter (T. C. Smith)

THE AMENITIES: FROM RUNNING WATER TO TV

Competition for patronage produces comforts for travelers that were unheard of in earlier days. As hotels provide radio and TV in guest rooms, so do motels. Practices common in new, high-quality highway establishments go far beyond this, however. Built-in furniture and items of equipment, many of them custom made, are quite common. Much furniture of course has to be portable, and such items are often selected from standard merchandise of excellent design and superior quality. This not only sets a tone which the motel's progenitor, the tourist cabin, lacked; because high quality furniture wears well in addition to pleasing the customers, it also results in lower maintenance and replacement costs



MOTELS

WILLIAM DUDLEY HUNT, JR., A.I.A.
Senior Editor, Architectural Record

There was a time — not so long ago — when any study of motel design and programming necessarily began with a sort of apology for the early antecedents, the tourist courts, followed by a sort of genealogical chart of the rise toward respectability. Such apologies are no longer necessary nor fashionable. Motels have now come of age — in fact, it has become almost impossible to differentiate the strictly motor hotel (new respectability has won a new name) from the nonmotor hotel. What were once unmistakably hotels now often have adjoining parking facilities and drive-in registration booths, while many erstwhile tourist courts now provide every luxury and convenience of the swankier hotels, and for good measure have added a few original fillips of their own.

Together with the rising degree of respectability has come a rapidly increasing volume of motel construction. The ten- to twenty-bedroom operation, often run by a semiretired mama-papa jack-of-all-trades team, is giving way to the supermotel with up to several hundred rooms.

All of these trends add up to increasing opportunity in this field for architectural and engineering service. An examination of the background of some of the present trends in motels, their programming, and their planning should prove to be useful to the architects and engineers who work in this field, and to their clients.

First of all, the motel business is big. It has been estimated that the total investment in 1958 was close to $8 billion, and that motels did a business of over $2 billion. Just five years before, the total investment and business were less than half of these figures. During this period, the number of motels grew from about 51,000 to 58,000 (an increase of a little less than 14 per cent), but the number of rooms rose by over 50 per cent to approximately 1.3 million.

While motel construction has boomed, hotel construction relatively has remained almost at a standstill. A measure of this development is the earnings of the two types of lodgings during these years. In 1958 the total earnings of some 25,000 hotels in the U.S. was about 4 per cent higher than those of motels. Hotel investments totaled about $10 billion. Five years before, with about the same investment, hotels had earned more than twice what the motels earned. It is estimated that motel and hotel earnings are now about equal, but that motels (or motor hotels) will, if the present trends continue, take more and more of the pie.

There is another side to this story: the pie continues to get bigger. More people with more leisure and money to spend on it are demanding (and getting) better, more convenient lodging. Increasing automobile travel has been boosted further by the federal interstate highway system. Hotel architect Bill Tabler points out that just one of the new jets can carry as many people per year as the *Queen Mary*. The result is a growth in travel that in turn will spur construction of both motels and hotels.

The motel — especially the larger motor hotel — that combines many of the desirable features of both types of accommodations, will probably play a major role in the boom. Aside from its attractions for the traveler, the motor hotel has considerable charm for the investor. It is thought by many to be one of the best — if not *the* best — real estate investments available today. While hotels return only 10 per cent (sometimes less) on investments, large motor hotels in the best locations often bring in a return as high as 30 per cent. One of the best indications of their popularity among investors is the wide acceptance of motels by conservative banks, life insurance companies, and institutions.

Another indication of motel popularity is the entry of the largest hotel chains into the motel business. Concurrently with the establishment of motel subchains by the biggest hotelmen, individually owned motels, affiliated through franchises with national

organizations have sprung up. These organizations (among them, Howard Johnson and Holiday Inns of America, Inc.) perform many of the services of a chain operation, such as central purchasing, advertising, and setting and maintaining standards of construction, maintenance and operation. Yet they allow ownership and management by individual or local groups. Other franchise chains provide these services and also partially own and manage the individual establishments.

Although it is becoming ever harder to distinguish between hotels and motels, a few differences usually exist. The motel is generally less formal than its big brother. It tends to be horizontal in massing rather than high-rise, and to be suburban or at the edge of the city, rather than in the downtown or congested area. The hotel is often better equipped for conventions and other large gatherings, and ordinarily has more complete services, shopping, dining, and entertainment facilities. But specific examples of motels and hotels could easily be cited to disprove any or all of these generalities.

People who prefer motels say they like them because: there is less pressure for tips; free, convenient parking is provided; the absence of fancy shops and restaurants encourages thrift; it is simpler and easier for the weary traveler to get settled in the motel, especially if he has an automobile full of children and luggage; it is much easier to start the next morning's journey, and less time-consuming, since checking out is simple and battles with city traffic can often be avoided. The hotel side of the story is that many people desire the luxuries they can provide — the handling of luggage, room service, and shops.

Architects and their consultants, faced with the prospect of designing motels for today's demanding travelers, need information on a widely varied, often baffling, array of background data, principles, and standards. Such architects can use the following notes as a guide in researching projects, preparing programs, and in planning. Since hotels and motels have so much in common now, study of hotels, and hotel information sources, should also be of assistance.

Feasibility and Location

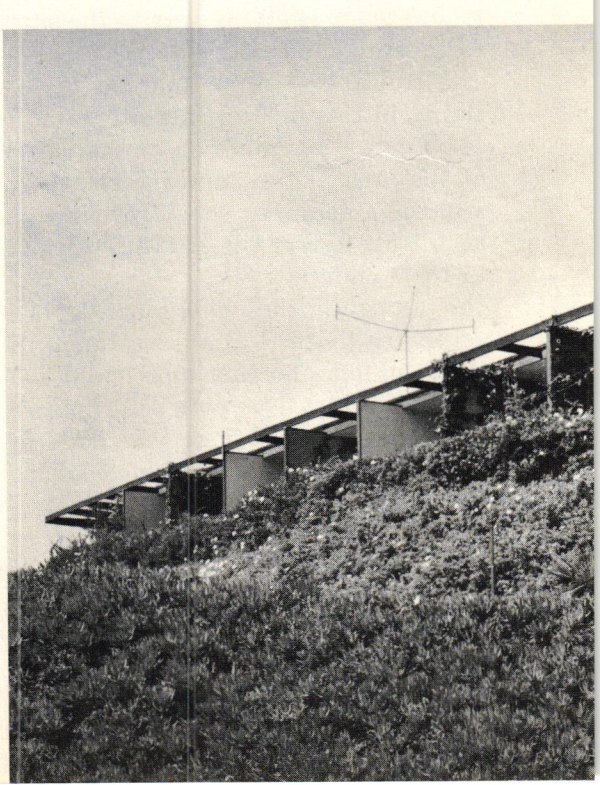
The first consideration in the planning of a motel, as in any other commercial project, is a determination of its chances for financial success. Next comes the selection of a location, beginning with the choice of a general locality and ending with the actual site selection. Although architects often are called in after the site has been chosen, many knowledgeable hotel men are finding the architect's training, talents, and approach to planning problems extremely valuable in site selection as well as in other phases of the project.

Attractions and trends: Reasons why travelers are drawn to the area, their numbers, any seasonal varia-

Motel on a Steep Site Overlooking the Pacific

Holiday House, Malibu Beach, Calif.

Richard Neutra, Architect



Julius Shulman photos

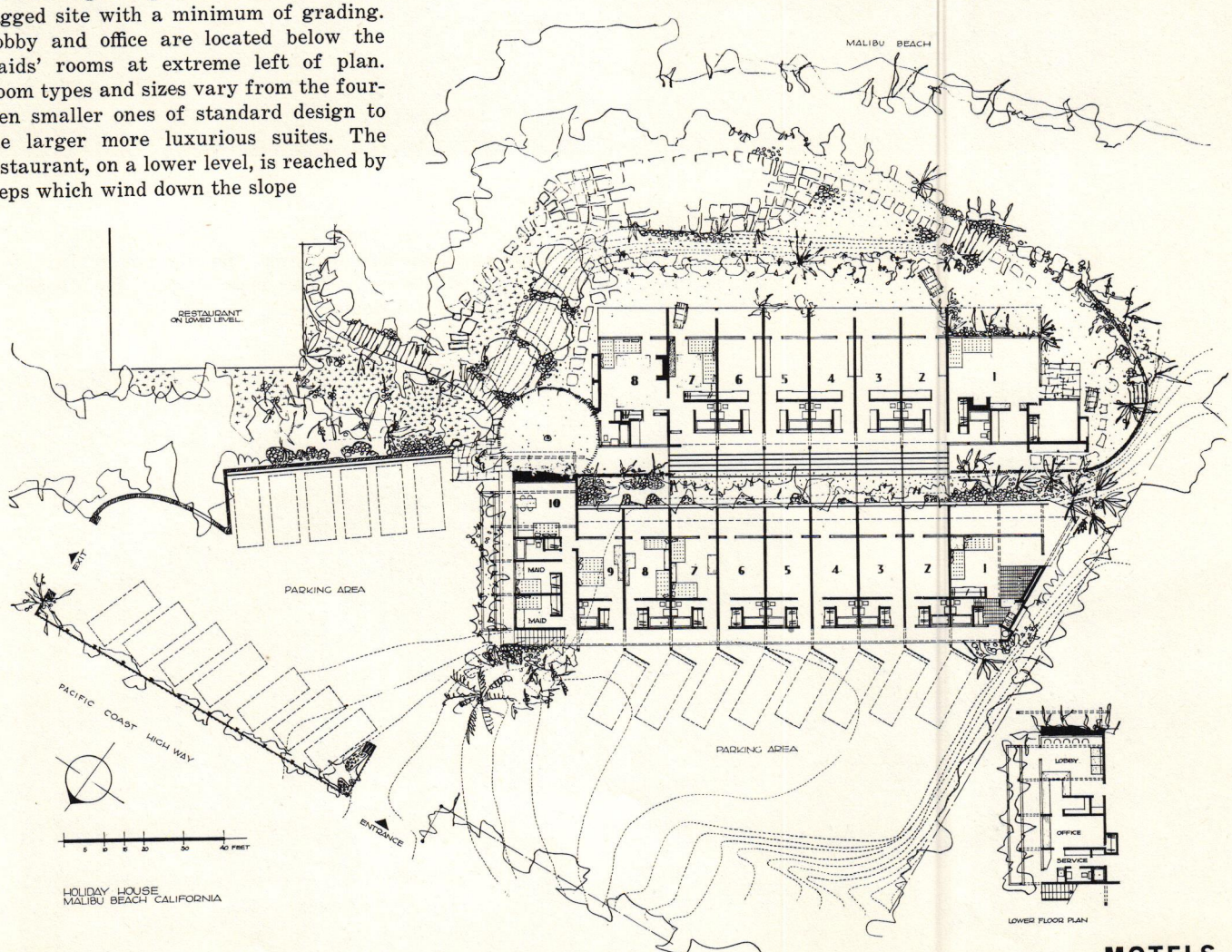
Above: interior of a large suite, showing detailing, the superior quality of the materials, and the view of the ocean. *Below:* view of motel from beach side shows successful handling of a difficult site



Julius Shulman photos

Holiday House

Above: exterior of a large suite. *Plan:* the building was placed on the steep and rugged site with a minimum of grading. Lobby and office are located below the maids' rooms at extreme left of plan. Room types and sizes vary from the fourteen smaller ones of standard design to the larger more luxurious suites. The restaurant, on a lower level, is reached by steps which wind down the slope





Individual units are provided with private porches, screened from each other by walls projecting from the face of the building. Entrances are on opposite side of this wing. Natural materials blend with the site



Views above and below indicate how retaining walls and a little grading made privacy possible between the wings while preserving for each room a view of the ocean



tions, and any tendencies toward change (passenger car counts are helpful).

Potential clientele: Character (urban, suburban, rural, vacation, or commercial); local competition and price ranges, types of existing accommodations, local preferences, driving times from other attractions and population centers. Potential demand for specialized services and spaces: conventions, banquets, dances, meetings, food and drink.

Characteristics of area: Well-balanced and stable community; population trends; long-range developments; ages, health, and background of population.

Labor market: Availability of sufficient numbers, training, seasonal help (if required), competition for services, wage scales, laws, unions, trends.

Climate: Average, maximum and minimum rainfall; snowfall; temperature ranges; winds; sunshine data; special hazards (like hurricanes).

Business and government: Whether business is generally diversified and growing; active organizations; trade, transportation, or industrial center. Local government finances, efficiency, honesty, building codes, zoning laws, labor laws, health and safety laws, crime rates, delinquency rates, taxation, city planning.

Utilities: Existing facilities for electricity, gas, water, telephones; changes or expansion planned; costs.

Community services: Waste and garbage disposal, sewage, storm sewers, police and fire protection, street cleaning and lighting, public transportation, playgrounds, parks, libraries, business services and shops, scenic attractions, recreation.

Hazards, annoyances, special problems: Poor traffic control, air pollution, noise, poor soil conditions, earthquakes, salt air, humidity excessively high or low, sand, hurricanes, tornadoes, extreme heat or cold, excessive wind.

Site Selection

Each site has inherent qualities that may be exploited, liabilities to be overcome. First consideration will usually be the highway, from which most, if not all, business will come. Ordinarily, a first-rate site will be convenient to the highway, have natural attractions, and be in close proximity to major recreational facilities.

For larger installations, many motel operators prefer (more or less in this order) sites near commercial airports, on an established highway near the perimeter of a large city, or on a similar highway nearer the city's center. Isolated stretches of highway are the worst locations.

Neighborhood: General character, existing buildings — types, sizes, heights, encroachments, future changes affecting site (loss of orientation, view, breeze).

Topography: Boundaries, utility availability and location, and natural features — rocks, water, ground

Alexandre Georges photos

The view of the Gulf of Mexico is preserved for all rooms. Each room has its private outdoor sitting area and is sized for two double beds. The site was maintained in a near-natural state, except for the large open grass area and the pool (considered a necessity even with the Gulf adjacent)







Ordinary materials and very simple detailing may result in an economical, yet efficient motel. Entrances are located away from the water. In the warm Florida climate, outdoor walkways are used

Simplified Design, Details For a Seashore Motel

Doctors Motel,
St. Petersburg, Fla.

Kivett and Myers,
Architects



water, surface drainage, requirements for grading or retaining walls, subsurface conditions.

Accessibility: Ease of access by auto, visibility of site from highway, driving time to various local attractions, parking on or off site.

Size and shape of lot: Possibilities for economical use; any size, shape, or deed restrictions that will increase costs; adequacy of size; difficulties arising from odd shape.

Orientation: Views, prevailing summer breezes, sun, trees, existing or possible future buildings, prevailing winter winds, automobile traffic, approaches, obstacles.

Although sites in urban fringe areas are usually preferred for motels, many are being constructed today near the centers of towns. Wherever located, there should be adequate frontage so drivers can recognize the motel and stop in time. Speed limits and average speeds are factors to be considered. Sites on the righthand side of a highway as it approaches the city are considered best. However, access from both sides of the highway is desirable. Sites near steep highway grades magnify stopping and noise problems.

Site Planning

Many of the factors that should be considered in the selection of a location or site also affect the site plan. In addition to the usual problems of site planning, some attention to a few special requirements of motels will be necessary. For economy, level ground with good bearing qualities is preferred. Good natural drainage is a valuable asset, as are trees, water, and a view. Yet some of the most successful of today's motels have few or none of these. Automobile circulation is the first considera-ation in site planning. The sequence rarely varies significantly: induce the auto to stop and turn into the grounds, route it easily to the office, allow it to park temporarily (under shelter if possible), then route it to parking closely related to the units, and finally to the exits.

Driveways and parking: Stabilized, hard-surfaced, or black-topped driveways and parking areas are considered necessities. Driveways should have easy access and egress, gentle grades and curves. The rake of headlights across the site can be quite annoying and should be minimized. Road lights should be kept low (a few inches above the ground) to avoid glare in guest rooms. Whenever possible, service drives should be separated from guest traffic.

Sheltered parking is ordinarily preferred, but motels in mild climates often provide only surfaced outdoor areas.

Landscaping: An important part of the planning of motels, landscaping is one of the major initial appeals of the establishment to motorists. It is often used as background for buildings, windbreaks, shade, and for screening undesirable views. Paved and

ever, since they are usually placed with their long sides against walls. Thus, making up the beds is more difficult, and the walls behind them receive very hard wear.

Some simple, foolproof arrangement for conversion of the sofas into beds by guests must be provided. This may be storage bolsters attached to the walls with the beds on rollers, fold-away backs for the beds, or some similar arrangement.

Storage: Motel guests require three general types of storage: luggage racks (preferably double-sized, or else two per room), clothes-hanging space (many motels with mostly overnight clientele provide a bar, no closet), and drawer storage. It is becoming ever more apparent that drawers may be kept to a minimum, since most guests live almost entirely out of their suitcases. Many newer motels are now being designed with combination built-ins, of various types, performing all of the above functions neatly and inexpensively.

If conventional closets appear to be necessary, the use of sliding doors can increase their usefulness. Two or three linear feet of hanging space will usually suffice for a double room. Storage for extra blankets should be provided. Sometimes other special storage areas for folding beds are provided in the bedrooms. If combination sofa-beds are used, space may be allowed for pillows and extra blankets in storage bolsters, which serve as backs for sitting.

Bathrooms and dressing areas: The bathroom is the most expensive part of the rental unit, the most difficult to maintain, and one of the features that will most impress or depress the guests. Tile floors and walls (or at least floors and wainscot) are now considered essential; the large chains and associations require tile in the bathroom, and the traveler has come to expect it. Bathrooms must often be designed for simultaneous use by more than one person to accommodate guests rushing to get back on the highway on the morning of their departure.

Showers, much used in motels in the past, have now largely been supplanted by tubs with shower heads and glass or plastic sliding doors or curtains. Where costs must be held to the minimum, receptor tubs with shower heads may be installed, usually for less than tiled shower stalls. They also offer the advantage of permitting tub bathing of children. For average-sized adults, tub bathing in receptor tubs is cramped, but possible. A number of existing motels are now using these units successfully.

As elsewhere in the motel, guests appreciate small conveniences in the bathroom (such as a space for placing toilet kits near the lavatory, or bath towels that may be reached from the tub) to a degree out of proportion to their cost. Bathroom heaters are essential even in mild climates. Table-top lavatories, when new, are an extra touch of luxury, but are generally hard to clean and maintain.

Dressing rooms, dressing-bathroom combinations,

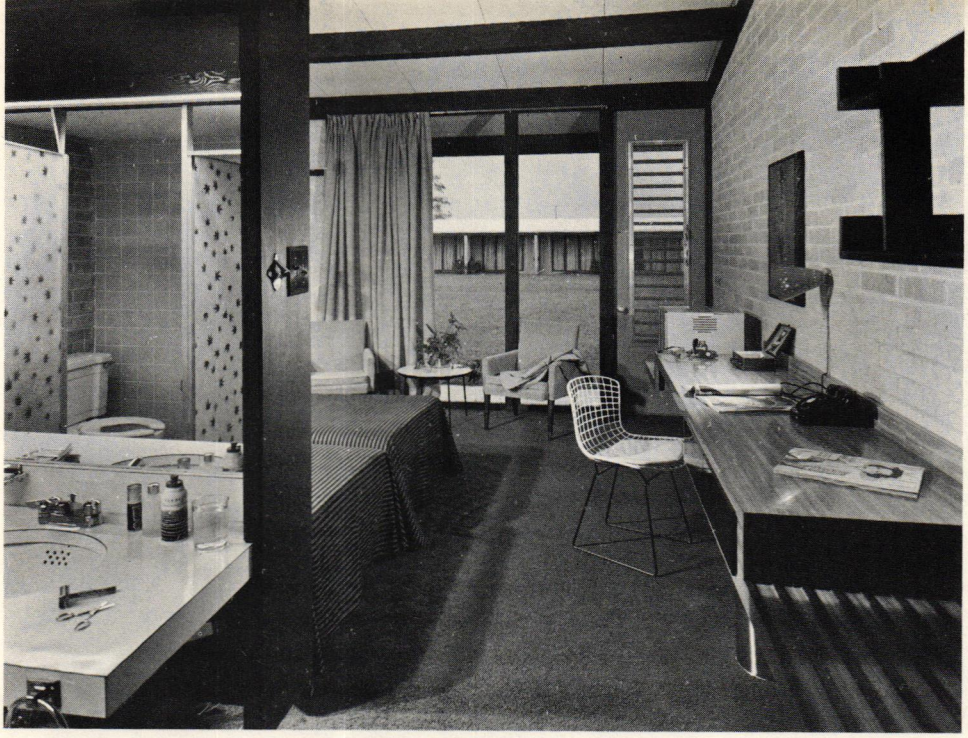
Interiors Designed for Appearance and Function

Howard Johnson Motel, Little Rock, Ark.;

Rufus Nims, Architect



This view from the bathroom toward the bedroom gives an indication of the degree of luxury, customer comfort, and attractiveness made possible by close attention to design and detailing. At moderate cost, two built-in lavatories, a large mirror, handy towel rings, and good lighting have been provided



The bedroom has been made large enough to accommodate two double beds, making it possible to rent to groups of various sizes. All storage is placed along one wall, leaving the remainder of the room open, with a feeling of spaciousness. The combination writing desk-television table-luggage rack should have considerable appeal for guests

Alexandre Georges photos



Alexandre Georges photos

Howard Johnson Motel

Simple, exposed materials are used throughout the motel. This treatment is effective, without undue costs. Entrances to individual bedroom units are located on one side of the building, porches and terraces on the other. Wing walls are provided between units for privacy and blocking of noise



or dressing-bath-storage combinations can become important features, if well planned and handled with restraint. Construction and upkeep cost factors, however, often rule out these and other special design features such as built-in furniture.

Other considerations: It is considered necessary to provide guests with some sort of simple writing desk. Frequently it has been possible to combine them effectively with dressing tables. Useful and properly placed light fixtures or lamps for reading (in bed and otherwise) are relatively inexpensive items, much appreciated by guests.

Identification of rental units: Simple and easy-to-understand identification of individual motel buildings, rental units, and other services is necessary to prevent confusion and frayed tempers.

Public Spaces

The motel areas shared by guests are second in importance only to the bedrooms. A few years ago, the public areas presented no problems; essentially there was only a small lobby-office for registration and perhaps the sale of postcards and cigarettes. In many motels, even this small space was eliminated by the simple tactic of allowing the guests to register in their rooms.

In some motels today, all of the public areas formerly provided in only the most complete hotels may be found. Among these are lounges, game rooms, restaurants, cocktail lounges and bars, gift and other types of shops, banquet and ballrooms (although infrequently), swimming pools (rapidly becoming necessities), and other recreational facilities.

Considerable information on restaurants and bars is included in the final section of this book. Useful data on public areas is presented in the hotel section. However, lounges, swimming pools, and other recreational facilities have come to assume particular importance in motels, and deserve special attention here.

Lounges: Motels are usually more informal than hotels; this fact often determines the character of their lounges. Provision may be made for comfortable social activities, such as bridge or other games; television may be one of the important features; furnishings should be durable and comfortable, lighting functional; flexibility of use and provision for a variety of activities should be considered. Public toilets, for larger projects, telephone booths for commercial ones, and snack bars for those without other dining facilities, should be given consideration.

Swimming pools: Few are the motels today which do not either have swimming pools or have plans for providing them in the future. Pools have obvious promotional value, and the first ones in motels were primarily for this purpose. Today, motel pools have almost become necessities because of competition.

In general, the motel swimming pool should be kept away from trees and sheltered from the prevailing winds. It should be located for maximum sunlight. The more rectangular plans are most economical, but other shapes are often more successful in attracting guests. Economies can sometimes be achieved through the balancing of excavation and fill. For maximum usefulness much of the pool may be quite shallow, since few people actually use it for serious swimming. For diving, however, a depth of about 8 ft, at a point 10 ft from the deep end, is necessary. For the next 15 ft of length beyond this point, the depth should be at least 5 ft. For wading, it is best to have separate facilities.

A surfaced walk 3 ft wide is the minimum acceptable for a motel pool. Serious consideration might be given to the provision of a considerably larger paved area, since the pool's terrace area can then become a center of attraction for nonswimmers and serve as an attractive and convenient gathering place.

Other recreational facilities often provided, which usually require study by the motel architect, are playgrounds, playing courts (badminton, tennis, shuffleboard), golf putting courses, and table tennis.

Operational Requirements

In general, the criteria for operational provisions in a motel are ease, thoroughness, and economy for housekeepers and service personnel; ease, simplicity, and effectiveness for supervisors; and ease, comfort, and unawareness of the operations for guests.

Employes: For a minimum operation, it is possible to perform housekeeping functions with one maid for each ten rooms. In a motel with most of the facilities of a downtown hotel, the number of employes (including administration, maintenance and housekeeping) can often be one per room. Most motel operators feel that a complete operation can be efficiently run with one employe for each two rooms.

In order to achieve this ratio today, good planning of the motel building, its grounds, and its operating procedures is essential.

Office and lobby: The minimum office facilities today include a sheltered driveway for incoming and outgoing guests; a small lobby, with some provisions for registration, payment of bills, information, and convenience sales; and an office space in which to handle the motel business affairs. Larger and more complete projects require more elaborate lobby and business office spaces. Often these can be part of, or related to, lounge or other public areas. Drive-in windows for registration and other guest business transactions provide an extra measure of convenience and informality. Ease of approach, and shelter for the car and its occupants, are important considerations.

Key systems: An efficient and workable system of keying various elements of the motel is essential, and will bear considerable thought during preparation of

the hardware schedules. Keys with self-addressed, post-paid return tags, ordinarily used by hotels, are considered best. A key check list for a somewhat typical, medium-sized motel, might be:

General manager: Grand master key.
Maintenance personnel: Master key for shops, equipment, storage, and the like.
Maids: Master key for just those rental units each is responsible for, and for her own linen supply storage. Keys to be turned in daily.
Guests: Individual key for own rental units. If rental units have garage, or other locks, these should be keyed with rental units.
Special facilities: Restaurants, coffee shops, bars, service stations, and the like, on individual keys issued to managers or concessionaires, subject to general manager's grand master.

Keys are best stored in locked cabinet under the direct supervision of the manager or desk clerk.

Telephones: Switchboards and complete telephone service are becoming the rule today, rather than the exception, in all but the very smallest motels. When this service is provided, guests feel safer, room service is more practical, and a competitive advantage is obtained. In a particular project, close study of the costs of installation and periodical service, operation, and other problems will be necessary before final decisions can be made.

Linen and supply storage and handling: In smaller motels, the generally accepted method of storage is in adequately sized central supply rooms, under close supervision. In larger operations, central supply rooms are supplemented by local storage rooms, usually assigned to one or two maids, and located near the rental units they serve. Usual supplies provided are: sheets, pillow cases, various types of towels, bath mats, washcloths, matches, tissues, writing kits, sterilized glasses. Others may be provided.

Motels that own their linen and send it out to commercial laundries will need at least four sets for each room, in order to operate over a "long" holiday weekend. The supply kept on hand by motels that use linen service will depend on the frequency and dependability of deliveries. If a motel is large enough (as determined by an analysis of costs and convenience), a private laundry may be practical. For a motel of 50 rental units or more, a private laundry will often prove feasible.

Cleaning operations: Service closets must be provided for the supplies and equipment required by maids for their ordinary operations. Equipment to be stored will include brooms, vacuum cleaners, carpet sweepers, and other cleaning apparatus. In most motels, the space will also be used for storage of the maids' cleaning carts when not in use. These carts have shelves and racks for all of the equipment needed by maids in their work and for clean and soiled linen and supplies. The most convenient location for service closets is near or adjacent to the local linen supply rooms. Maids' slop sinks are ordinarily located in the service closets.

Miscellaneous storage: Room must be provided for the storage of cots, utility beds, cribs, extra pillows, mattresses, and blankets (during the summer, almost all of the blankets may have to be stored). In addition, there are always extra chairs, beds, or other items of equipment which are not currently in use in rental units. Separate storage is usually necessary for such outdoor furniture and equipment as lawn mowers, garden tools, ladders, and recreational equipment.

Maintenance shops: The number, degree of specialization, and completeness of shops depends on the complexity and size of the motel. Even the smallest must have some space for storage and minor repairs of furniture and equipment. In larger installations, shops for maintenance and repair of plumbing and heating, air conditioning, and electrical equipment will usually be necessary. Painting and glazing projects are year-round occupations in most motels, large or small. In larger or more spread-out motels, maintenance mobility is accomplished by the use of bicycles, scooters, jeeps, or small trucks (some motels also use such vehicles for room service and other purposes).

Employe facilities: It sometimes is necessary, because the site is isolated, or for some other reason, to provide quarters for employes who will live on the premises. Lockers, toilet rooms, and other facilities for employes must be provided, and state and local laws usually stipulate minimum requirements.

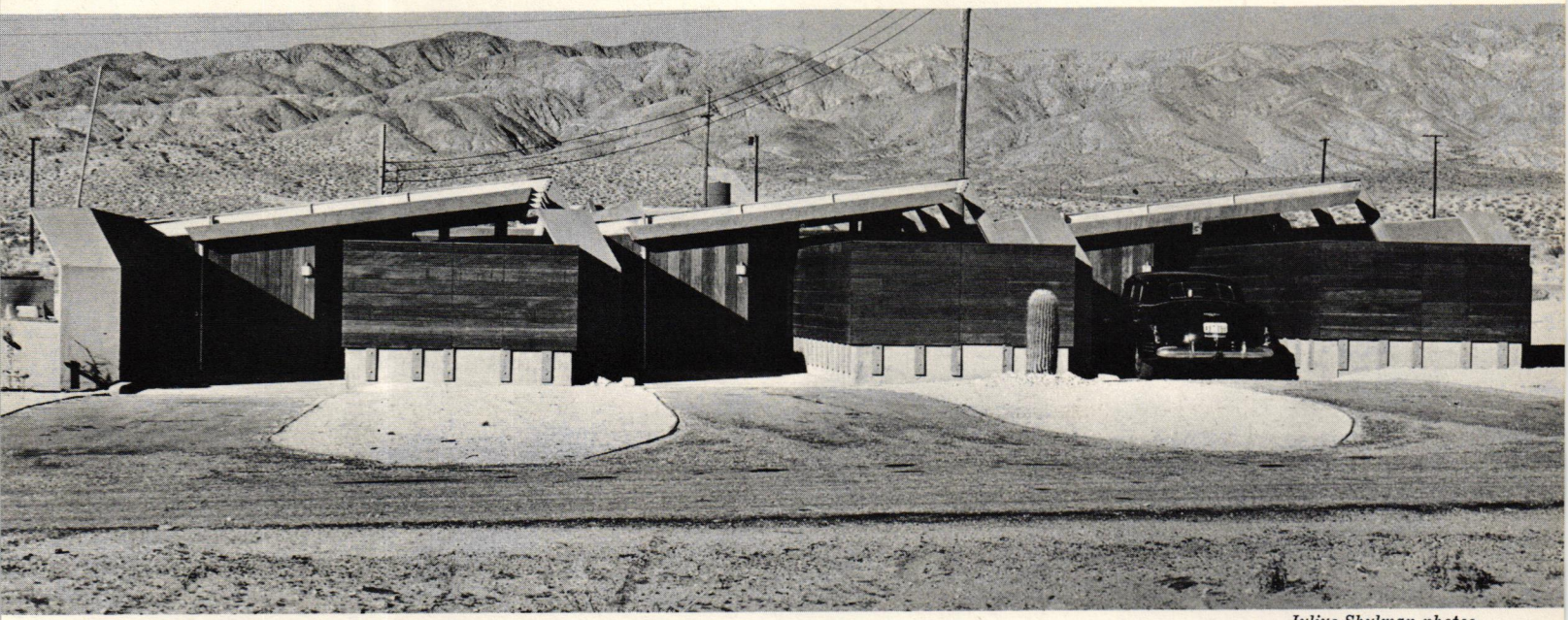
Materials and Construction

Although all materials and construction methods currently available can and are being used in motels, some specific problems peculiar to this building type should be considered.

Floors: Poured concrete slabs are often used in one-story projects. The floor finish used varies with the budget, the locale, and the clientele. Resilient flooring is often used (asphalt tile for the minimum budget project, vinyl or cork tile for others.) Vinyl-asbestos tile seems to have many characteristics to recommend it: medium cost, resistance to wear and tear, and ease of maintenance. Quarry or ceramic tile, slate, and wood are sometimes used. Carpeting is generally preferred, and wall-to-wall installation is favored. Many associations require it and guests appreciate it. It is important to remember that the floors get heavier wear than any other surface in motels.

Walls: The lower 30 to 36 in. of wall, and that portion behind combination bed-sofas, take the worst beating. Although plaster and other smooth wall finishes are usually suitable for most wall surfaces, these two areas might economically be treated with

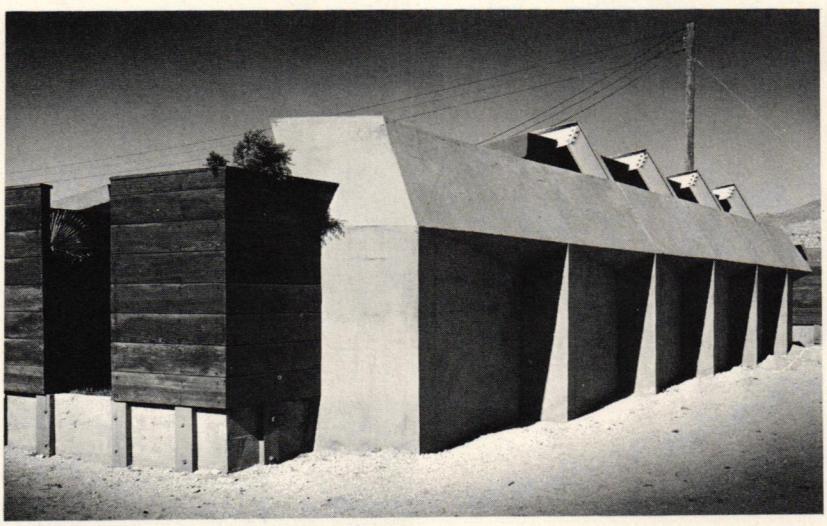
Resort Motel and Cottage Group in the Desert



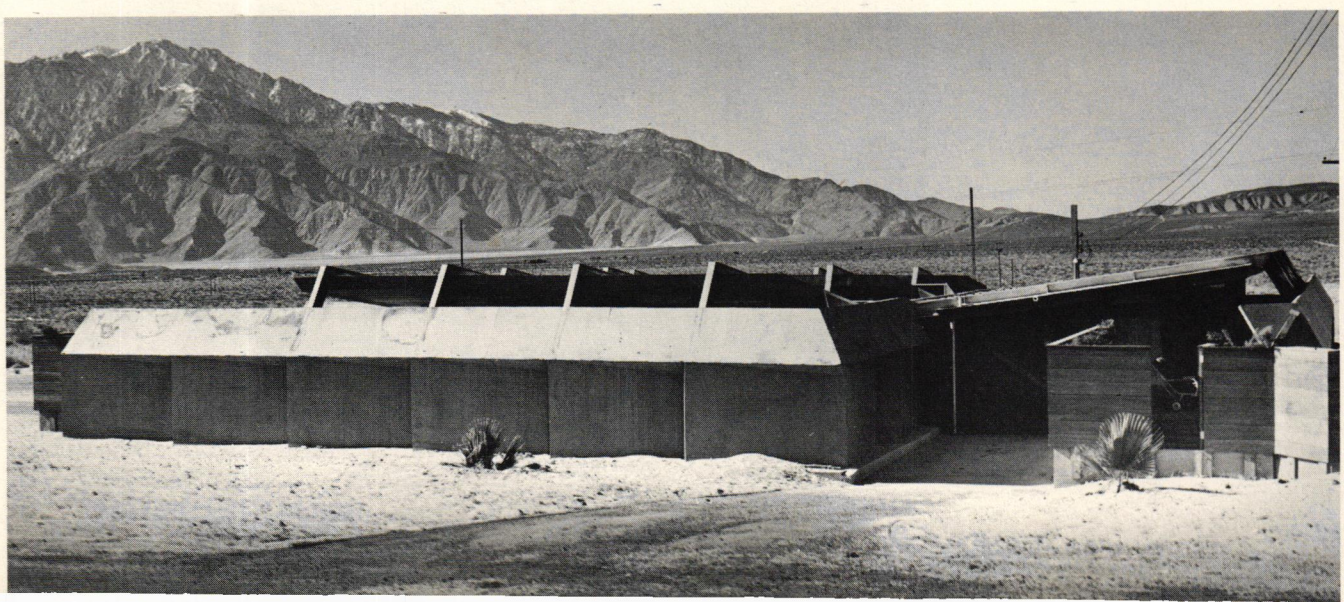
Julius Shulman photos

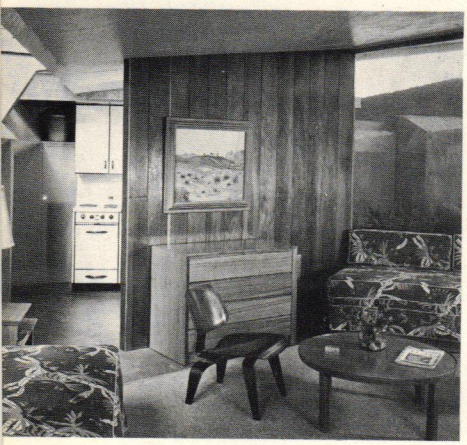
Contentment House,
Desert Springs, Calif.

John Lautner,
Architect



Combined here are a resort motel and apartments. Located six miles for Palm Springs, in the desert, this motel turns inward toward private courtyard-gardens, away from the dry heat outside. Parking space for automobiles is provided adjacent to each unit.



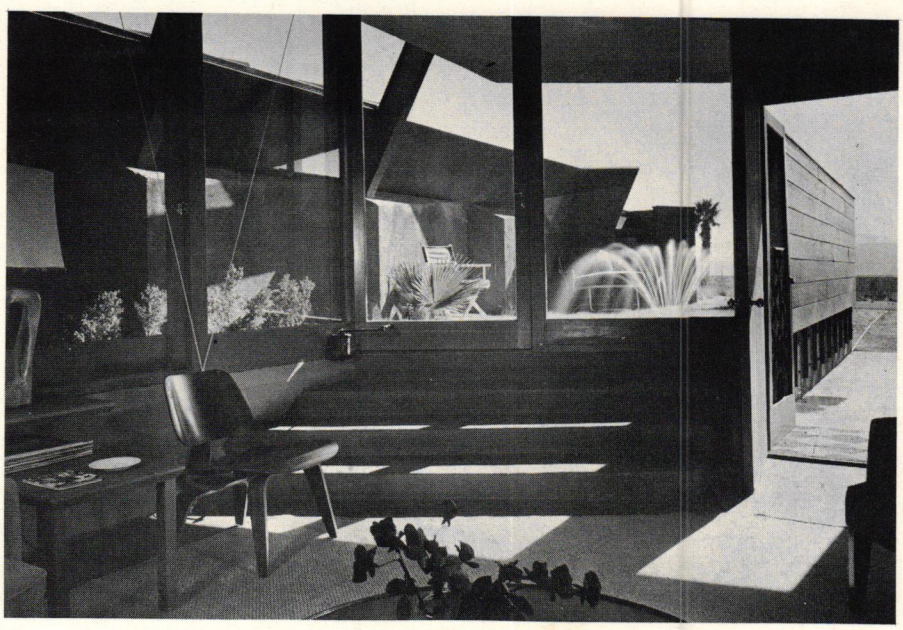


Contentment House

Above: view from the living area toward the kitchen (provided for each unit). *Right:* private garden adjacent to a rental unit. *Below, right:* view toward entrance and garden of a typical unit



Julius Shulman photos



wood paneling, vinyl wall covering, brick, or some other highly impervious and easily maintained or refinished material.

Ceilings: One of the major problems in motel design and construction is noise. Strong consideration should be given to acoustical treatment of all rental unit ceilings.

Acoustics: The problem of acoustical control in motels is really two problems: (1) controlling the quality of sound within the rental units, and (2) blocking sound from outside the room. Sound quality in the rooms can be properly controlled by the use of sound-absorbent ceilings and proper design of spaces. Sound transmission, either from the highway and other nearby outdoor sources, or from adjoining rooms, is more of a problem.

The most satisfactory and economical method of blocking highway and similar noises is to select the right site, away from hills and traffic lights, near which so often can be heard the sounds of gears being shifted, accelerating engines, and screaming tires. If it is necessary to locate the motel near such sources of noise (many motels are now being built near jet airports), attention must be given to blocking the sounds by heavy exterior walls, trees and shrubbery, rock outcroppings, changes of grade, and the like.

Sound from adjoining rooms enters the rental unit mainly through thin, light walls; openings (such as windows or doors opening toward each other in adjacent units); bathrooms (back-to-back medicine chests separate two rooms from each other only by thin metal); and doors between units. For motels, a transmission loss (T.L.) of no more than 45-50 db should be adequate. Acoustical ceilings, curtains, upholstered furniture, and heavy carpets will reduce the sound within rooms considerably. Masonry or staggered-stud walls of various types can be constructed to give the T.L. needed. Exterior wing walls and double doors with sound-resistant sealing strips between units help, as does attention to the noise problems that may be created by plumbing and other interior sounds.

Furniture

Guest comfort and convenience, together with ability to withstand hard usage, are the most important criteria for motel furniture. Ordinary residential types frequently do not measure up to these standards. Accordingly, many motels employ standard hotel furniture of metal or wood. Much of this may be below the architect's standards for appearances. It is possible, however, to choose from among the number of lines available, pieces which possess, in some measure, the qualities desired. An important consideration is the door swing in relation to the furniture arrangement.

Beds: Simple headboards, no footboards, and good quality describe the best beds for motels. Casters or dollies should be provided to facilitate cleaning and making the beds.

Other furniture: In addition to the provisions for storage (luggage racks, hanging space, drawer unit) and sleeping, motel bedrooms are usually furnished with at least two comfortable chairs for lounging, one or two straight chairs, a desk and a vanity (or combination of the two) with a large wall mirror, bedside tables, and convenient lamps. Television sets have now become almost standard equipment in all rooms. In addition, some motels have coffee tables, full-length mirrors, complete cooking-dining facilities, or other furniture.

Cigarette-, alcohol-, and stain-proof tops for tables and chests will reduce damage and maintenance cost considerably. Some operators prefer to cover these pieces of furniture with glass (edges should be ground and the tops beveled). Chairs should have projecting rear legs to avoid damage to walls. All furniture should be mounted on glides.

The furniture provided in any motel will depend on the type of clientele (vacationers, salesmen, others), their average length of stay, the number of people likely to be in parties, the price of the accommodations, and similar considerations.

Lighting

An important source of guest satisfaction (or dismay), room lighting should be carefully designed. In the past, general lighting with ceiling fixtures has been left out of many motels in favor of switched outlets and lamps. Such outlets can be the source of serious annoyance, for the unsuspecting guest who switches off the light at the lamp when leaving the room will return to find the wall switch ineffective.

A good rule-of-thumb for minimum lighting of units would be to provide medium-level general lighting with ceiling or wall fixtures, switched from the entrance, supplement them with correctly located special-purpose lighting for reading, writing, and dressing.

In addition to the purely functional aspects of motel lighting, its use as decoration, when handled with restraint, can be effective and highly acceptable to guests.

Equipment

Motel equipment, in common with other motel furnishings and materials, must be tough and strong to withstand the hard usage it will receive. The convenience and comfort of the guests must not be compromised, yet it should be remembered that the best piece of equipment available performs no useful function whatever if it cannot be made to operate efficiently, and, in a motel, almost continuously, with little attention and few breakdowns.

Heating and air conditioning: Various combinations are in widespread use. These fall into two classes: central systems and individual units. Under certain conditions, either may be the proper one to choose for a given motel. Or a central heating system may be used with individual unit air conditioners.

It has become customary to air-condition motels in almost all climates. Unit or room air conditioners have been installed to improve older motels. In many new projects, they have also been chosen because of a number of factors: their relatively low first cost; the fact that only one room need be shut down when a unit fails (and a few spare units can be kept on hand for quick replacements); and the convenience and economy of individual controls for each rental unit. The other side of it is that the room conditioners may be more expensive to operate than a central system. Even this disadvantage may not hold true, however, if units are turned off when rooms are unoccupied.

In milder climates, heat pumps, both air-to-air and air-to-water, are being used extensively. Both central system and unit pumps are available for heating and cooling. Radiant panels for heating may often be the best answer in cooler climates. For many motels, the systems used will most often be the more conventional heating (hot water or steam boilers, hot air furnaces) and air conditioning systems (compressor-condensor types or water chillers).

Pets: Some operators rent to travelers with pets; some do not. Some rent only particular rooms to pet-owners. Of interest to the architect planning motels is a new development, to which he must devote some attention: the provision of kennels.

Windows and doors: Major sources of irritation and maintenance expense in many motels have been lightweight, inferior grades of windows and doors. Almost any type, of any material, may be used satisfactorily in a given instance, the choice between types being based on the intent or purpose of the architect and his client. What should influence the choice in motels is the extremely hard wear, caused by many hands over long periods of time, to which the items will be subjected. This factor calls for heavy-duty, mechanically simple, and foolproof (if that is possible) windows and doors made from high-grade materials. The same qualifications apply to hardware, window stools, bathroom fixtures, and all other items used. Screen doors and window screens, considered necessary in most locations, should also be of sturdy materials and construction.

Miscellaneous: It is of particular importance, in motels, that plumbing, heating, air conditioning, and electrical ducts, lines, or conduits be planned for ease of maintenance or replacement. It is also helpful to make provision for cutting off sections of the mechanical and electrical equipment for repairs, or in off-seasons, without impairing the operation of the remainder.

Motel on the Mountain,
Suffern, New York

Motel Units:
Harwell Hamilton Harris, Perkins & Will, Architects

Restaurant:
Junzo Yoshimura, Designer
Steinhardt & Thompson, Architects

Raised Motel and Restaurant



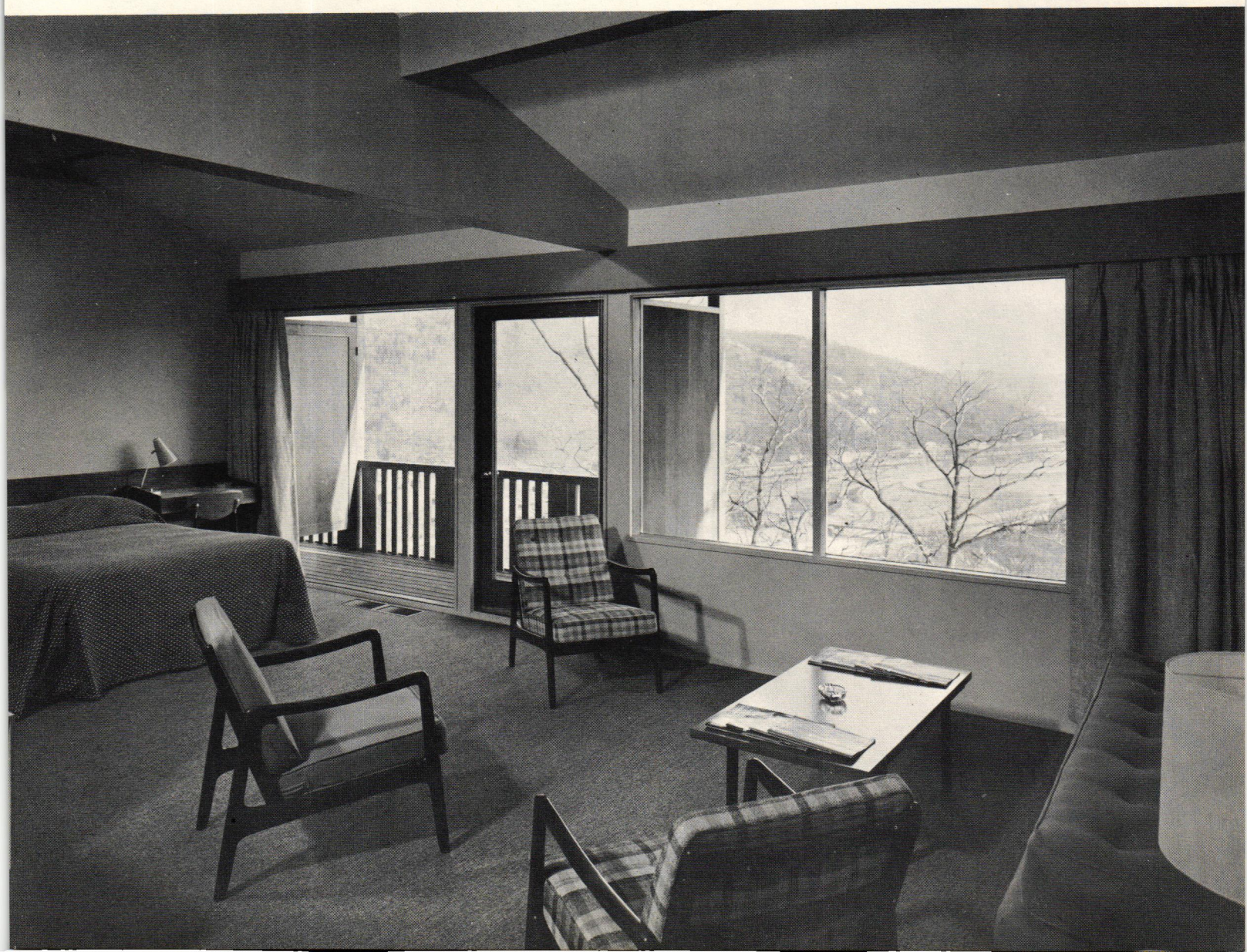
The bedrooms are spacious and comfortable. Carpeting is used with painted walls. Furniture and curtains were selected for simplicity and utility. An outdoor sitting area is provided for each room. Simple wood railings are used with the slatted floor of the balconies



Command View of Valley

Because of the extremely rugged and steep site, the rental units of the motel are small buildings connected by a covered walk, rather than one larger building. An added dividend of this scheme is the improvement in the vantage point of each unit in relation to the valley below

Alexandre Georges photos



Motel on the Mountain

Right: this view gives an indication of the quality of the materials used for the rental unit buildings and the simplicity of the detailing

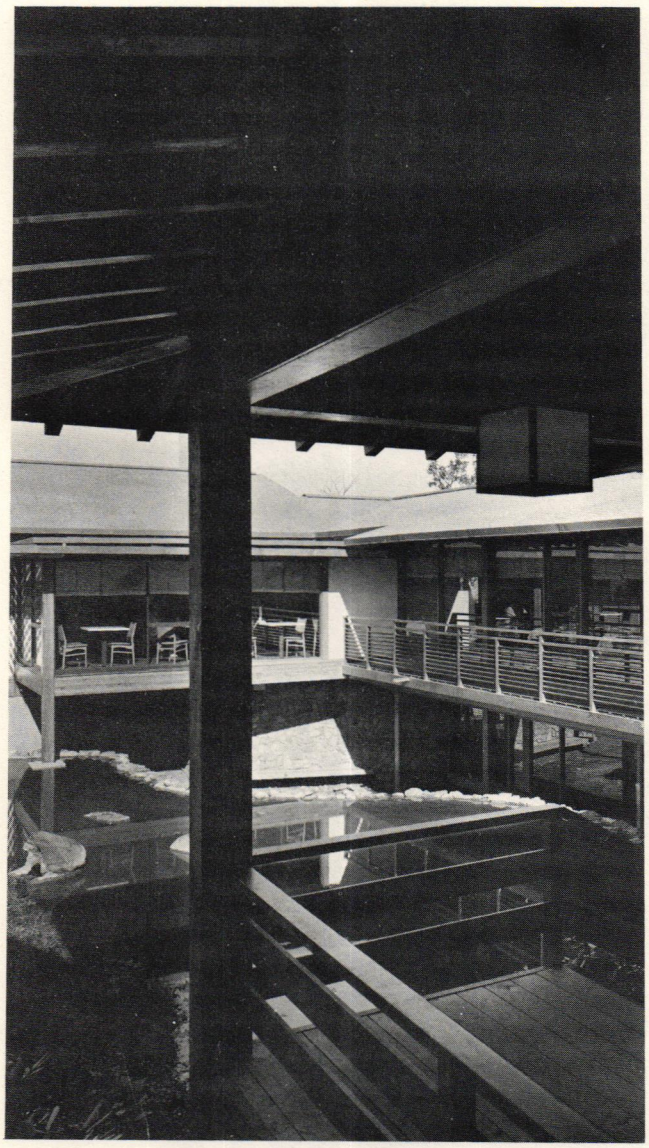




Alexandre Georges photos

Above: the restaurant is a separate structure, multilevel, raised above the landscape for maximum effect. The feeling is Japanese; this effect is carried out in the interior *(right)*. Yet the building provides the efficiency necessary for success in an American establishment





The restaurant is planned around a central court, which is landscaped simply, and provided with a pool. Stone walls are used on the lower levels; upper walls are wood and glass

Cost Considerations

It is difficult to generalize about motel costs because of such widely variable factors as location, relative size and quality of accommodations, number of rooms, and special requirements. It can be said, however, that smaller motels with few auxiliary services ordinarily cost, on a national average, approximately $6,000 to $8,000 per room. Increased size, sumptuousness, and service can raise this cost per room to $15,000 or more.

Hotels, on the other hand, are unlikely to be built for less than $8,000 per room. Most will fall in the $10,000 to $20,000 range, with a few much higher in cost.

Closely related to these costs, and of importance to anyone considering an investment in this field, is the fact that well located, efficiently planned motels ordinarily enjoy higher percentages of occupancy than hotels, and make greater net returns on their investments.

Close attention to workable principles of space relationships and utilization, construction and materials, and detailing can reduce motel costs considerably. One large hotel chain and its architects have translated this attention into such rules of thumb as: (1) two rooms per bay, (2) narrow rooms for reduced exterior and corridor wall area, less nonrevenue-producing space, and so on, (3) ceilings approximately 8 ft 4 in. high (8 ft is considered too low, 9 ft too high), (4) exposed ceiling structure, (5) smaller windows to lower heating and cooling costs, minimize sizes of curtains, and reduce sun fading, (6) minimum electrical system, and (7) repetition of small number of unit plan types.



Motel on the Mountain

Alexandre Georges

Wood floors and railings characterize the balconies outside the glass doors of the dining room. From the balconies, one can see down the valley to the highway below and across to the hills; at night the lights from the highway and the valley below are particularly attractive.

MOTOR HOTELS AS BUILDING BUSINESS

By George Cline Smith
Vice Pres. and Economist,
F. W. Dodge Corporation

The casual motorist may well wonder if there is enough business to support the seemingly endless lines of motels along our highways. On the other hand, the summer tourist who vainly searches for a vacancy wonders why motel building has failed to keep pace with the growing volume of motor travel.

The postwar period has seen an astonishing increase in the use of automobiles. The number of passenger cars has more than doubled since the war, and speedometers are clicking off more than 500 billion miles a year. Inter-city travel by car is now at more than two and one-half times the highest prewar rate.

Motel building has struggled valiantly to keep up. Dodge figures indicate that construction contracts for new motels in 1957 totalled $161 million, an increase of 10 per cent over 1956. The heaviest concentrations were in the southeast and far west, but all parts of the country shared in the motel boom.

All indications point to a continually expanding motel market. The trends toward a shorter work week and increased real incomes will result in more leisure time, as well as more time for recreation and travel. Improved highways add immeasurably to the attractions of motor travel for business and pleasure, and better facilities—such as inviting motels—generate more traffic. The new interstate highway program will add enormously to the need for enlarged, relocated and especially for additional motels during the next decade and probably for longer.

MOTOR HOTELS AS ARCHITECTURE FOR BUSINESS

By James S. Hornbeck

Every business must grow; and the logical way for the hotel business to move is sideways—toward the motel. The traditional large, central-city hotel finds itself in an increasingly untenable position, with suburban and highway hotels taking growing bites of its income from outside—while increased taxes, high labor costs, and large non-profit areas (elaborate ballrooms, lobbies, dining rooms, etc.) are nibbling away at its money from inside. As motor travel increases—and the experts tell us it will—the bite will become bigger.

Of course, the large downtown hotel has its advantages; but the newer kind of motor hotel seems to have more—profitwise—as architect William Tabler explains on the following page. Even such historic functional prerogatives as banquets, meeting rooms, and convention facilities are moving from the city into suburban motor hotels; while highway hotels—assuming a more festive, resort-like character—are building up a heretofore non-existent weekend and vacation business.

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THE ECONOMIC FACTS OF LIFE ABOUT HOTEL DESIGN

An Interview With
Architect William B. Tabler

Unlike most businesses, the hotel business makes its money from a building. It operates on a small profit margin, selling its product daily. Travelers demand three things—food, lodging, and entertainment—and the hotel furnishes them. On the average the profit ratio, on an individual sale, runs about as follows: on rooms, 70 per cent of income; on liquor, 50 per cent; on commercial rentals, 15 per cent; on food, nothing. Yet when one builds a hotel building, 65 per cent of the cost goes into public and service areas and 35 per cent into rooms. Economically out of balance? Yes, but the non-profit areas must be there in order to rent the rooms, for rooms alone fail to meet those three demands.

The motor hotel—in which rooms comprise a relatively greater percentage of building area and cost—operates at a higher profit rate per dollar invested than downtown hotels. The big chains know this, of course, and are all working their way into this newer market in one way or another. Additional tempting aspects of the motor hotel: the informal, do-it-yourself atmosphere (less labor, less tipping, no garage); cheaper land; lower taxes; less restrictive building codes; fewer labor regulations. Hilton, Sheraton, Knott, and Hotel Corporation of America are turning to the motor hotel as a logical field for growth.

I know of no extensive research program into motor hotel design, and am currently conducting my own. Rules of thumb for cost analysis are useful, but can be used against you if not understood. Please understand that the following *are* rules of thumb, derived from extensive hotel study, and bear in mind that each one influences the other.

First, room construction cost (the finished, unfurnished shell) should not exceed $1,000 per $1 average room rate. Second, the cost of the land should not exceed 10 per cent of the cost of the building. Third, the number of necessary employes should not exceed the number of rentable rooms. Fourth, bedroom areas (i.e., total typical floor areas) should be at least slightly larger than public and service areas; and the more the better—conditioned by those basic three demands again! These rules of thumb are predicated on a 65 per cent occupancy break-even point.

Years ago Mr. Statler found that a commercial hotel in a city must contain at least 1000 rooms in order to achieve a proper balance between profitable and non-profitable areas. This principle lies in back of the recent non-building of large city hotels, and as costs of land and taxes and labor increase, it is more forcefully true. As of now, optimum size for a motor hotel is a new problem requiring study. Additional problems in motor hotel design which require analysis and study are: percentage of land coverage; covered versus open parking; means of control.

An interesting possibility occurs when one considers the Howard Johnson operation. In like fashion, the services of a large commercial hotel in the center of a city might be utilized profitably to service several satellite motor hotels within driving distance. Non-profit activities such as administration, food commissary, bakery, the supply depot for linens, china, etc., laundry service, valet service, maintenance shops, etc., could serve double duty for the satellites. This would help justify their expense from two directions, and make both the central hotel and its satellites more profitable ventures.

DESIGN FOR A FRANCHISE CHAIN

The Newest
Howard Johnson Motor Lodges

Carl Koch & Associates, Architects
Text by Carl Koch

One of our first suggestions upon being retained was for a program of basic research into room types and combinations, kinds of furniture and interior decor, the design of a standard gate lodge, study of a proper signature for the highway, and determination of specific site planning principles for the entire program. Unfortunately, funds were not available for such research, but we did work out a standard room which has been used, with minor changes only, throughout their building program.

In working on these Howard Johnson projects we came to many conclusions about the American motel. First, a list of principles we were able to apply to the Johnson chain, many of them worked out in collaboration with Rufus Nims, architect, R. H. Dwinell of Howard Johnson, and John Woodard of Contract Interiors.

One point of advertising and control close to the highway—the gate lodge. This was to provide an inviting porte-cochere and drive-up window, an indoor registration desk, small office, meeting room, and public rest rooms. The Breezewood lodge shows early experimentation and an attempt to include a manager's apartment on the second floor. The Ridgefield Park lodge is a later development reflecting the

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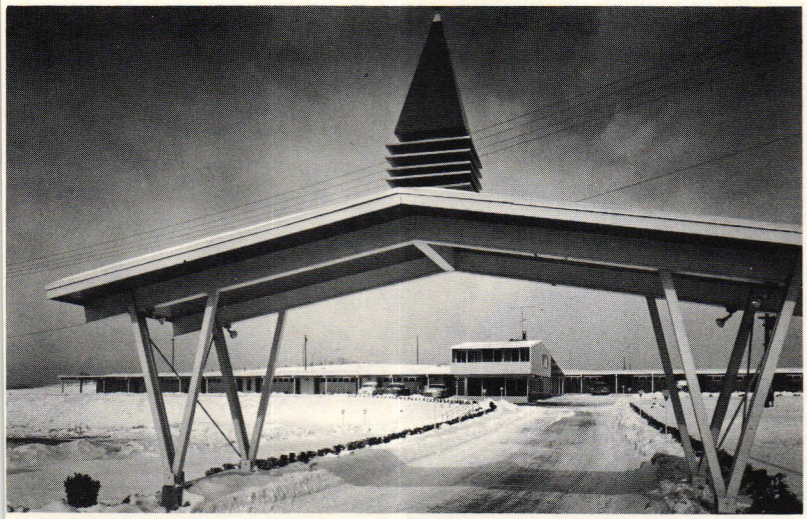
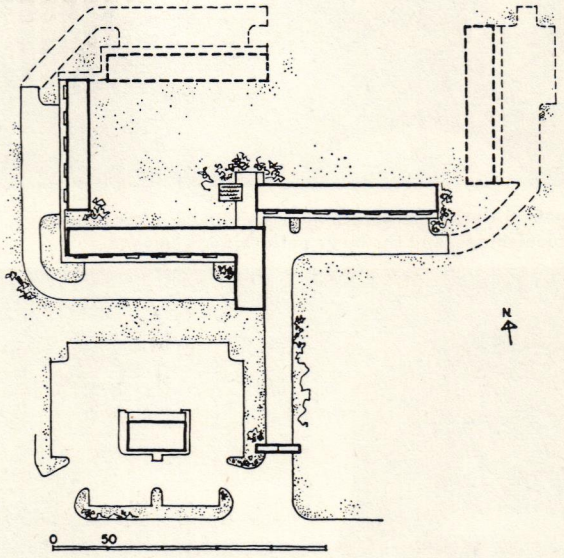
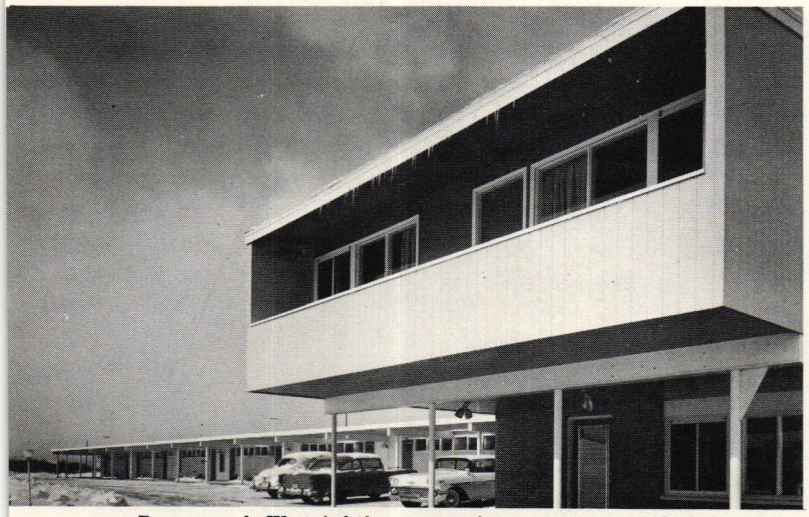


Breezewood: An experimental gate lodge

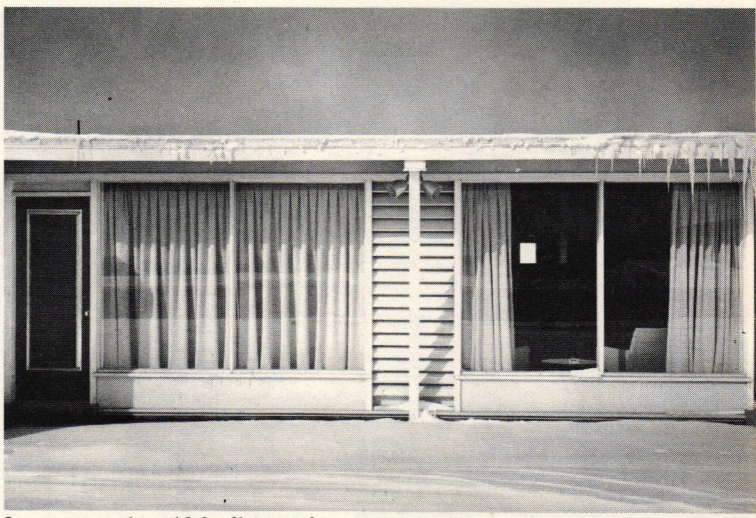
All photos by Joseph W. Molitor



Plot plan for Breezewood



Breezewood: We tried the manager's apartment over the lodge



One-story units widely dispersed

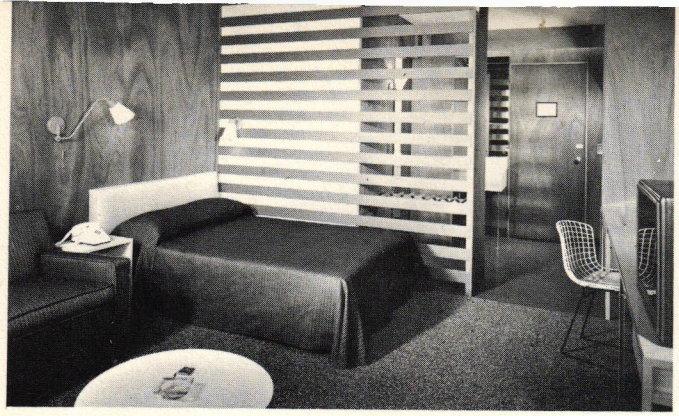
Johnson philosophy of trying to relate the gate lodge to the restaurant by means of similar orange roofs and cupolas on both.

Wherever possible the site arrangement was to present the project attractively from the highway. We all agreed on this principle, but our ideas in achieving it were often at variance with those of the operators and the Johnson organization.

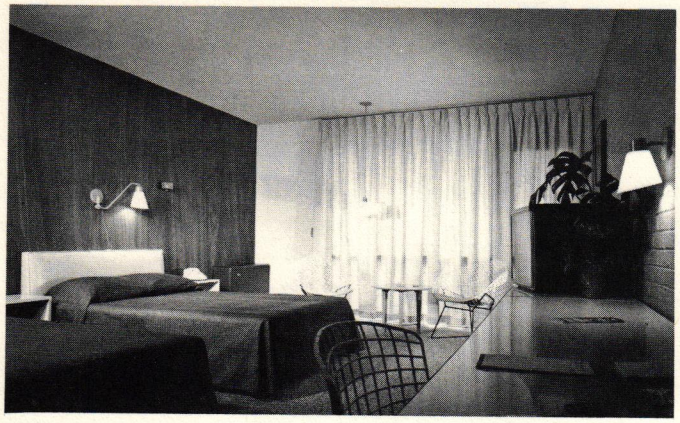
The business of driving to one's front door, unloading under a sheltered walkway, and going directly indoors was heartily agreed upon and generally well executed in the designs. The covered walkways between buildings provide both shelter and a strong visual tie between units. Should they be eliminated in future projects for reasons of economy, I feel the design will suffer as a result.

First impressions upon entering the room are important in rentals, and here we designed a screen that allows a partial view of the furnishings and large patio window beyond. The guest finds—upon entering—two built-in luggage racks and a coat closet. He may place his articles in drawers or upon shelves. We all favored shelves since most travelers live out of their suitcases and may leave behind things stowed away in drawers. An outside dressing area with large mirror, counter, and lavatory is provided in all but D units. Adjacent this is the bath with similar lavatory and mirror, two shower heads (high for "him" and low for "her"), ample towel racks, hooks, and other accessories. The two lavatories and shower heads are aimed at setting the Johnson chain apart from competition.

Traffic flow works thus: from car to luggage rack to dressing-bath to bedroom-sitting with a private view over patio to lawn in back. The furnishings were worked out with John Woodard and Rufus Nims. There are gimmicks in the room: sloping headboards for luxurious reading in bed, TV opposite the bed



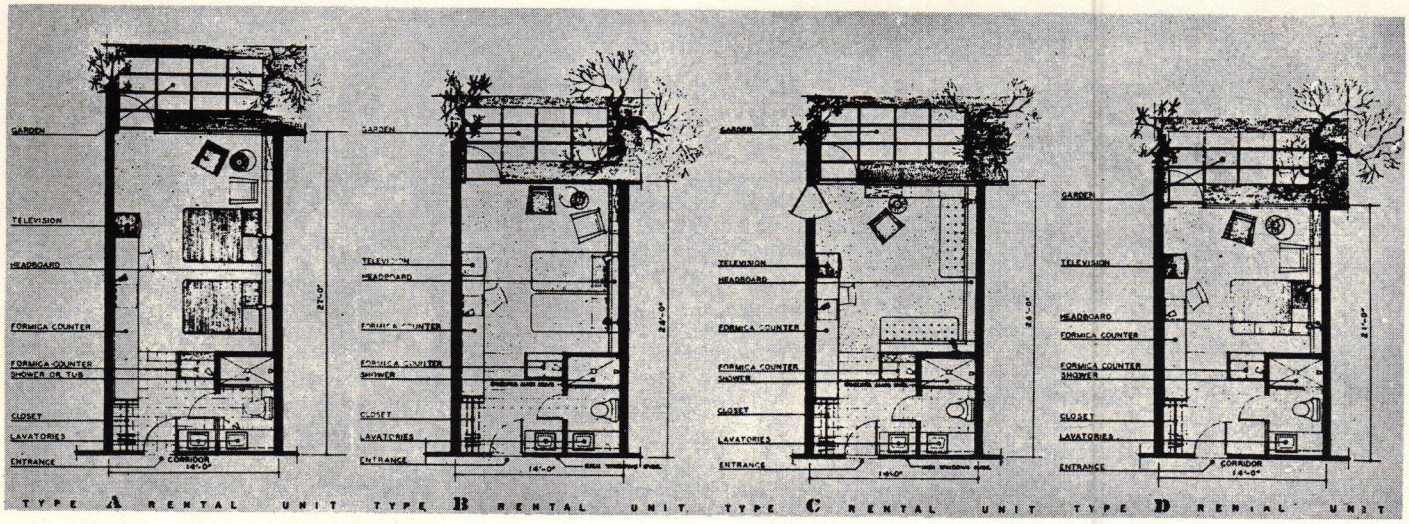
Ridgefield Park: The screen allows a glimpse of the room, its furnishings, and the large patio window beyond

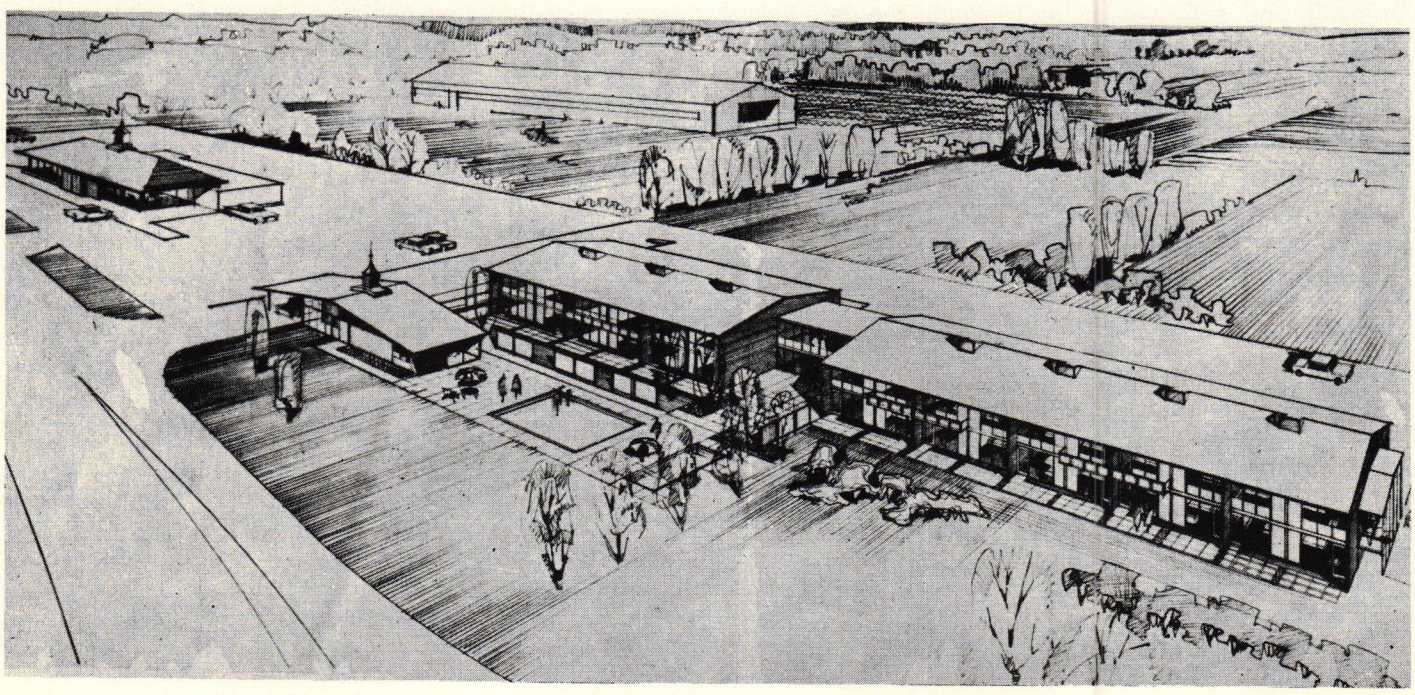


for lazy viewers, luggage rack, desk, and TV counter in one continuous plastic-topped counter. The colors are on the somber side to add dignity and restfulness.

As for site planning, we hope—but are not sure—that we have made the Johnson organization conscious of how important it is to make the most of a difficult terrain. At Breezewood, there is a narrow bottleneck approach between a Howard Johnson restaurant parking lot and an obscuring weed-covered bank. This alley led to open acreage about 300 ft back, upon which the owner wanted one-story buildings. The problem was to stretch out the buildings to call attention to the project yet provide something high to relieve the monotony. We hope the site arrangement answers the question. Here we were able to keep parking roads on the perimeter and face the patios inside and away from the highway. The danger in such an arrangement is that the passing tourist may never know how attractive the project is until he drives up and walks through. Time and landscaping will help.

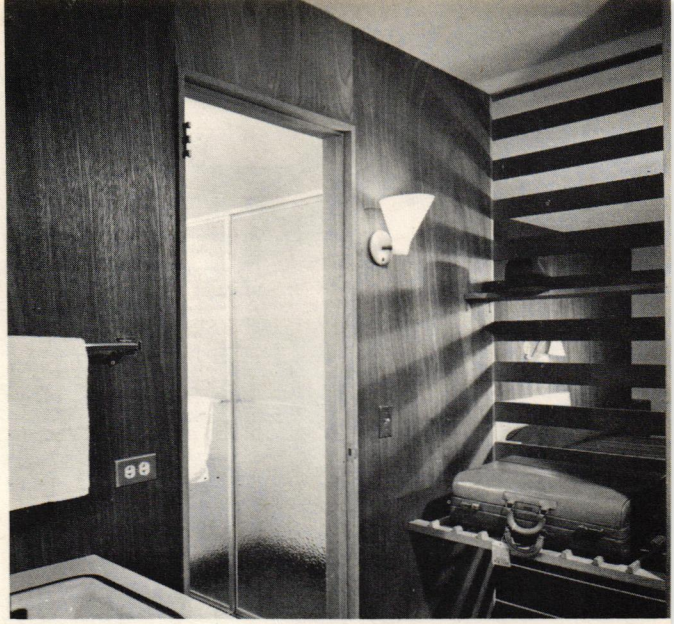
Ridgefield Park illustrates the opposite problem: a handkerchief piece of marshland at the end of the







Ridgefield Park: Interior of the gate lodge reception lounge



Ridgefield Park: Luggage rack and screen at room entrance

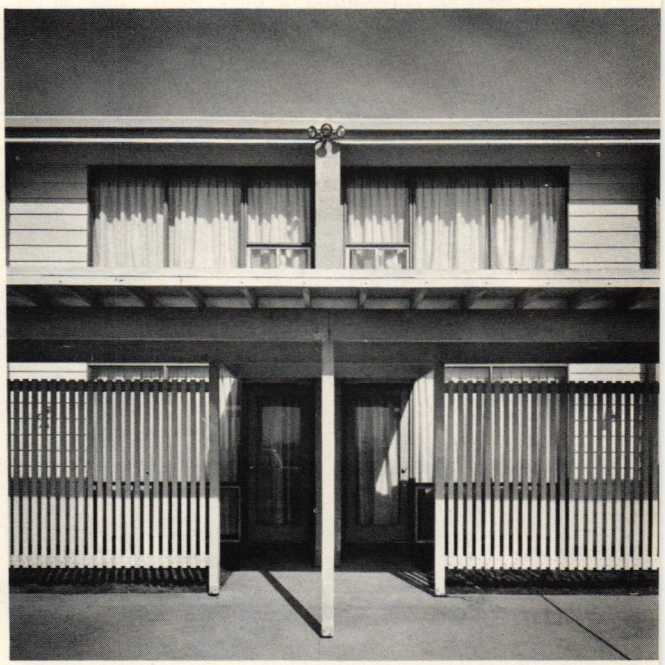
New Jersey turnpike, worth its weight in gold. High density was an economic necessity, hence the two-story corridor scheme with the grass strip between, set back as far as possible from the highway. Since the building faces both ways, it was felt that parking should be in back because of the need for advertising whatever small green areas were left by placing them on the highway side. The little Japanese gardens separating parking from lower floor rear rooms will make these attractive and should become a feature of the project.

As for construction: we all felt costs should be kept as low as possible consistent with the program envisioned. The greatest problem has been to keep mechanical costs down, since the projects are fully air conditioned. The electrical installation, while not lavish, is far above motel average, and the plumbing —with extra fixtures—is costly despite backing-up wherever possible. Thus it seemed the best place to cut costs was in the structure, but the effort has been in the direction of durable materials to minimize future maintenance and make soundproofing easier. This has resulted in solid masonry walls between units and a regular system of beams and roof deck overhead. Despite concerted effort to modularize the construction in multiples of 4 ft, the company has insisted on a 14-ft-wide room which strictly adheres to their accepted standard layouts for rental units.

While these criteria will not fit every project, they may be useful as guides to the sort of analysis and planning necessary for successful motel design, construction, and operation.

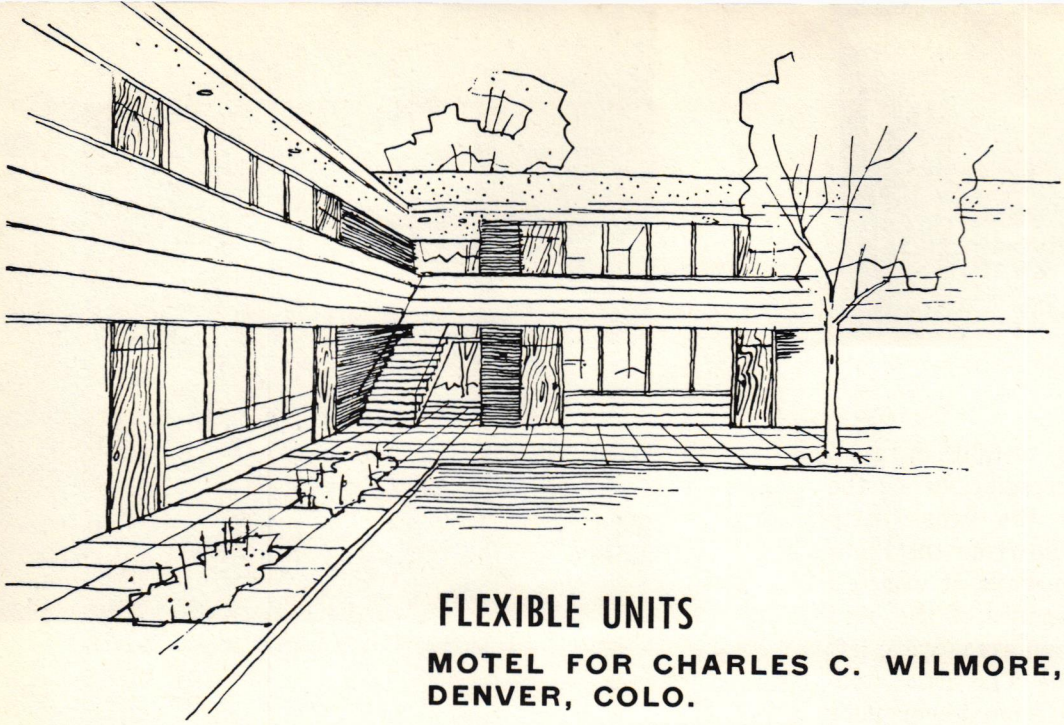
Perhaps the main block to a successful combined motor lodge and restaurant operation is the client's tradition. It should be obvious that a motor lodge does not compete with a restaurant, but is a welcome adjunct to it. From the beginning, however, all the design functions and even land purchase have been kept entirely separate. There is a whole group of restrictions on the location of the restaurants so that the motor lodges usually end up looking at the garbage side of the restaurant. As remarked before, the gate-lodge concept of trying to draw attention to the motor lodge by putting an imitation of restaurant in front of it will only confuse the motorist.

We predict that a company that can combine eating and sleeping in a unified, homogeneous motor-inn concept will have a much easier time drawing in the tired, hungry traveler. Architecturally, this type of problem is much more interesting and it is much more possible to attain a happy solution.



Ridgefield Park: Two-story buildings on valuable land

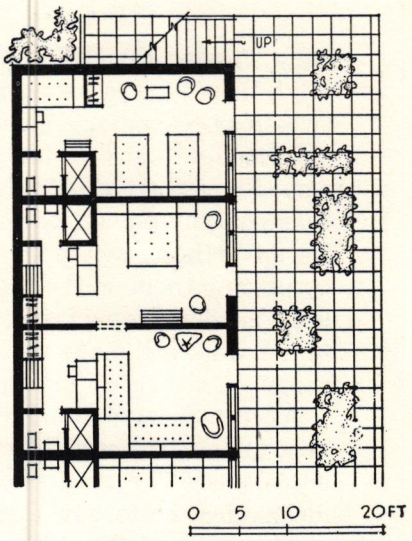




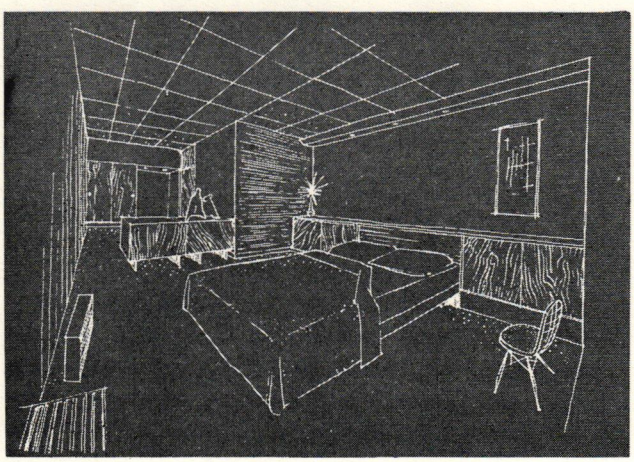
FLEXIBLE UNITS

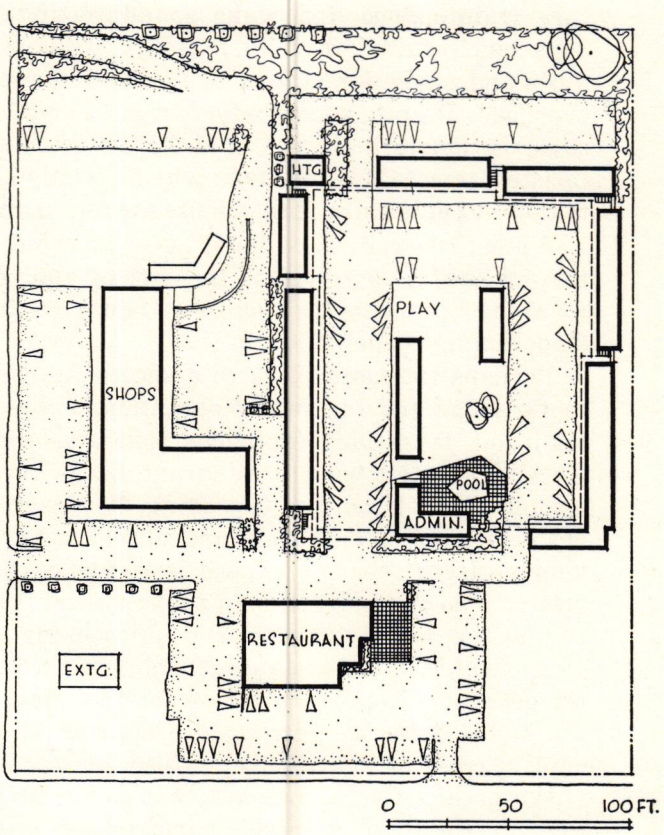
MOTEL FOR CHARLES C. WILMORE, DENVER, COLO.

Norton Polivnick, Architect

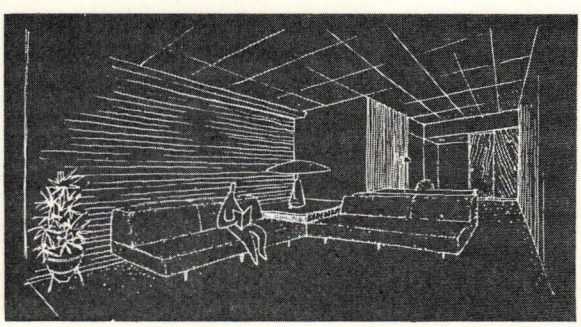


The increasing trend to automobile travel for business or pleasure trips and family vacations poses a relatively new problem for motel designers and operators to meet the varying demands for types of room arrangements. The architect of this motel project has devised an economical solution by providing a basic unit that lends itself to a variety of furniture layouts. The units have been combined into a well organized design that also includes a restaurant, a group of shops and recreation facilities. An existing service station occupies a corner of the site adjoining the restaurant.





The two sketches shown here illustrate the adaptability of the basic unit to different arrangements: a sitting room with sofa beds (below), a unit with double bed (above)



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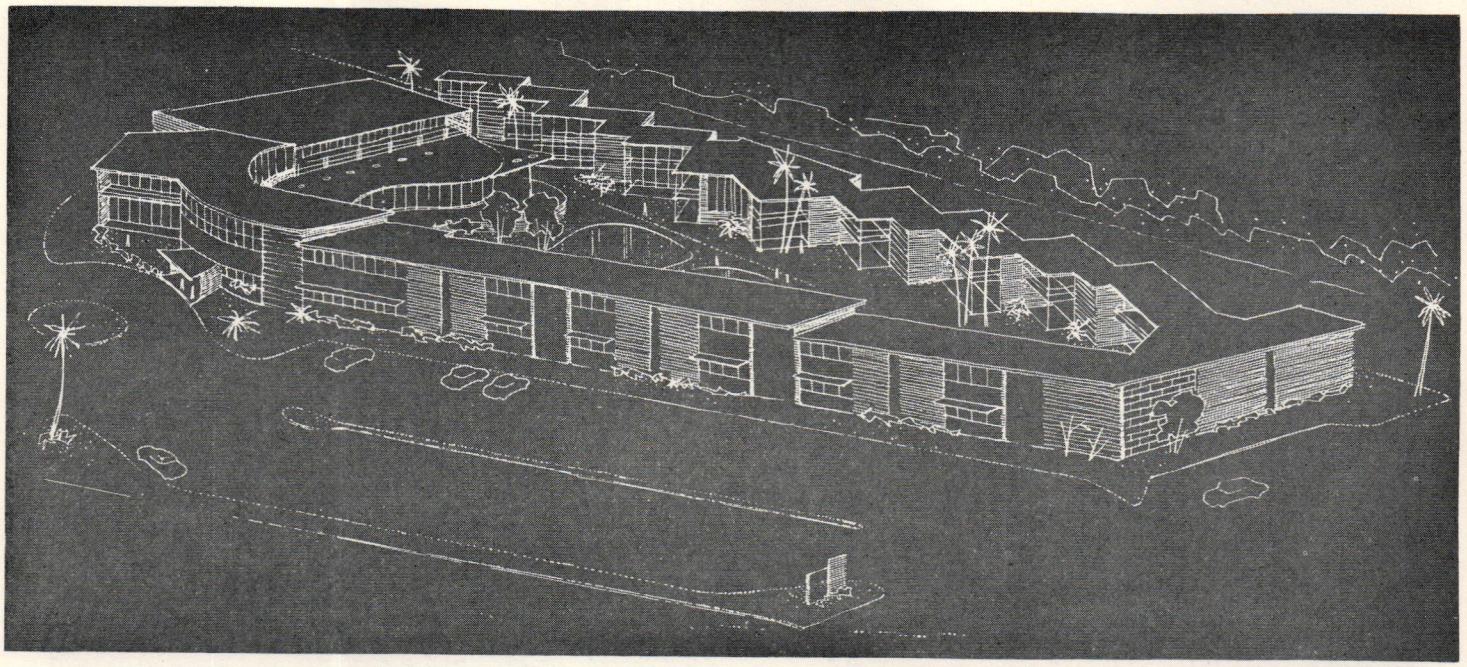
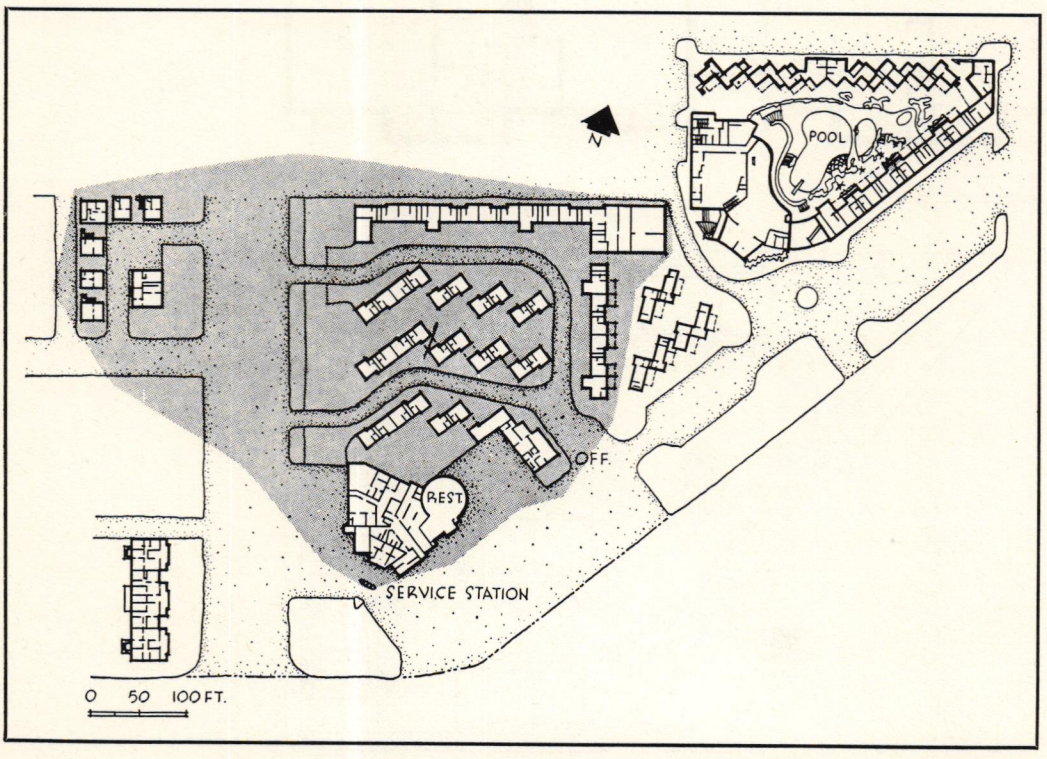


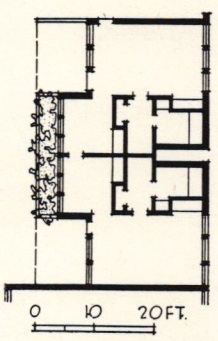
FOR YEAR-ROUND OCCUPANCY

JACK TAR HOTEL, GALVESTON, TEX.

Thomas M. Price, Architect

The relatively short duration of the popular vacation season in many areas — in Galveston it is from May to September — can leave a resort operation with a lengthy and unprofitable slack season. Although the original portion of the Jack Tar Hotel, built in 1940 (shaded area on plan below), has had an overall success, the owners have sought a way to keep occupancy high during the off-season. The result is an addition (sketch above) designed to attract small conventions, sales meetings and club activities. The original property has 100 units; the addition has 60 suites, and expansion of restaurant and meeting room facilities.





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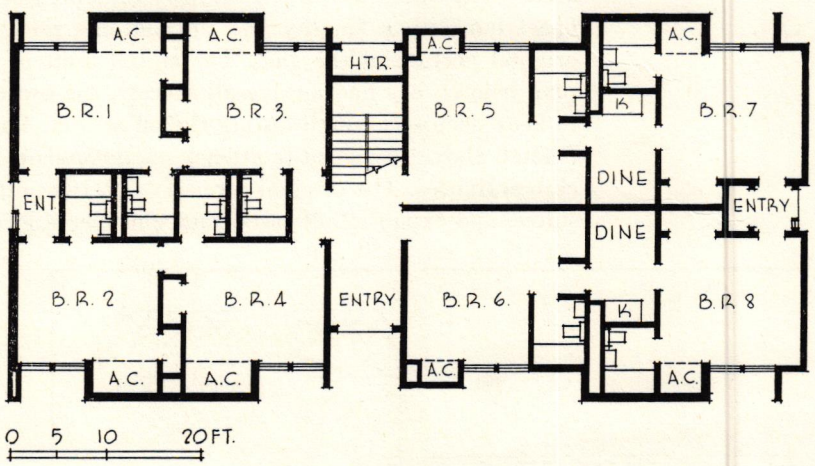
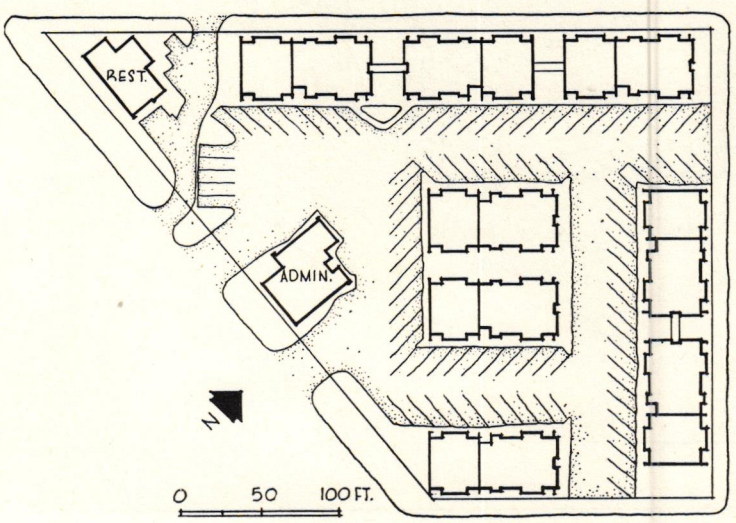
APARTMENT HOTEL FOR MOTORISTS





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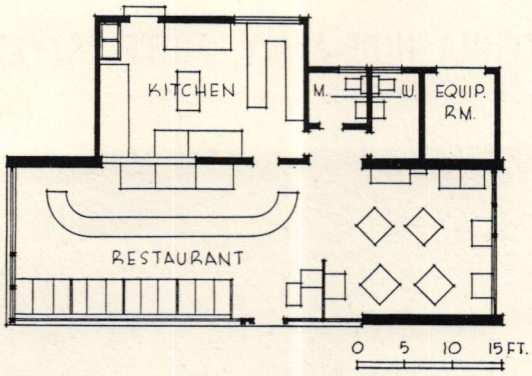


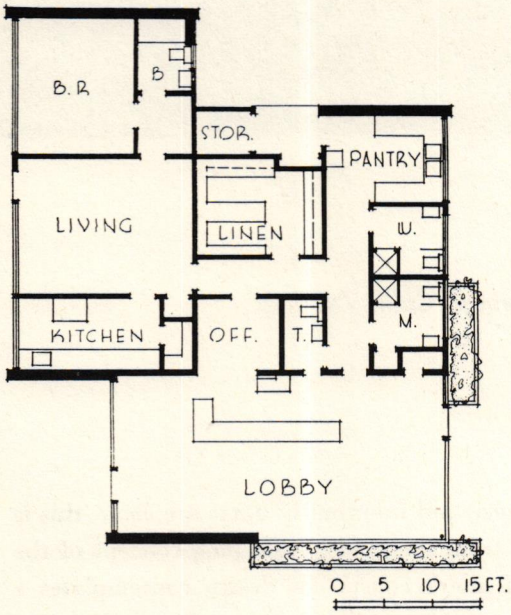


TOWN HOUSE MOTOR HOTEL, NEW ORLEANS, LA.

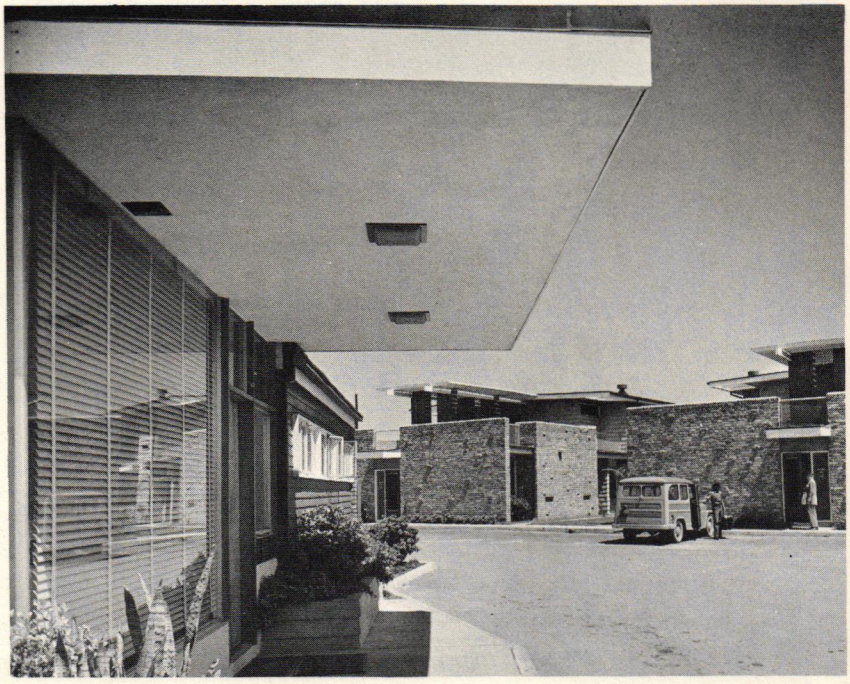
Curtis and Davis, Architects

An unusually adaptable arrangement of rooms has been worked out for this New Orleans motel to permit rental as apartments of one to four or more rooms. The rental units are grouped into eight identical buildings, which feature such items as second floor sun decks, a ¾-ton unit air conditioner in each room, and central forced circulation hot water heating. All the buildings in the project are constructed on concrete slabs on gravel fill, with wood frames, and exteriors finished with brick veneer and cedar shingles. Interiors are finished with plywood and plaster walls and plaster ceilings. Floors are asphalt tile or carpeted. All baths have ceramic tile floors and wainscots, and are equipped with bathtubs and showers.

The restaurant (above) has been located in a corner of the site adjoining a street intersection, where it will attract regular drive-in trade, as well as draw from the motel guests. A small serving pantry has also been included in the administration building (below).



Frank Lotz Miller



CALIFORNIA HIDE-AWAY, MOTEL STYLE



Julius Shulman Photos

Town and Desert Apartments, Palm Springs, Calif.

H. W. Burns, Owner and Designer

IF the "motel" is the modern version of a hotel, this one is a similar model of an apartment hotel for a vacation spot. Its rooms are really small apartments, designed for Californians who can afford to get-away-from-it-all in elegant seclusion at Palm Springs. While the convenience and informality notes are clear, this is far removed from the roadside sleeping concept of the more typical motor courts. Its design contemplates a commune-with-nature type of holiday where a swim and a sun bath are the doctor's prescription.

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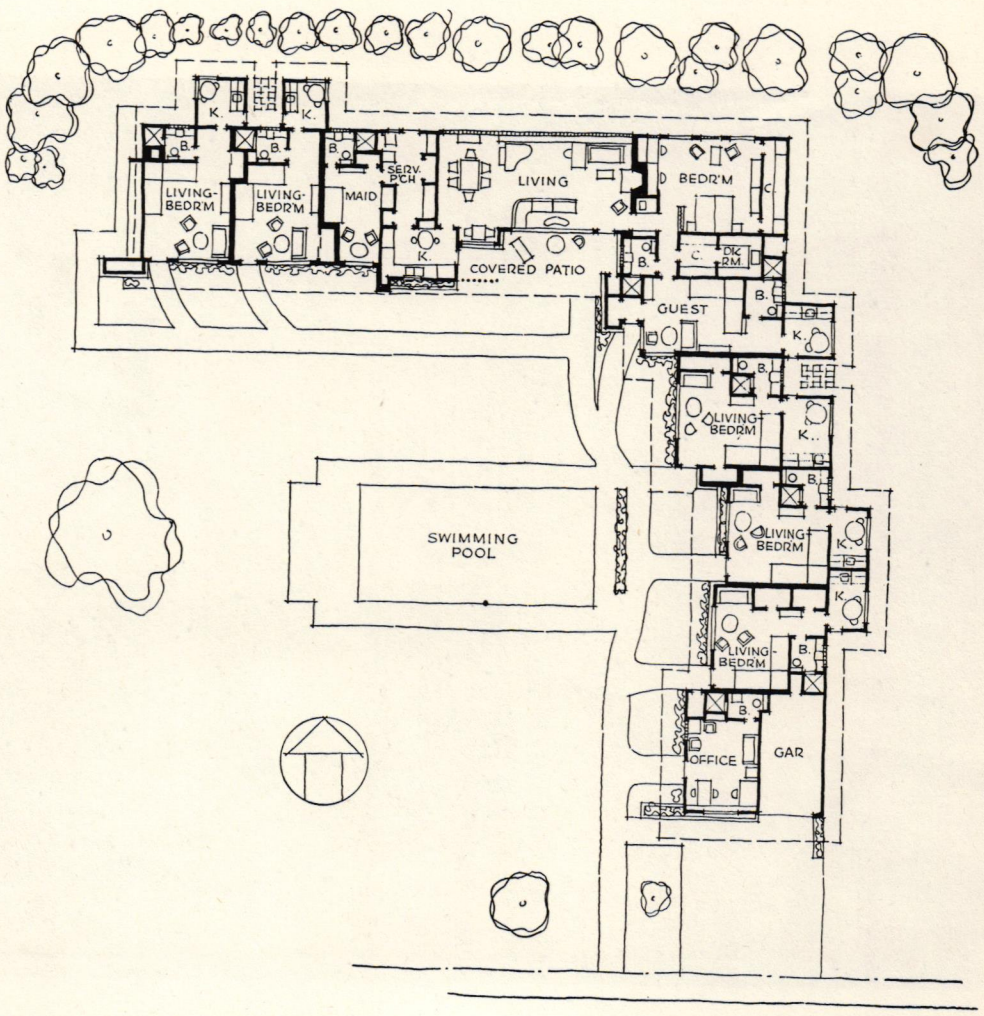
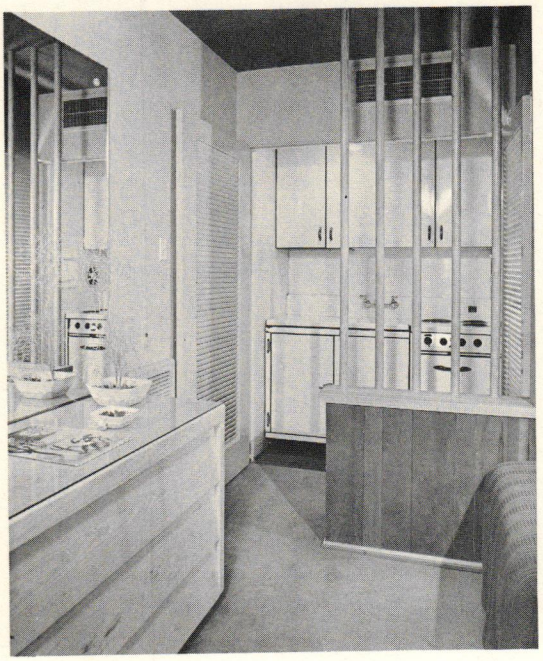
Julius Shulman Photos

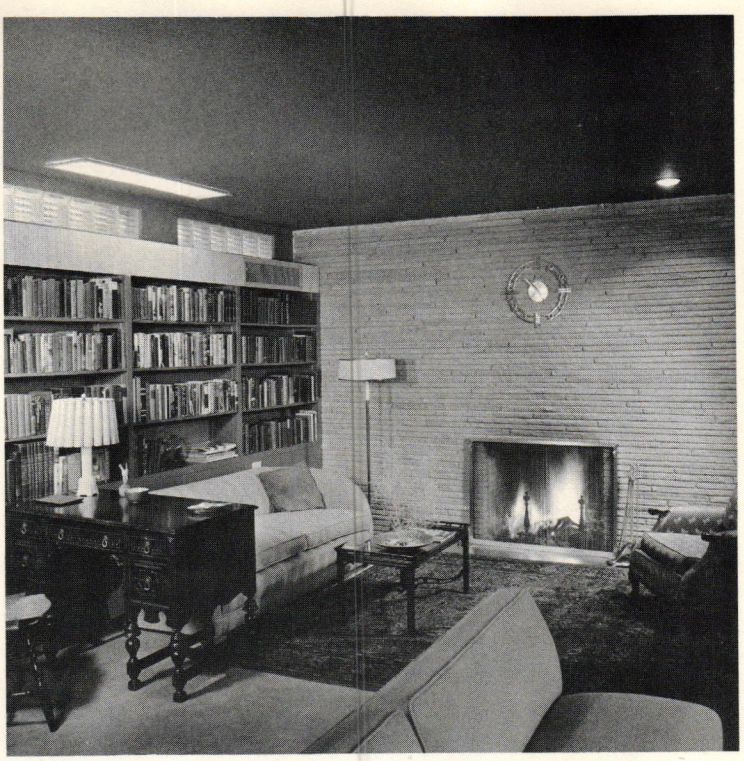


A little study of this plan is almost bound to impress one with the idea that here indeed is a new way of life, at least for those times when one craves a real rest. One gets interested, too, in the owner's way of life in this new concept of a building venture

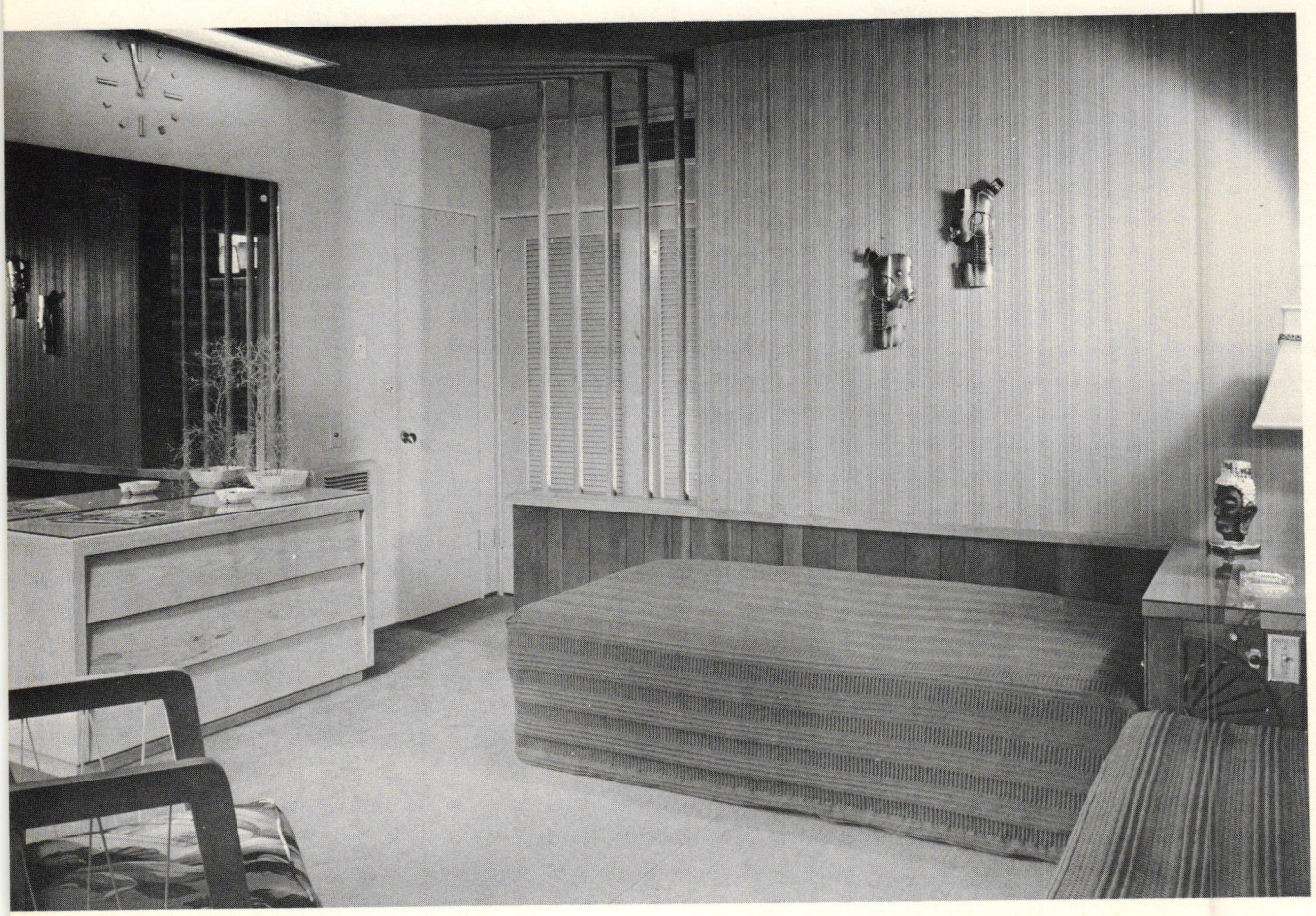
Each unit has a small Pullman-type kitchen, lightly screened off when in use, completely hidden by louvered doors at other hours. Note air conditioning duct

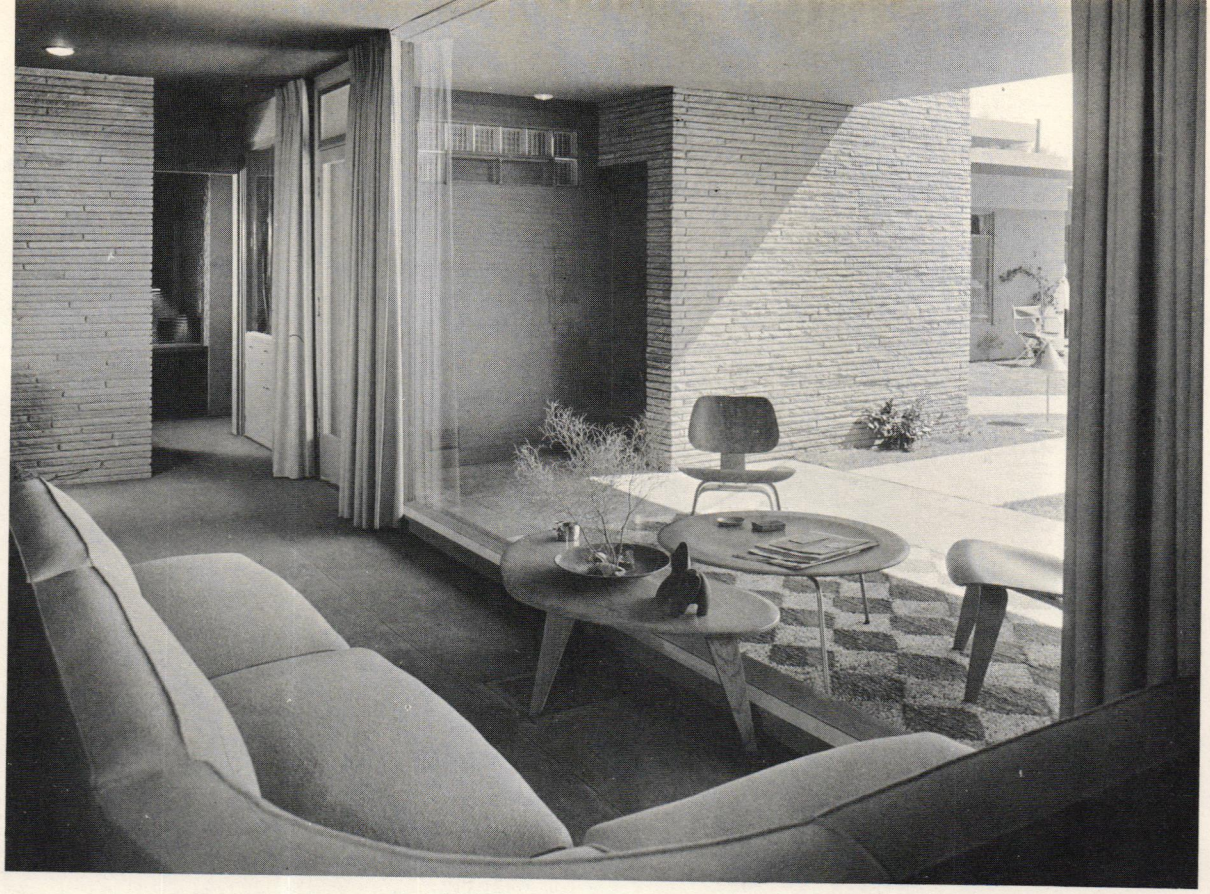
Julius Shulman Photos



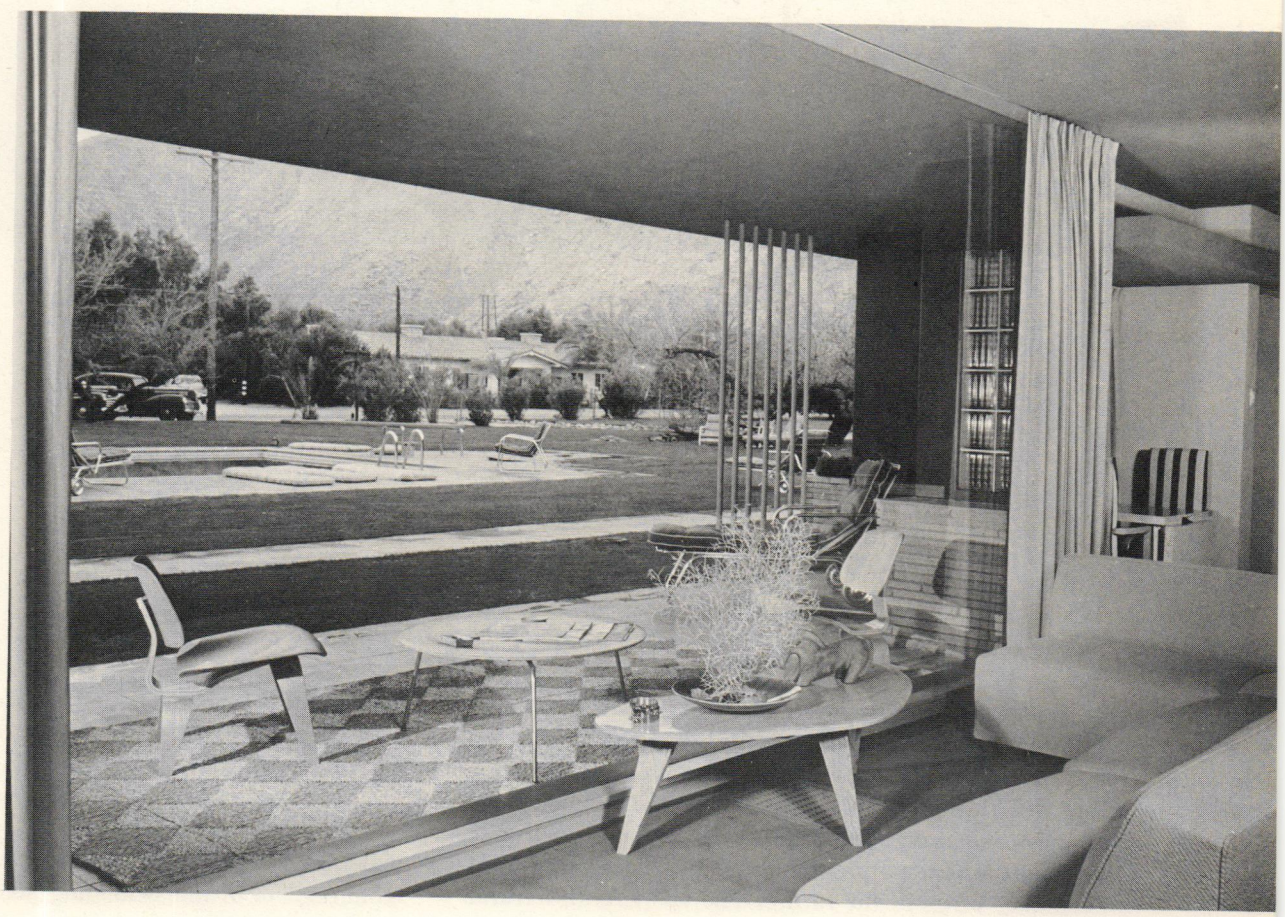


The broader view of the typical rental unit, below, shows day-beds in a hotel-type placement in the combination living-bedroom fashion, complete even to the built-in radio in the corner

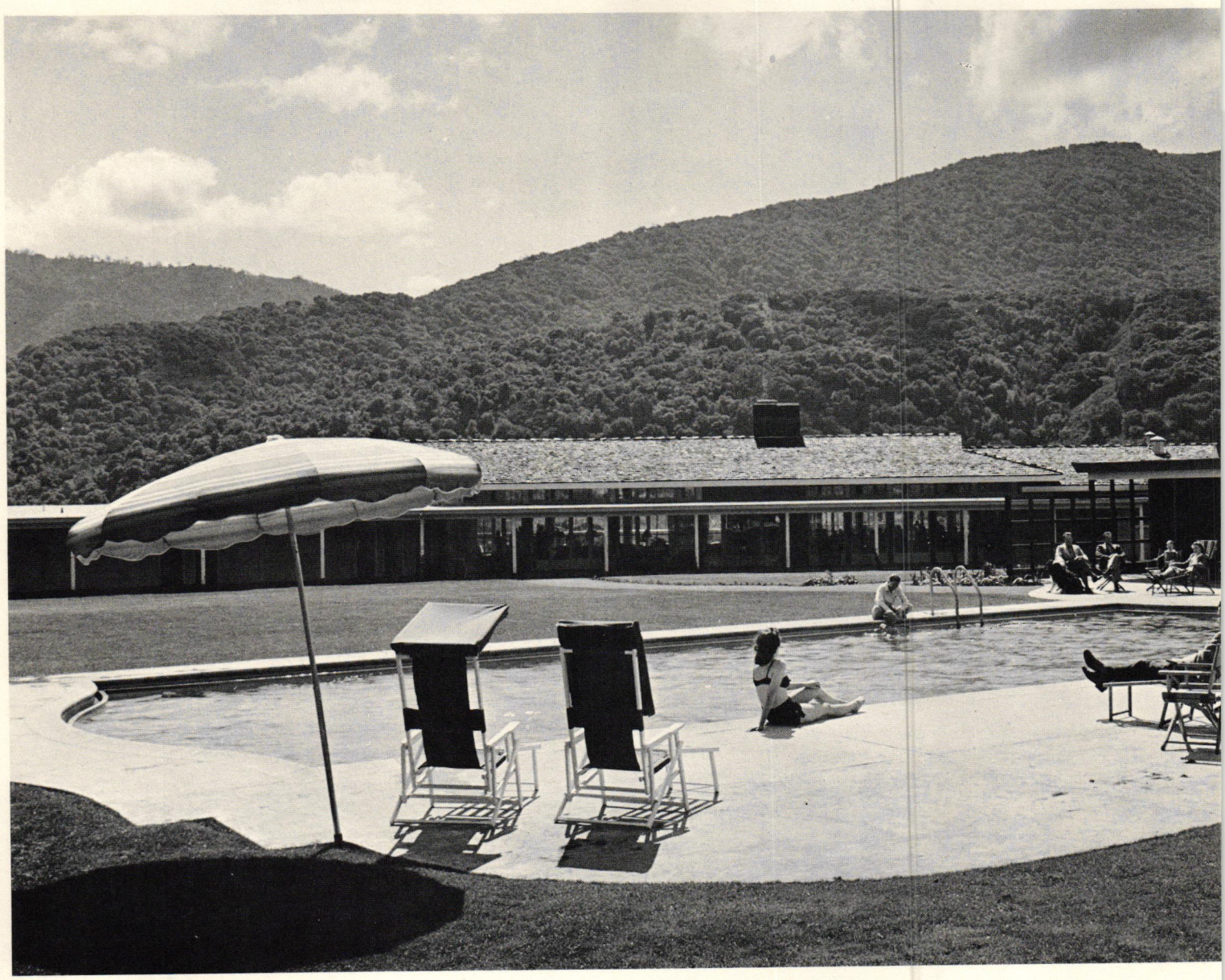




Outdoor and indoor space merge so completely that in these photographs it is difficult to find the line of enclosure. Views through the glass wall are from the owner's living room toward covered patio Note same brick inside and out



VACATION HOTEL IN THE MOTEL MANNER



Morley Baer Photos

Carmel Valley Inn, Monterey County, California

Robert R. Jones, Architect

A COMPELLING example of the "motel" grown to the stature of a resort institution, this one has the spread that typifies California relaxation. It was this "spread" that dictated the low, dispersed arrangement, done in the ranch tradition. The angling wings give each unit a little patio, and also leave the possibility of extending wings in the future. The views, both natural and man-made, provided another design theme, which was carried out with a maximum of glass to bring the outside inward on every possible location. This was one factor in the use of covered porches rather than interior halls; glazing can always be put between the porch posts if it seems desirable, without blocking off views of the mountains or of the swimming pool and gardens.

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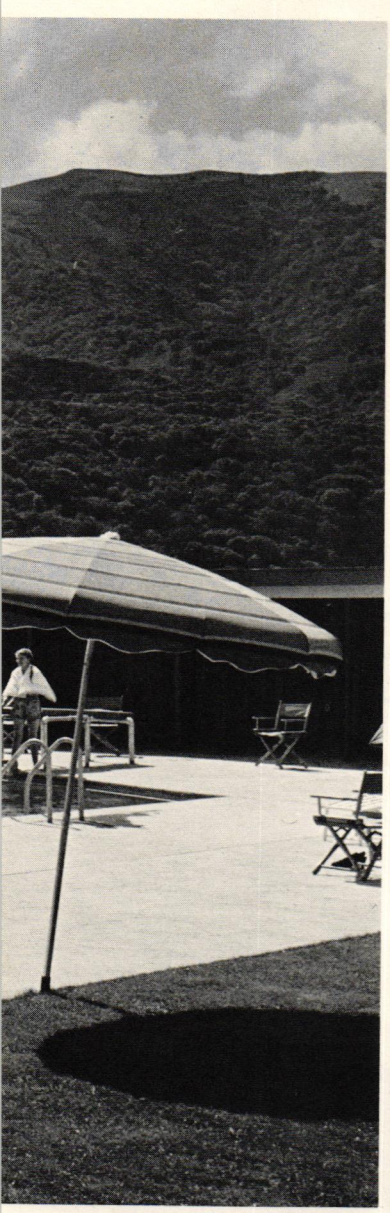



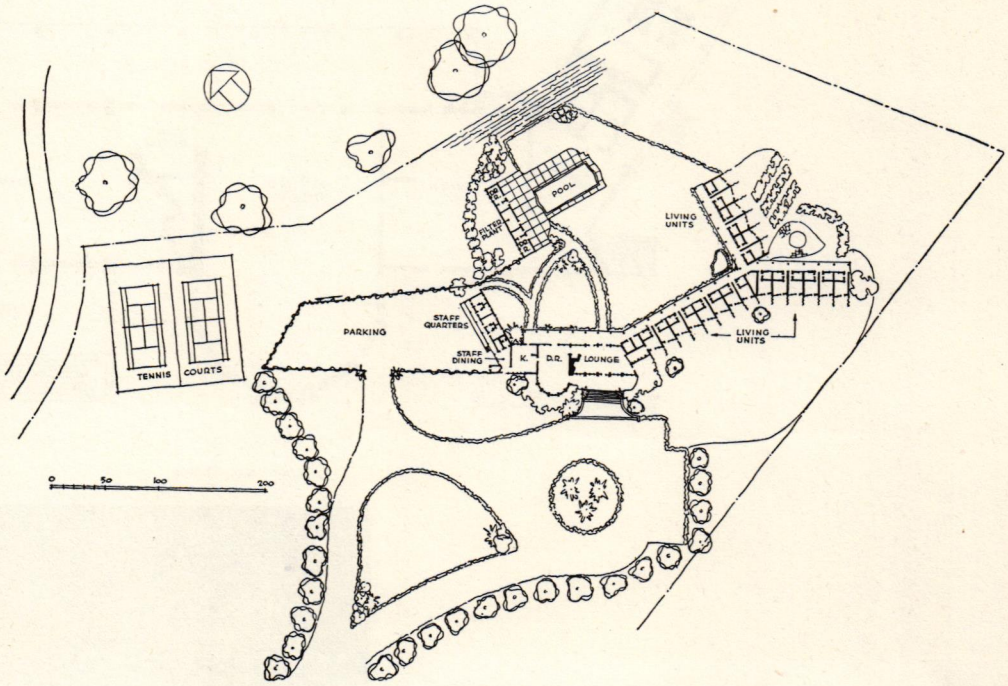
POOL
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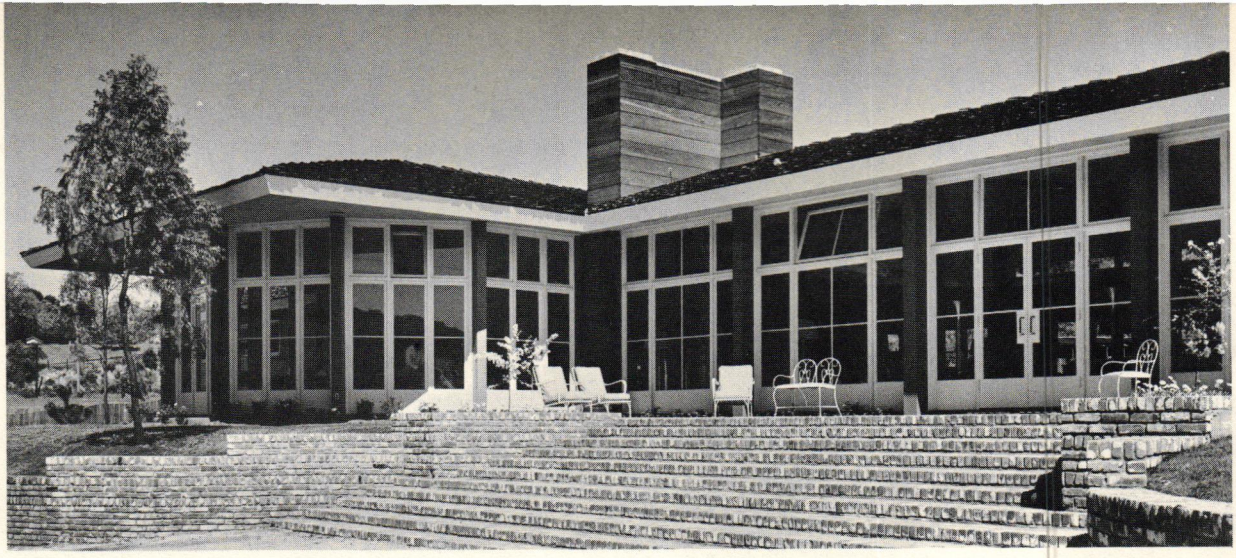
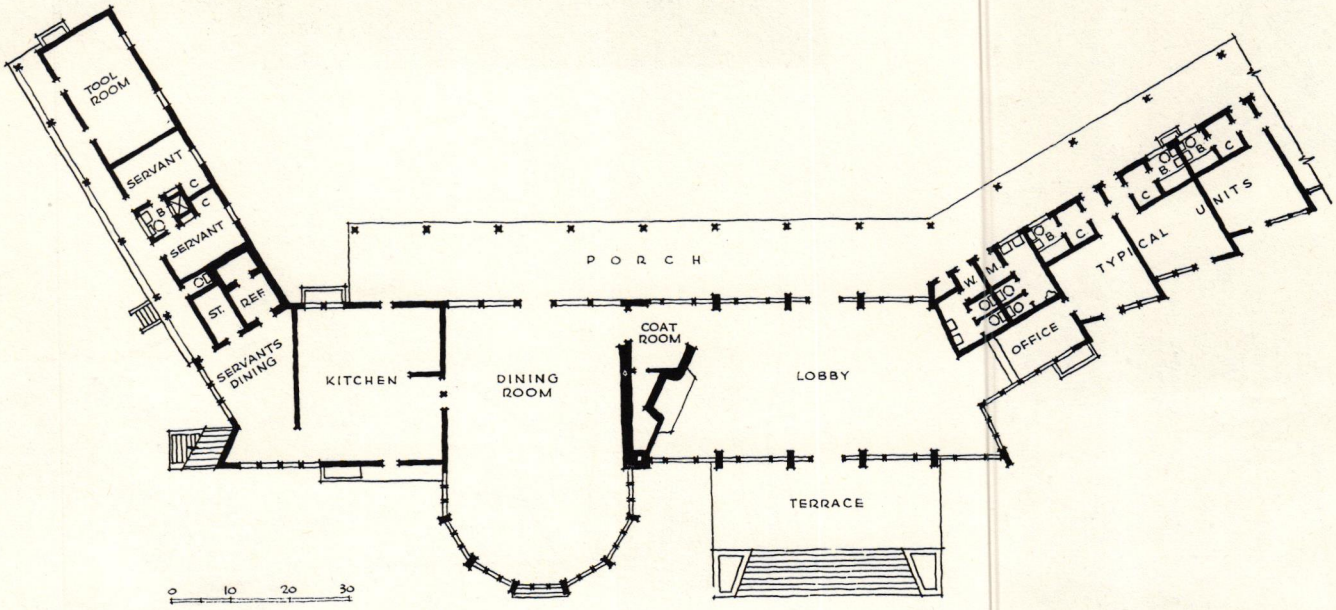




Morley Baer Photos

Lobby and dining room facilities, with the kitchen area, were made oversize to allow for a future expansion to 40 or 60 rooms. The public area, with its lounge porch, was placed for views both front and rear. Service wing was turned to provide a windscreen



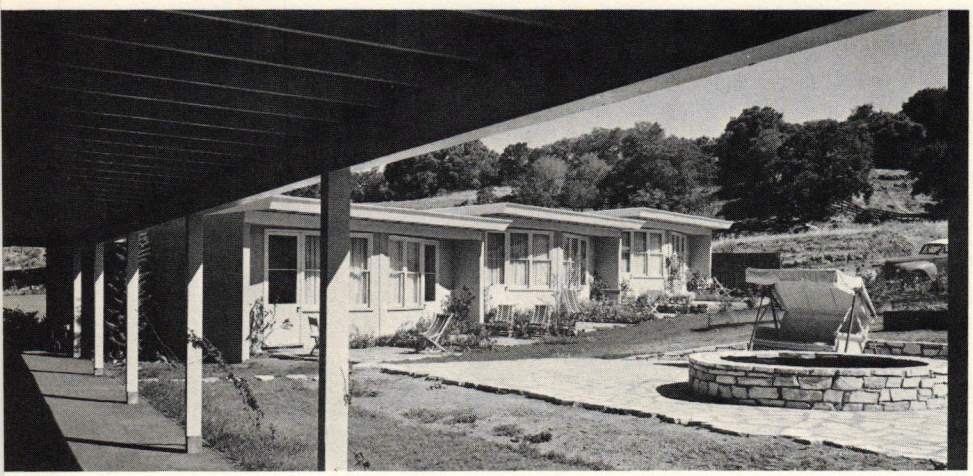


The architect mentions that cost considerations dictated many changes, including elimination of a massive chalkrock fireplace and furnace flue form, in favor of redwood covered brick flues. Perhaps the result in the photograph above is not properly in the ranch tradition, but it is doubtful if the guests would be moved to anything but hearty approval





An eye more knowing than that of the average guest might notice that the rooms follow an idea successfully used in modern hotels — wide, shallow rooms, daybeds, scaled down furniture for an atmosphere of spaciousness

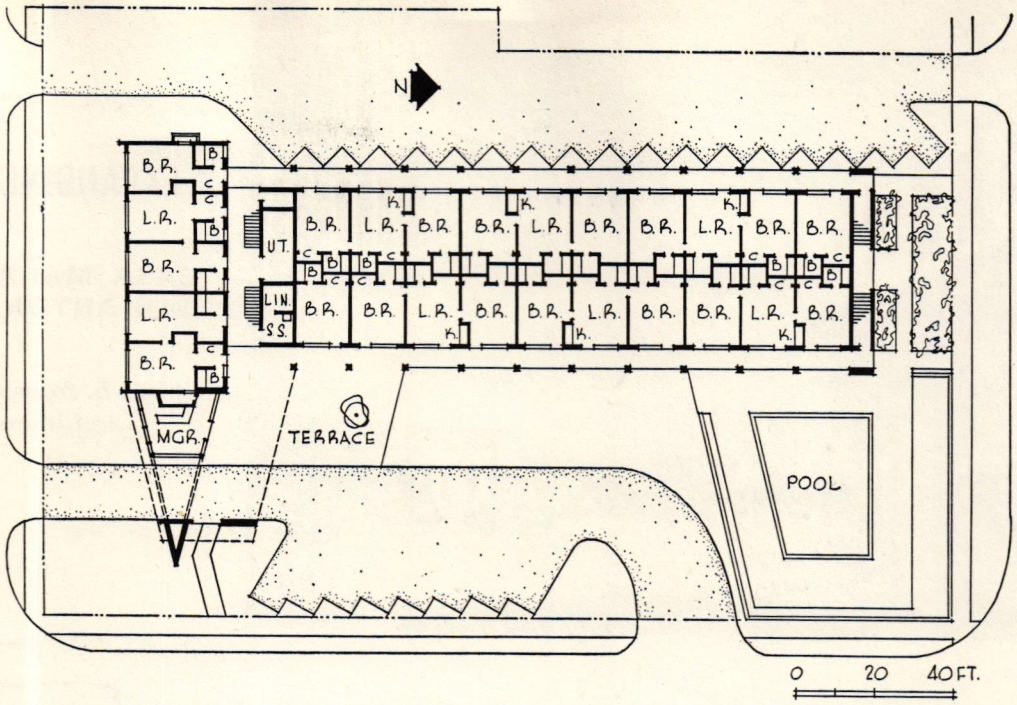


While the distant views are fully up to the California standard, the foreground is not forgotten. Nevertheless, eye-catchers are low enough for distant vision

Morley Baer Photos



No scaling down of furniture is seen in this view, though it is still there. Glass walls on the porch side inescapably draw the eye of anybody in the room until the porch area is effectively added to that of the room



THE SHALIMAR FOR LONGER STAYS

The Edwin T. Reeder Associates, Architects



THE wide range of types of tourists that can be expected in the Miami area have been taken into account in the planning of this two-story motel. Rooms are arranged so that they may be combined into apartments of one, two or three rooms to accommodate overnight guests, commercial travelers or families on a holiday. All rooms flank a bathroom core running the length of the building, and open on either the front or the rear parking lot. The second floor is identical to the first. Stairs are placed behind fins at the north end, and adjoining the service rooms. The original scheme for the front terrace and pool shown on the plan above have not yet been carried out.



Ernest Graham

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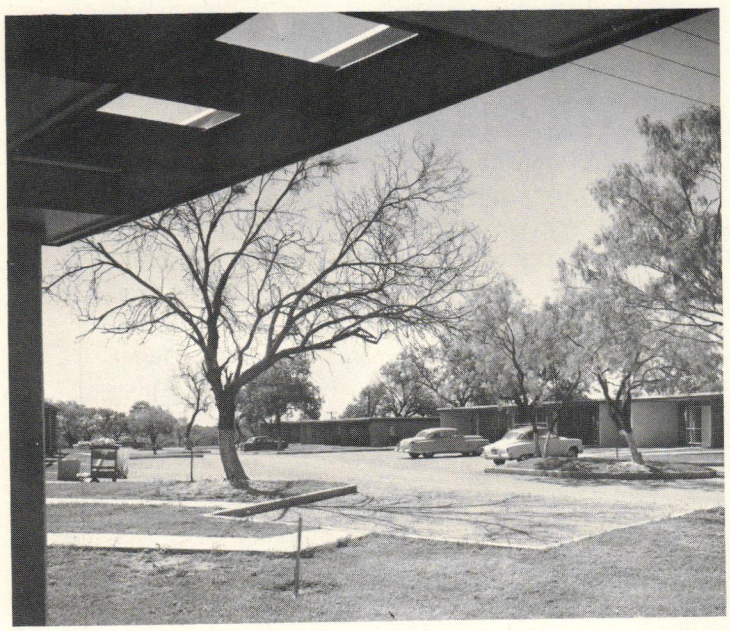
EXPANDING MOTEL

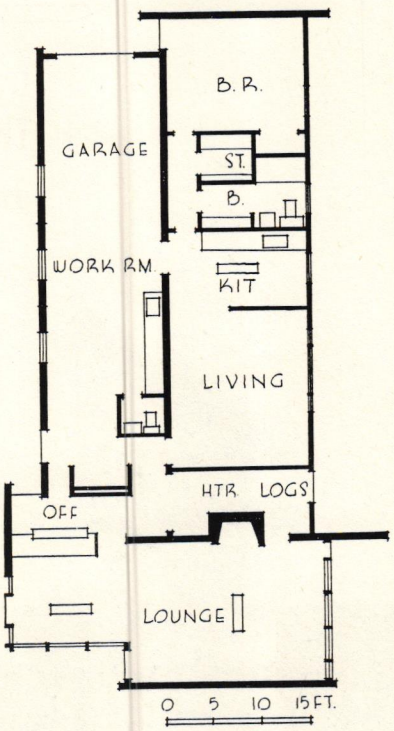
CASA MAÑANA MOTEL
SAN ANTONIO, TEX.

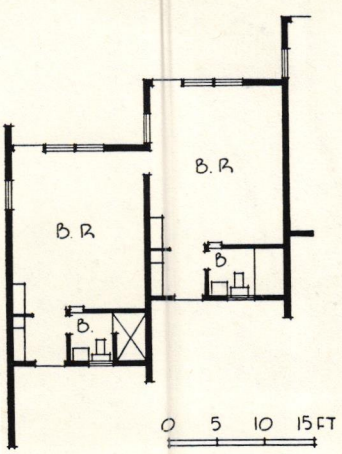
Addis E. Noonan Associates, Architects & Engineers

The motel utilizes water pumped from a deep well on the property, has its own sewage disposal system. Water system is oversized to augment fire extinguishing equipment



Each unit (typical plans at right) has individual window A.C. unit, thermostatically controlled gas wall heater. Office (above right) has PBX board, 5-ton A.C. unit





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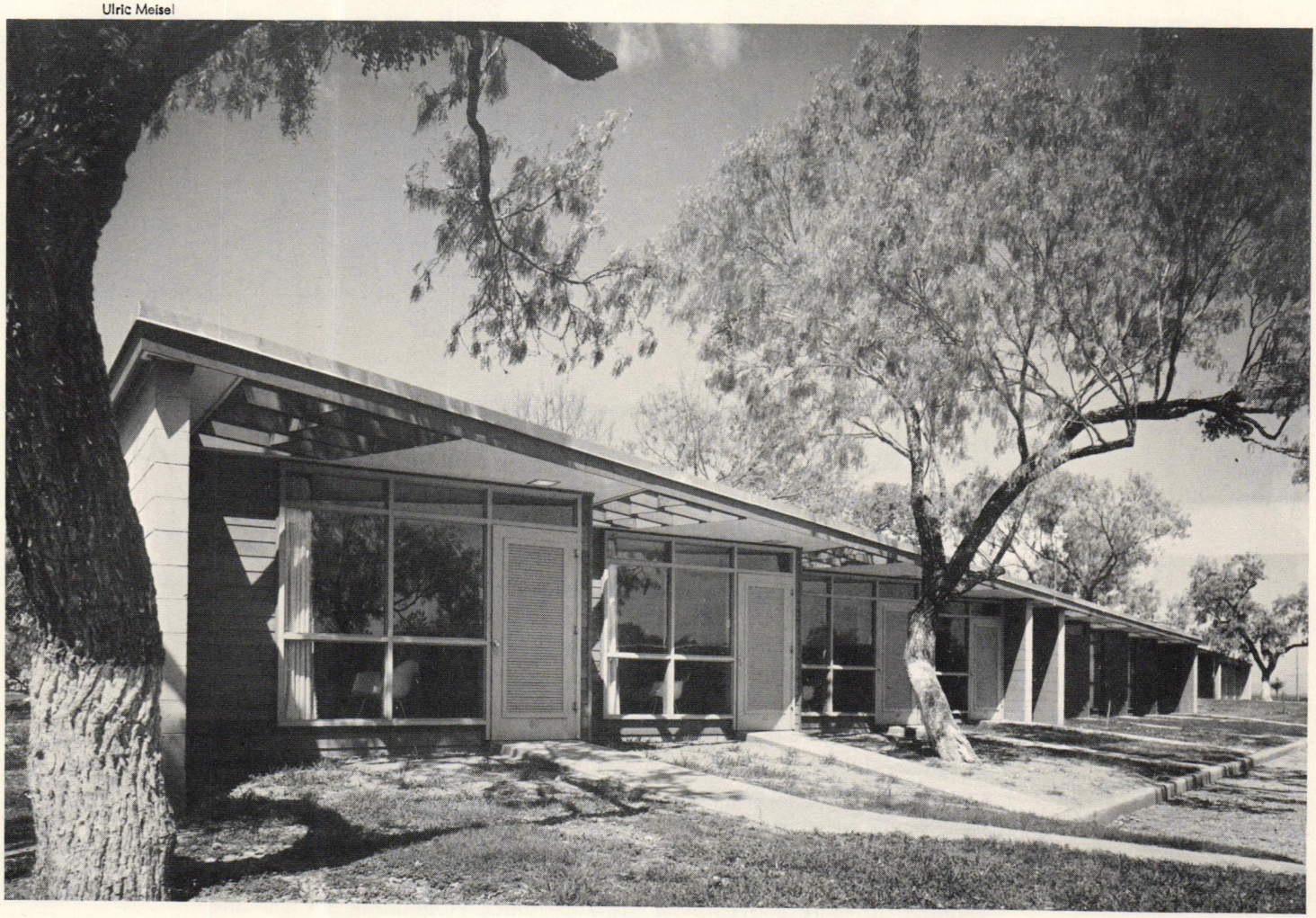
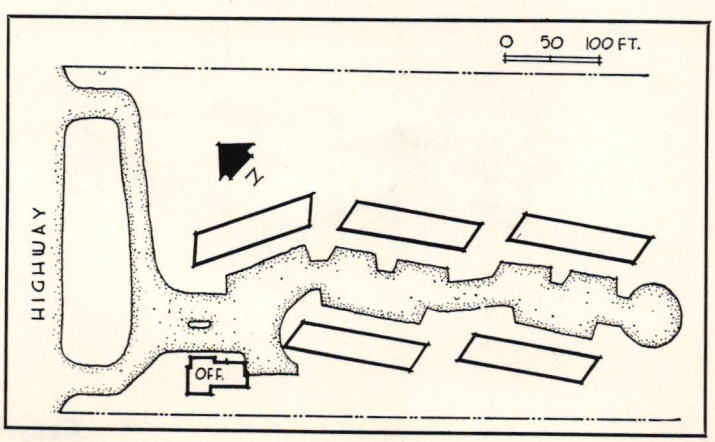
CASA MAÑANA MOTEL is perhaps adroitly named, for these six crisp new buildings form the nucleus for a larger motel slated to include an impressive variety of recreational and sales facilities. Adjoining properties, which also belong to the owners, will be developed with a cafe-lounge, a drive-in, a liquor store and a service station. It is also proposed to provide a swimming pool, a small golf course, picnic grounds and similar facilities along a small creek on the property. The present rental units are placed on high ground with an open vista across a valley. Each building has eight units, angled for greater privacy. End division walls between units are lightweight concrete block and serve as acoustical insulation; staggered baths are also planned to reduce noise transmission. Other walls have redwood siding. Future plans include 24 more units and development of terraces and sitting areas outside all rooms. Furnishings, color schemes and site planning are all being done by the architects.

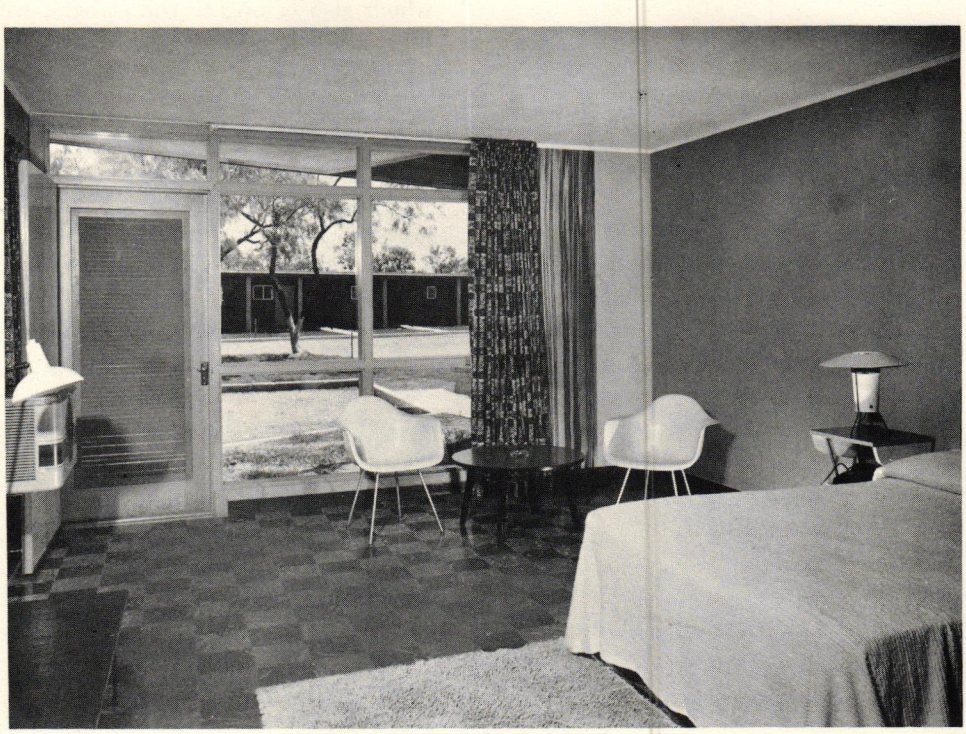
Thomas B. Thompson, Architect

Ulric Meisel





Each 8-unit building has central water heater. All units have showers, eight have tubs. Foundations are "floating" reinforced concrete slabs with 8- by 16-in. perimeter beams



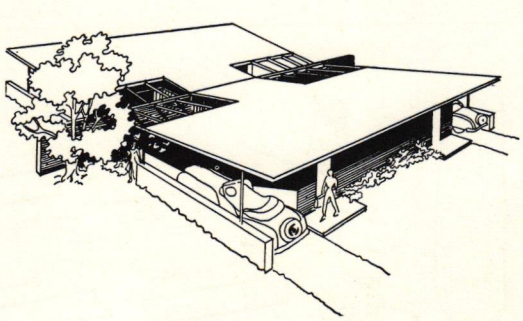
Casa Mañana interiors are also kept crisp and simple. Concrete end walls are waterproofed and painted. Other walls and doors are natural-finish gum plywood. Ceilings are painted wallboard, insulated with glass wool blankets. Floors are colored cement tile. All baths have ceramic tile floors and wainscots

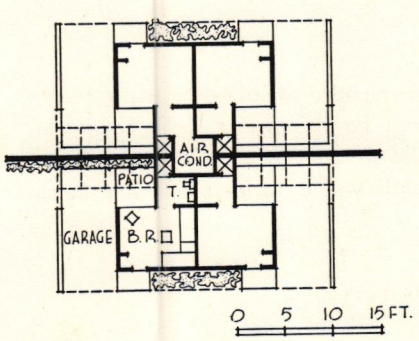
HIGHER DENSITY FOR HIGHER RETURNS

SPRINGER MOTEL
NEW ORLEANS, LA.

Ricciuti, Stoffle & Associates, Architects

THE ROLE OF FINANCES in the designing of motels is plainly indicated in the development of this project to be built near New Orleans. The site, a plot 360 ft wide by 440 ft deep, had several drawbacks: it was on the wrong side of the highway for incoming traffic to the city, and was in an area with a high density of sub-standard motels. The original scheme was planned to create enough appeal to offset these factors by an informal arrangement of basic 4-unit cottages. Each unit was given a high degree of privacy by the use of small patios; elimination of windows in the front also shielded units from auto headlights. The need to provide more units eventually forced the adoption of more conventional row-type units, eliminating garages and combining recreation and office areas into one building.





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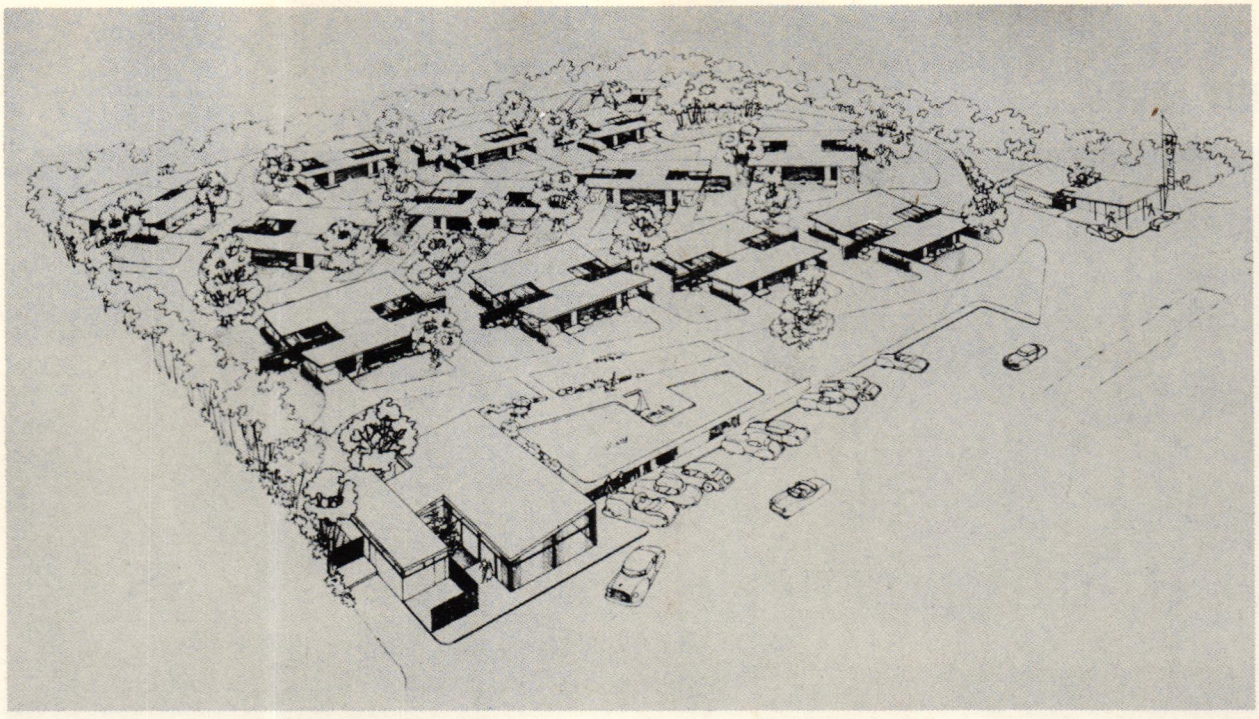
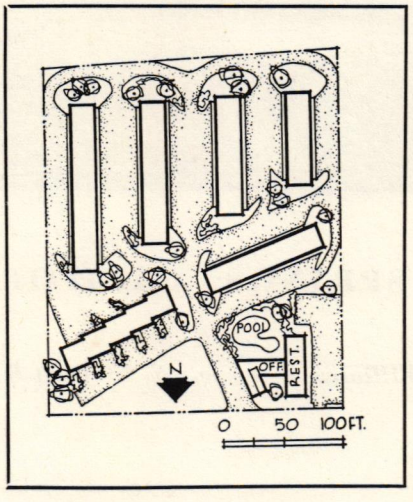
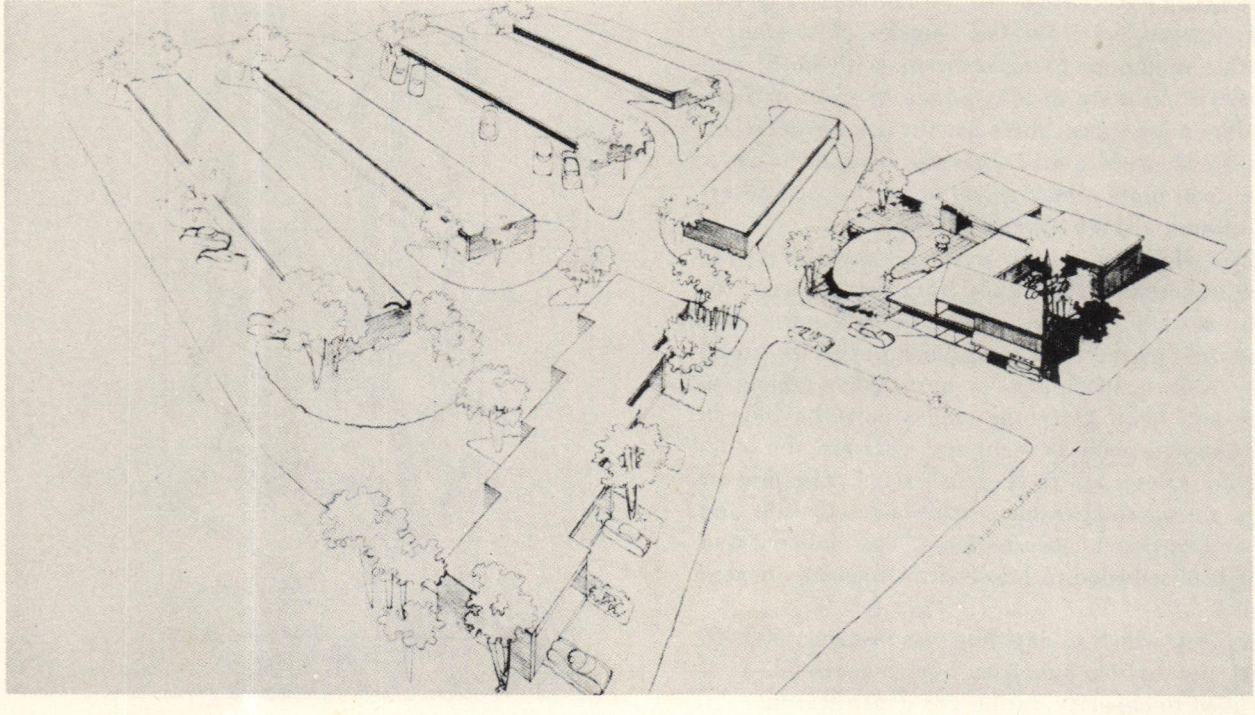
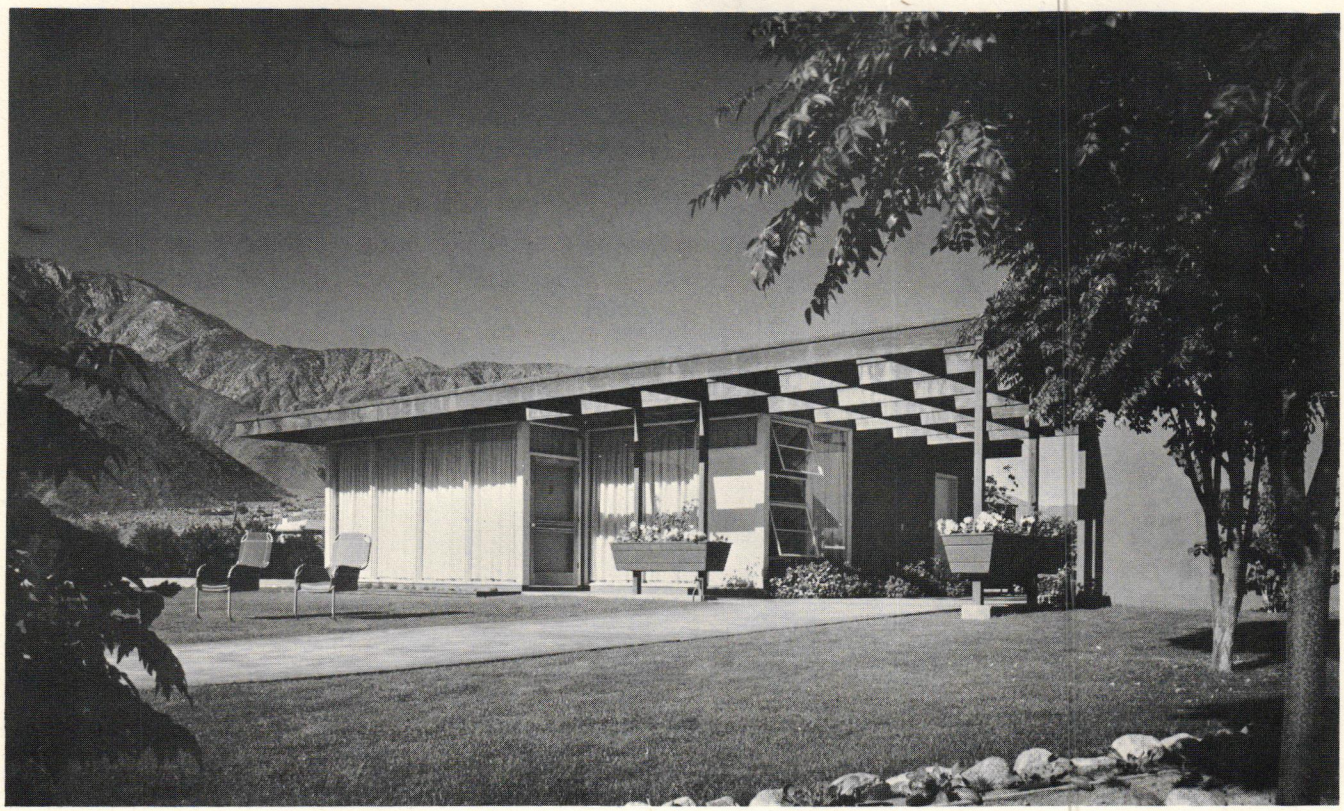


The original motel scheme (above) includes 50 units in 4-unit cottages (bottom opposite page), and separate restaurant-recreation and office-administration buildings. The revised scheme (right and below) increases capacity to 128 units, eliminates garages and patios. An effort was made to preserve an appearance of openness from the highway by using a triangular shaped lawn to give incoming traffic a full view of the combined administration-recreation building and the pool. Exterior finishes will be brick and redwood or cypress





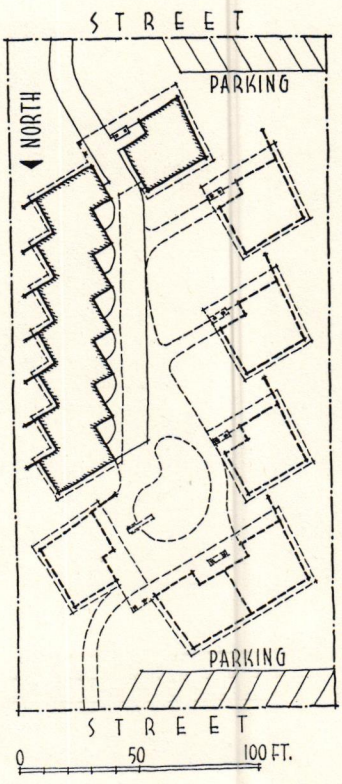
BISONTI LODGE



Donald J. Higgins

PALM SPRINGS, CALIFORNIA

Harry J. Williams & Assoc.; E. Stewart Williams— H. Roger Williams, Architects



IN GENERAL, Palm Springs winter visitors are of two kinds: weekenders from Los Angeles (who want a comfortable minimum living-bedroom with bath) and vacationers from more distant points (couples or families needing more space; these usually ask for detached bungalows). Hence Bisonti Lodge was designed as a row of single room units plus a group of bungalows, all organized around a small patio and pool.

The best view lies to the west and southwest; the warm afternoon sun also comes from that quarter. To make the most of the view, the individual units were angled so their glazed walls would look in this direction, and they were connected by a louvered overhang to minimize sun heat. Only the single units have been built to date. As soon as regulations permit, the independent bungalows are to be constructed. The present buildings are of wood frame, with plastered walls and ceilings and carpeted concrete floors. The louvered roof overhang is of redwood. All units are electrically heated and cooled.

The project, which to date has cost just over $38,500 (or $9.04 per sq ft), has been very successful. It is usually filled to capacity during the entire season.

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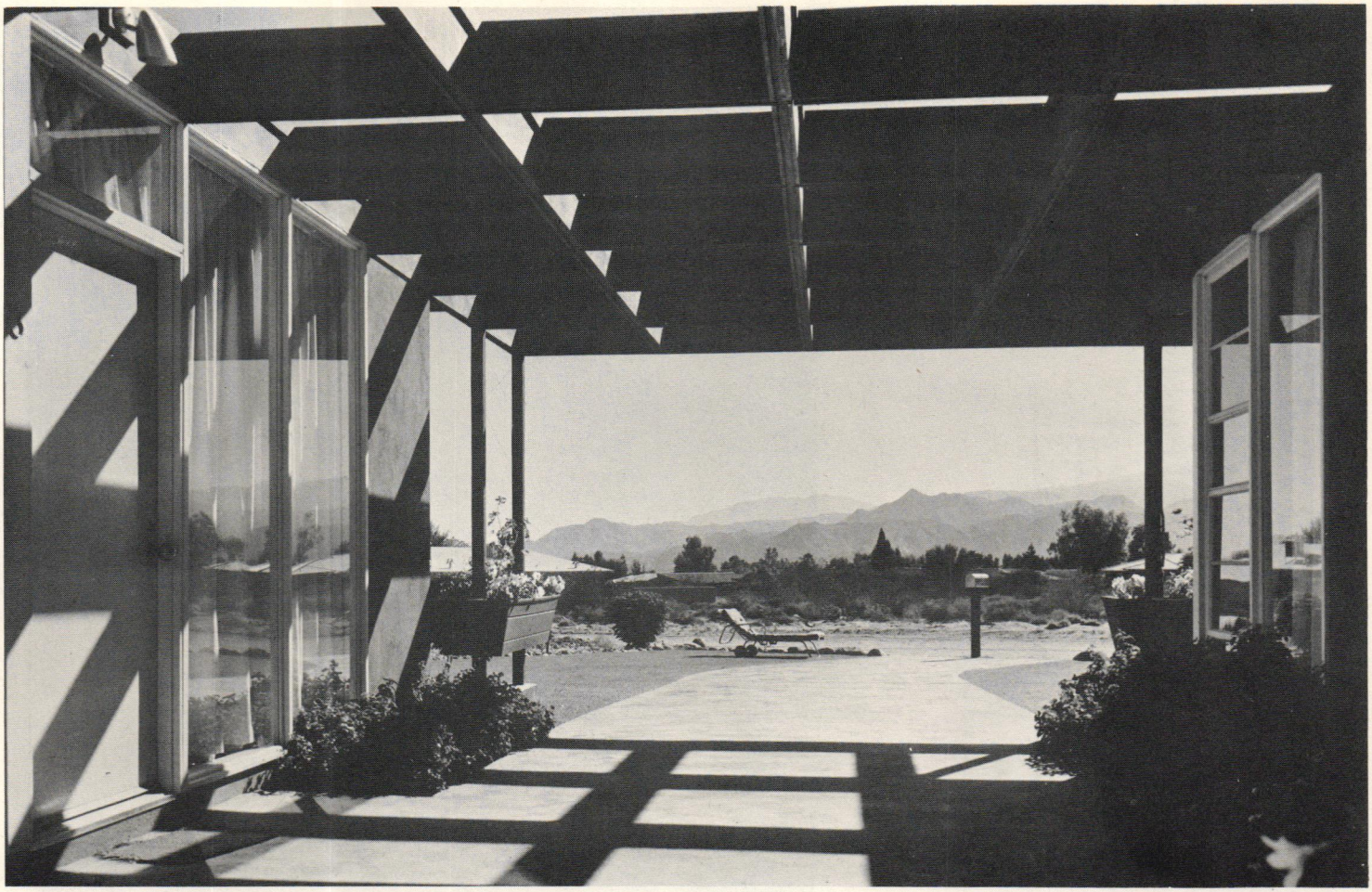
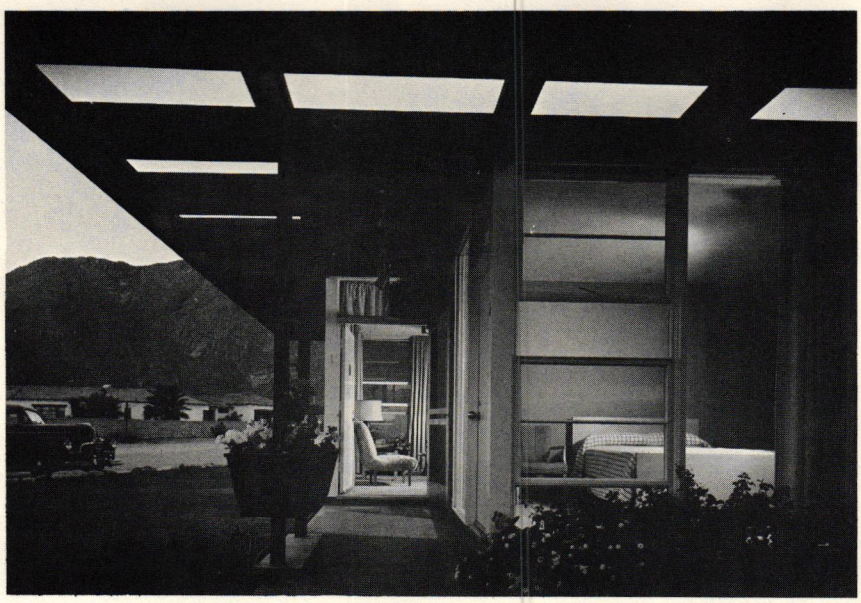
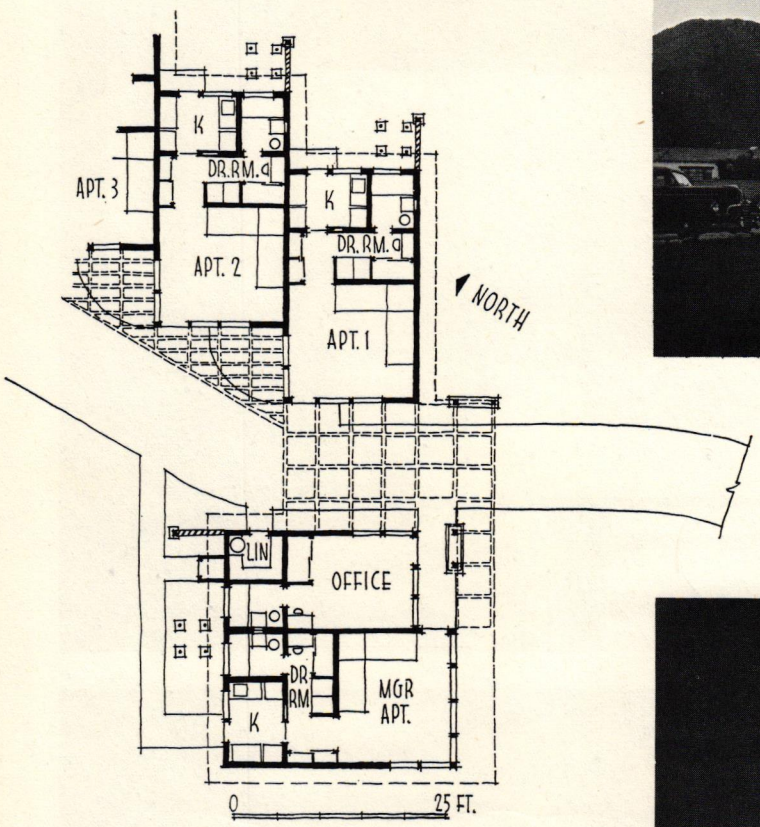
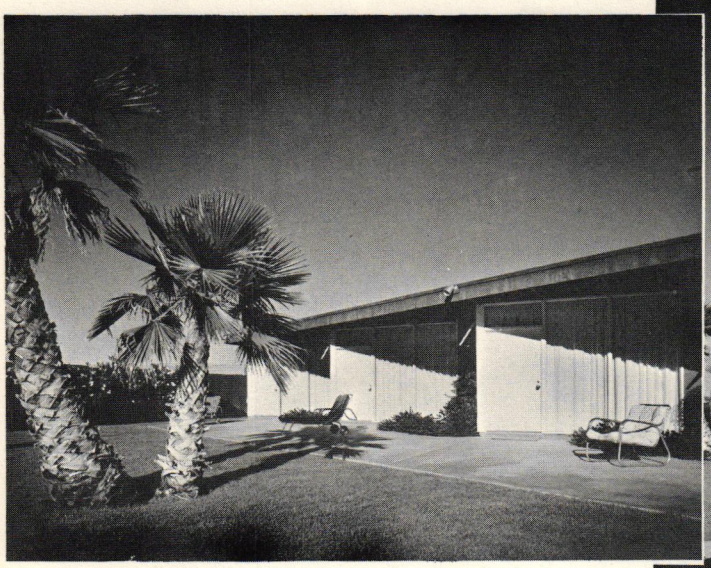








All seven of the single-room units are identical. Wood, including fir doors and frames, is painted; roof is built-up, with white surface to reflect sun. Insulation is aluminum foil and all sheet metal is aluminum



Donald J. Higgins





Morley Baer

MARK THOMAS INN, MONTEREY, CALIFORNIA

Architect: John Carl Warnecke. Landscape Architect: Laurence Halprin. Interior Designer: James Aldrich. Mechanical Engineers: Clyde Bentley

How to design buildings for sites of overwhelming natural beauty is not one of the pre-eminent concerns of contemporary architectural study. In any case, this is not a topic for academic discussion; one could approach it only by specific example. And where a better example than this one? Man made the buildings here; man also added several contrivances to the site. But man was inspired to throw away the book and follow unabashedly the call of a great gift of beauty. And if this course seems one of self-abnegation, well, man won a national A.I.A. award of merit for the first stage of this building operation (page 80), and another for the second stage, including the restaurant (above).

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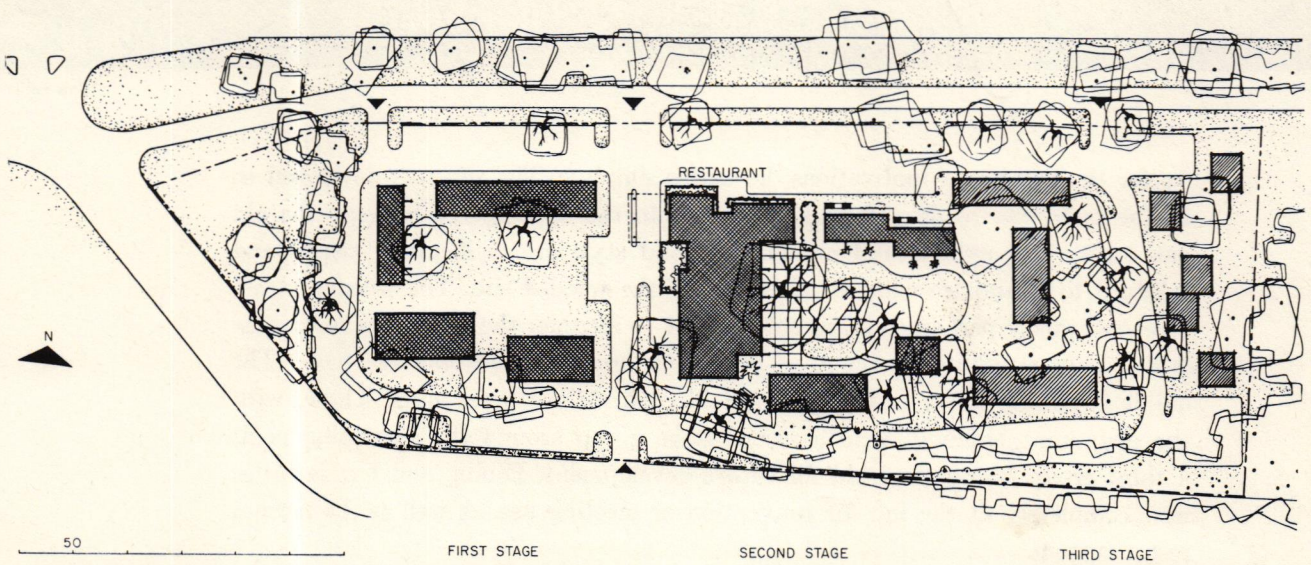
Wynn Bullock



FIRST STAGE SECOND STAGE THIRD STAGE

MARK THOMAS INN

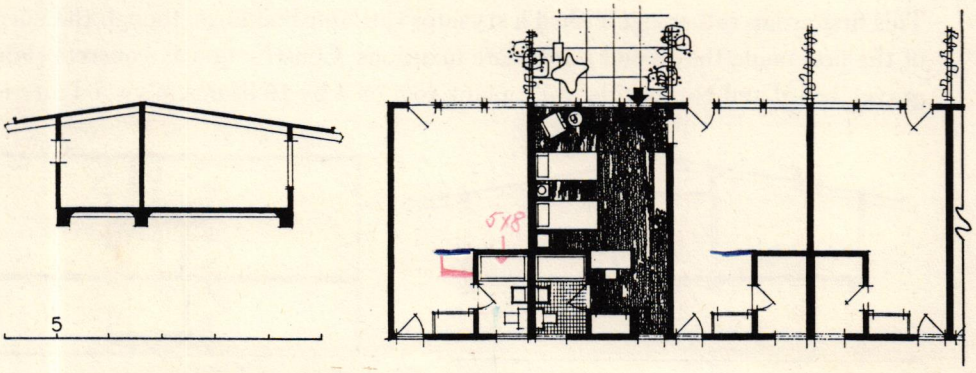


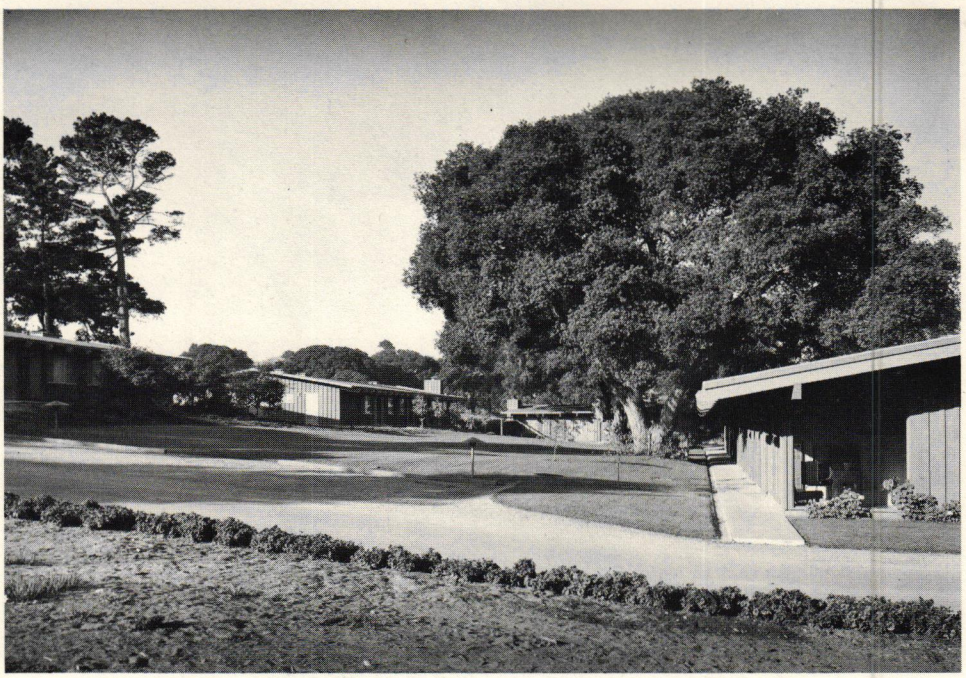
Wynn Bullock

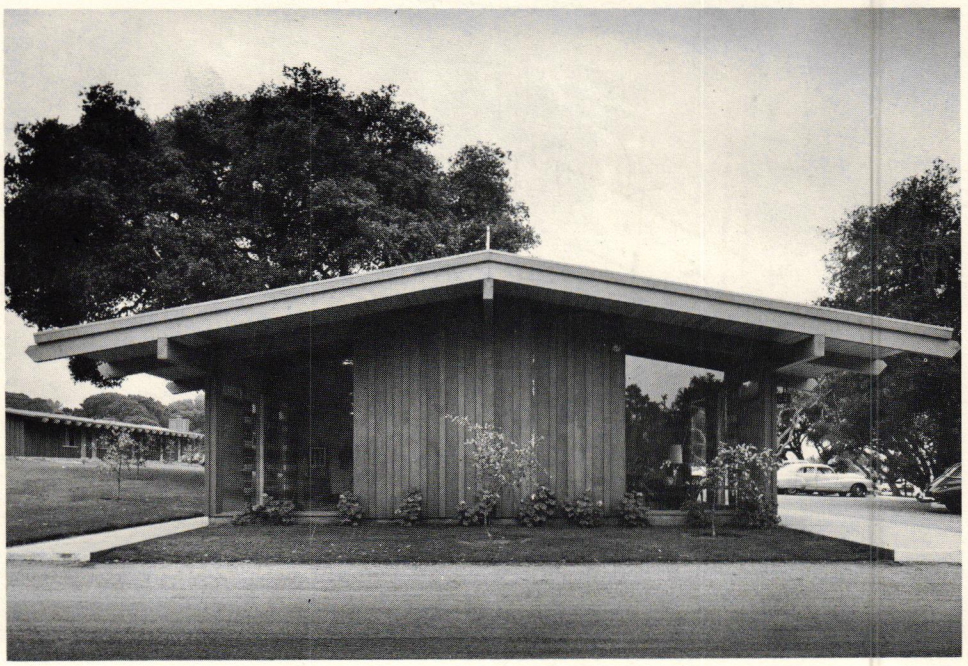
As for the architect's motivations, he writes simply: "The site was developed to fit the buildings, roads and parking areas into the open spaces between the old oak trees. The architectural organization and style are deliberately casual and subdued to harmonize with the character of the wooded site. The wooden structures are quiet; parked cars are not allowed to intrude; the design seeks to subordinate the structures to the great beauty of the land forms and the trees." The buildings shown above (also page 77) add 28 luxurious hotel units. These, with the restaurant building, form a second-stage group around the swimming pool; a third group is contemplated for future development. Dining and bar facilities now completely fit the inn for convention or meeting use, as well as the normal resort custom.



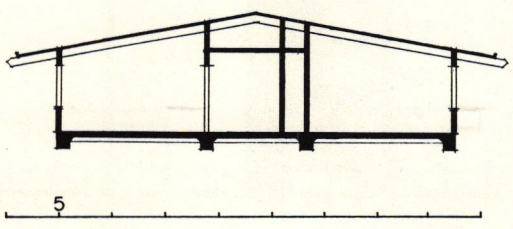
Morley Baer

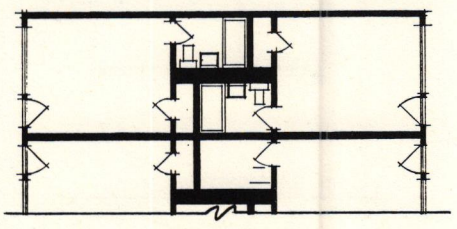


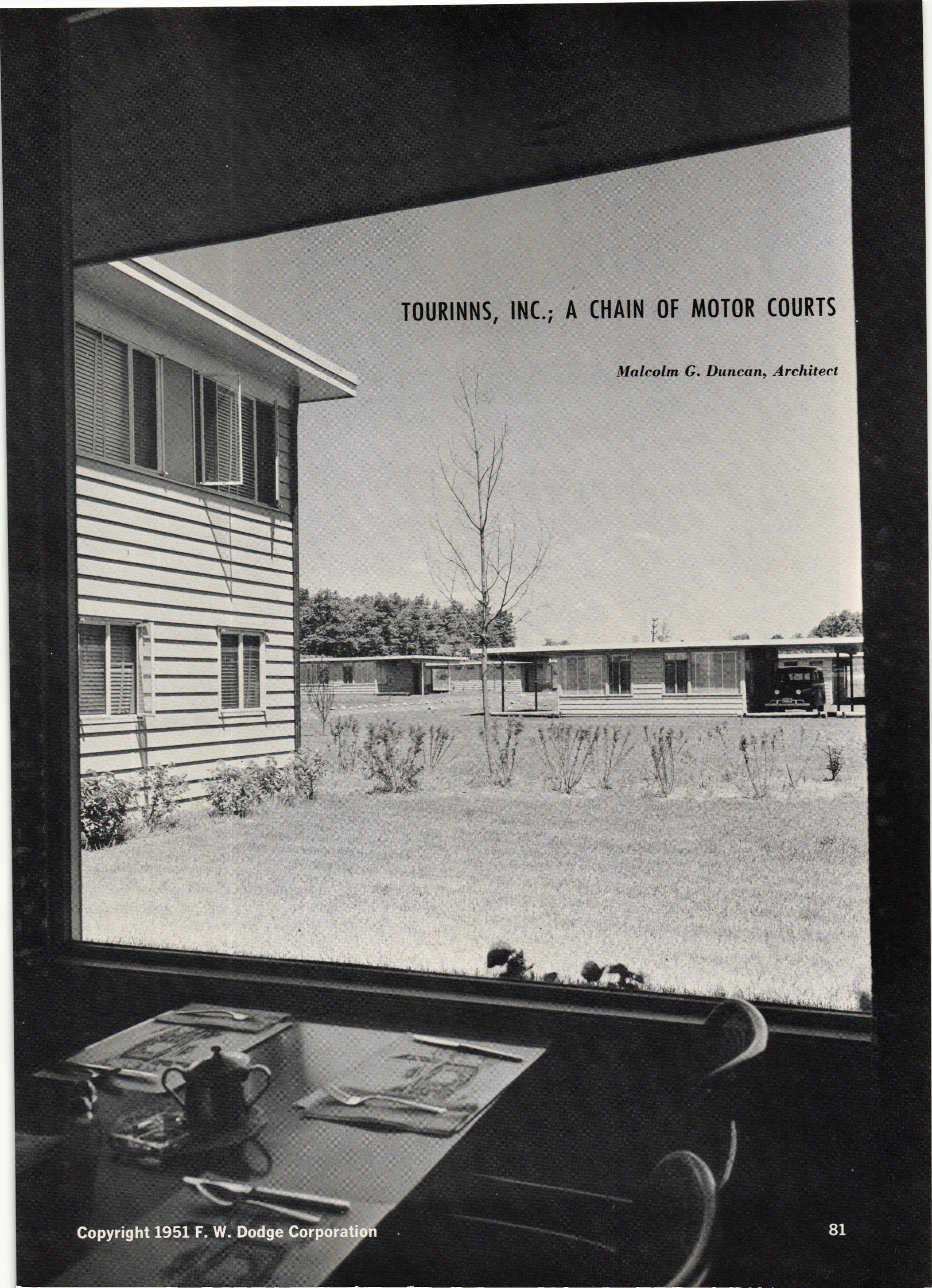




This first group rather established a style for the later buildings, though the success of the first made the second a bit more luxurious. Construction is concrete slab on gravel, board and batten side walls, plank roof on 4 by 10 beams, plywood interiors.







TOURINNS, INC.; A CHAIN OF MOTOR COURTS

Malcolm G. Duncan, Architect

Copyright 1951 F. W. Dodge Corporation



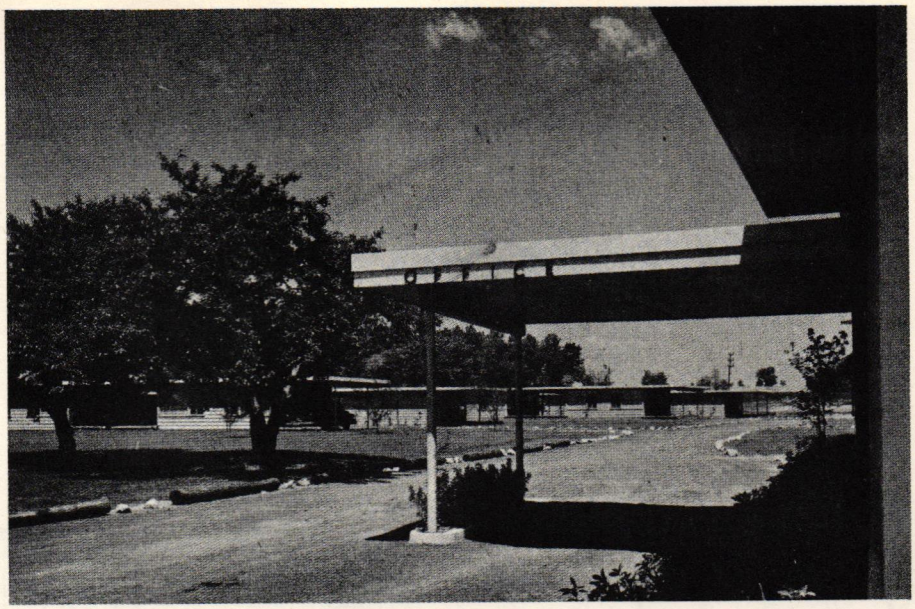
Joseph W. Molitor

TOURINNS, Inc., is a management firm engaged in developing and operating a nationwide system of motor courts, with the intent of providing the quality of accommodations and services found in the metropolitan hotel while retaining the facility and accessibility of the motel. Each unit derives the benefits available from a large-scale operation, which would be beyond the scope of a purely local development. This plan is the result of approximately two years' intensive and extensive study of motorists' needs and the motel field, including analyses of motor courts, hotels, and public accommodations in general. There are now four Tourinns: at Fort Wayne, Indiana; Allentown, Pa.; Pittsburgh, Pa.; and Wilmington, Del. Of these, the first two have been in operation since last year; the others have just been completed.

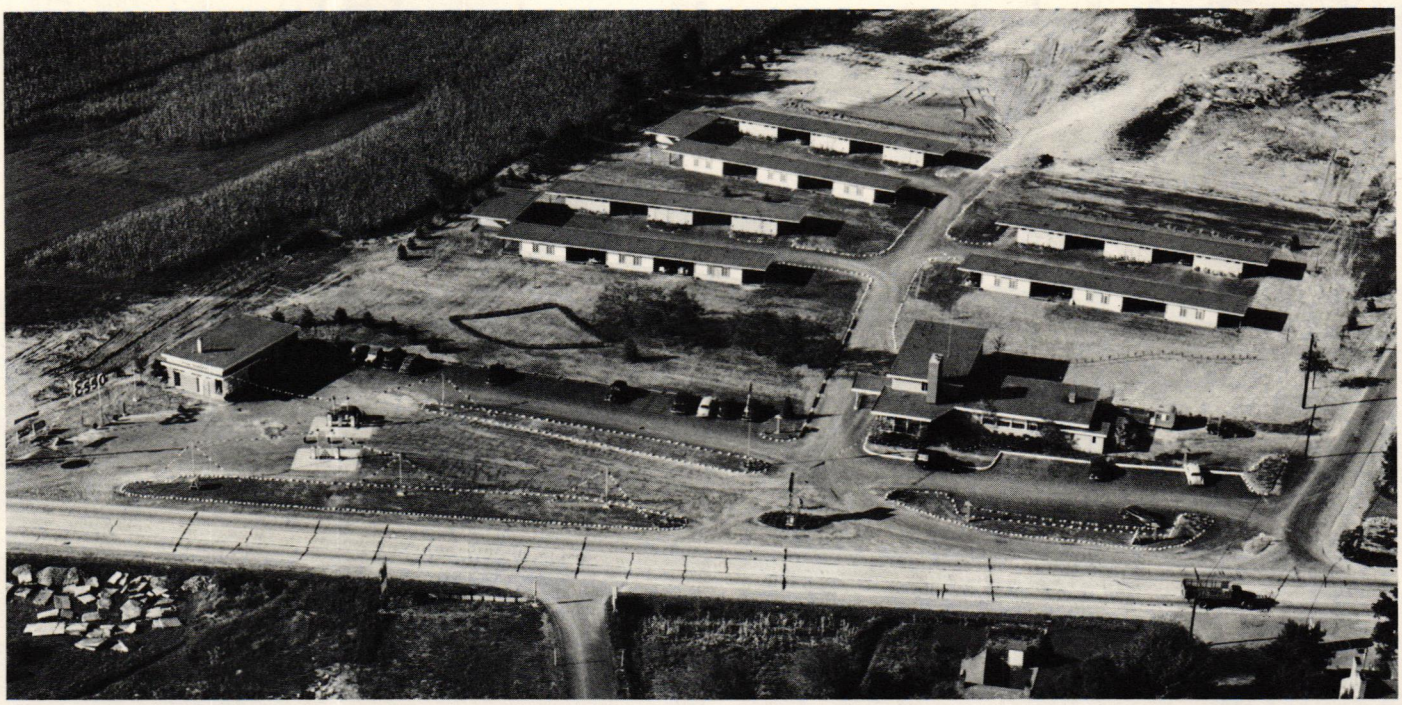
Incorporated early in 1949, the organization has a long-term financing arrangement with State Mutual Life Insurance Co. of Worcester, Mass., and provides for local financial participation as well. At each Tourinns site there are a restaurant and service station — both under lease to national companies — and a group of single rooms in addition to double cottages arranged in a series of culs-de-sac much like a contemporary housing development. The site arrangement was intentional, to produce as pleasantly domestic an atmosphere as possible. The restaurant is intended to attract highway and local customers and to serve motel guests.

After the initial surveys and analyses, standards for site selection and for design and operation of the individual units were developed. Some 90 sites have been tentatively identified, usually on major highways near large population centers, about a day's driving distance apart. Quantity and nature of auto traffic, characteristics of the highway, surroundings, topography and stopping convenience were factors in site selection, as were: frontage in relation to total usable plot, existing competition, utilities, and proximity to recreation, to points of interest, to airports and other means of transportation.

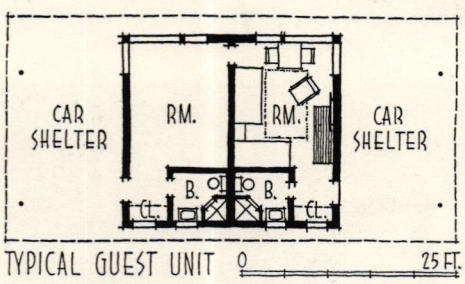
The Tourinns unit at Allentown, Pa., is shown in these pages. Across page is a typical cul-de-sac; right, office approach; center below, air view showing site layout; bottom, typical double room in one of the cottages. Knoll Associates, Inc. designed the interiors and provided furniture, drapes, color schemes, etc. Each room has a long luggage rack rather than a chest; there are no drawers or closet doors, so guests will have little reason to leave things behind



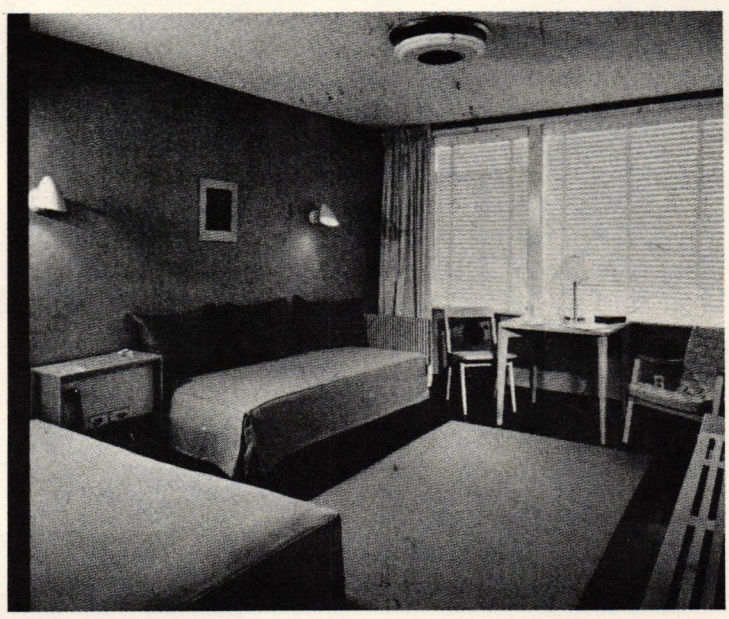
Joseph W. Molitor



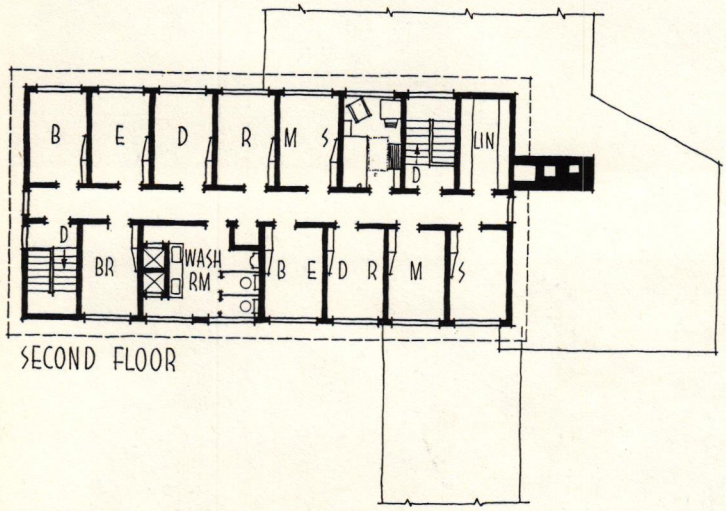
Weitner Aerophoto Service

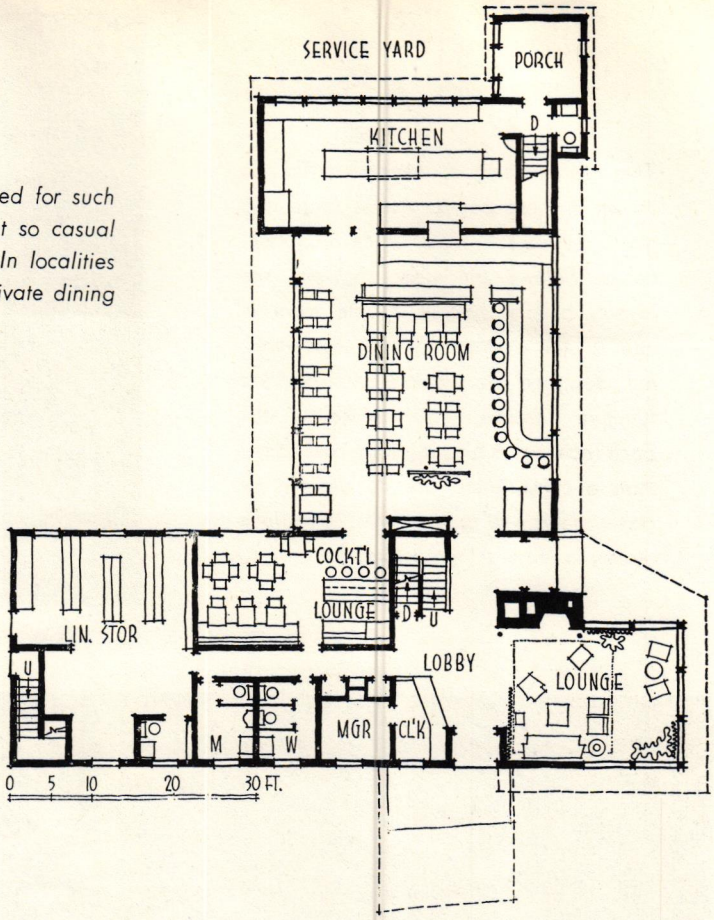


TYPICAL GUEST UNIT 0 25 FT.

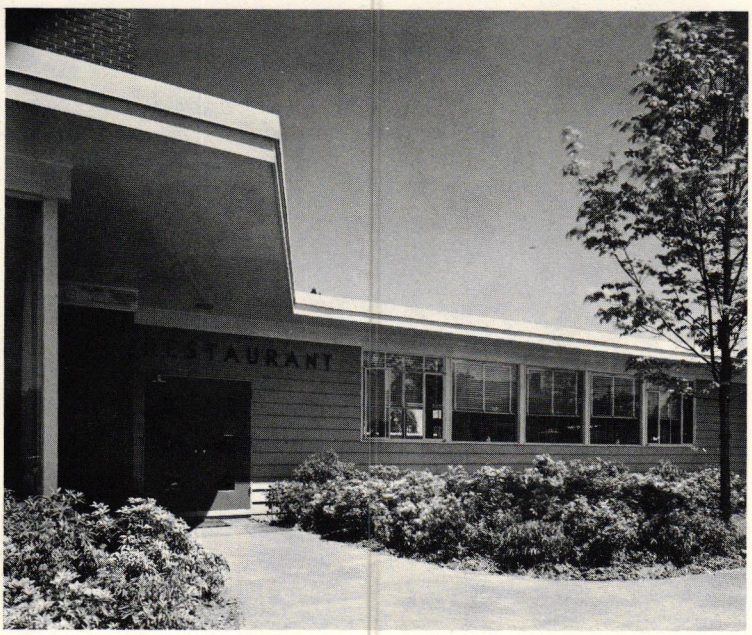


On the main building's second floor are single rooms planned for such clientele as male commercial travelers. First floor is laid out so casual restaurant patrons need not interfere with overnight guests. In localities where laws forbid cocktail lounges, this space becomes a private dining room. In linen room is a launderette for guests' use





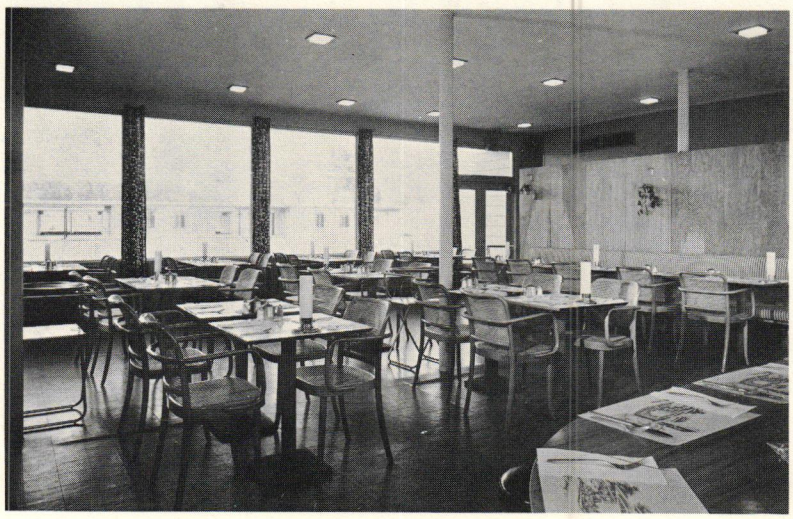




Joseph W. Molitor

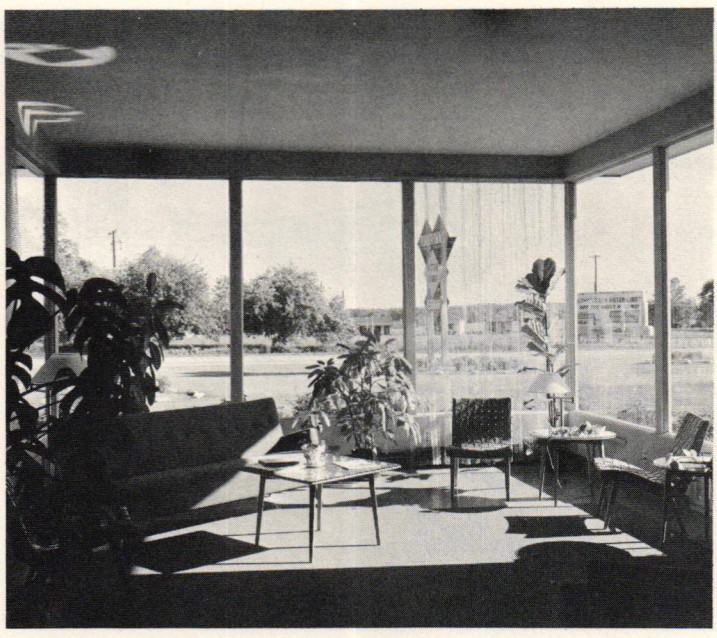
W. Lee Moore

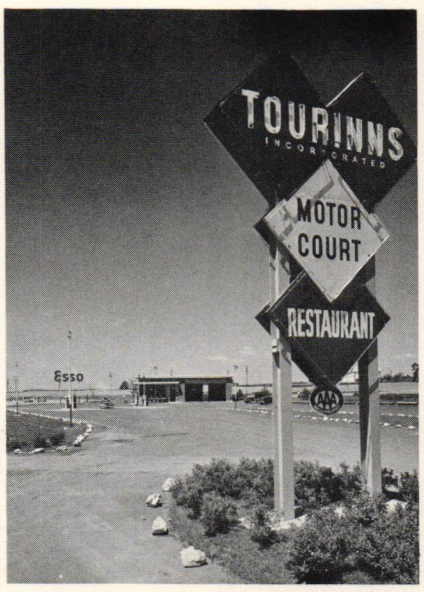
Landscape Architect



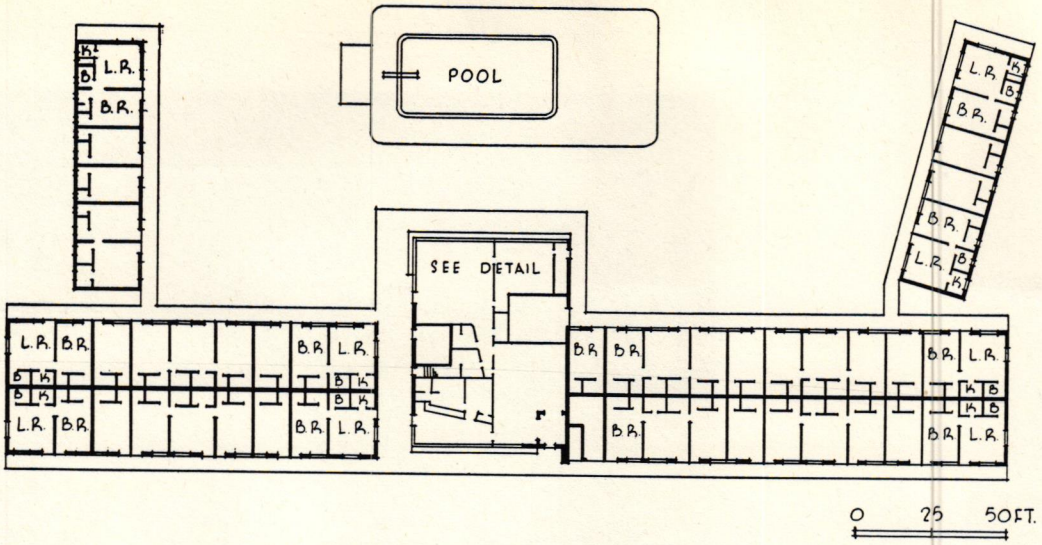


Right, lunch counter; below, lounge. This and the restaurant have ample glass areas, being public rooms where the quality, simplicity, and cheerful domesticity of the establishment can be displayed to potential guests. In contrast, the guest cottages are planned for privacy, set far back from traffic noises with high, small windows on exposed sides and larger windows opening to lawns and planting which, when fully developed, will screen them protectively. Even the road lights inside the area are only a few inches above ground, to avoid glare in guest rooms

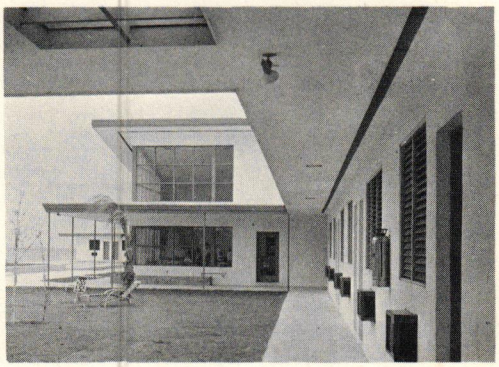




Everything about a Tourinns unit is consistent in design, although in the case of the service station (right, in background) this entailed considerable work with the concessionaire. Sign, in foreground, is used repeatedly as a trademark; as it has become necessary to add items the advisability of restudying its use has become evident



JUNO RANCH MOTEL
JUNO BEACH, FLA.

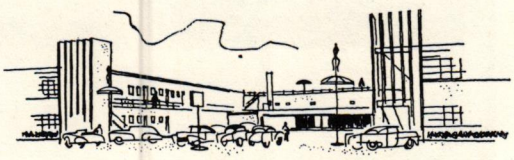


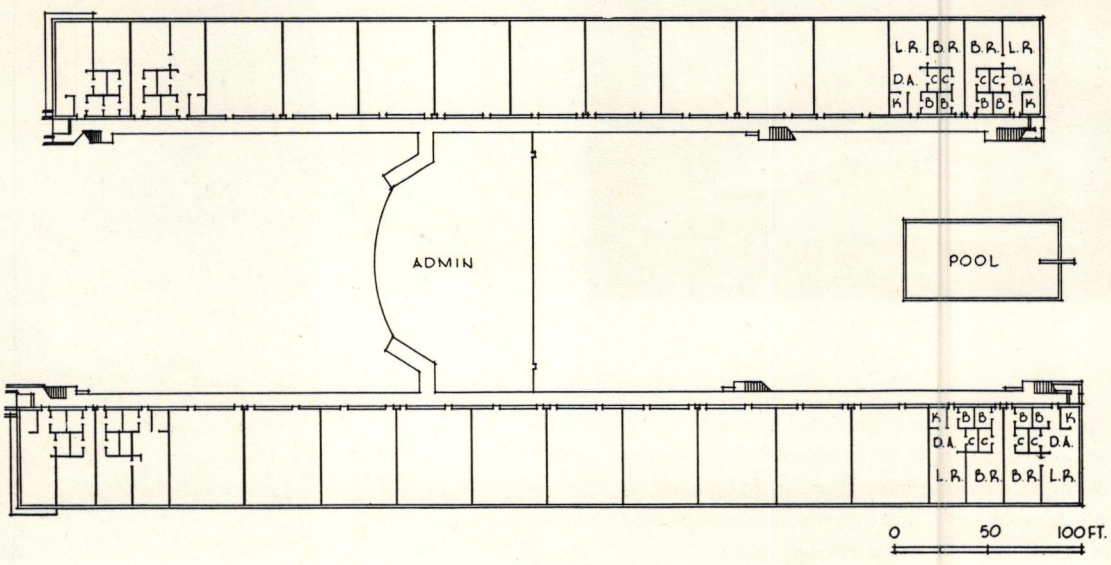
THE resort trade is being cultivated by motels in many areas by the added inducements of such luxuries as running ice water in the rooms, large lobbies, cocktail lounges, coffee shops, television, swimming pools and an enormous variety of recreation facilities. This one-story scheme for the Juno Ranch Motel also features double louvered windows — redwood slats outside, glass inside — individual A.C. units, covered walks around building.

TWO OCEAN FRONT RESORT MOTELS FOR THE FLORIDA COAST

THE Gold Coast motel strip of Miami Beach has had a phenomenal growth in the past three years. The Caribe Motel (below and right) is typically planned for a holiday atmosphere, and caters to guests who often stay for a three month vacation period. The narrow, deep site was developed with an H plan; parking area faces road in front.

CARIBE MOTEL
MIAMI BEACH, FLA.





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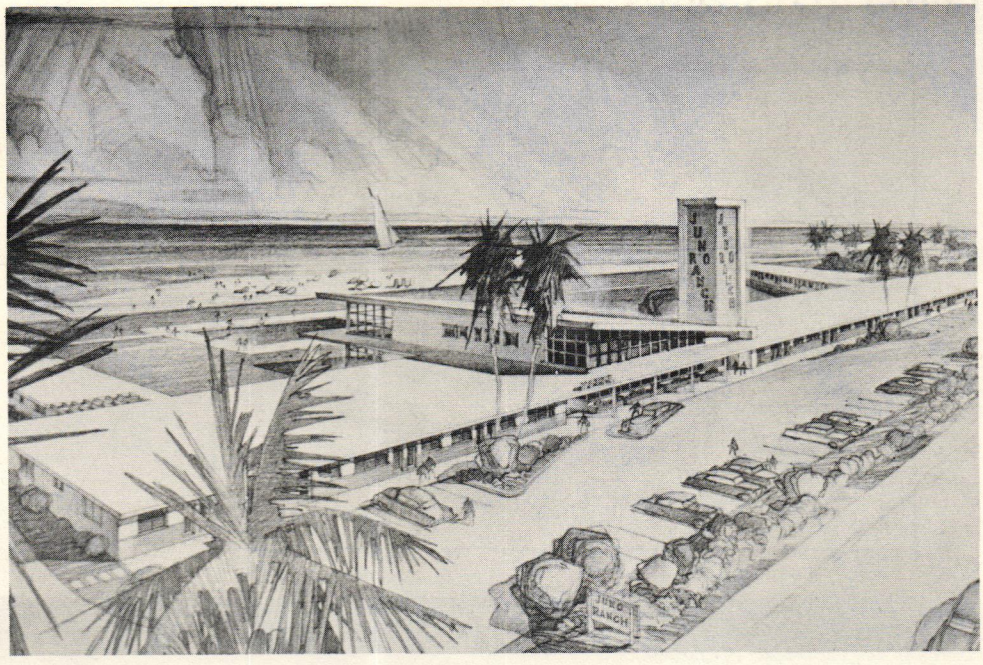
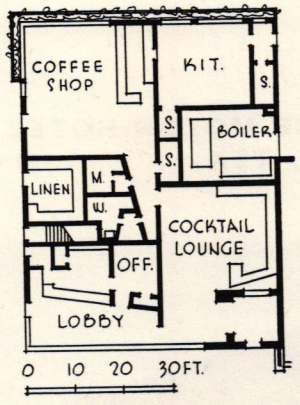


The one-story Juno Ranch Motel has tall clerestory over public areas (plan below). Structure is stuccoed concrete block. Kitchen and coffee shop have access to beach

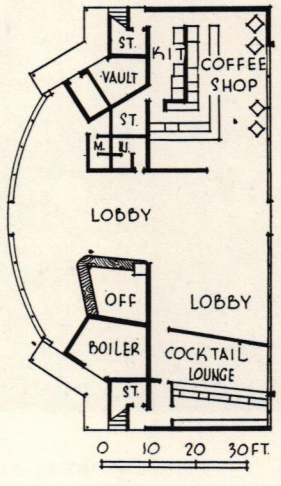


Norman M. Giller, Architect



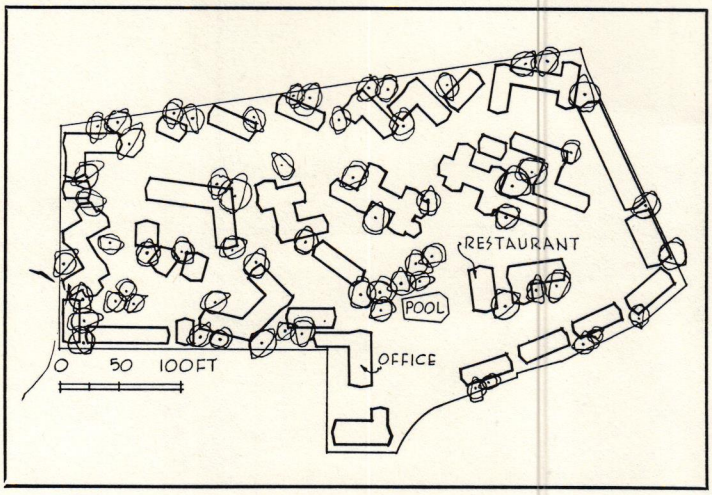
Klara Farkas





The Caribe Motel has elaborate lounges (plan above, photo above left). Wings are one room deep, have balconies on one side facing pool (photo left)

LANDSCAPE KEYNOTES TEXAS MOTEL



TERRACE MOTOR HOTEL, AUSTIN, TEX.



GREAT ADVANTAGE was made of the rolling, wooded character of the site to produce this extremely pleasant, well landscaped and informal motel. The 102 units, no two of which are alike, are arranged in various sized groups made up of the basic unit plan shown on the opposite page. The units are fairly large, with separate dressing room and bath combinations and individual carports. Exteriors include combinations of the following materials: white and pink stone, red brick, vertical boards, rough or smooth boards and bats, horizontal siding, colored wood shakes and corrugated transite. Roofs are built-up with crushed red brick topping. Each building is insulated, and heated or cooled by individual units.

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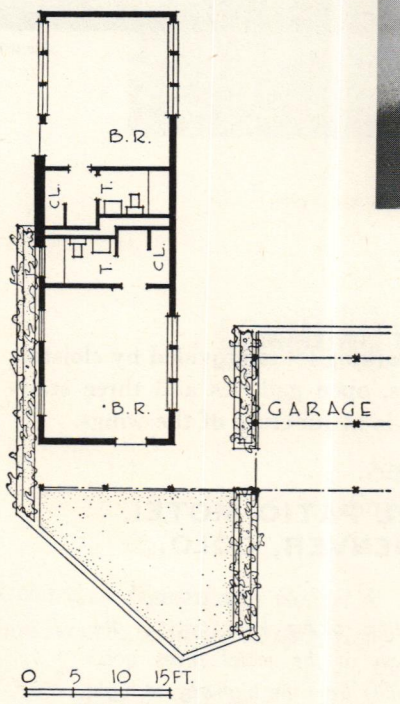
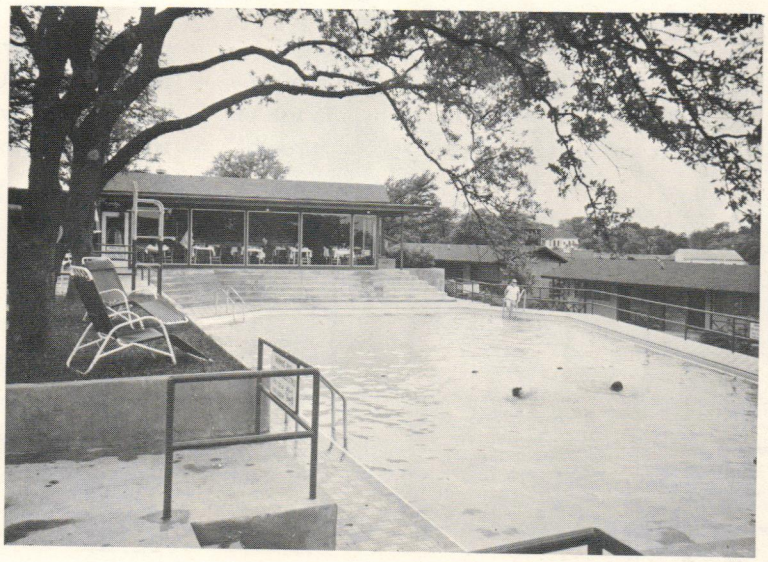
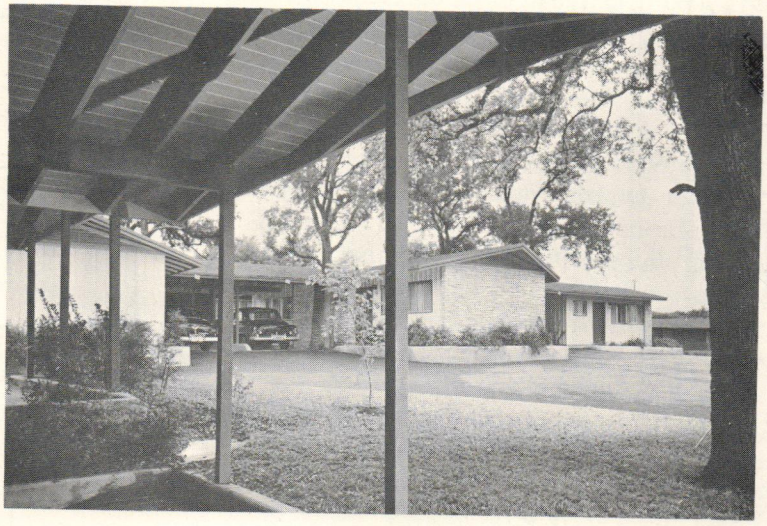
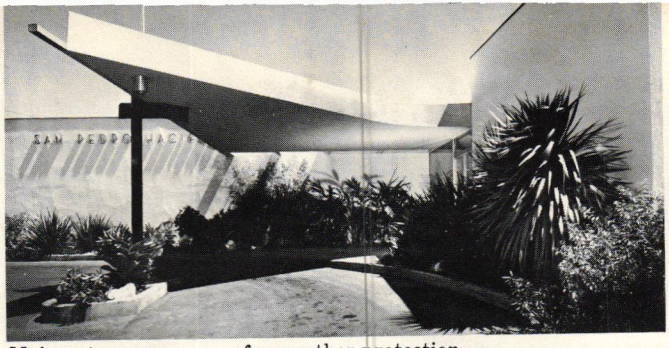




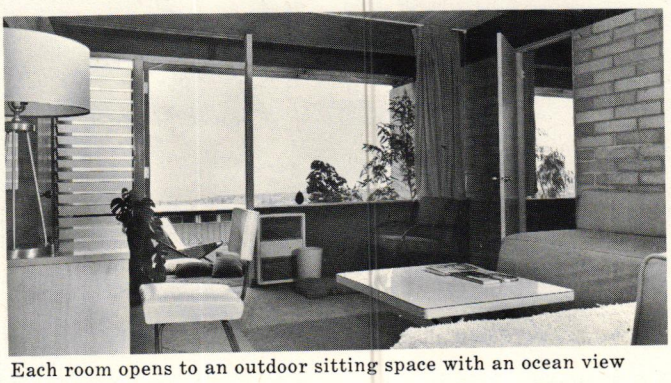
All interiors were also designed by the architects. Wall surfaces include combinations of plaster and vertical boards, plywood, hand-blocked wallpapers, and wainscot. Floors are carpeted

Niggli & Gustafson, Architects





Main entrance marquee for weather protection

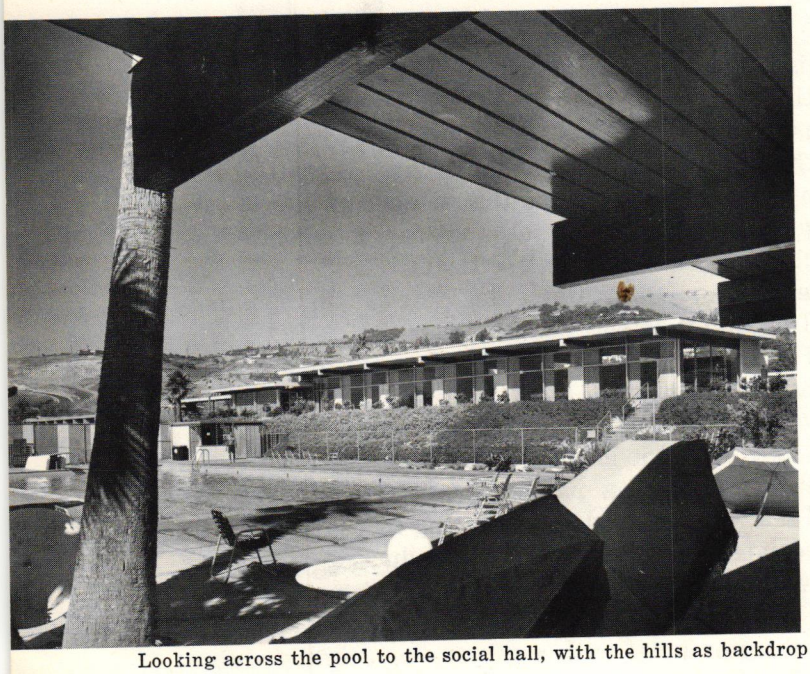


Each room opens to an outdoor sitting space with an ocean view



All photos by Julius Shulman

From the social hall and restaurant, the slope descends toward the sea

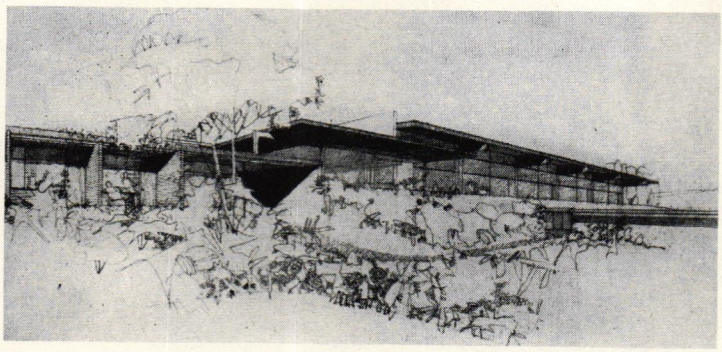


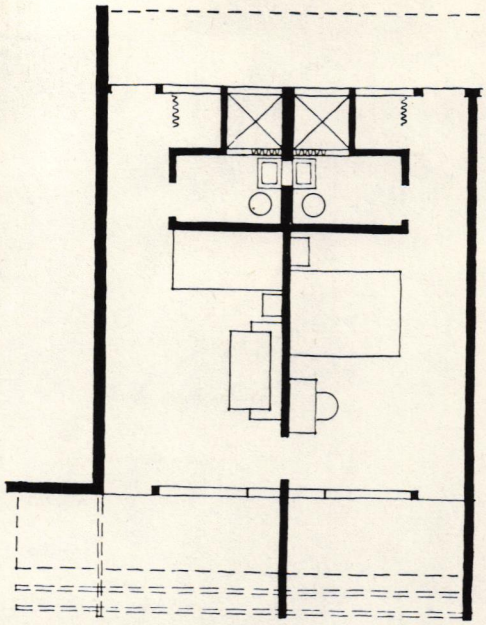
Looking across the pool to the social hall, with the hills as backdrop

atmosphere, and architect Richard Neutra has interpreted that thinking into an interesting and attractive scheme. As the plot plan shows, the rooms are arranged in groups stepping down the slope and are surmounted by the core building (social center) and pool immediately up the hill. Because of the slope, every guest room and all other principal rooms and areas have an ocean view. A golf course adjoins the hotel on down the slope. A driveway links the units and enables every guest to park his car behind and adjacent to his room.

In line with the general air of informality, the hotel is operated with a minimum of personnel and waste. Wherever possible, guests are given the opportunity for self-service, although hotel service is readily available if they prefer.

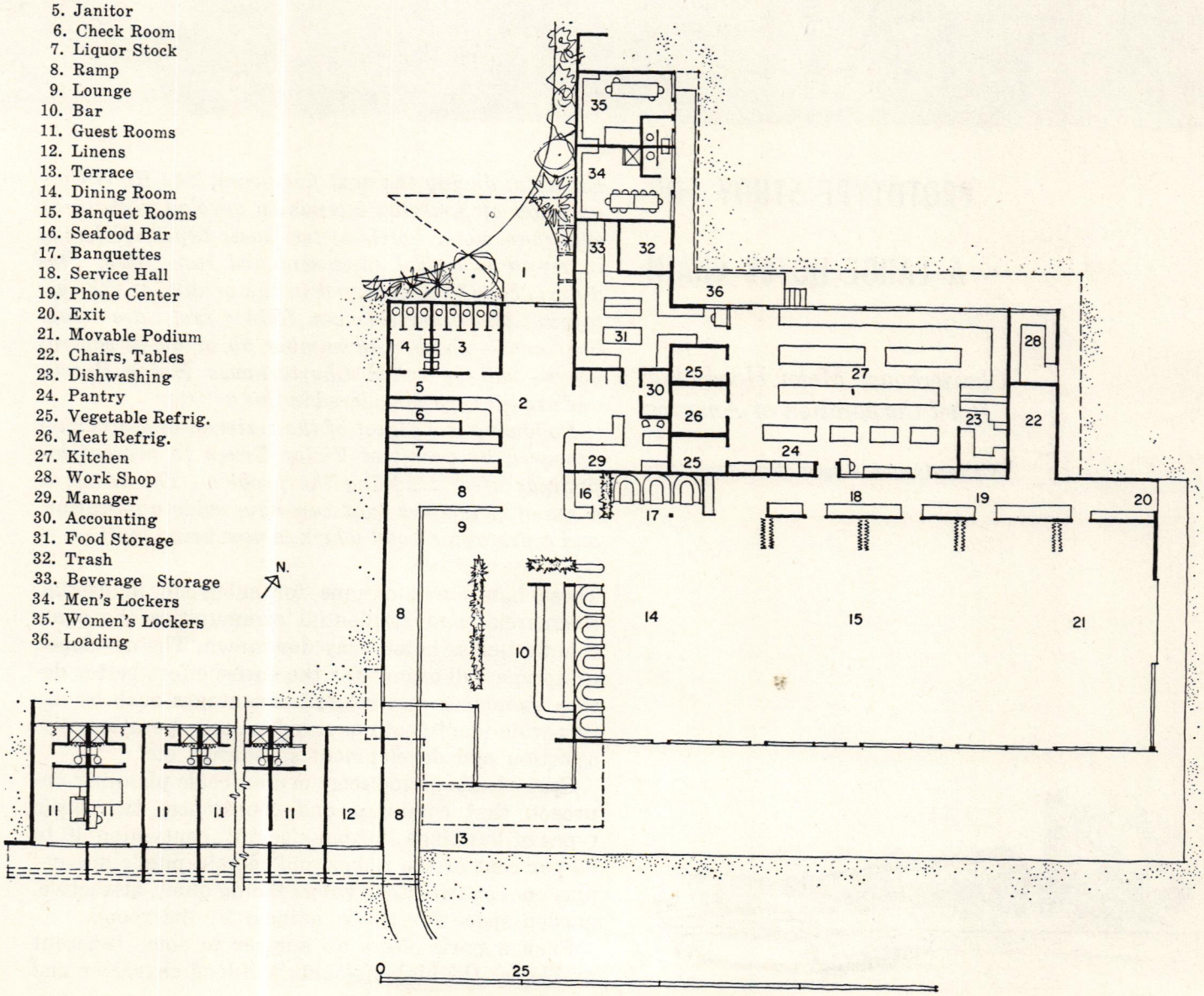
The dispersion of the one-story guest room units provides a goodly measure of fire protection, while the core building is of fire-resistant construction.

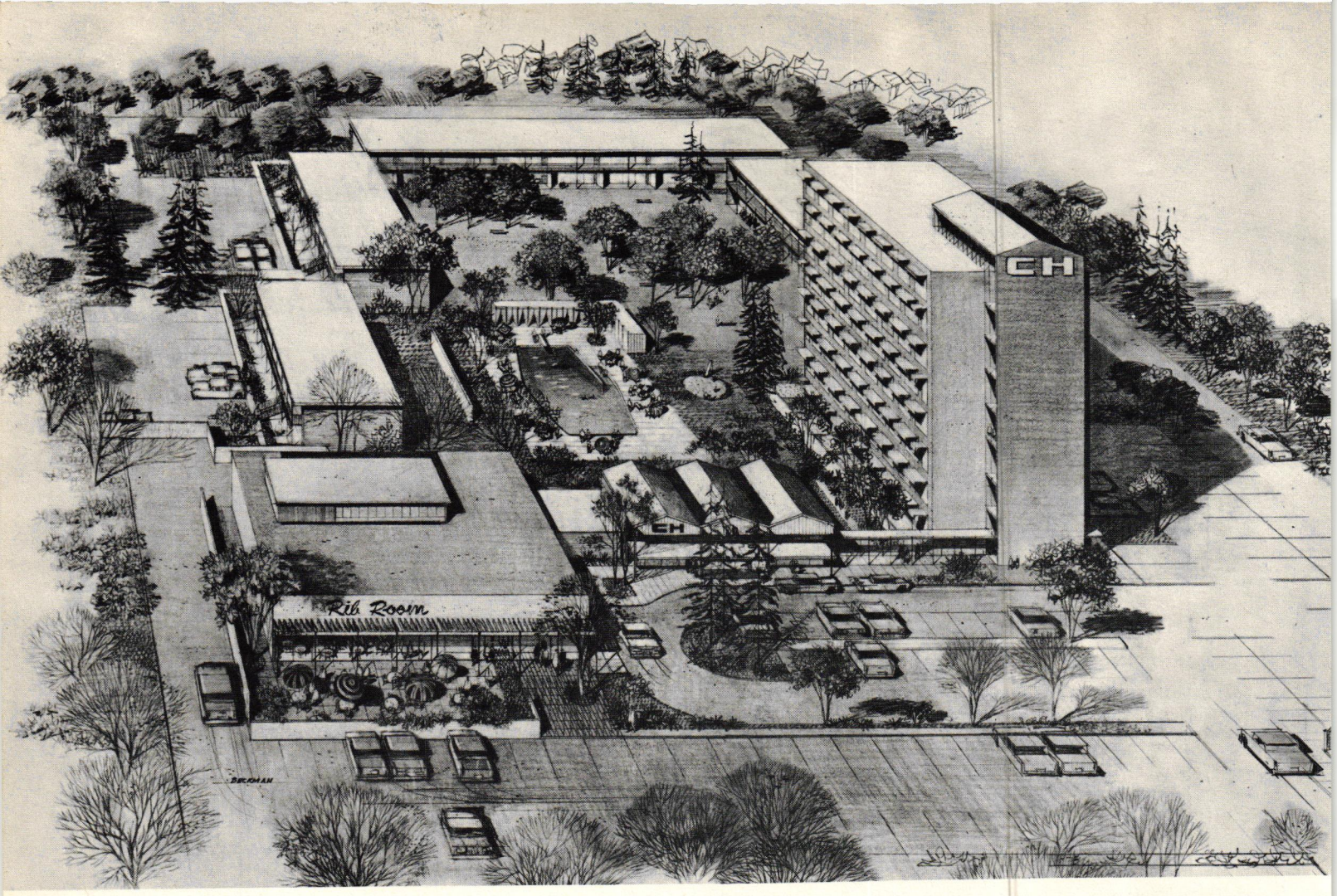




CORE BUILDING & SOCIAL CENTER

1. Main Entrance
2. Lobby
3. Women
4. Men
5. Janitor
6. Check Room
7. Liquor Stock
8. Ramp
9. Lounge
10. Bar
11. Guest Rooms
12. Linens
13. Terrace
14. Dining Room
15. Banquet Rooms
16. Seafood Bar
17. Banquettes
18. Service Hall
19. Phone Center
20. Exit
21. Movable Podium
22. Chairs, Tables
23. Dishwashing
24. Pantry
25. Vegetable Refrig.
26. Meat Refrig.
27. Kitchen
28. Work Shop
29. Manager
30. Accounting
31. Food Storage
32. Trash
33. Beverage Storage
34. Men's Lockers
35. Women's Lockers
36. Loading





PROTOTYPE STUDY FOR A LARGE HOTEL CHAIN

Charterhouse Motor Hotels For Hotel Corporation of America

Victor Gruen Associates, Architects

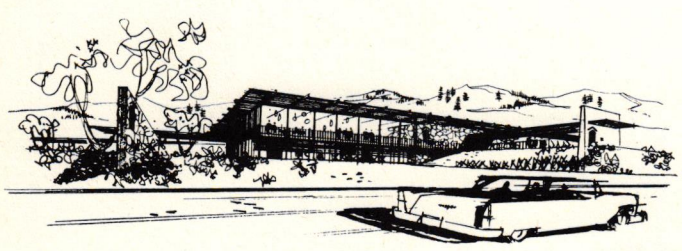
Ed. note: during the next five years, The Hotel Corporation of America intends to develop a chain of suburban motor hotels of two basic types, differing in regard to capital investment and room rents. This difference will be reflected in the quality of the restaurant and other services. HCA's first-class establishments—which may number 50 or 60 in several years—will be called Charterhouse Motor Hotels, and are the type considered in this article.

Following is a digest of the material in a brochure prepared by architect Victor Gruen to present his findings after studying the problem. The result is a set of principles that can have wide application, and a prototype hotel which is now being built.

These hotels will assume for suburban industrial, commercial and residential communities the same role first-class hotels play downtown. The developed prototype will assure for the entire effort better design standards and related advantages such as nation-wide identification, standardized operation, site selection and development standards, etc.

Study leads us to recommend a basic planning approach that combines and coordinates two basic types of buildings: a high-rise unit containing 40 to 60 per cent of the rooms and certain public spaces; plus one- or two-story wings facing quiet, attractive, garden space for the remainder of the rooms.

Such a parti offers an answer to some inherent problems: the high-rise unit will lend character and



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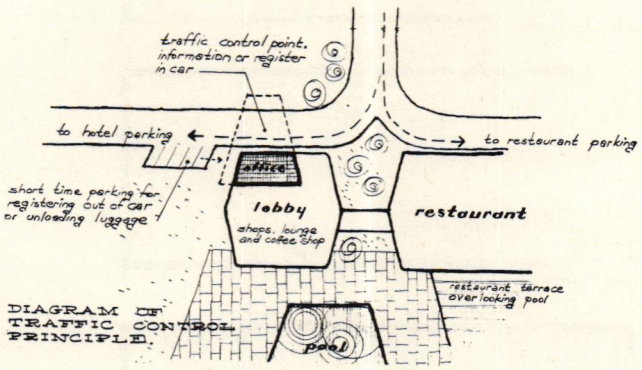
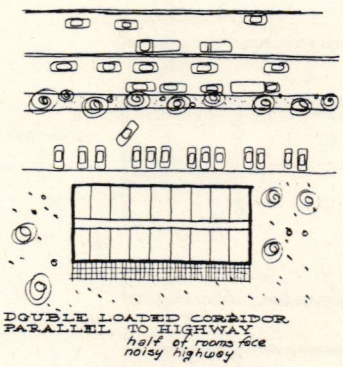
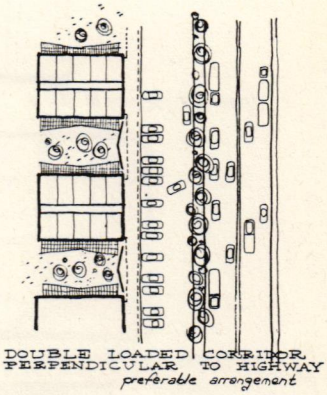


DIAGRAM OF TRAFFIC CONTROL PRINCIPLE


DOUBLE LOADED CORRIDOR PARALLEL TO HIGHWAY
half of rooms face noisy highway


DOUBLE LOADED CORRIDOR PERPENDICULAR TO HIGHWAY
preferable arrangement

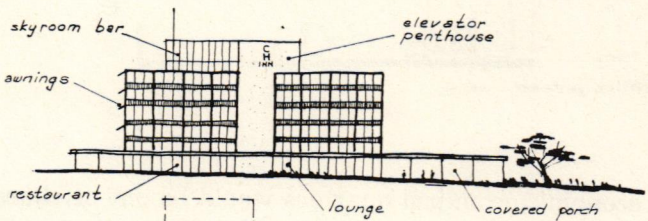
promotional value to the enterprise, and distinguish these establishments from the usual motel; will permit better site utilization; will offer rooms for non-driving guests staying several days; will lower service costs in this unit. The low wings will furnish accommodations for those wishing direct access to their cars and a garden, and who prefer the privacy of such an arrangement. The combination of high and low elements will make possible a variety of room types and sizes and prices to meet the varying demands of a wider market.

SITE PLAN PRINCIPLES: both incoming and outgoing guests and visitors of the hotel proper must pass a control, information, and registration area. Guests may register either outdoors or indoors.

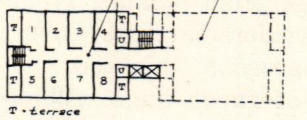
For noise protection, guest rooms will not face either highways or parking spaces, but quiet areas.

THE RESTAURANT: and also the coffee shop and other public areas should be near the entrance so their traffic and noise will not disturb guests; and so they can be developed as an architectural feature or landmark to attract outside restaurant trade. Guests must be able to use them without going outdoors, and without a long walk.

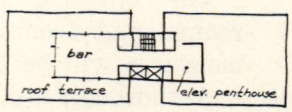
GUEST ROOMS: will be provided in a variety of sizes, shapes, types, and prices. Furnishings and lighting will be designed to increase the apparent sense of spaciousness. In sizing rooms, economy must of course be considered, but squeezing areas and heights to the utmost to lower building cost is false



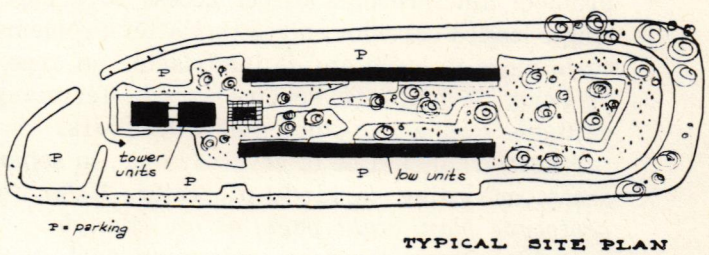
ELEVATION



TYPICAL FLOOR PLAN



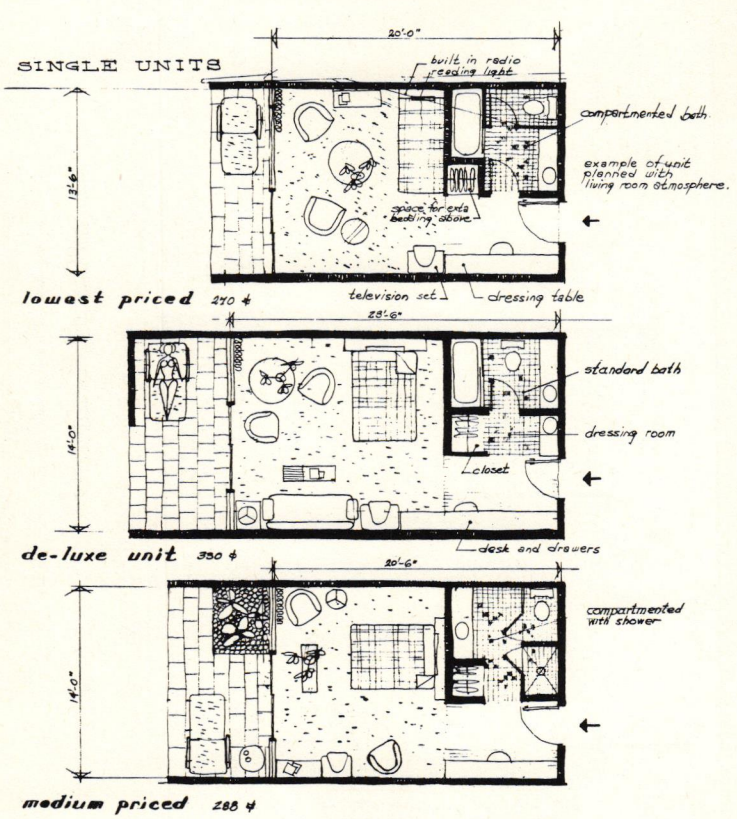
ROOF PLAN

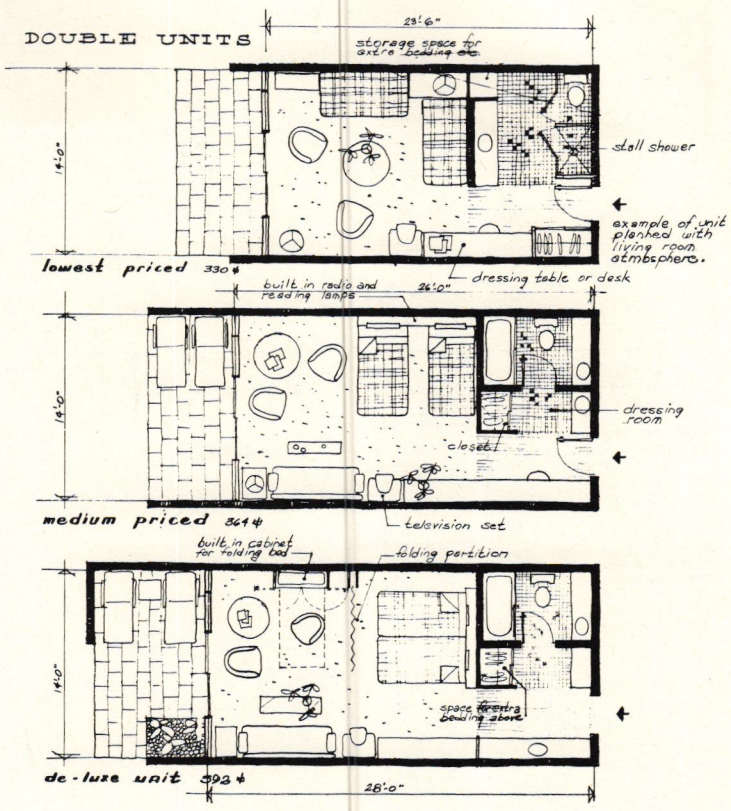


TYPICAL SITE PLAN

The first example to be built (and now under construction in the East) is shown at top of facing page; its plan on page 97, following. It will carry into reality most of the principles and ideas of Victor Gruen's study.

The sketches on these two pages are reproduced from the architect's brochure summarizing his study. Above, top, site-planning principles; immediately above, a consideration of some of the combinations possible with a two- or three-unit multistory complex, and its plot arrangement





economy; cramped quarters would be out of character with the quality being sought. Mechanical installations will affect costs to a much greater degree than somewhat generous rooms.

The control of noise from outside, from nearby rooms, and from corridors is imperative. Special measures will be proposed to this end.

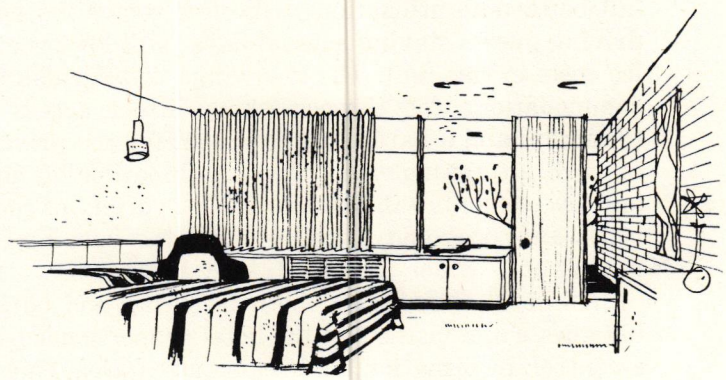
A thorough study of furnishings will provide a basis for room sizes and shapes as well as for details, materials, and colors that will combine good looks with durability and ease of maintenance.

GROUPING OF ROOMS: the double-loaded corridor is cheaper to build, easier to serve; but creates a noise problem and prevents direct access to a car. The single-loaded corridor solves the latter problems but costs more to build and is inadvisable on expensive property. A split-level scheme would offer many advantages over a two-story unit with stairs.

PARKING: should be of several kinds, in separated areas, according to kinds of traffic. *Refer to the prototype plan, right page, as an example.*

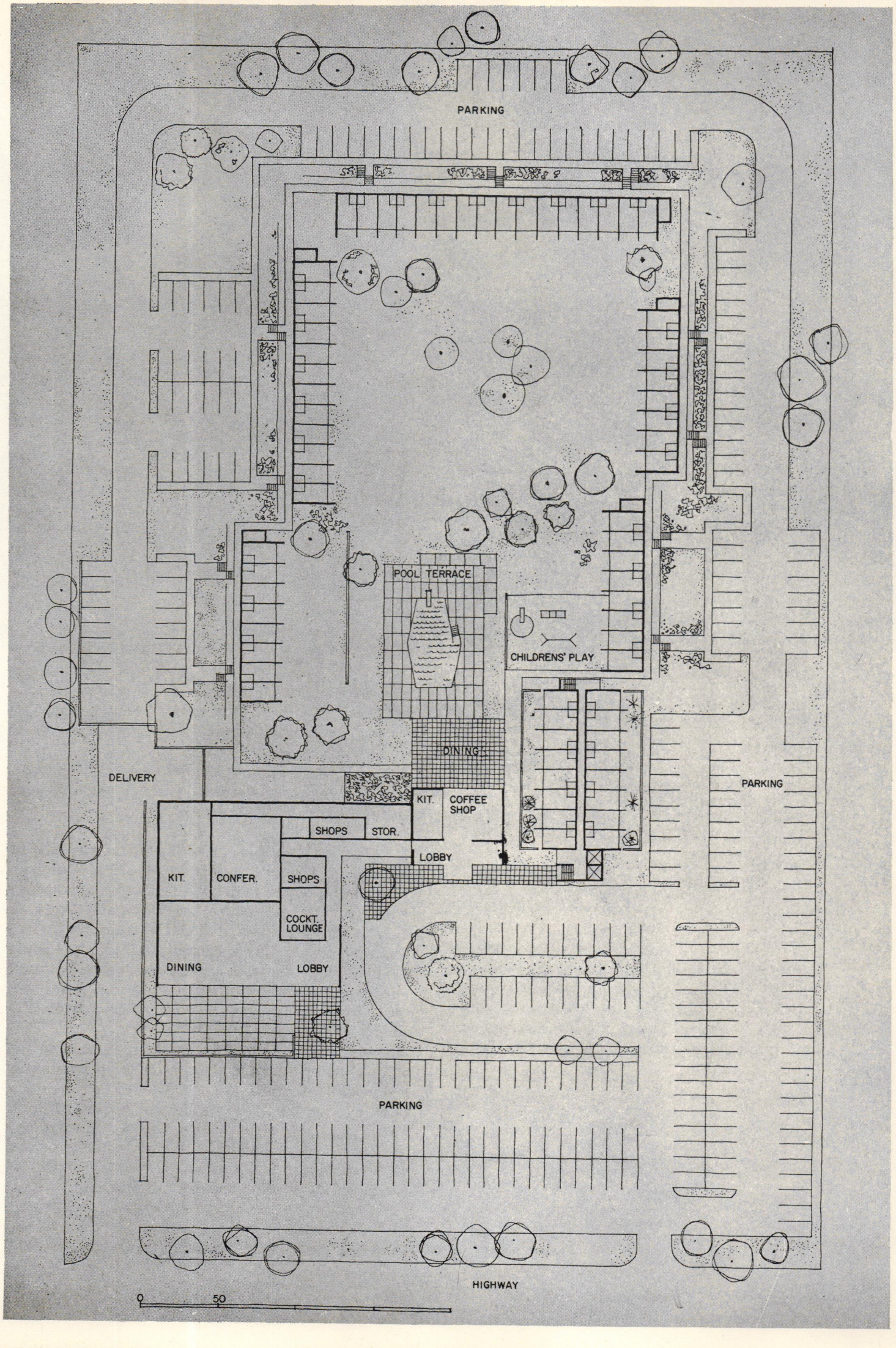
LANDSCAPING: terraces, swimming pool, gardens, playgrounds, etc., are important amenities deserving careful study as an integral part of the scheme, and decisive in establishing a desired character.

SIGNS AND GRAPHICS: will be especially studied to the end that lettering and symbols and color will be coordinated for buildings, identification towers, directional signs, menus, towels, stationery, dishes, matches, etc., on a national basis.



Top of page, a consideration of room elements as reproduced from the architect's study. Sizes and shapes result from the *kind* of room desired, such as a bedroom with a living room look, and so on. There will be a variety of sizes and rentals in both singles and doubles. Room prototypes will be based on the habits of the occupants, which are different in a suburban motor hotel than in a downtown hotel. Architect Gruen maintains that unduly cramping room sizes and heights is false economy in high-class accommodations such as these.

The plan at right is for the first actual project to be built, now under construction in the east


PARKING
POOL TERRACE
CHILDRENS' PLAY
DINING
DELIVERY
KIT.
COFFEE SHOP
SHOPS
STOR.
LOBBY
KIT.
CONFER.
SHOPS
COCKT. LOUNGE
DINING
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PARKING
PARKING
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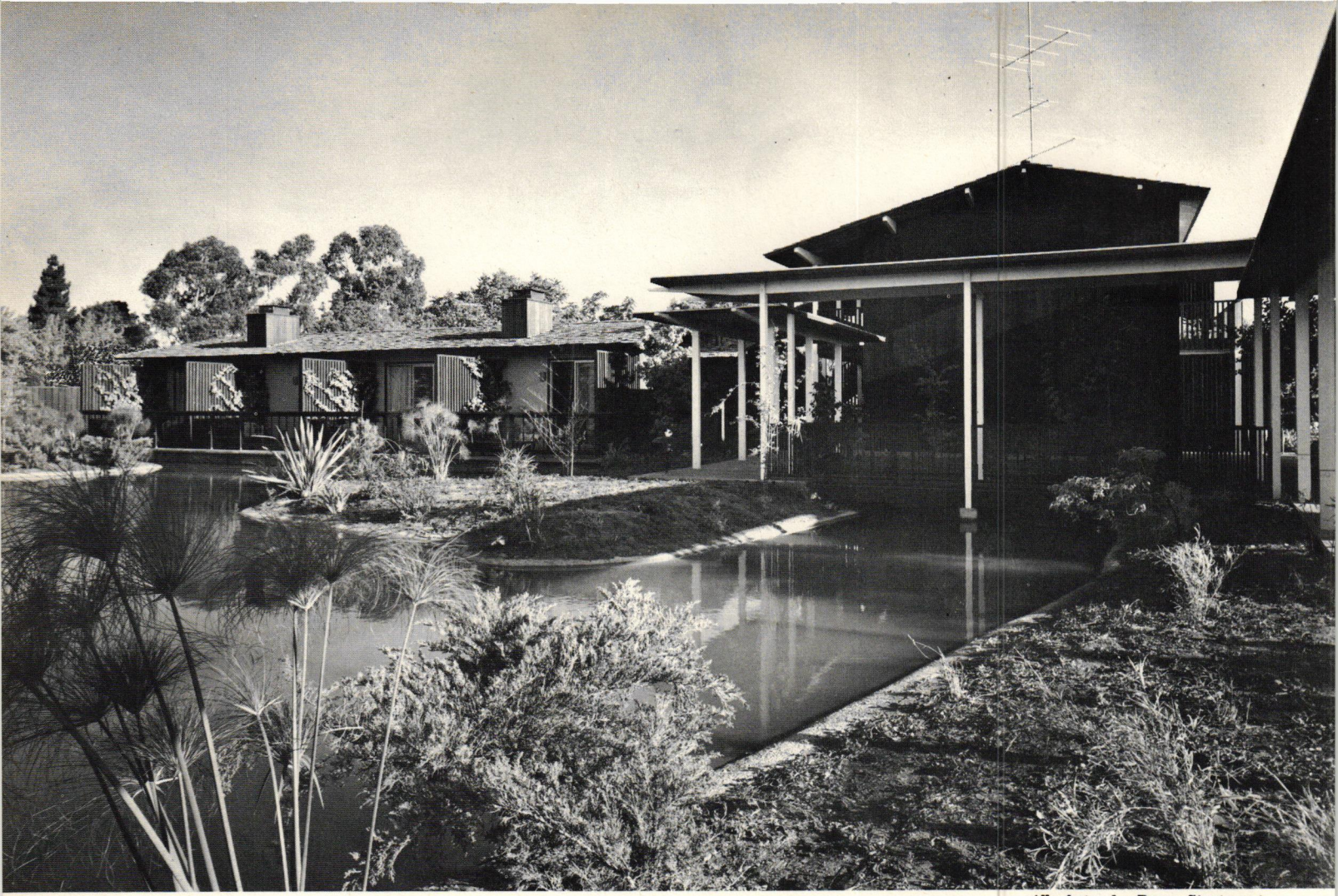

All photos by Roger Sturtevant

A RESORT ON THE WEST COAST

Dinah's Motor Hotel
Palo Alto, California

Campbell & Wong, Architects
Eckbo, Royston & Williams, Landscape Architects
William B. Gilbert, Structural Engineer
Ben B. Lezin, Electrical Engineer
Daniel Yanow, Mechanical Engineer
Fidelity Building Co., General Contractors

This motor hotel's architecture possesses unusual refinement, and a further quality hard to achieve: an air of gaiety that is not too blatant or insistent, as resort "atmosphere" often is.

In order to lend interest to the level site the buildings are informally disposed, some of them open to the pool, some to the lagoon.

Of motor hotel design, John Carden Campbell, of Campbell & Wong, has this to say: The first step in creating a better motel, we believe, is to consider analytically the procedure the motorist follows as he arrives, lives in, and departs from the motel, observing closely those elements or arrangements that help make his visit a pleasant, convenient, and appealing one. Following such study, we have been able to draw several general conclusions about motel design.

In many cases, motorists prefer to remain in the car to register, and for them a drive-up window is an appealing feature.

The average guest hopes he will not be involved in a lot of tipping in a motel, yet part of his luggage —and sometimes enough for the whole family—must get from the car to the room, so parking should be as convenient to his quarters as possible.

The room or suite must be attractive, of course, but if the motorist is to remember the place as one to come back to or recommend to friends, it must

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Dashed plaster, dark brown redwood, white trim, and shakes



The total visual effect must be carefully considered



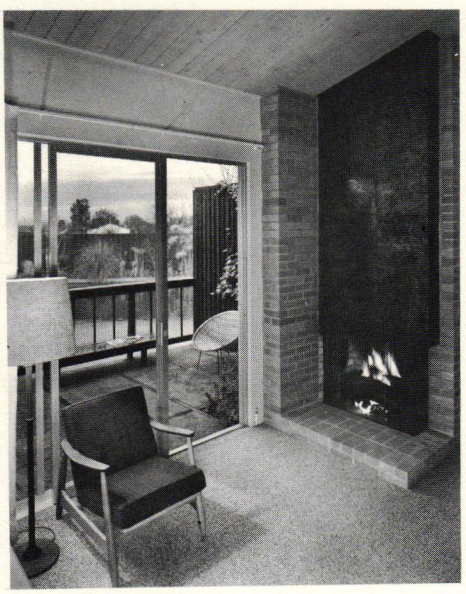
Rough-sawn wood beams, neutral wall colors, and teak furniture

have extra qualifications that make it pleasing: possibly a balcony, or a small walled garden, or a view —something that lifts it out of the "just a room" category. Occasionally, in larger suites, fireplaces and living room furniture can be used to get away from the "bedroom look"; in fact, even in single rooms, furniture sometimes can advantageously be selected and arranged to make the room look more like a small study. Extra services, such as locating ice machines within 50 to 75 feet of every unit, add a convenience that is remembered. And so does room service, providing a restaurant is part of the scheme.

In motel design, some factors are like those in a hotel; some are unlike. As for the necessity for soundproofing and providing flexibility of room interconnections, the problem is similar; various family arrangements—familiar in hotels—must also be considered in motels. However, because of a more intimate relationship with the ground and private outdoor space, motel units can often be made much more homelike and inviting than hotel rooms.

A major consideration not usually associated with city hotels is landscaping and land planning, which should certainly involve more than the installation of a pool and a few shrubs. Actually, the planning of the approach, parking, connecting walkways, pool area, and outdoor dining space becomes a basic design problem of some complexity, and the success or failure of the entire scheme may hinge on it.

Two-story units with decks and private patios form a court about the pool, planting, and umbrella-shaded seating



A fireplace or walled garden adds appeal

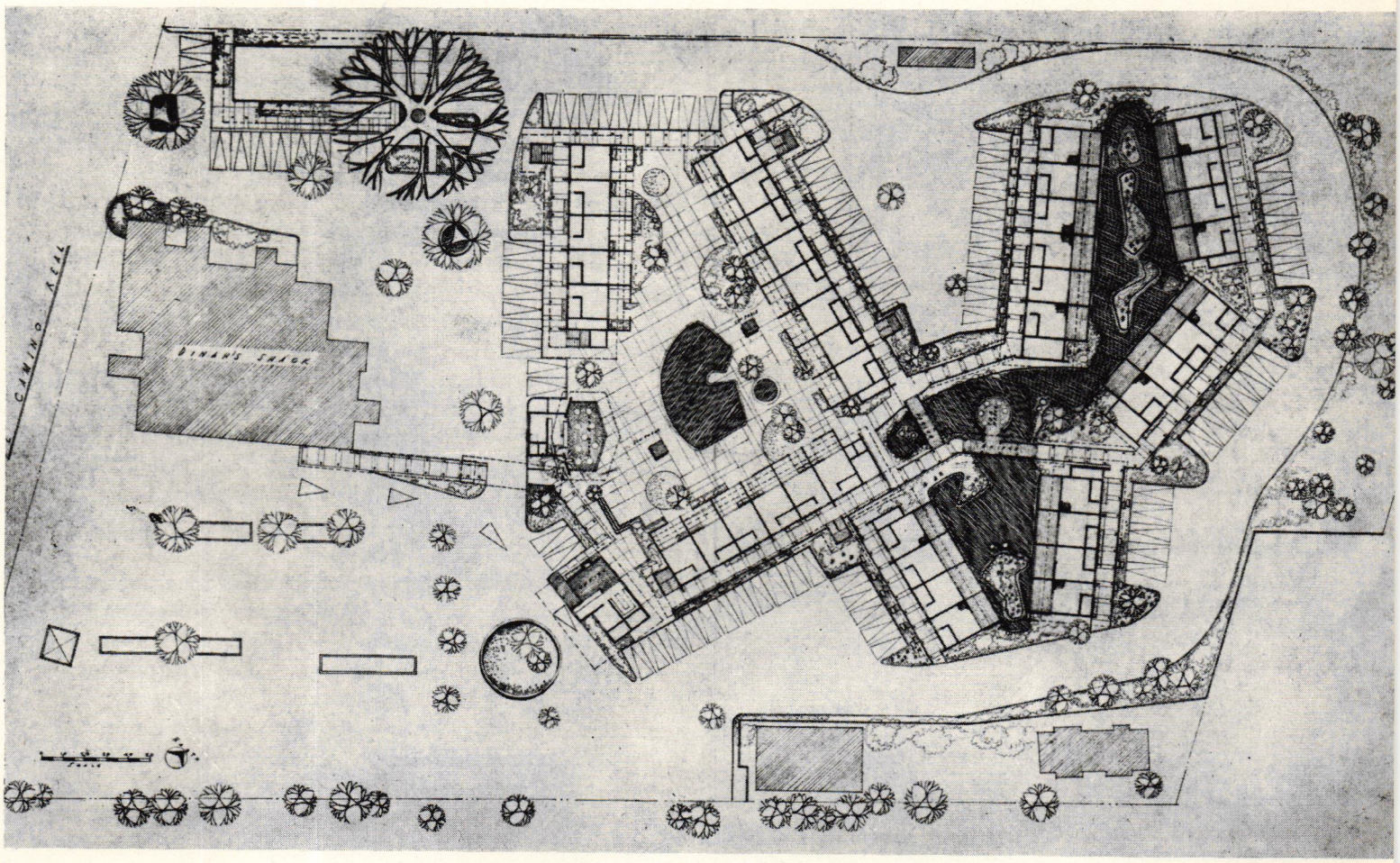
Food preparation and service is another factor of increasing importance, whether it involves a full-scale restaurant or the provision of a room-service "continental" breakfast. Although some motels still provide kitchen facilities for guest units, their popularity seems to be decreasing.

Color is an element that can contribute a great deal—when well handled—in creating an attractive quality in the eyes of the guest. When badly handled, it can create the opposite reaction. This is particularly true in those cases in which motels appear to be regarded as a huge signboard done up in the gaudiest of colors as a lure to draw in business. Garishness may catch the eye, but it does not follow that the motorist will want to stop, or enjoy his stay, in such surroundings. The same thinking applies to signs: a properly scaled, well-designed sign will do more in selling the motel than will the overpowering examples we see on every hand. There seems to be a new emphasis on good appearance as a means of doing a more proficient job of roadside selling.

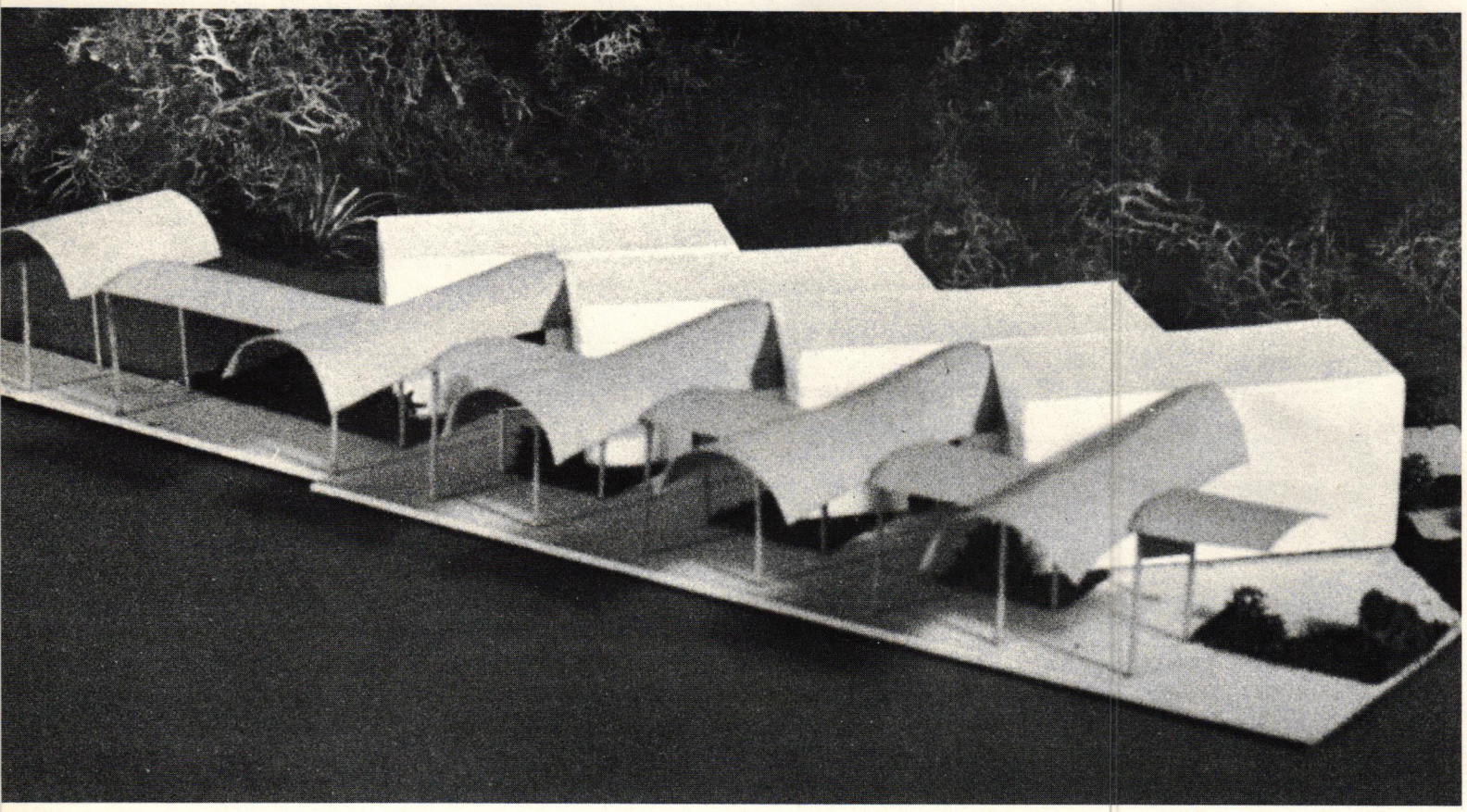
Many owners seem to consider durability of prime importance when it comes to interiors, but the total visual effect must be considered if a pleasing atmosphere is to be achieved. Carpets, bedspreads, and curtains should have related patterns; furniture and accessories must be coordinated in scale, material, and color; wall decorations should be carefully chosen—possibly to reflect local color of interest.



A poolside restaurant pavilion serves refreshments to guests



BEYOND PREFABRICATION



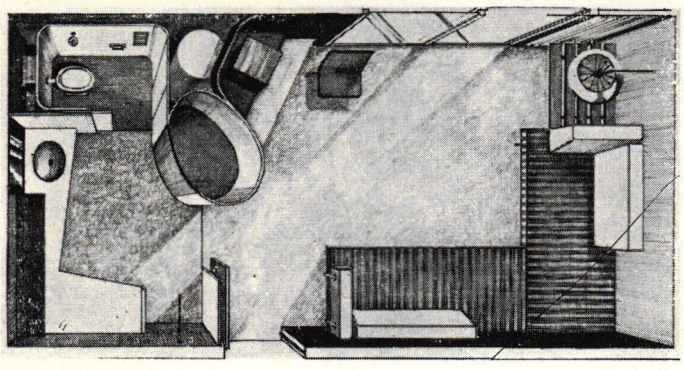
By Rufus Nims, Architect

The present situation can be stated simply: motels cost too much and are too difficult to finance.

Motels have now become "respectable"; chain operators and other professionals have entered the field. The result is a general upgrading of facilities to meet competition. This adds up to greatly increased total project costs.

As prices soar, so does the spread between available financing and final construction cost. Likewise, the necessity for higher rates becomes inevitable, as does the need for a higher occupancy percentage. These two factors explain the spread.

Increased room rates are gradually freezing out a large segment of travelers who prefer motels but who face the choice of third-rate accommodations or rents greater than their ability or inclination to pay. There is a great need along the highway for clean, comfortable, inviting lodgings—devoid of frills—which can be had at moderate prices.



The number of highway travelers is increasing, as is the number of highways. Many businessmen are looking longingly at the motel business. Given a predictable, reasonable building cost and a predictable delivery date, they would plunge in. Finance men tell us that if a motel can break even at less than 50 per cent occupancy with a $6 rate, they will enthusiastically participate in its financing. Our research was aimed at this goal, and our results appear to have reached it.

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Various other efforts to cut costs have been tried. Less space and cheap construction place the operator in a non-competitive position and are no answer. Certain chains have tried having a builder follow jobs from place to place with only moderate success, since costs vary widely, particularly in mechanical and electrical work. Prefabrication has been unsuccessful, since only the shell of the building is manufactured, and its proportion of the total cost is so small that if thrown in free, the total price would be but little less than that of conventional construction.

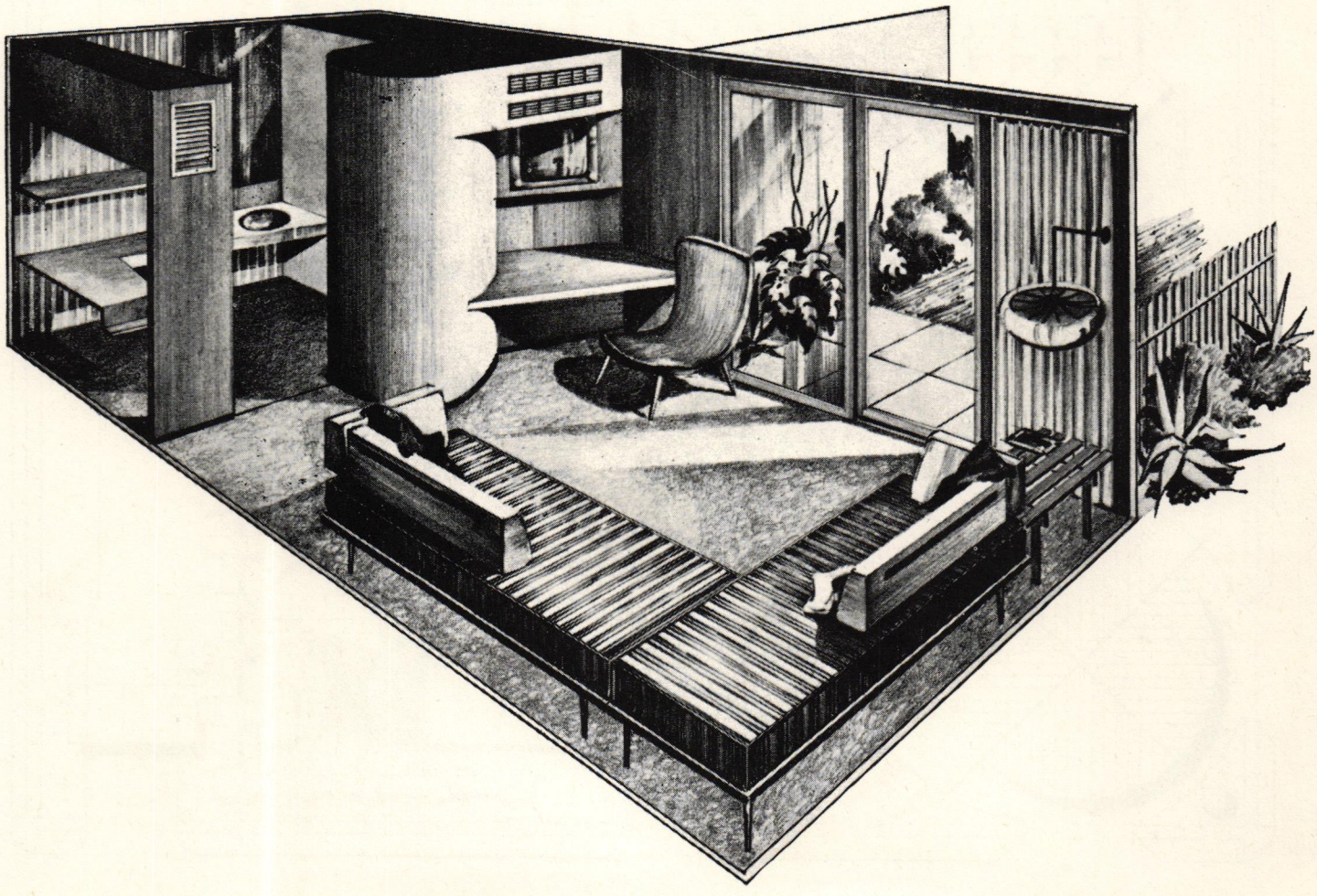
Having experienced all the foregoing, we approached the problem from the standpoint of controlled costs. We have gone to the manufacturers and proposed, designed, and submitted for bids a complete sleeping-room unit, as shown. It will be wholly manufactured in the plant, with all finishes, fittings, fixtures, and furnishings in place. The complete unit will be hauled to the site and connected—*not erected.* This process consists of bolting the unit to four piling foundations and then connecting electricity, gas, water, and sewer. The assembly of the manufactured canopy parts more nearly approaches prefabrication, but they are made in large pieces and are very simply joined. The factory promises completely predictable prices within the stated budget. The restaurant and service station accompanying most motel projects has been similarly approached and solved.

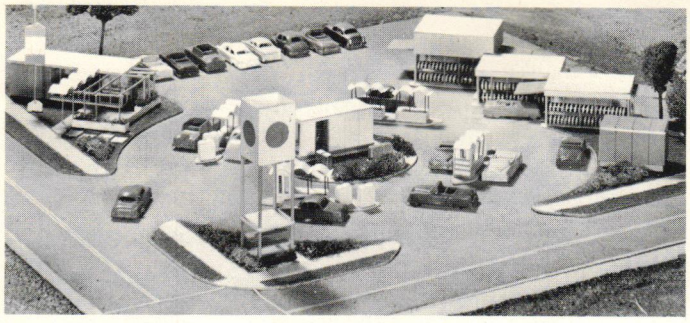
The manufacturer can buy materials, equipment, and labor at wholesale and can sell at wholesale. Shipping is the only variable, but one that can readily be determined for a given site.

During the period between the placing of an order and delivery of units by the manufacturer, the contractor has roughly enough time to grade the site, install utility lines, drive foundation piles, and place the paving (including the sidewalks). The units are then connected, and the owner is in business within a period of roughly one month. There has been no construction financing, and a saving of five months' earnings from the project. Because of these latter plus factors, we have been able not only to meet the budget, but to reduce it slightly.

There are many design advantages in such a system. Parts and pieces can be shaped and molded to suit minimum space requirements; control of traffic flow is easier with molded shapes than with rectilinear ones. Since each piece of equipment is predetermined, it can be readily integrated into the whole. These self-contained units will have individual air conditioning, heating, hot water, electrical panel, and television; and each of these will be integrated into the finished whole as various elements are integrated into an automobile.

The greatest design advantage lies in freedom of arrangement. Since the units are whole, there is no





gain in a common wall; and units can be staggered horizontally or vertically, stacked, cross-stacked, or conjoined in any possible pattern. We are free of weather—because of the piling footings—and can build in the coldest winter months.

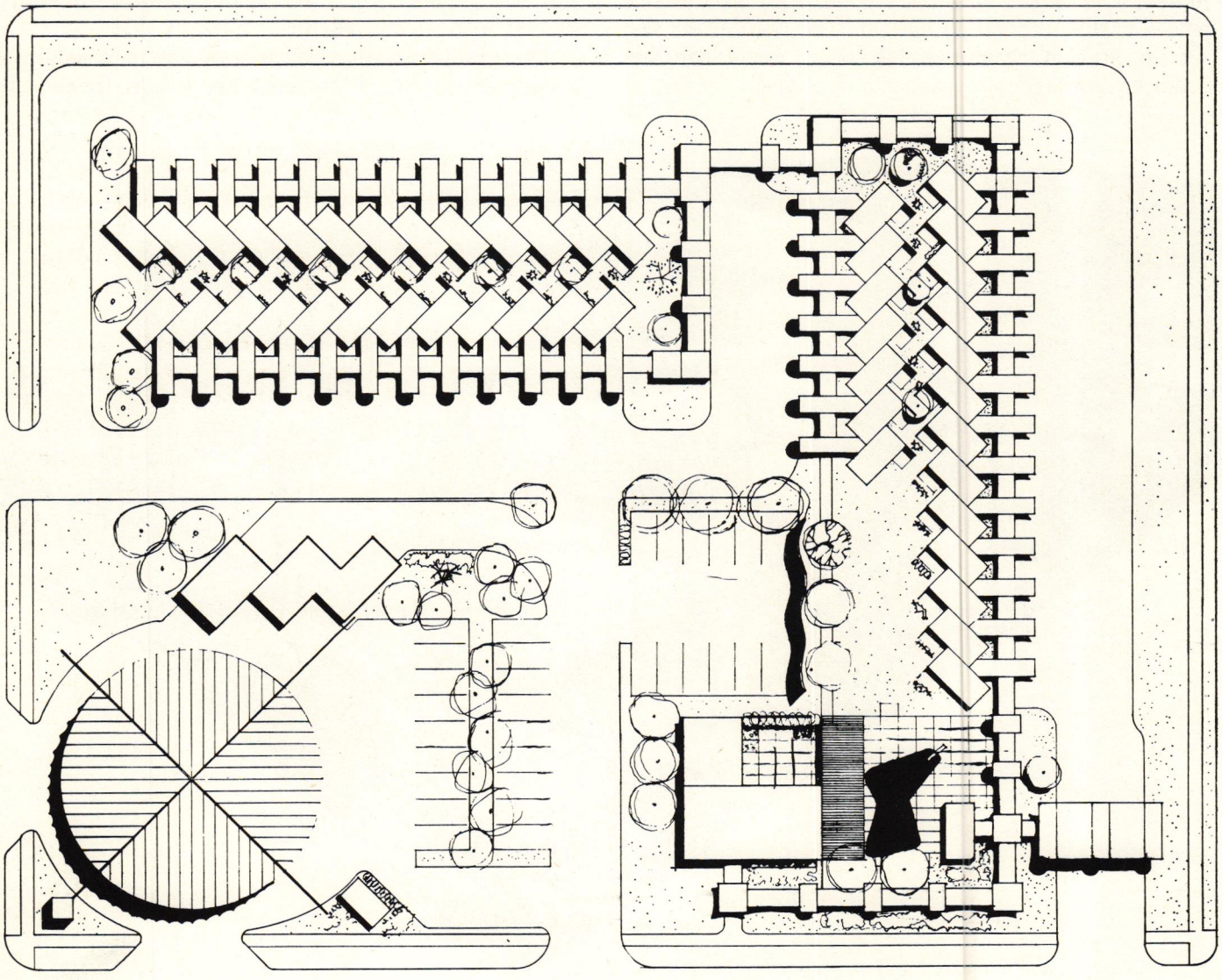
Because of this flexibility, interior advantages occur. The entrance can be placed on the *side* of the building rather than the front. Thus, the bath and dressing rooms can be organized independently, keeping spillage and messy traffic free of the living area. The side entrance permits a side terrace, which in turn means the terrace can be more readily and acceptably screened from neighbors than the usual end terrace. This permits greater land density and savings in land cost.

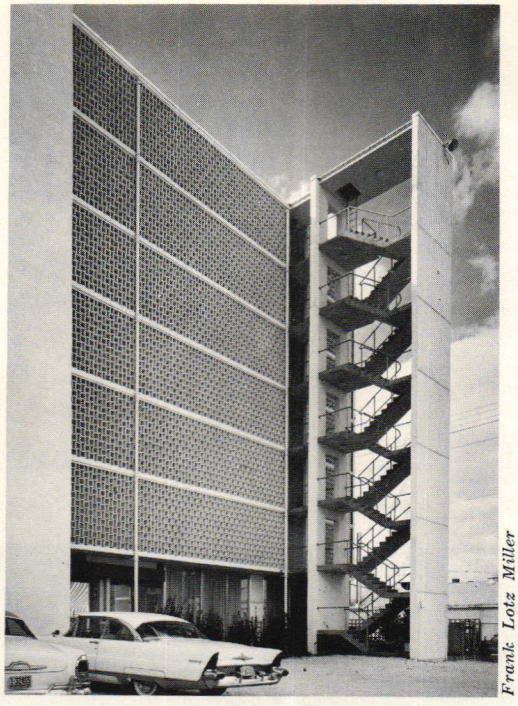
Although we have come up with a nice unit which stacks, colludes, and adjoins in every combination, each room is still (with apologies to Mr. Wright) only a nice box. We are obligated to conceal this fact from the public and probably from ourselves as well. Thus, we have expended considerable energy on the walkways and caused the canopies to dominate the assembly. We think it helps.

The designer is obliged, of course, to call for as few parts as possible. The mechanical core is constant; while left and right counterelements are the only variables. The basic room is ten by twenty, but can be expanded to twelve by up to forty (using the same core) at little added cost.

The canopy is of five sections, each slightly different but nesting together and providing complete flexibility. It can crawl up or down hill, turn corners, and assemble itself to cover large areas for entrance, pool, etc. Since all furniture except beds and chairs is built-in, the manufacturer's inventory can be kept relatively small.

Even at this preliminary stage, using agencies have requested over two thousand units, and four prime manufacturers are bidding competitively for the work. There will be some six to ten sub-manufacturers whose work will be integrated.





Frank Lotz Miller



A DOWNTOWN MOTOR HOTEL OF DISTINCTION

Pan-American Motor Hotel
New Orleans, La.

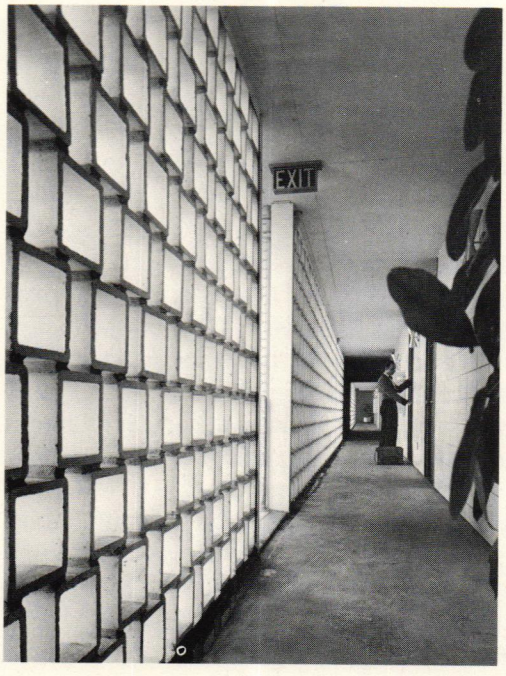
Curtis & Davis, Architects

Of this stylish in-city motor hotel, architects Curtis & Davis have this to say: "The site was chosen because it was closer to downtown than any of the other motel locations in the long string lining the main highway into New Orleans from the west.

"The small site set the design, developed for minimum coverage and maximum parking. The multi-story arrangement revolves about the idea of rooms above ground level, with only elements at first-floor level that are clearly required to be there, such as office, entrance lobby, bar, restaurant, and kitchen. Such a scheme permits parking 60 cars. This arrangement in turn sets the number of rooms possible.

"The rooms are disposed—ten to a floor in a six-story block—on one side of an open screened corridor. Each floor is typical except the second, which houses a manager's suite. Each pair of rooms can be thrown together to form a suite.

"The air conditioned building is of reinforced concrete construction with flat-slab floors to permit a minimum floor-to-floor height."





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TO SERVE SUBURBAN BUSINESS



Cranbrook House, Detroit, Michigan

Louis G. Redstone, Architect
Allan G. Agree, Associate Architect
Avner Naggar, Project Architect
A. E. Lawrence, Engineer
Edward A. Eichstedt, Landscape Architect
Samuel Cashwan, Fountain Sculpture
Tilchin Aaron, General Contractor

This 76-unit, two-story motor hotel is located in northwest Detroit within a triangle formed by three major highways. Northland Shopping Center is nearby, as are numerous existing office buildings and the new Reynolds Metals Building, now under construction. The hotel is thus popular with executives, salesmen, and engineers visiting the area.

The fire-resistant buildings are arranged to protect occupants from traffic noise. Guests—who are offered a free breakfast—are provided with television and 24-hour telephone service. Typical rooms feature walnut paneling with decorative metal sculpture. There is a meeting room for 25-30 in the basement of the main office building.

Careful study was given to exterior lighting, signs, and stairways. The structural frame is of steel and concrete; exterior walls are face brick; interior walls are painted plaster. An aluminum sash is used. All guest rooms are carpeted.

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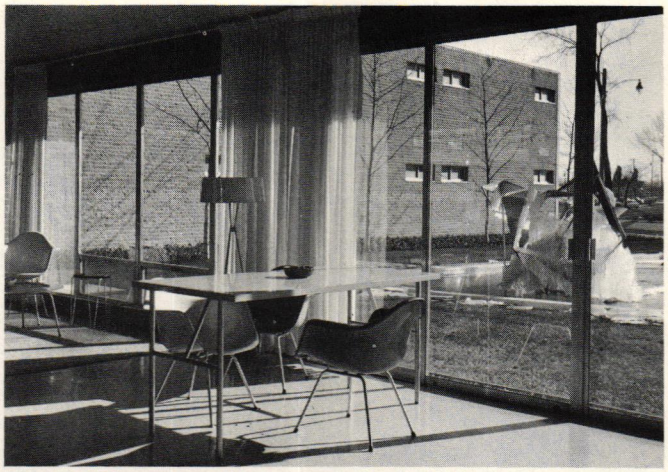


The colorful reception lounge overlooks the fountain

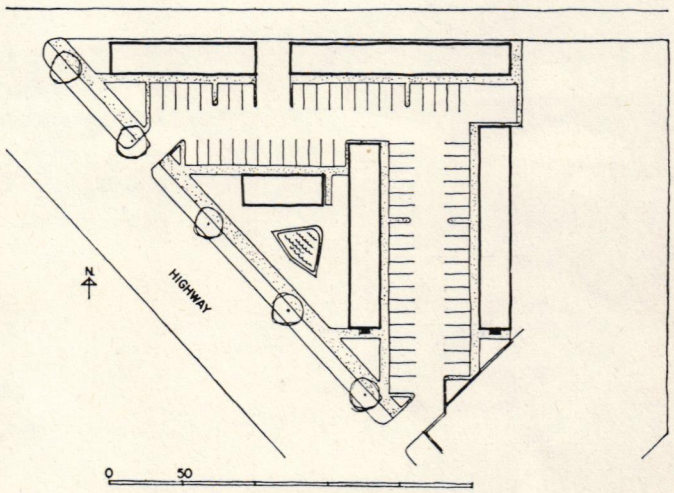
Photos by David R. Kitz

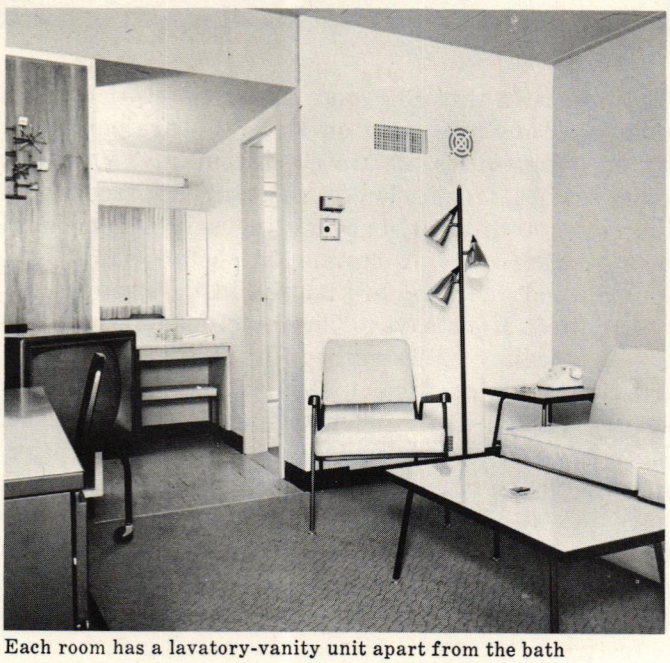


General view from the highway



Details of exterior stairways were carefully studied



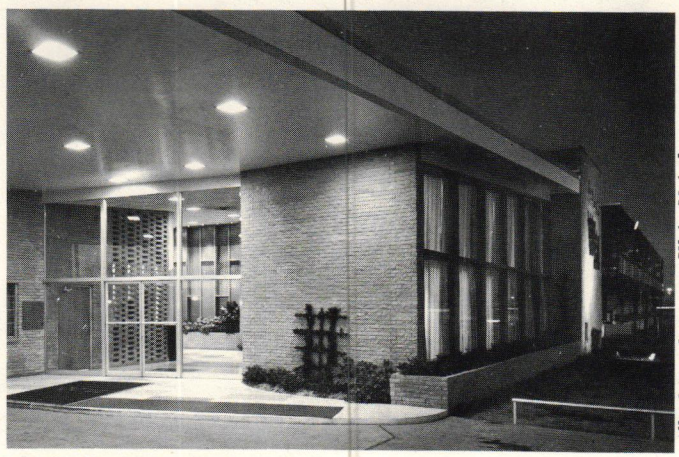


Each room has a lavatory-vanity unit apart from the bath



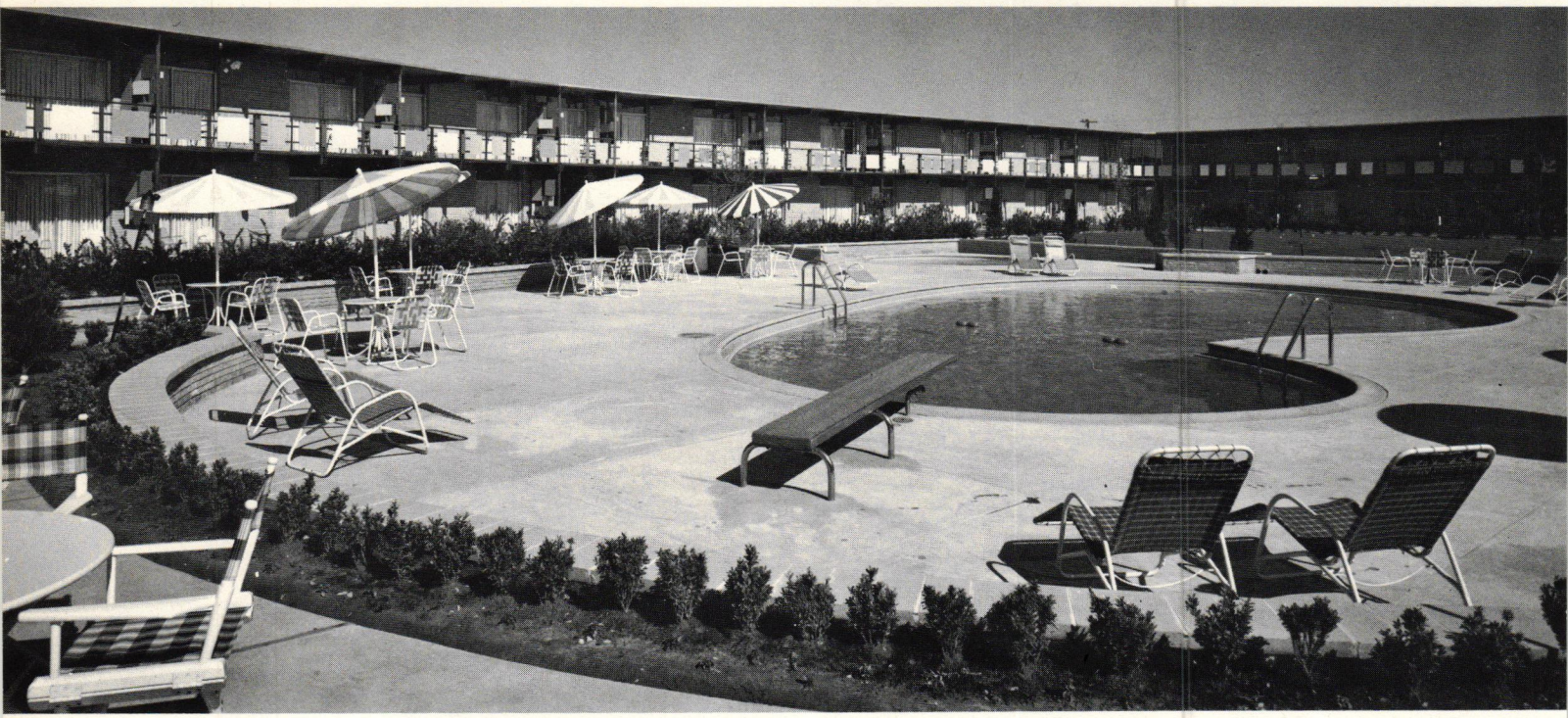
One can park and unload his car directly outside his room

LOUISIANA LUXURY RESORT



All photos but one: Ulric Meisel

Detail of main entrance



La Sands Western Hills Hotel
Shreveport, Louisiana

Lester G. Haas, Architect
John S. Malahy, Jr., Mechanical Engineer
E. M. Freeman, Structural Engineer
Stuart M. Mertz, Landscape Architect
Tower Contracting Co., Builders

The guests in this 133-room motor hotel—located 4 miles east of Shreveport on U. S. 80—are pampered by such amenities as air conditioning, TV, radio, room service, free ice cubes, valet service, free morning coffee and paper, baby sitting service, and kennels for the dog! A restaurant, coffee shop, bar-lounge, and gift shop are housed in the group.

Architect Haas says: "The hotel was designed to create a feeling of warmth, informality, and gaiety. All the buildings face inward to the central landscaped garden and sunken swimming pool terrace. Entrance and service for all rooms—as well as parking—is on the outside perimeter. Ground-floor units have private terraces on the garden side; second-floor units have balconies overlooking the garden and pool. All materials were chosen to further the air of informality; color is used extensively to add a festive note and to attract the passing motorist."

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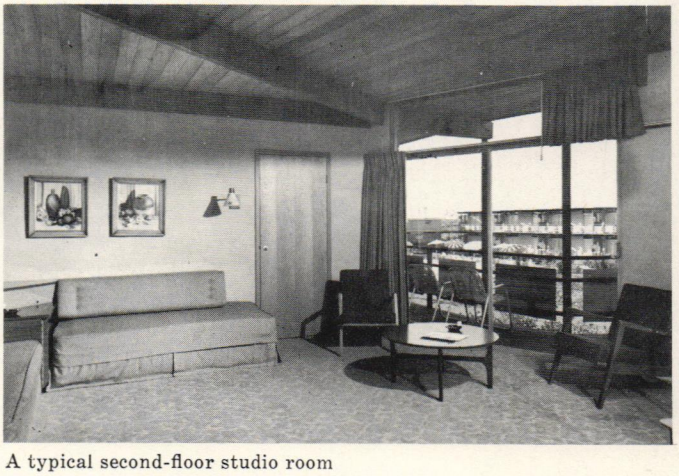
The bar-lounge opens to the pool terrace

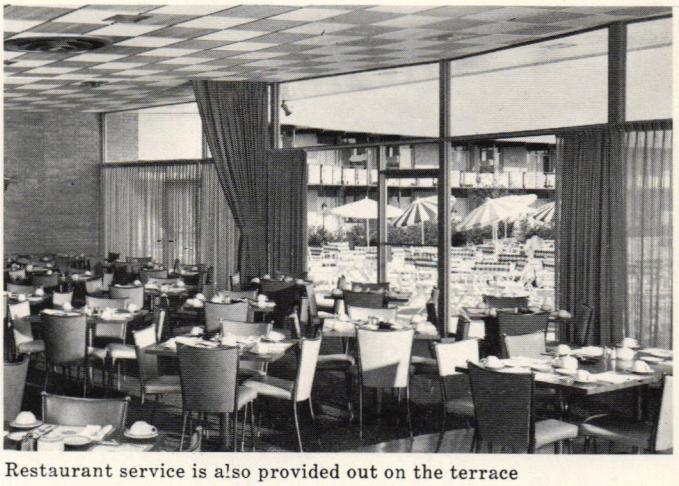


A typical second-floor studio room



Grabill Studio

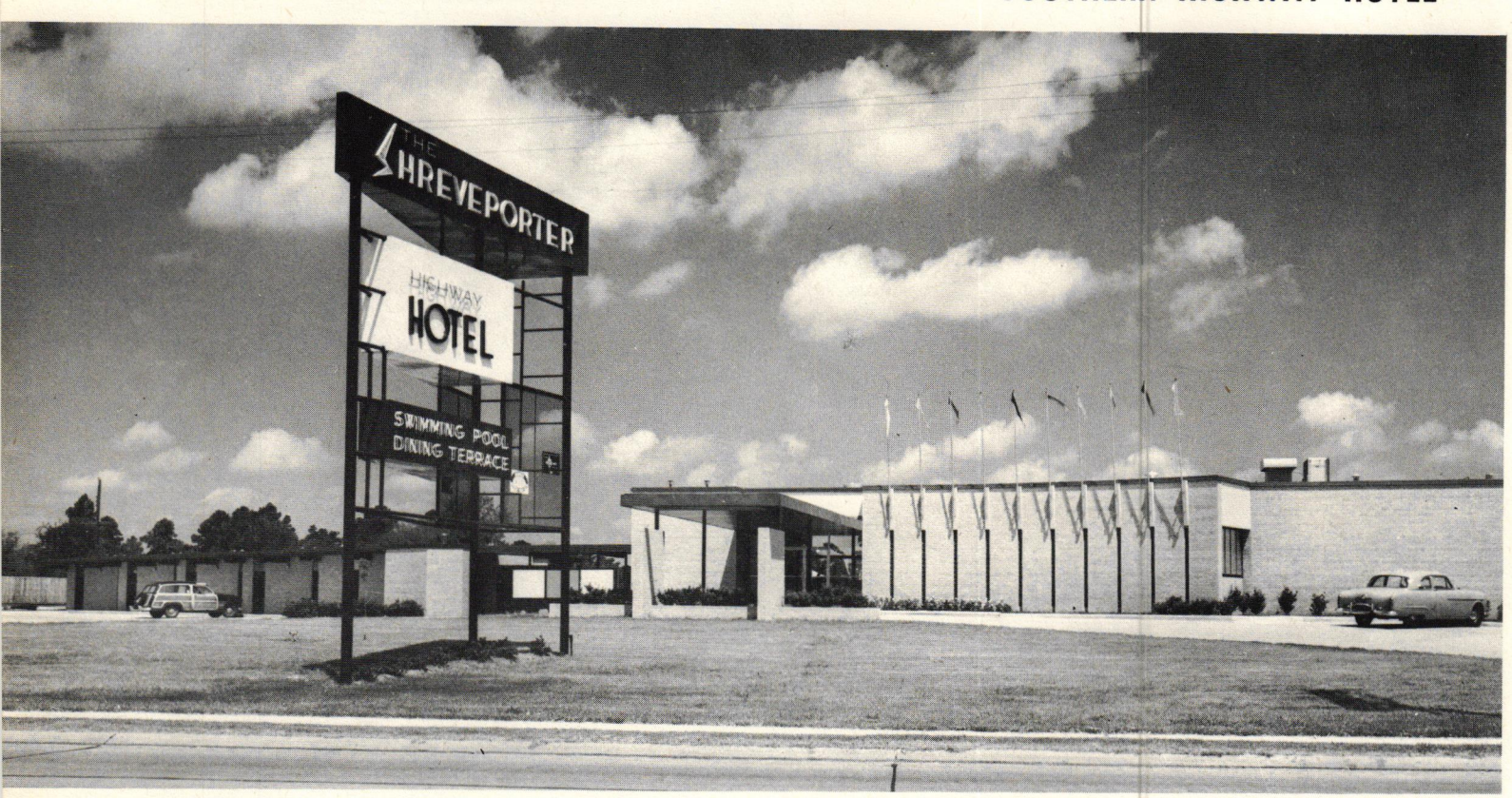
Aerial view shows the six-sided plan focusing on the pool



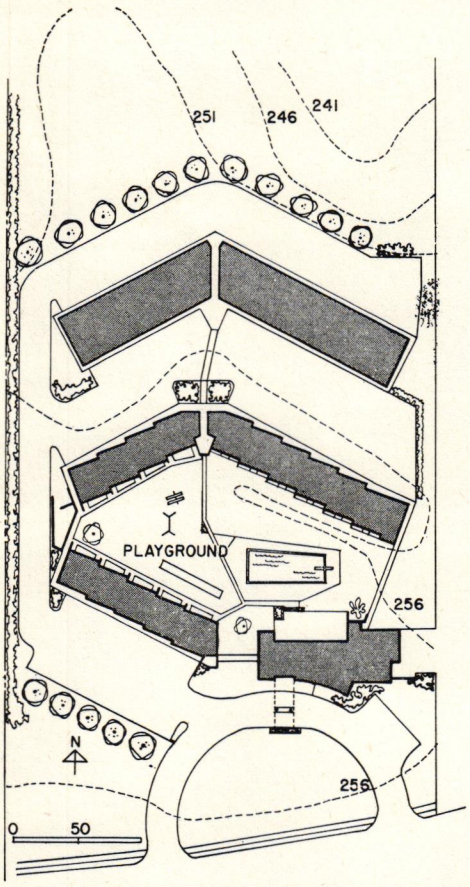
Restaurant service is also provided out on the terrace



Interconnecting rooms can be thrown together into suites



Frank Lotz Miller



Site, on heavily traveled Highway 80, is just inside city limits, 4 miles from downtown and 2 miles from the airport and State Fair Grounds. Room orientation varies less than 20° from ideal north-south exposure

The Shreveporter, Shreveport, La., Samuel G. Wiener & William B. Wiener, Architects, Jesse O. Morgan (Architect in Charge) and Aubrey E. Butler, Assoc.

JACK TULLOS, president and manager of The Shreveporter, and Alfred Roper, vice-president and treasurer, were experienced hotel men when they quit good jobs to get the new highway hotel under way in 1953. Mr. Tullos describes the profitable enterprise and its underlying concept:

"It is my opinion that there is a need for both the highway hotel and the well operated downtown commercial hotel. The highway hotel is the answer for a man traveling with his family and for the commercial man whose activities are not entirely downtown. Today, many business establishments are moving to suburban areas; and many commercial travelers find a hotel on the outskirts convenient. Too, convenient parking makes the highway hotel ideal for small conventions and group meetings. Some commercial men, particularly in summer, even though business keeps them in town all day, enjoy leaving the city hubbub and relaxing here. On the other hand, downtown hotels are certainly satisfactory for those who have time only for downtown business.

"The Shreveporter attracts people just passing through, for overnight or longer stays. Our resort atmosphere, swim-

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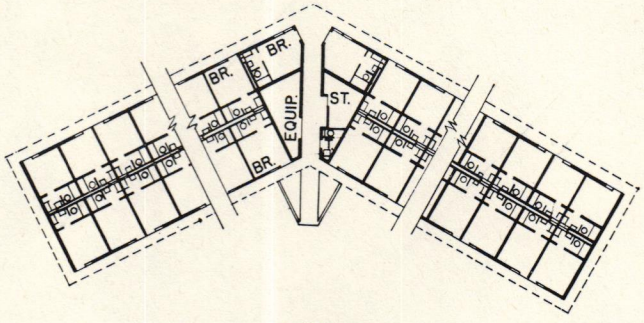
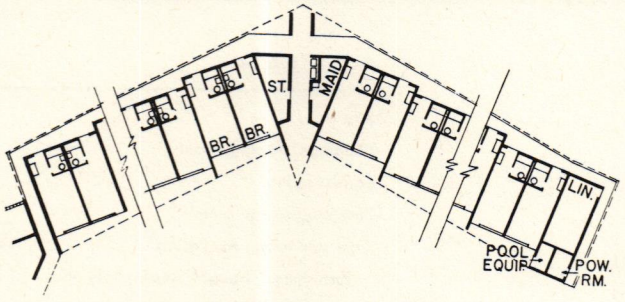
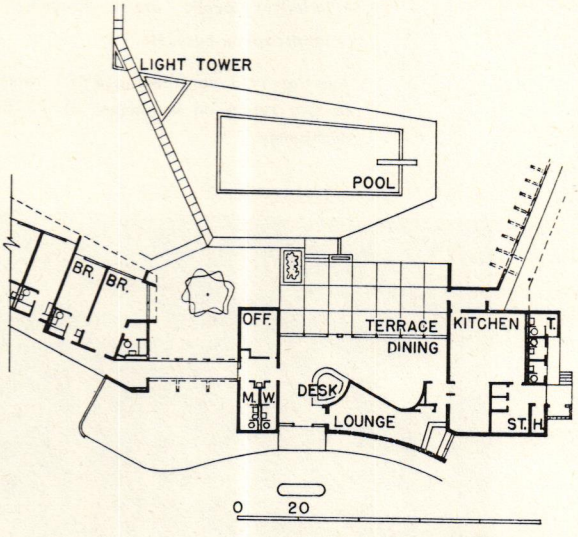
Frank Lotz Miller

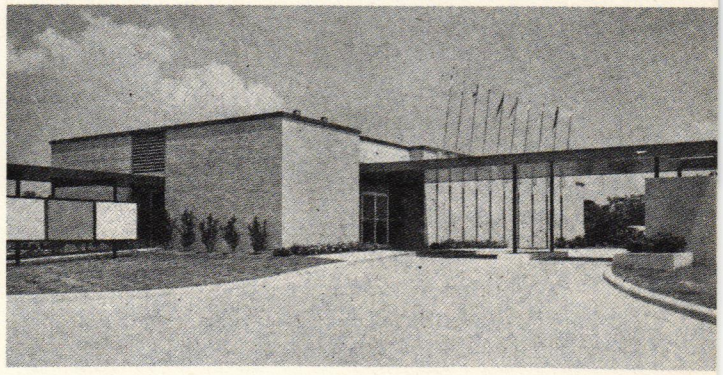


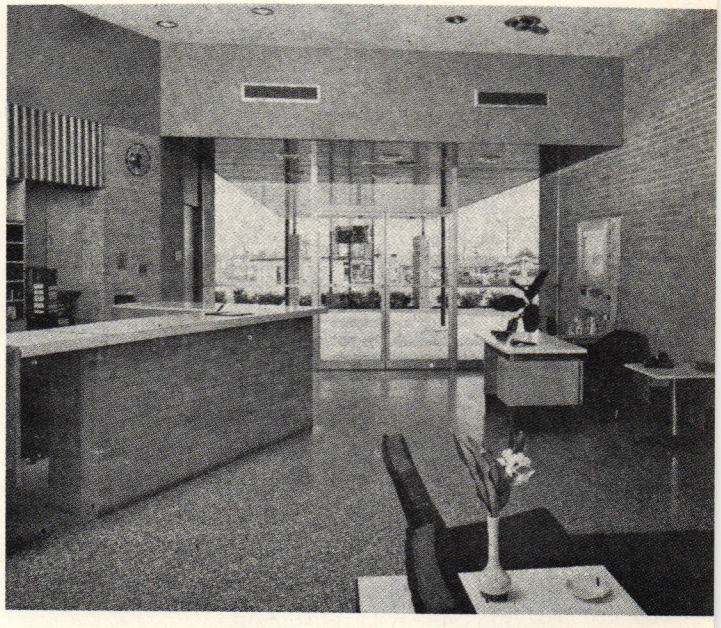




Everything from sign and landscaping to interior decoration, menus and stationery is architect-designed. Parking is planned so that cars are kept away from main court, dining terrace, pool and game layouts

T. C. Smith







Frank Lotz Miller

ming pool, dining facilities and good food have attracted local patronage also. Families in town spend weekends to enjoy swimming and other recreation for adults and children; people spend long vacation weekends here and as we become better known we hope to have them for full vacation periods. Many local people find us convenient for lodging out-of-town guests who can't be accommodated in their homes.

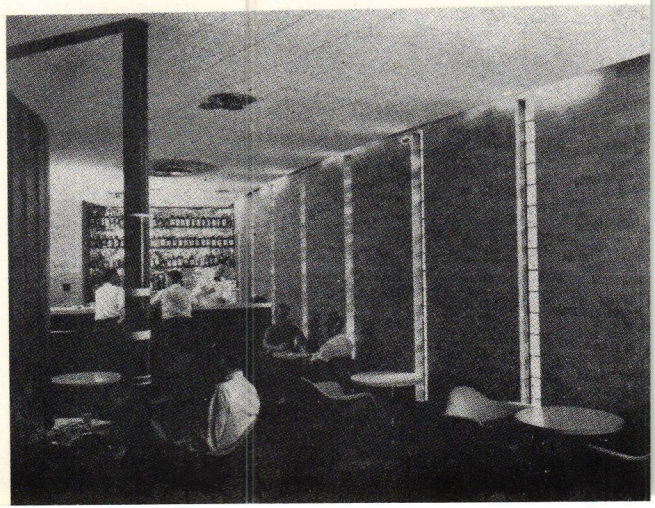
"These are the patrons we expected and planned for. If we were to start over, we would include private dining rooms for group meetings and the necessary larger kitchen facilities. We should increase the number of rooms from 70 to 100 or 125. Part of this expansion plan is under way."

The operators emphasized to the architects the importance of high quality and atmosphere in every respect, from landscaping and site development through the smallest detail of finishes and equipment, including air conditioning. Only in one respect were there restrictions on design: the 400-ft-wide site, the architects believe, might better have been 500 ft for this size of establishment.

COST DATA

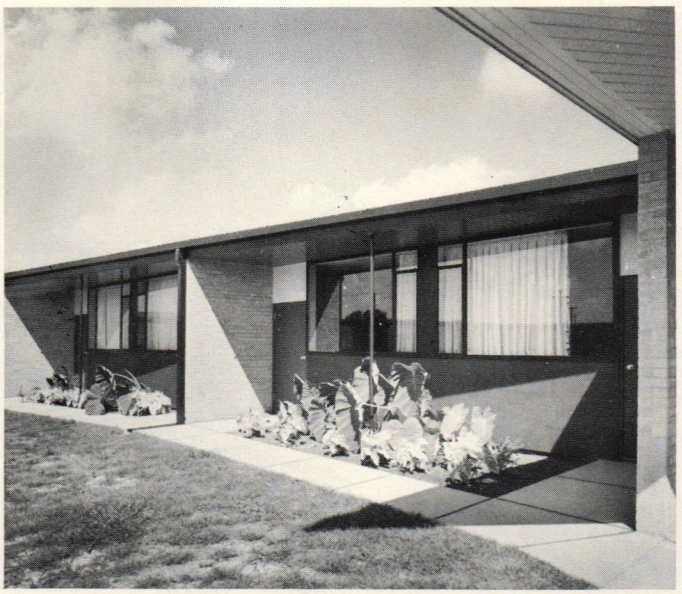
Site	$ 30,000
Buildings, paving, pool	530,600
Landscaping	6,800
Furnishings, equipment	82,750
Cost per room, excluding furnishings bought separately but including public areas, kitchen, landscaping, pool, etc.	8,000

Average rate per room is $9.75, which provides satisfactory return on investment at 70 per cent or more occupancy



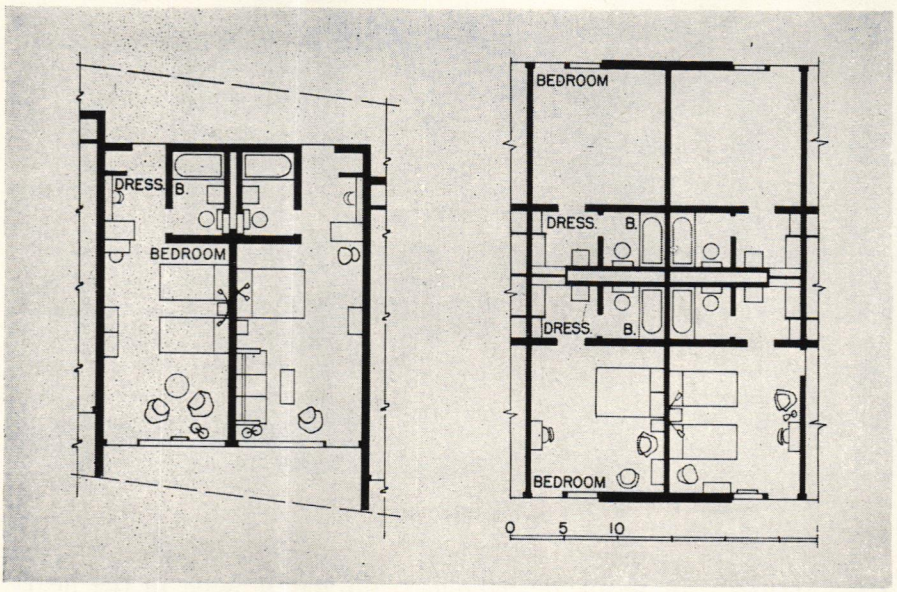


Bedroom wings angled and offset for variety

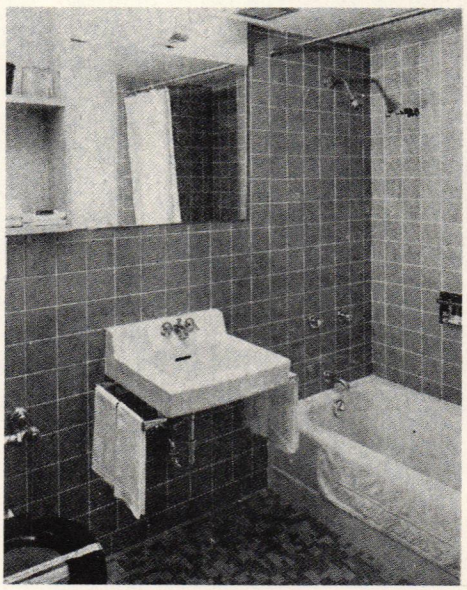


Frank Lotz Miller

Color relieves monotony. Diffused outdoor lights are carefully placed

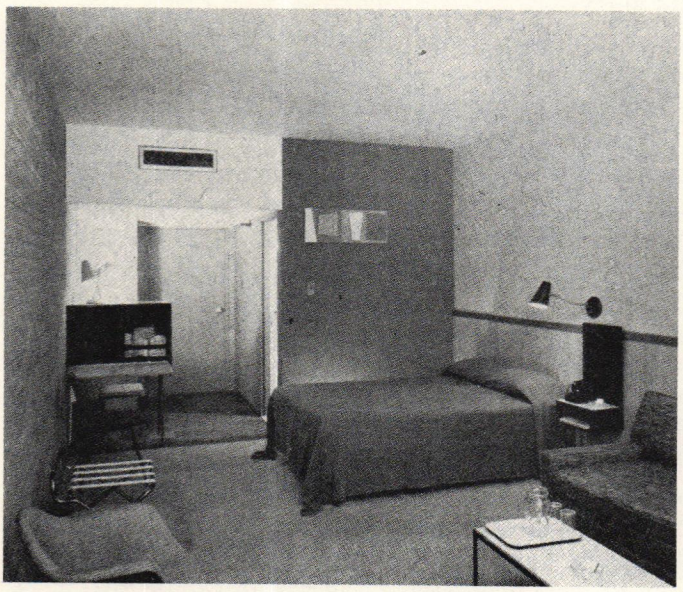


One-room-deep wings command higher rates for larger quarters

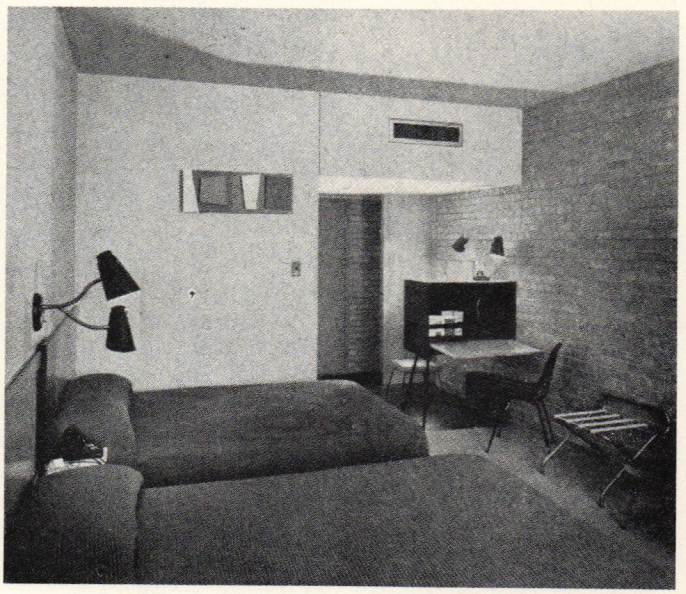


T. C. Smith

Deep shelves hold toilet cases; mirrors are fixed, bath towels extra large



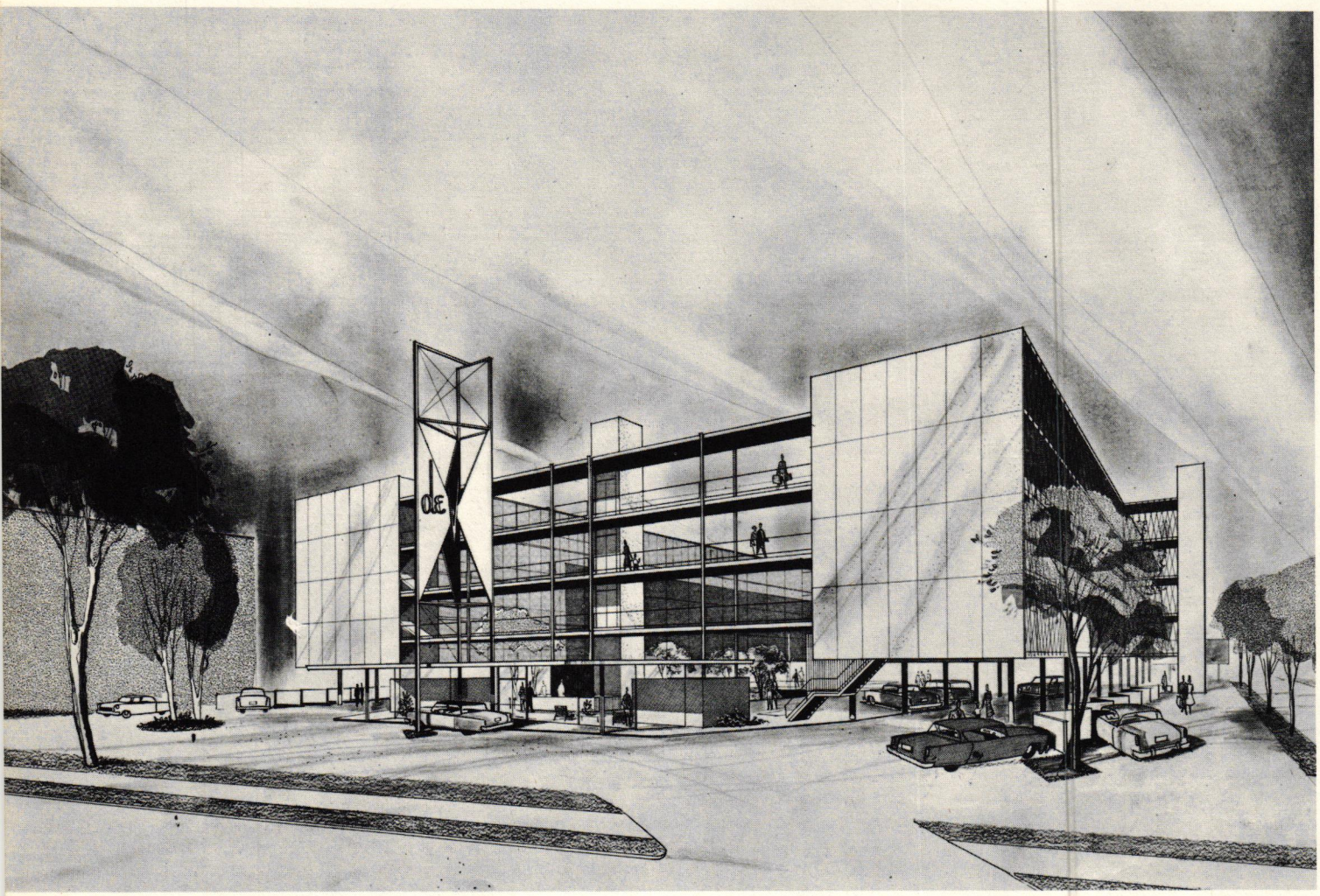
Individually controlled air conditioning



T. C. Smith

Abstract "Stabile" designed by Samuel Wiener, Jr., carpenter-made

SCHEME FOR A MID-CITY MOTOR HOTEL



Proposed Hotel de Ville
Kansas City, Missouri

Colbert & Lowrey & Associates, Architects
Designed for Shelby Construction Co., Inc.

A recent development, the motor hotel in the heart of the city must compete with the downtown hotel on its home grounds. This proposed 250-room, air conditioned complex—located one block from the civic auditorium and main shopping center in Kansas City—is expected to be under construction soon.

The design resulted from taking apart the elements of the city hotel, subtracting some, adding several, altering others, and then reassembling them into a completely new arrangement. The concept is based on providing a maximum of personal convenience, comfort and enjoyment to offset the weariness travel induces in a manner quite different from the impersonality of the typical traditional hotel, with its formal lobby, forbidding dining room, box-like bedrooms, and expensive auto storage. In this building, a more festive air should prevail, with the swimming pool-skating rink providing a focal point for the main lounge and restaurant areas, and half the rooms as well. From outside, the large glass areas and general openness of the design should furnish a new and enticing look to contrast effectively against

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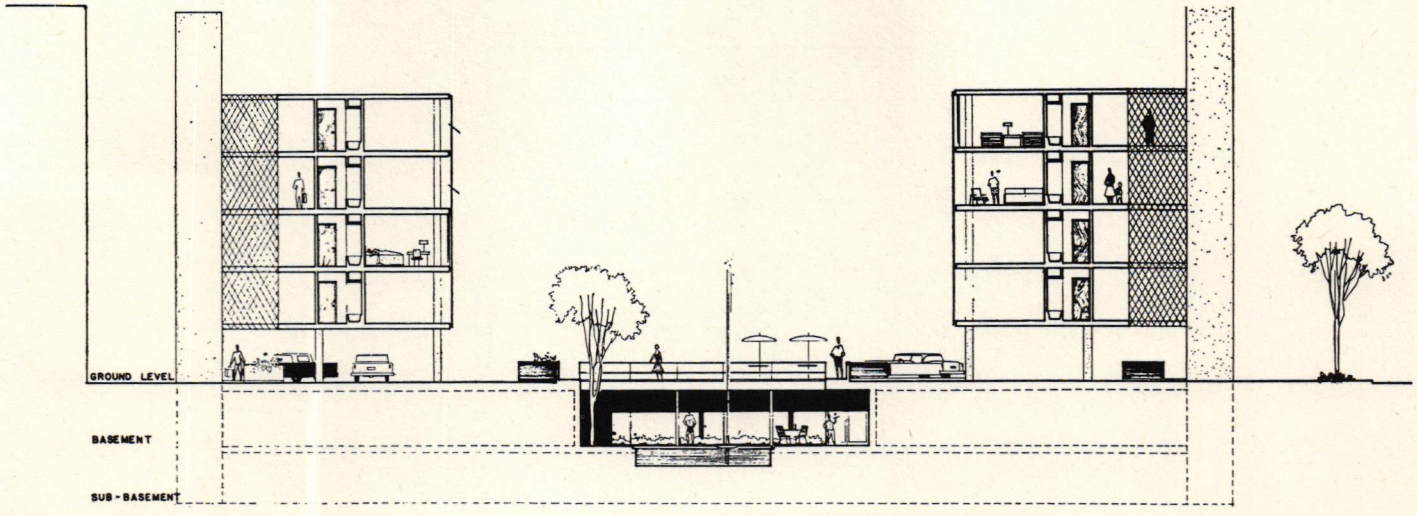
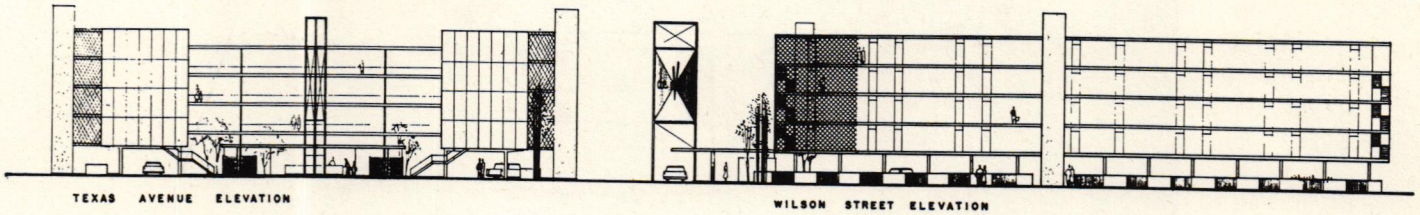
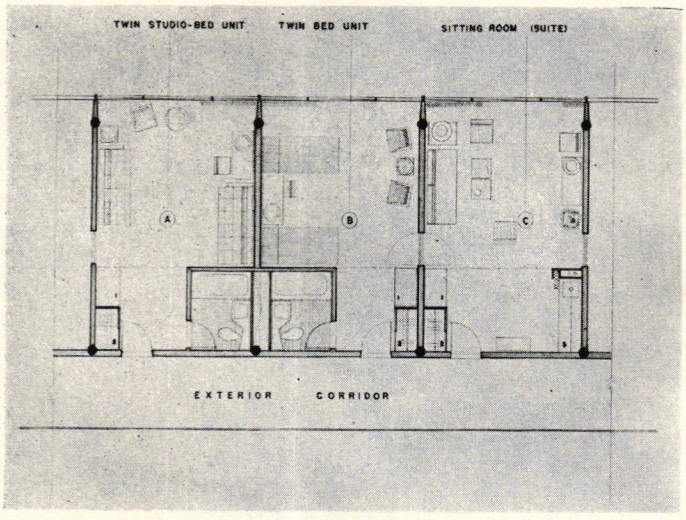


TRANSVERSE SECTION



TEXAS AVENUE ELEVATION

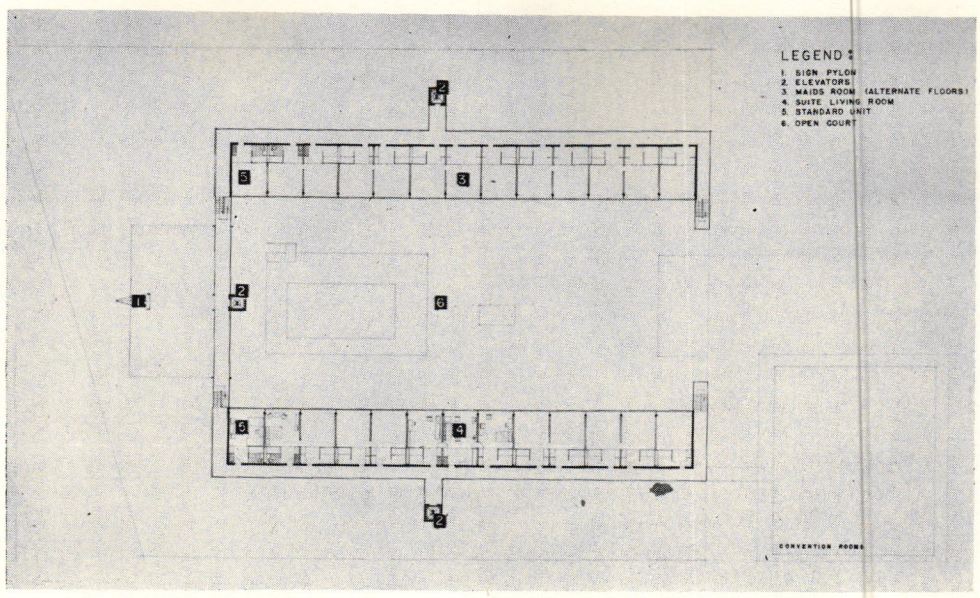
WILSON STREET ELEVATION



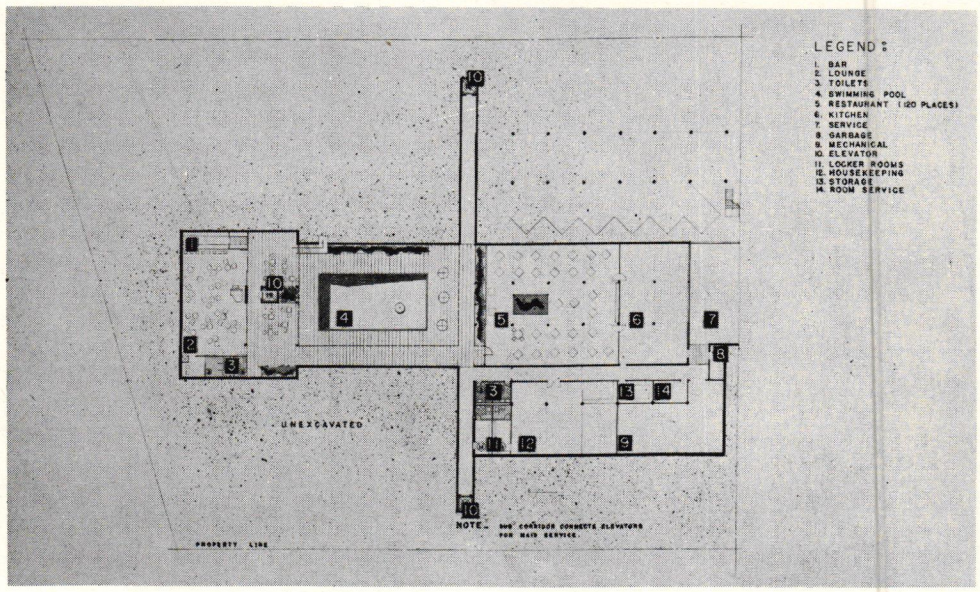
its brick neighbors. Convention and banquet facilities will provide support, but will be separated so as not to disturb usual functioning of the hotel.

Study of the plans reveals that the lowest or street level is devoted entirely to parking about 100 cars. Here, one may register at a pass-through window and take an elevator directly to his room. The second, or Pool Plaza Level, parks an additional 30 cars and includes the pool, banquet room, kitchen, cocktail lounge, and promenade deck. Above, on the third or Lobby Level, are located the main desk, lobby, lounge, restaurant, florist shop, offices, and meeting room. The top seven floors are given over to guest rooms and suites.

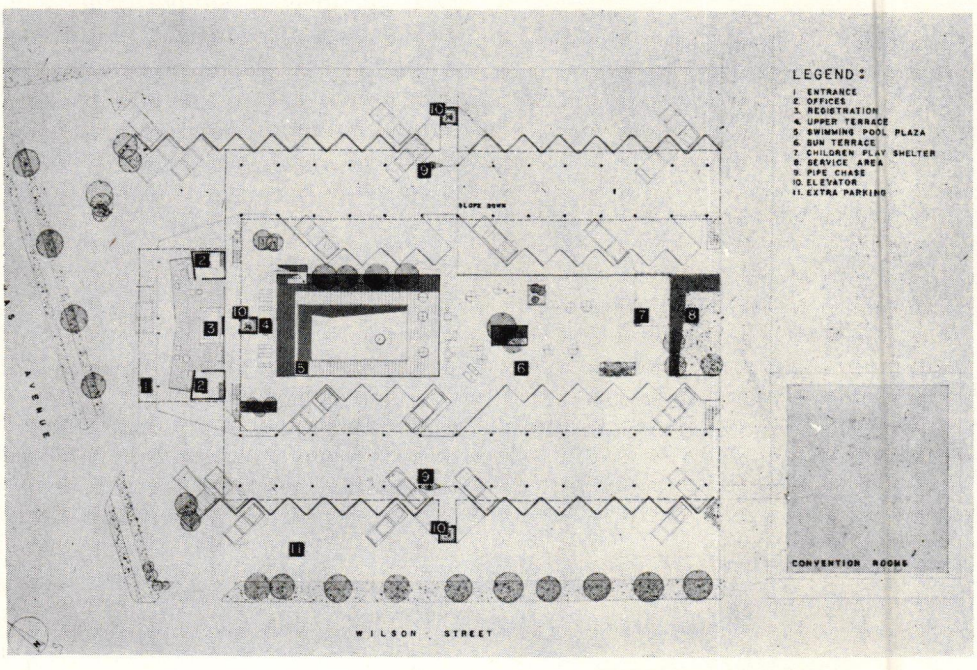
Of the total 156,800 sq ft area, 63 per cent is devoted to rooms and suites while 12 per cent goes to the restaurant, banquet room, shops, and lounge. The pro-rated cost per rental unit (yet to be exactly determined) runs about $10,000. The structure will be a concrete frame with flat-slab floors and exterior facings of thin-slab marble, precast terrazzo, or insulated porcelain enamel panels.



Typical Rental Floor Plan



Above: Excavated Level. Below: Ground Level



0 20

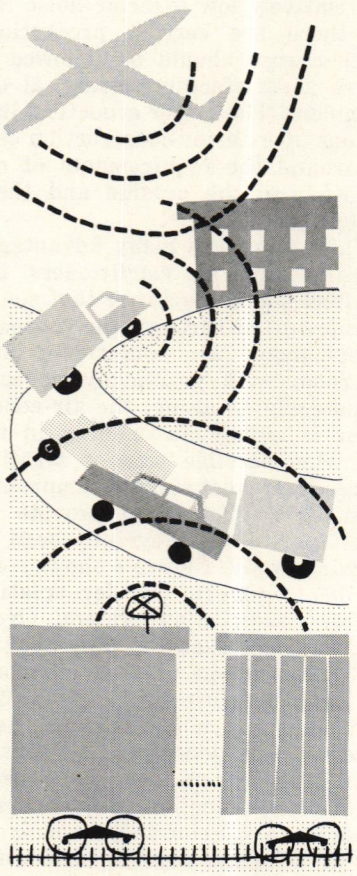
NOISE CONTROL TECHNIQUES FOR MOTELS

By William J. Cavanaugh and Norman Doelling,

Bolt, Beranek and Newman, Inc.

Consultants in Acoustics

Cambridge, Mass.



The increasing number of aircraft and cars and trucks creates serious noise problems for architects designing motels. In general, noise problems associated with a motel cannot be resolved by locating the motel in a quiet location. Economic success for a motel demands proximity to the noisy routes of traffic. Even in relatively quiet areas interior noise problems can pose equally stringent demands on the motel designer. Providing a comfortable environment of sound for motel guests requires an integrated study of both interior and exterior noise problems. The consideration of noise problems should begin at the time of site selection and should continue throughout the entire design.

Each motel will have special noise problems to be considered. However, the general approach is essentially the same for all motels. First, an acoustical criterion or design goal is established. Next, the noise source levels are determined. Finally the noise reduction requirements are found from the difference between the noise source levels and the criterion level. The source levels, the criterion must all be considered as a function of frequency. A single number description of noise problems is rarely adequate. For example, a so-called "40 decibel" partition may only provide 20 decibel noise reduction at low frequencies. Where jet engine noise is predominant, this degree of noise reduction control may be far from adequate.

Criteria

There is no unique background noise level criterion for all motels. An air traveller staying at an airport motel, for example, will generally tolerate more noise than a vacationer staying at a resort motel. The criterion noise levels for a particular motel will depend upon the type of client, the price for the motel rooms, the amount of competition for the motel in the area and on many other variables such as the "character" of the noise. In general, one chooses the criterion noise levels to be as high as permissible for two reasons. First, a high criterion will mean lower noise reduction requirements and hence less expensive construction techniques for exterior walls. Second, relatively high noise levels in each motel room will tend to mask noises from adjacent rooms so that the construction for noise reduction between rooms is minimized. Care must be taken, however, to assure that the criterion noise levels are not so high that a large fraction of the guests will object.

Exterior Noise

For most motels, the exterior noise levels are created by automotive traffic and/or aircraft. Railroad lines in the vicinity of the site can also be a problem. The noise levels from these sources can be quantitatively determined from the number of cars or aircraft, their speed and their location with respect to the motel. A visit to the site, however, may be required to determine the noise levels resulting from other sources, such as railroads, factories, etc. The usefulness of one's own ears for evaluating the magnitude of the noise problem should not be underestimated. Acoustical measurements are required only for extreme problems.

The difference between the outside noise source levels and the inside design goal levels (or the required reduction for the exterior noise) can be accomplished by three methods: site selection, site planning and appropriate construction techniques.

Site selection is particularly important for motels located near airports. The noise levels at locations around airports depend on the relative usage of runways and the location of maintenance areas. The air-

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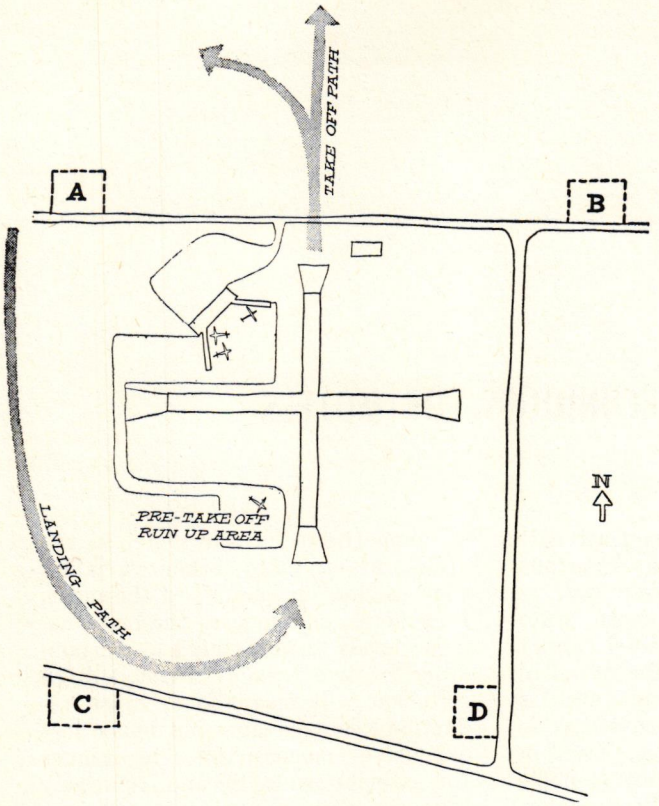

Fig. 1

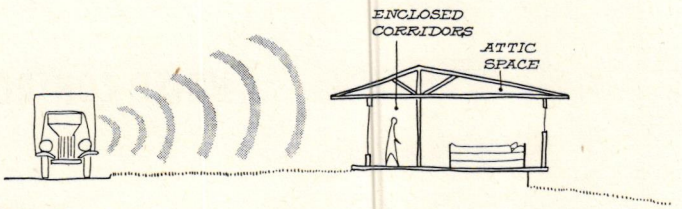

Fig. 2

Left: four possible motel locations are shown, with Site B best. Site A is near take-off path; Site C is near ground runup area
Above: enclosed corridors and attics serve as sound buffers

port management can usually provide data on the relative usage of the runways for various periods of the day and times of the year, and the location of ground run-up and maintenance operations. This information can be of great assistance for determining the relative noise levels at various potential sites. If, for example, the prevailing wind is from the north, most aircraft will take off toward the north and will land from the south. Because aircraft normally fly in a "lefthand pattern" around most airports, Site A, in Fig. 1, would be much noisier than Site B. Site C would be even worse than Site A as the pre-take-off ground runup operations would add to the exterior noise levels. Site D would be better than Site C, but not quite as good as Site B. Of course, when the wind direction changes, the noise levels at the various sites will also change. It will usually be found, however, that there are certain runways that are used much more frequently than others. It may be better to choose a site very near a runway which is seldom used than to choose a site located fairly far from all runways.

Similar considerations should be given to the selection of a motel site near a highway. Insofar as possible, a site near a stop street, a stop light or a steep hill should be avoided because the noise levels from accelerating or decelerating cars and trucks are generally much greater than the noise levels from cars and trucks moving at a constant speed.

Site planning can also aid in reducing noise levels just outside the guest rooms. Where possible, the motel buildings containing bedrooms should be located far from the road. Buildings containing dining rooms, function rooms, kitchens, supply rooms, offices, heating plants, etc. should be located between the highway and the other buildings to form an acoustically shielding barrier. If space is not available to move the buildings with bedrooms far from the noise source the plan of the building could be arranged to provide good shielding. As shown in Fig. 2, enclosed corridor or attic spaces can be used as noise reducing elements.

It should be pointed out here, that trees and shrubs are almost entirely transparent to noise. They are a visual barrier only, and are not an acoustical barrier. Free standing walls, too, are an over-rated noise control measure. To be effective, they must be quite high, at least the height of the building, and carefully located with respect to the noise source and the receiver.

If the noise levels due to exterior sources have been minimized by site selection and site and building planning, no special construction techniques may be needed. However, even for relatively low exterior noise levels, there are certain precautions which always should be followed to assure a satisfactory acoustical environment. The major acoustical limitations of exterior construction center around the requirements of observation to the outside and those of ventilation.

While there are many advantages to using room air conditioners, the architect should be aware that sound is transmitted through the ordinary under-window air conditioner into the room with practically no loss. Acoustically speaking, the air conditioner is simply an opening in the wall. One possible way of treating the fresh air inlet and the compressor cooling air inlet is to provide an acoustically lined labyrinth bend in the window sill. Figure 3 shows some possible configurations for treating the air conditioning system. (Note that the manufacturer may require larger fans in the units to overcome the large pressure drop around the bends.) In very noisy locations, near airports for example, a central ventilating system should be used. The noise reduction requirements through the exterior wall are so large that an adequate muffling device for

the unit air conditioners is too large and expensive to be practical.

The windows in a motel near an airport often require double glazing with an air space from 4 to 10 in. between the panes of glass. At least one window should be mounted in relatively soft gasketing material. Conventional double glazing techniques which use rigid metal-to-glass bonds and small air spaces between glass panes are only slightly better than single glazed windows with the same thickness of glass. Figure 3 also shows an exterior wall construction that may be required in a severe exterior noise situation.

Doors opening directly from the guest room to the outside should be avoided in very noisy environments. A central corridor system or a closed-in corridor is much preferred to single exterior doors. If an operable window is required, it should be carefully gasketed and provided with an adequate system for insuring an airtight closure.

"On-Site" Exterior Noise

Thus far we have concerned ourselves with noise sources exterior to the motel itself. There are, however, a number of problems which can also be classed as "exterior" but over which the designer has some control. These "on-site" exterior problems include the noise due to activity at the swimming pool, the arriving guests, outdoor terraces for the dining-dancing part of the motel operation, and others. The sound of these activities, however unobtrusive or even delightful to the makers, can be just annoying to the tired guest as would be excessive aircraft noise. The solutions to these problems are essentially the same as for the off-site exterior problem: that is, remote location of the noise source from the sleeping rooms, using enclosed corridors or lounges as buffers between the noise and the guest rooms, and finally, suitable wall and window constructions to reduce the noise. These kinds of noise problems might be quite severe in a "resort" type motel and, of course, should be controlled if the motel wants to enjoy a "quiet" reputation.

Interior Noise

The sources of interior noise are the occupants, and the equipment and gadgets that serve the occupants—the air conditioning system, radio, TV, plumbing, to name a few. Problems of these kinds are not new ones but have been solved with varying degrees of success by hotel and house designers in the past. Often more noise can be tolerated in motel rooms than would be deemed acceptable for more permanent apartments. The reputation for "acoustically transparent" walls can, however, travel far, and these certainly do not make for satisfied guests. Interior problems can be solved, for the most part, by the selection of proper materials and carefully detailed constructions, and, most important, a basic understanding of the nature of the particular noise problem.

Privacy

A guest expects a reasonable amount of acoustical privacy from the persons in the rooms around him, between his bathroom and the inevitable back-to-back one of his neighbor, and from the corridor. The measures necessary to eliminate completely these intrusions on one's privacy would be prohibitively costly. What is desired is that the normal speech and other living activity sounds from adjacent rooms not be distinguishable above the general background noise levels in the adjacent room. Background noise plays an extremely important role in the achievement of acoustical privacy. In fact, one can never estimate the noise reduction requirements of partitions without also considering the expected background noise. For example, at certain frequencies, speech levels may be in the order of 70 decibels. If the parti-

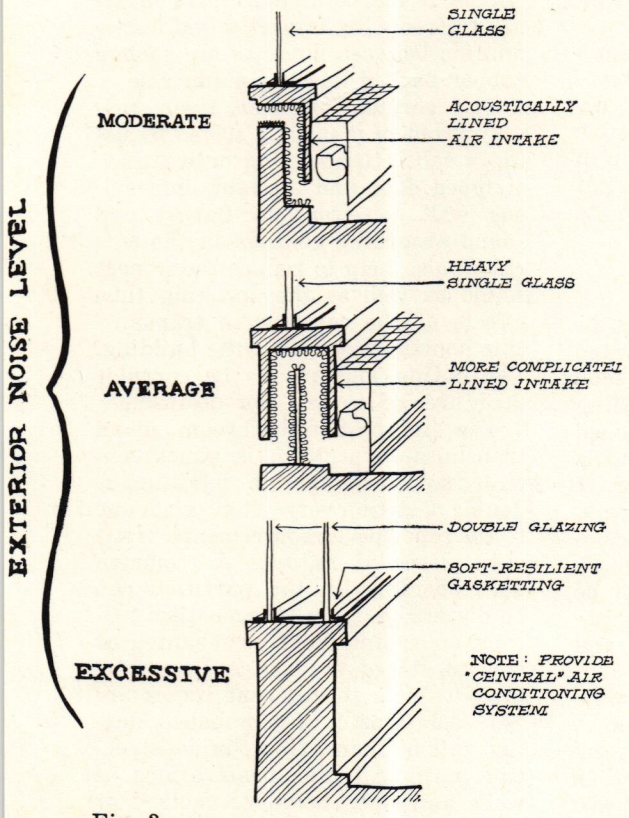

Fig. 3

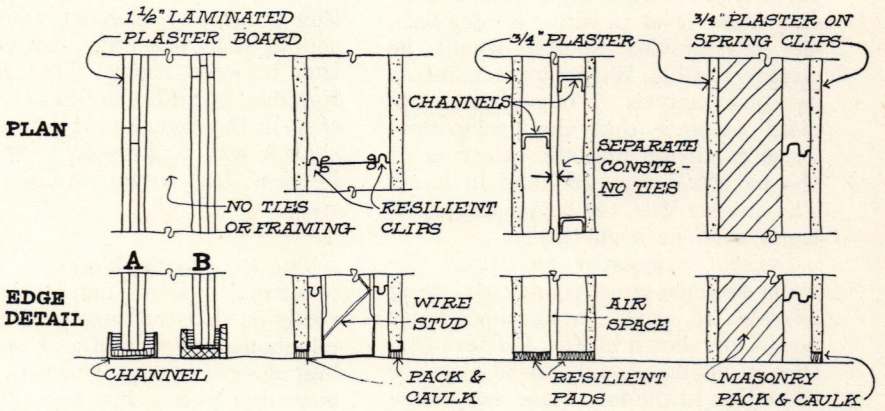

Fig. 4

Left: suggestions for glazing and air conditioning sound traps with varying degrees of outside noise conditions. *Above:* interior partition details designed to give 45-50 db noise reduction

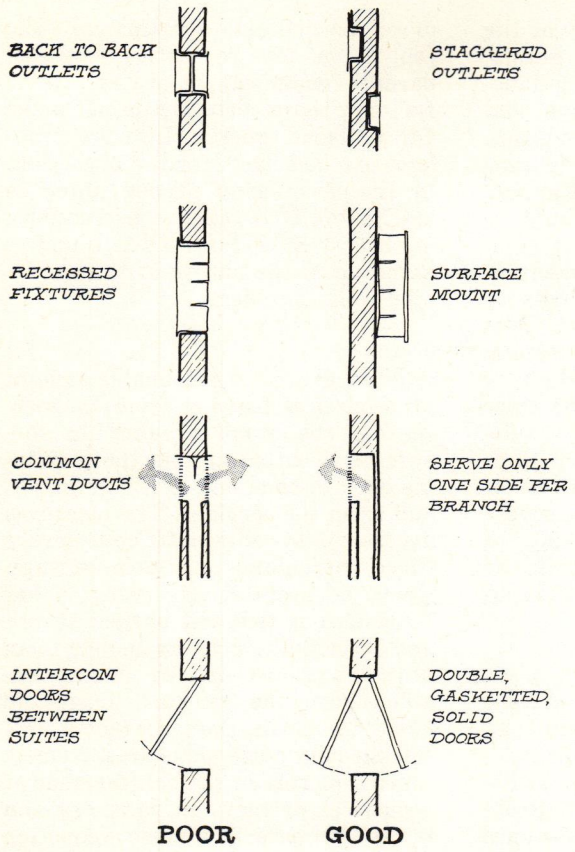

Fig. 5

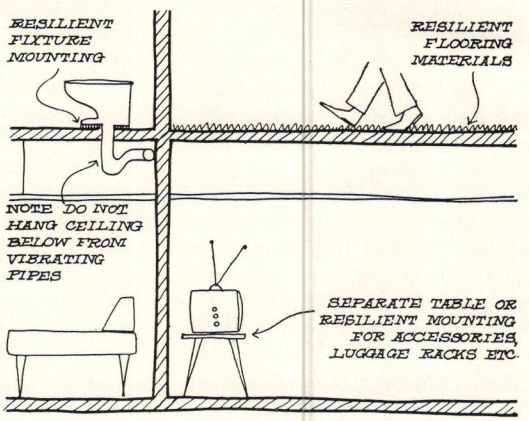

Fig. 6

Left: no matter how good the wall itself is in reducing noise transmission, it can be negated by sound leaks. *Above:* means for reducing structure-borne sound from footfalls, equipment

tion to the adjacent room provides a 40-decibel reduction, at that frequency range, transmitted speech levels will be unintelligible only if the background noise in the adjacent room is above 30 decibels. If the general noise level is below 30 decibels, the transmitted speech would be clearly audible. Without going into a detailed analysis, it is perhaps sufficient to state that the background noise condition and the selection of the partition type go hand in hand. The quieter it is, the better the partitions need be acoustically.

Several suggested partitions for walls between guest rooms, assuming average to quiet background noise levels, are shown in Fig. 4. These partitions should provide 45-50 db noise reduction in the mid frequency range (500 to 4000 cps). Where somewhat higher continuous background noise levels exist due to exterior traffic or air conditioning equipment, the resilient elements (clips, separate studs, etc.) may be replaced by somewhat simpler single wall constructions. "Double" partitions can be quickly reduced to single partitions in noise reduction performance if rigid elements tie the separated sections together. In any case, the partition selected must be completely airtight and potential sound leaks through the edge termination of the partition, back-to-back electrical convenience outlets, penetrating pipes, inter-communicating doors and the like, must be avoided. A few of the points to watch in partitions are shown in Fig. 6. In general, one should look cautiously at any element that allows sound to by-pass the wall construction between rooms. This construction may be all for naught if operable sash in the exterior wall opens up in such a way to provide a convenient by-pass for sound from room to room.

Structure-borne Noise

Some noise generating devices act directly on the structure: wall mounted telephones, television and radio sets, luggage racks, etc. There is nothing more disturbing than to be awakened by a telephone ring that you find is not for you but for your neighbor. If at all possible, one should avoid mounting these elements on a common partition as indicated in Fig. 5. However, if necessary, they can be wall-hung by means of vibration isolation mountings using rubber and other elastic materials. In passing, one should note, too, that it may be possible to control the airborne noise of radios, TV's and telephones by means of volume limiters. Other sources of structure-borne noise are footfalls, falling objects, piping, air handling units and the like. The noises can be reduced by placing a resilient layer or mounting between the noise source and the structure. Carpet is an excellent control measure for reducing impact sound transmission between floors as are sponge rubber backed flooring materials.

The corridor-to-guest room privacy problem is usually solved by using a solid, tight-fitting or weatherstripped door and airtight, impervious wall construction. Carpet and sound absorbing ceilings in the corridors also help to reduce the impact sound as well as the speaking tube effects of the corridor in transmitting sounds throughout the building. Ventilating louvers in the corridor door are, of course, not desirable.

The bathroom-to-bathroom sound transmission problem is almost entirely solved by care in detailing. A double partition very often exists due to the pipe space requirements. However, recessed fixtures or common duct openings in the partition can be disastrous from an acoustical privacy viewpoint. Surface mounted or back-plastered fixtures and separate branch ducts to adjacent rooms are easy solutions if accomplished during rather than after the construction state. All pipe penetrations of walls and slab should be caulked or otherwise made sound-tight.

MOTEL AIR CONDITIONING

By F. J. Walsh, Consulting Engineer, New York City

Problems of motel or motor hotel heating and air conditioning are similar to those of the downtown or resort hotel. But certain of these require special attention because of the generally smaller size and speculative nature of this type of enterprise. They include: desired installation write-off, allowable depreciation for tax purposes, desired equipment life, operating cost, provision for expansion, provision for room shut-off, partial load operation, operation at minimum occupancy rate, maintenance requirements, satisfactory ventilation supply and exhaust, odor control, noise control, etc.

This article is concerned with air conditioning and heating design for motels having 40 units or more up to multi-story motor hotels of possibly 500 units. These large motor hotels might have five to eight stories and complete hotel facilities.

General Considerations

It is extremely important that the engineer understand what operating cost the motel owner can afford during each season of the year for heating, or ventilation or air conditioning. This can be estimated in advance for all occupancy conditions. Otherwise, a system might be recommended that would be too expensive to run much of the time.

Natural ventilation through operable sash should be considered for cooling during intermediate seasons unless certain factors preclude it such as: rooms sealed because of noise problem; objectionable atmospheric pollution; because architectural design treatment demands it (as in a deluxe operation).

Often heating is combined with cooling in the same distribution system. When these systems involve a central air supply system as in an all-air or an air and water induction unit system, operating costs can be excessive unless each cycle of the system is designed for shut-off and efficient part load operation. The solution to this may not be simple, and particularly where the air cycle employs high air velocities and pressures, as in a larger motel, this can never be neglected.

In a high velocity type air conditioning system present status of knowledge and problems to be encountered must not be overlooked.

Criteria for System Selection

1. Factors to be set by Owner or Architect

Before the engineer can determine possible solutions for the project, the following must be discussed with the client and architect and explained in laymen's terms:

A. Quality of performance

1. Summer range, room temperature and humidity. (What do competitive facilities provide? What is necessary minimum?)

2. Winter heating. (Evenness of heat, avoidance of drafts, etc.)

3. Type of automatic or manual control.

4. Air distribution (absence of drafts, etc.)

5. Supply and exhaust ventilation provisions.

6. Filtering, smoke and odor removal required for ventilation supply air.

7. Filtering, smoke and odor dilution and/or removal in room.

8. Time allowed for newly rented unit to be brought to optimum condition, and at what time of day.

9. Allowable noise level and need for eliminating noise from air outlets, air ducts, fans and equipment, transfer through duct system or air intakes, central heating or cooling plant, etc.

B. Architectural limitations on heating and air conditioning equipment in rooms, and on location of central equipment, if used.

C. Budgetary limitations.

D. Minimum useful life of equipment.

E. Depreciation period for plant and equipment and interest rate or required rate of return on investment. (Depreciation may not be the same as that allowed for income tax purposes.)

F. Building orientation and concept, site planning, type and usual hours of occupancy, occupancy peak loads and time of occurence, range of occupancy percentages and when they will occur as to season and time of day.

G. Need for shut down of units or groups of units because of low percentage occupancy at times. Present or future range of occupancies (maximum-minimum) and when they will occur during the day or season. (Note: occupancies may be as low as 30 per cent.)

H. Quality of maintenance help available.

1. Maintenance staff.

2. Outside service.

I. Provision for expansion.

J. Decision to lease equipment (e.g., window a.c. units) or to use a particular type or make of equipment or type of system.

K. Standby equipment or capacity to be provided or other provisions to be made in design to meet specified contingencies.

L. Existing motel: allowable interference with occupancy and scheduling of installation.

M. Special occupancy suites or facilities (e.g., meeting rooms, suites used for conferences during conventions, restaurants, cocktail lounges, etc.). These require as much planning as for a downtown hotel.

N. Extent to which facilities for restaurant or other area are to be combined with room system facilities. When peak occupancy?

Factors Affecting Design and Operation

While self-contained room equipment inherently has a high operating cost, this is of little consequence because it runs only when the room is occupied.

Central Systems

Centralization of equipment brings with it a number of problems which require special planning in the original design.

1. Efficient and stable operation of system at minimum or maximum occupancy. The occupancy rate has to be relatively high for efficient operation particularly with an all-air or air-water system unless special provision is made for shut-off of air and/or water to room units.

2. Shut off of service to units.

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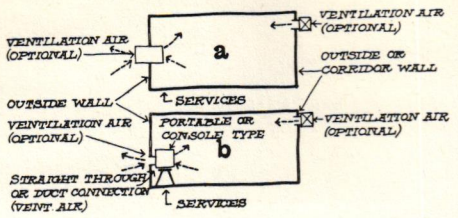
Motel Air Conditioning

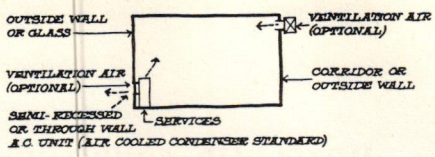
SELF CONTAINED ROOM AIR CONDITIONERS

WINDOW UNIT



(1) Steam or hot water heating coil available with some (B) models.

THROUGH WALL UNIT



(1) Unit available with hot water or steam coil for heating.
(2) Some units are available on special order with water cooled condensers eliminating need for opening through wall. Such unit can be located on interior wall.
(3) With water cooled condensers need central cooling tower or well pump installation.

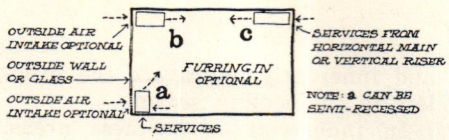
1. FIRST COST	Lowest	Low
2. OPERATING COST [1]—COOLING	High to Highest	High to Medium
HEATING	Low to High (Reverse cycle)	Low
3. MAINTENANCE COST	Highest	High
4. LIFE OF SYSTEM (APPROXIMATE) a. EQUIPT. IN ROOM	Shortest	Short
b. PLANT & SERVICES	Medium	Medium
5. SERVICE CONNECTIONS	Electric, Steam, Hot Water	Electric, Steam, Hot Water, Drain
6. USED WITH SEPARATE RADIATION	Generally yes	Sometimes
7. RANGE OF USAGE a. MIN. NO. UNITS	No Minimum	No Minimum
b. MAX. NO. UNITS (BEST APPLICATION)	20 (but depends on quality of Motel)	40 (but depends on quality of Motel)
8. LEASING ARRG'T—ROOM UNITS	Yes	Yes
9. MAINTENANCE REQUIRED IN ROOM	Most	Medium to Most
10. MAINTENANCE STAFF REQUIRED	Least (outside service)	Least (outside service)
11. DEPRECIATION FOR INCOME TAX	Highest	Highest
12. QUALITY OF PERFORMANCE		
a. AIR DISTRIBUTION—COOLING	Fair to Poor	Fair to Good
HEATING	Fair to Excellent	Fair to Excellent
b. FILTERING DONE BY ROOM UNIT [2]	Fair	Fair
c. TEMPERATURE CONTROL—SUMMER	Fair	Fair
WINTER	Reverse cycle—Fair Heating Coil—Fair to Good	Reverse cycle—Fair Heating Coil—Fair to Good
d. HUMIDITY CONTROL [3]—SUMMER	Poor to Good	Poor to Good
WINTER	None	None
e. ODOR REMOVAL IN SPACE [4]	Fair to Poor	Fair to Poor
f. NOISE OF OUTLET OR UNIT	Noisiest	Noisy
13. SPECIAL PROVISIONS REQUIRED TO SHUT OFF SERVICES TO UNIT	No	No

1. Depends upon unit shut-off and part load operating provisions, zoning controls, etc. Assume windows open in intermediate season.
2. See Text.
3. Depends upon ventilation provisions—see Text.
4. See Text.

(1) Use of Reverse Cycle (heat pump operation will be satisfactory down to about 45° F. —below that temperature, supplementary heat (e.g. electric strip heaters, panels, baseboard required).

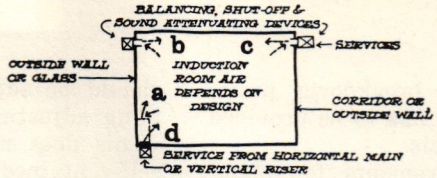
(2) Bathroom heating may require special consideration to achieve minimum cost. Where reverse cycle heating is satisfactory for room, electric heat for bathroom is suggested.

ROOM AIR HANDLING UNITS



(1) Induction unit—provides balancing, sound attenuating and shut-off devices for primary air.
(2) Heating accomplished with room unit unless existing heating system is retained or direct expansion coils are used.
(3) Units can use well water instead of mechanically chilled water.

ALL AIR SYSTEM



(1) Can re-use any existing perimeter radiation or use new perimeter radiation except when using (A) or (D).

FAN-COIL UNIT Motor Driven Fan Direct expansion coil or water coil	INDUCTION UNIT Room air induced pa:t water coil by primary air flow past nozzles	SINGLE DUCT SYSTEM Zone Reheat and Volume Control	SINGLE DUCT SYSTEM Volume Control	DOUBLE DUCT SYSTEM
Medium to High	High	Medium to High	Medium to High	Medium to Highest
Medium to Lowest	Medium to High	Medium to High	Medium to Highest	Medium to Highest
Low	High	High to Highest	High to Highest	High to Highest
Medium to High	Medium	Low to Lowest	Low to Lowest	Low to Lowest
Medium	Medium to Long	Longest	Longest	Longest
Medium to Long	Medium to Long	Longest	Longest	Longest
Electric, Water, Drain, Air	Air, Water, Drain	Air	Air	Hot and Cold Air
Sometimes	Sometimes	Sometimes	Sometimes	Sometimes
Chilled water coil—40 units Direct expan. coil—10 units	100	Low pressure—6 units High pressure—100 units	Same	Same
Chilled water coil—no max. Dir. exp. coil—40/compr.	No maximum	Low pressure—20/system High pressure—400/system	Same	Same
No	No	———	———	———
Medium	Medium to Little	Least	Least	Least
Small system—little (if outside serv.) Larger system—most	Most	Small system—little Large system—most	Same	Same
Medium	Medium	Small system—medium Large system—lowest	Same	Same
Fair to Good	Fair to Good	Poor to Excellent	Poor to Fair	Poor to Excellent
Poor to Excellent	Poor to Excellent	Poor to Excellent	Poor to Fair	Poor to Excellent
Fair to Good	None to Poor	Done at Central Fan	Done at Central Fan	Done at Central Fan
Good to Excellent	Good to Excellent	Fair to Excellent	Fair to Excellent	Fair to Excellent
Fair to Good	Good	Fair to Excellent	Fair to Excellent	Fair to Excellent
Good to Excellent	Good to Excellent	Poor to Excellent	Poor to Good	Poor to Excellent
None to Good	Good	Poor to Good	Poor to Good	Poor to Good
Fair to Excellent	Fair to Good	Good to Excellent	Good to Excellent	Good to Excellent
Quiet to noticeable (depends on fan motor and vent. air supply)	Quiet to noticeable (depends on nozzle-unit combination and characteristics of balancing air valves, system static pressure.)	Quiet to noisy—depending on attenuator boxes, air valve characteristics, static pressure control provided, system static pressure.		
Water or refrig.—no. Air—yes (esp. if H.V.)	Water—no. Air—yes.	Yes	Yes	Yes

1. Induction Unit System generally uses high velocity air distribution.

(1) Low pressure duct systems are limited in general to small installations.

(2) Larger installations will probably require high velocity duct systems with no return air to central unit because of space and cost considerations. Operating costs will be excessive without shut-off and efficient part load operating provisions.

3. Standby or breakdown provision since service has to be provided on a 24 hour basis.

4. Space requirements for plant.

5. Provision for expansion.

6. Zoning and central plant control required.

7. Noise problem.

8. Distribution of services from plant—above or below ground and how run.

Centralization may be considered for service to all units (e.g., central chilled water) or to groups of units depending on site planning or cost factors. Where separate groups of units are treated for air conditioning, for example, this might be accomplished using one package air conditioner and a duct system or one remote refrigeration compressor unit with refrigerant piping to fan coil units in the rooms.

The engineer should realize that for the motel application, particularly the multi-story motor hotel, size of the central plant requires very careful evaluation of storage, diversity and occupancy factors. For example, using factors established by the Air Conditioning and Refrigeration Institute (Standard 530, 1956), which are based on statistical evaluation of existing installations, in some cases it might be possible to use a plant capacity 25 per cent smaller that that which conventional peak load calculations would indicate. Such factors must be used with judgment. Type and design of system used can limit possible savings.

Where there is a possibility of using well water for cooling purposes it should be investigated very carefully and decided upon only after complete laboratory analysis indicates expensive treatment is not required.

Underground services can be considerably more expensive than overhead services and should be avoided wherever possible.

Where restaurant or other facilities are provided, central plant capacity and equipment layout should be predicated on probable individual loads (peaks will not occur simultaneously) and different hours of operation.

Savings will result if additions radiate from a central location.

Room Equipment and Controls

Some mention has already been made of factors affecting room load and types of systems available.

Because internal loads in a motel application are low and a small part of the total, zoning control should be used insofar as possible. But since the occupants will desire some control of room conditions this should be supplemented by a trimming adjustment, generally manual. (This does not apply to individual self-contained room equipment which must be operated by a room thermostat).

Air distribution where occupants are sleeping can be critical and air must not be blown toward them.

Noise can be a problem, particularly with high velocity systems, and here characteristics of fans, air valves and nozzles, and attenuating boxes should be carefully specified.

Where the outdoor noise level is of some consequence (but still not disturbing) a self-contained window or through-the-wall unit may be good enough.

The following are the sources of noise from which difficulty may arise: a) unit vibration; b) fan noise; c) air outlet noise; d) balancing damper noise (air valve noise in a high velocity system); e) flow of air in duct; f) cross talk through ductwork; g) outside noise transmitted through outside air intake at room unit.

If outside noises are of such character and level as to require double glazing to shut them out, special attention will have to be given to noise level of the air conditioning system too.

Most economical location of room equipment or outlets will depend on number of stories, presence or absence of corridors, sill height, type of roof, etc. In general minimum cost will result when run of service piping, ducts, etc., are at a minimum and run in convenient locations. Direct expansion refrigerant piping runs must be kept short to be economical.

Filtering and Odor Removal

ODORS: To keep room air free from smoke, dust and odors, the following must be done:

1. Outside or ventilation air must be made free from contamination.

2. Smoke and odors in the room must be diluted by adequate, clean ventilation air or adsorbed (e.g., activated charcoal). Masking odors only alleviate the odor problem and are of questionable effectiveness.

Solution of the first problem is usually simple, although sometimes expensive.

Solution to the second problem will be difficult and expensive, if not impossible, unless a satisfactory solution to the first is provided.

With an "all-air" system, the smoke and odor problem can be solved at a central point. All other systems have individual room cooling coils which operate alternately wet and dry due to moisture removal, and inherently aggravate the problem in the cooling season.

In industrial or business areas, odors, smoke or dust in the atmosphere may be the principal determinant of equipment for high quality air supply.

Removal of smoke and fine dust requires electric filters or high-pressure drop dry filters.

Air washers and sprayed coils can remove a small amount of odors and gases, but the use of activated charcoal is the accepted solution.

Operating cost with activated charcoal can be compensated through savings in refrigeration capacity and by making possible the use of outside air for ventilation which might otherwise have objectionable odors.

It is known that a cold surface (e.g., a coil), especially a wet one, has a greater odor holding capacity than a warm dry one. It will adsorb odors from the room, particularly if the air is forcibly circulated over the surface.

These coil odors or "wet coil" odors commonly occur and are tolerated unless they are definitely objectionable. They result principally from retention and release of tobacco odors and body odors from the cooling coil during the air conditioning season.

It is uneconomical to design a system to have a completely dry coil, and no existing system operates entirely that way especially under adverse conditions.

Effective filtering is needed to prevent build-up of foreign matter on the coil which can add to its odor holding capacity. It is also important to make sure that convenient access is provided for cleaning the coil.

Most of the odor load will be picked up when the coil is wet and cold, and released on the "off" cycle or when the coil temperature rises and the moisture evaporates. Therefore, outside of the cooling season, coil odors will be of little consequence.

Smoke removal is generally accomplished through providing sufficient supply and exhaust ventilation, but this may not always be possible.

The obvious solution, where the quality of performance requires it and room units with cooling coils are used, is to provide activated charcoal filters on the clean side of the filtering media at each unit. These filters are now readily available in any size, and effectively remove both smoke and odors.

Their cost will be insignificant in relation to total system operating costs.

Some fan coil units have space for

2-in. filters and thus can accommodate both a 1-in. dust filter and a 1-in. activated charcoal filter which can be regenerated.

Because the rooms may have wall to wall carpeting and bedding may be changed or re-made daily, a considerable amount of dust and lint will be evolved in the space. No induction unit should ever be used without a lint screen or filter.

Air recirculating units drawing in air close to the floor need better filtering provisions at the unit than those suspended from the ceiling.

Ventilation Air

GENERAL COMMENTS: Regardless of the particular type of system used, if possible it should be one that gives a balanced air supply and exhaust within each unit. This is important not only from the standpoint of odor control but also room relative humidity limitation during the air conditioning season, particularly so in a humid climate.

In any case if windows are left open or infiltration is excessive and continuous it will upset the air conditioning completely. Showers can have the same effect temporarily.

Fortunately, window air conditioning units and fan coil units will usually have excess moisture removal capacity so that, within limits, satisfactory humidity will be maintained even though the proportion of load due to moisture is high.

Provisions for Ventilation Air Supply and Their Effect on Cooling Season Operation

1. Outside Air Supply by:

a. Infiltration. Poor to fair except where there is no mechanical exhaust or it is intermittent (e.g., toilet exhaust fan on light switch). Otherwise too much humid air will be pulled in.

b. Outside Air Intake at Room A.C. Unit. Fair, with or without mechanical exhaust.

c. Ventilation Air Supply to Room A.C. Unit.

(1) Not pre-cooled. Fair, with or without mechanical exhaust.

(2) Pre-cooled. Excellent, with or without mechanical exhaust. Note: Air supply to unit should be shut off when room is not in use to save on refrigeration.

2. Ventilation Air Exhaust or Relief by:

a. Exfiltration through windows or doors. Poor but may be satisfactory if there is no smoking and hot showers are not taken. (Outside air intake to unit required.)

b. Individual toilet exhaust fan operated off light switch. Fair to excellent except if supply is by infiltration and fan is on too long.

c. Central toilet exhaust system. Fair to excellent except if supply is by infiltration and outside air has too much moisture.

Building Code Limitations

These will pertain mainly to the following:

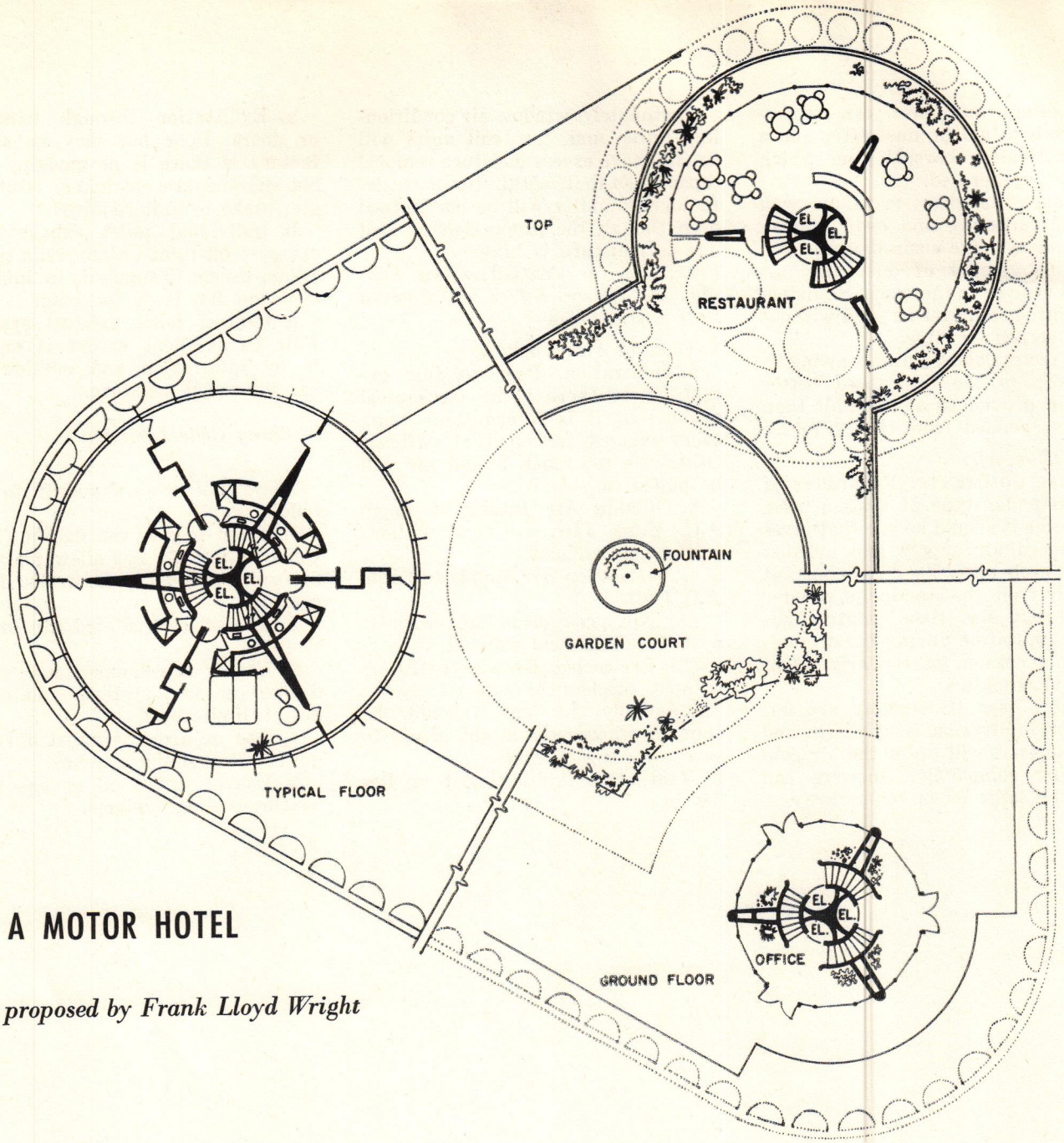
1. Toilet exhaust ventilation. (Fire Underwriters do not allow make-up for toilet exhaust to be drawn from corridors.)

2. Use of recirculated air in air systems.

3. Use of fire dampers and other devices in duct systems and other design limitations.

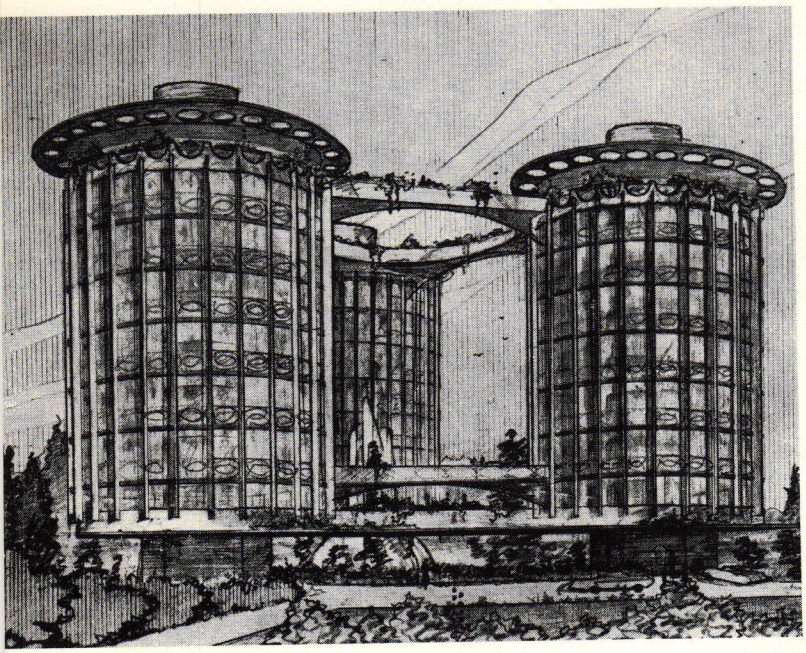
4. Use of direct expansion refrigerant for cooling systems.

5. Use of direct oil or gas fired heating-cooling systems.



A MOTOR HOTEL

proposed by Frank Lloyd Wright



Although designed as a stopover for motorists who have temporarily tired of the open road, this conception has none of the characteristics of motels anywhere. It seems destined to remain a project if only because it is so luxurious in some respects, so severe in others. The scheme is built around three separate elevator groups of three elevators each. A single cluster of elevators serves seven floors in addition to a terrace restaurant under the roof of each unit. The restaurant is interconnected by the bridges shown in the perspective above. One elevator functions for two rooms per floor giving a grand total of fourteen rooms per elevator. The rooms attained by means of this generous outlay of mechanical equipment are small.

This building shares a principle in common with Wright's other towers, the "interior" system of structure in which the floors are cantilevered from a steel and lightweight concrete core, tripod-shaped for stability.

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MOTELS
HOTELS
RESTAURANTS
AND BARS

SECTION 2



TODAY'S TRENDS IN HOTEL DESIGN

By WALTER O. VOEGELE

Editor, *Hotel Management*

THE BEGINNING OF A NEW PERIOD of hotel building, after a twenty-year hiatus, finds the big downtown hotels competing with the motel or highway hotel. It also finds hotel operation under the scrutiny of scientific accounting methods, as against the tradition-bound methods of innkeeping. Both of these factors have had great influence on hotel design.

The "uniform system of accounts for hotels" with its operating ratios has become the Bible. Rigid adherence to prescribed figures and percentages replaced handed-down, traditional practices and principles of hotel-keeping of former days. Analyzing operating statements and trying to achieve prescribed financial results, became the order of the day. Hotel accounting firms have set up operating ratios for every department. These are usually expressed in three different ways: (1) ratio to room sales, (2) to total sales, and (3) to cost per available room. This highly developed accounting system led to the oft-quoted rule of thumb that a transient hotel under normal conditions cannot expect a satisfactory financial result unless it can obtain an average room rate of at least $1 for every $1000 of original investment per room in the building.

If, for example, a transient hotel cost $10,000 per room to build, exclusive of land and furniture, under normal conditions and 70 per cent occupancy, nothing less than an average room rate of $10 could produce a satisfactory financial result, the accountants explain.

Today this rule of thumb still holds. While building costs have gone up, so have room rates. If an occupancy of higher than 70 per cent can be expected, or if the hotel is large and luxurious, the $1 figure can be reduced to around 90¢ or slightly lower.

Outside of Miami Beach, and perhaps Las Vegas, only eight large city hotels have been built in the U. S. since 1948. (Terrace Plaza, Cincinnati, 1948; Shamrock, Houston, 1949; Carlton House, Pittsburgh and Statler, Los Angeles, 1952; Statler, Hartford, 1954; Beverly Hilton, Beverly Hills, 1955; Statler-Hilton, Dallas, 1956; Sheraton, Philadelphia, 1957.) Only a handful of other large city hotels are on the drafting boards. Motor hotels, on the other hand, have had the most spectacular growth during the last five years, and more and more hotelmen and hotel chains with downtown properties are entering the motor hotel field.

Sheraton, with two motels in New York State already, recently announced a $4-million combination hotel and motel for Portland, Oregon, and a $3-million luxury inn for Binghamton, New York. The Portland project is to be eight stories high with plans calling for 300 rooms at the outset; 300 more may be added later without altering the structure. The 200-room Binghamton Motor Inn will have six stories. Chicago's plush Drake Hotel is building the Drake North motor hotel near the O'Hare airfield, to mention only a few. The Knott, Pick and Dinkler hotel chains have been in the highway hotel business for several years and more chains are joining their ranks. Four of the six Jack Tar Hotels, with properties in Galveston and Orange, Texas; Charleston, South Carolina; Ashville, North Carolina; and Clearwater and Marathon, Florida, are members of Master Hosts, the motor hotel association with the highest requirements.

For decades the state hotel associations have been fighting motels. Today all but six states take them in. Significant of the trend is Sheraton's President Ernest Henderson's statement: "We have become more and more convinced that in these competitive times the best in modern hotel services often can best be achieved only through new construction. Other such projects (like Portland and Binghamton) are now under consideration."

Meanwhile, hundreds of individual investors and several motel or motor hotel chains have sprinkled the countryside with horizontal hotels. While large city hotels usually announce a cost per room in the neighbor-

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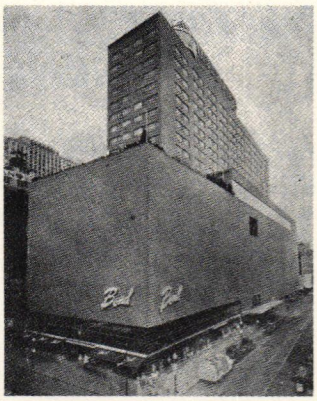

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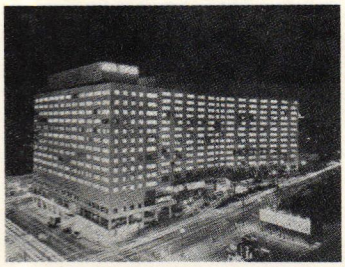

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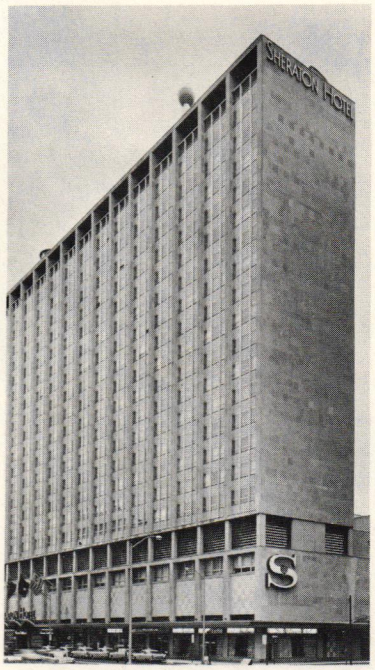
William F. Howland



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hood of $16,000, motor hotels in the last few years have shown costs per room anywhere from $6,000 to $18,000. In size they range from 40 to 366 units, the largest being the $5-million Marriott Motor Hotel near the Pentagon in Washington.

Almost without exception, these motor hotels have complete hotel service, and their average room rates are in the $8 to $10 general range. There are those who predict an ever-growing number of this type of highway hotels.

According to a recent study by C. Vernon Kane, partner of Horwath & Horwath, hotel accountants and consultants, the modern motor hotel is more expensive to operate than the oldtime "motel." The cost per unit of operation is usually in the neighborhood of $1500, and payroll per unit between $600 and $750. Housekeeping expense, exclusive of payroll, is about the same as in other hotels of the same size, but administrative expenses are usually higher than most investors anticipate. Their operating profit before fixed charges varies from about $1000 to $2400 per unit, but probably none would earn more than $7–900 had they not food and beverage income. The resort-type motor hotels usually show the highest profits, but usually they cost more to build, and sometimes get as much as one quarter of their net profit from food and bar operations. A first class resort motor hotel, operating the year round, accountants say, must gross at least $3000 per unit in room sales — or about a $12–14 annual average daily rate at 65–70 per cent occupancy.

Already there are strong indications — and several examples — of decentralizing group and function business which heretofore was monopolized by downtown hotels. Many of the newer motor hotels are making a strong bid for group business with function and convention facilities. To be sure, it's only the beginning and may never reach the proportions of large city operations. But more and more established motor hotels are plan-



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Eddie Hoff

The big downtown hotels of the last few years: 1. Hotel Statler, Hartford, Conn., William B. Tabler, architect. 2. Terrace Plaza, Cincinnati, Skidmore, Owings & Merrill, architects. 3. Hotel Statler, Los Angeles, Holabird and Root and Burgee, architects, William B. Tabler, associated. 4. Statler Hilton, Dallas, William B. Tabler, architect. 5. Sheraton Hotel, Philadelphia, Perry, Shaw, Hepburn & Dean, architects. 6. Shamrock Hilton, Houston, Wyatt C. Hedrick, architect. 7. Beverly Hilton, Los Angeles, Welton Becket & Associates, architects.



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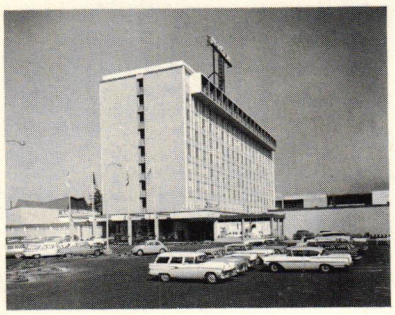
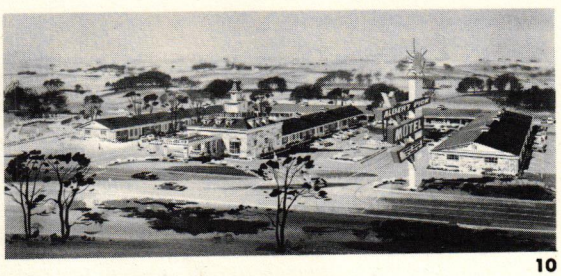


William F. Howland 8



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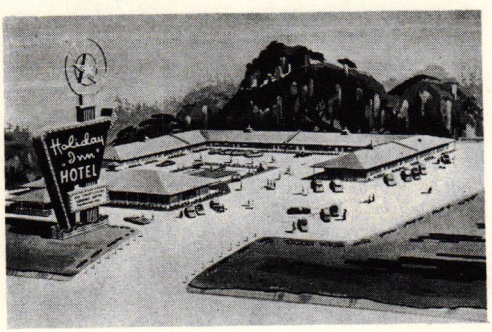

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The Sheraton chain is venturing into the highway hotel field with two projects: 8. a 300-room for Portland, Ore., and 9. a 200-room hotel for Binghamton, N. Y., Samuel Glasser, architect. The Pick Hotels Corporation is moving into the field with two motels: 10. The Albert Pick Motel, Rockford, Ill., E. P. Lewin, architect; and 11. Holiday Inn Hotel, Chattanooga, Tenn., William Bond, architect. 12. The "world's largest" motel is going up near the Pentagon Building, Marriott's Motor Hotel, by Hot Shoppes, Inc., Joseph Morgan, architect. 13. Chicago's famous Drake Hotel is building the Drake North, a $2,000,000 highway hotel in the northwest suburban area of Chicago, Walton and Walton, architects. 14. One of the Jack Tar chain, this one in Orange, Texas, Goleman & Rolfe, architects.

ning function room additions. And as more downtown hotels and hotel chains gain a foothold in the highway field they will, no doubt, introduce features which will force the older hotels into the competitive race.

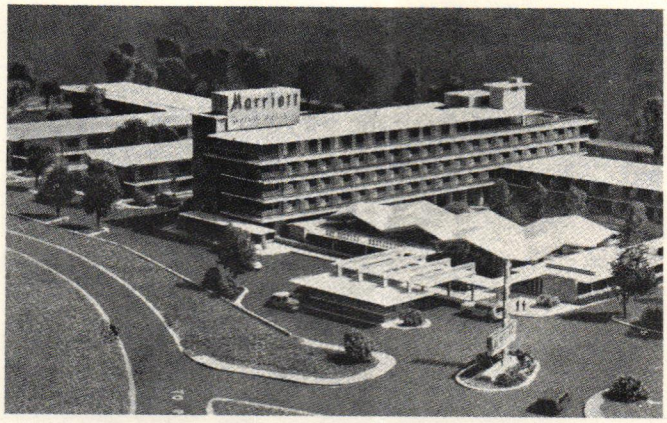
The two- and three-story motor hotel is no longer an isolated case. Those who pour millions into their projects are convinced they have the ideal solution by going vertically as well as horizontally in construction. Others try to compromise with a split level, from the parking level up and down. It's a good solution where the terrain lends itself. The guest has his car outside his room, whether he lives on the lower or upper floor.

It's safe to say that highway hotels will get larger and more luxurious. With money getting harder to borrow, money will probably come from real estate syndicates. The sale leaseback method is already attracting investment money to the motor hotel field. Some motor hotel operators with older properties are trying to ward off new competition by upgrading or enlarging their establishments.

Existing downtown hotels continue to add garage and parking facilities and create drive-in entrances wherever possible. Group facilities are also enlarged wherever there is some waste space to recover.

There are definitely new trends in the hotel eating facilities. It is no secret that Americans prefer to eat in restaurants rather than hotels. And food operations in many hotels are not profitable. But it cannot be blamed entirely on customer refusal to patronize hotel dining rooms. In many existing hotels, food preparation and service areas are poorly laid out and oriented. It takes too many employees to prepare and serve the meals speedily and economically, the cost of labor being as high as it is today.

In the older hotels the kitchens are not on the same floor with the eating facilities. Some still have two and three separate kitchens. Even the newer ones with one oversized central kitchen now go in for specialty food rooms with a specialized limited menu in each



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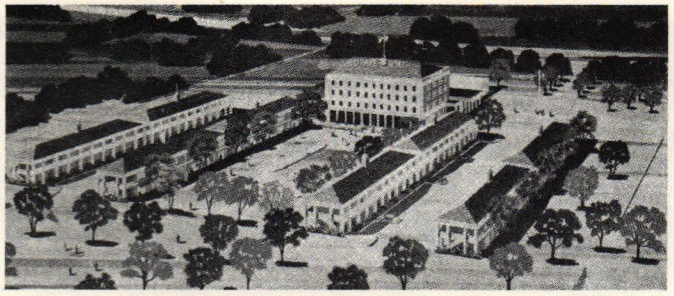

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14 *Harper-Leiper Studios*

room. This allows the guest the choice of a number of different eating places at various prices.

This has several other advantages: the eating places are tailor-made for a variety of people with different tastes, different money and different times to spend it.

A typical example is the Hotel New Yorker in New York City. It had four public restaurants occupying 20,000 square feet of space. The kitchen and bakery alone occupied 31,000 square feet. With $3½ million food and beverage volume, it was making a departmental profit of about 10 per cent, *before* light, heat, power, rent depreciation, insurance, and taxes. On a comparative restaurant basis, the hotel had been losing because it couldn't cover those expenses with 10 per cent.

To remedy this situation, first a survey was made to determine the income per square foot and turnover per seat. (Both were entirely out of line with commercial restaurants. Income was too low, and the turnover too slow.)

The character and design of one of the four eating places were completely changed. A 2700 square foot dining room was changed to be an eating and drinking restaurant equally conducive to breakfast, lunch, cocktail, dinner and supper business. The restaurant was to stay open from 7 o'clock in the morning until 3 o'clock the next morning. The cost of the change-over, including equipment and decor, was about $175,000. Immediately, the annual income increased 90 per cent, to $1 million.

In another dining facility at the same hotel, the income doubled from $500,000 to $1 million when it was converted. Then, a 5400 square-foot formal dining room was closed and diverted to banquet business. Within six months, the income was up 60 per cent.

While creating commercial rental areas is still in vogue, here and there low income producing shops are being turned into cocktail lounges or eating facilities. In one case a shop area which brought in $9000 rent a year now nets $60,000 in a newly created cocktail-cafe lounge in the same area.

With exception of the luxury hotels in Miami Beach and Las Vegas, and some of the better motor hotels on the highways, guestrooms in the new commercial hotels are considerably smaller than what was formerly considered a required minimum. In the 455-room Hartford Statler, the single rooms are only 96 square feet; doubles are 138 sq ft; small twins 150 sq ft; large twins 191 sq ft; parlors 410 sq ft; sample rooms from 140 to 313 sq ft.

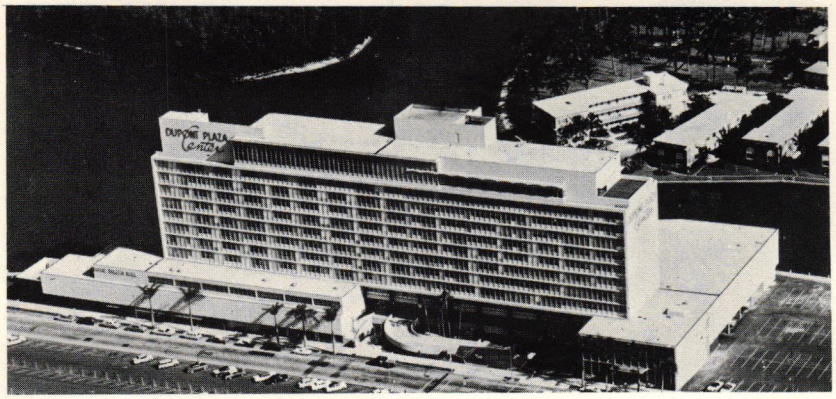
In the newer Dallas Statler Hilton they are only slightly larger, but in the newest hotel, the Philadelphia Sheraton, guestrooms are again smaller. There seems to be no guest resistance to small hotel rooms, provided the furniture is not over-scaled. Air conditioning and television, on the other hand, are something every traveler expects in a new hotel.

Most recently-built hotels have an equal number of studio-type and conventional bedrooms with alternating connecting doors. Room clerks, however, say they could do with fewer studio-type rooms. The demand for conventional beds is increasing. A 40–60 ratio, with the larger portion of rooms having conventional beds, might be a safer bet.

It's usually best to survey a locality for hotel room requirements. In certain cities, there is still a great demand for single rooms, while in others twin-bedded rooms throughout the house are more economical. Some recent surveys have shown an increasing demand for double beds in certain areas. Furniture can be changed to suit the demand, but permanent construction cannot. To make the smaller rooms large enough for a double bed, if needed, would seem a good solution.

The new hotel lobby is just large enough to handle the traffic. A minimum of seats discourages lobby sitters. The public writing room so popular in the 20's and 30's is a thing of the past.

Elevator control is important. With more operatorless elevators being used in hotels, the front office staff or bell captains should have an unobstructed view of the elevators.



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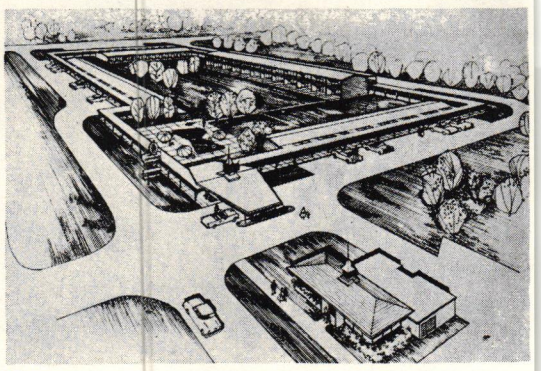

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After World War II the open-front desk, with everything built into the counter, made its first appearance. Guests could lean over the counter to see whether the house was full or empty. Room clerks and assistant managers had no way of discussing anything without being overheard by the guest. While the old conventional hotel desk, where clerks spent most of their time concealed behind brass fronts was bad, the completely open desk is not much better. The ideal solution is a compromise between the two, where room clerks and assistant managers can step out of guest's hearing. The pivoting room rack in all of the new Statler hotels is one way to do it.

Function rooms are receiving more design attention than in former years. Group business constitutes a major portion of the food and room income in city hotels. Flexibility and accessibility are major factors. Assembly areas which can be closed off and used separately should be included. Hotels in large cities and state capitals usually require larger function space because of a greater number of conventions. Storage space for banquet tables and chairs should be included. Some of the larger hotels have also located a public bar or cocktail lounge on the function room floor.

If sample rooms are specified, it will be wise to proceed with caution. Demand for sample rooms blows hot and cold. In most hotels sample rooms are used for small conferences. The newer hotels design them with that double purpose in mind. At the Philadelphia Sheraton a partition between two regular guest rooms has been eliminated, but bathroom plumbing connections in bathrooms are left intact. If it proves the hotel does not need as many sample rooms, the partition can be put back and bathroom fixtures installed for regular guest room use.

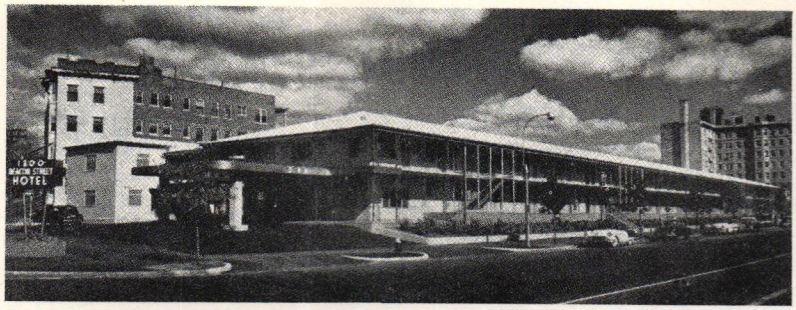
Almost without exception, hotels have insufficient storage space. Employe feeding facilities and adequate locker space are receiving more attention today than formerly. Usually it's best to have only one employe entrance and exit, preferably in connection with the delivery entrance, where the timekeeper can watch the traffic.

While 30 years ago the architect could make a guestroom or guestroom floor corridor any width, today he'll be picked up quickly by the alert hotel man if the floor measurements for wall-to-wall carpeting are not in multiples of the standard 9-in. carpet width.

The hotelman may also have definite ideas about bathrooms. He wants more shelf space for shaving and make-up kits, and larger mirrors with better bathroom lights. In the luxury type hotels, he demands larger bathrooms, possibly with two basins in twin rooms. And a glass shower door rather than curtains. (He doesn't have to buy them outright, but can write them off over a period of years and then own them.) In some of the newer motor hotels even the toilet is separately enclosed. Where costs must be trimmed, partial tiling in bathrooms might be a solution. Several hotels have switched to moisture-proof wall covering above the tiles. Some luxury hotels use both fluorescent and incandescent lighting in bathrooms.

Hotelmen stress preventive maintenance features in guestrooms. A great variety of color schemes is no longer necessary. Two or three color schemes are more economical to maintain than eight or twelve. A guest occupies only one room at a time and no hotel guest has ever refused accommodations because a hotel room wasn't in his favorite color.

Radio, hotelmen have learned, isn't entirely out of style. Many who have replaced radio with television get increasing demands for radios. Latest trend is to have a radio-clock combination, either built into the night stand or on top of the dresser-desk combination. But there are distinct disadvantages in this latest trend. If the house current is interrupted it delays the clock and makes guests miss trains and appointments. Also, in certain steel structures poor radio reception may make the investment wasteful. The better solution would be



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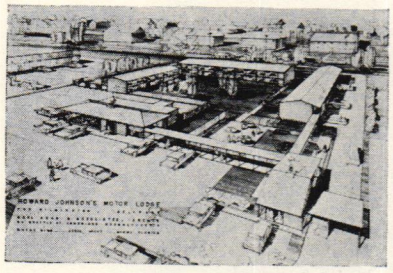

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Phil Fein



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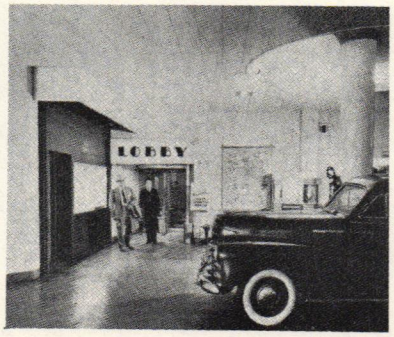
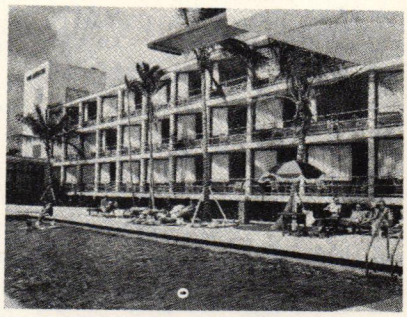


19 McLaughlin & Co.



21 Associated Photographers

a centrally-controlled clock, and a radio-television combination working off a master antenna.

Some of the newer hotels anchor new-type picture hooks permanently in the wall between two rooms where furniture is placed back to back in connecting rooms. Sooner or later a colorful, pictorial map of the area, and perhaps another of the immediate vicinity, pointing out places of interest, might replace the old picture print.

Savings in electrical wiring can also be achieved if furniture placement is shown in the plans. Some hotelmen prefer outlets just slightly below desk top height rather than at baseboard level. It saves on cords, prevents tripping. Lamps to be placed against mirrors need only half shades. The mirror reflects the other half.

Ceiling lights for over-all illumination have long been discarded. The new trend is to make the closet light serve as foyer illumination by undercutting the wall on the closet so the closet light will shine out into the foyer.

Fewer desk or dresser drawers are another trend. Functional baggage racks take their place. Slanted fronts on drawers, with undercut fingertip grooves at the bottom make hardware unnecessary. Laminated plastics for furniture tops and fronts are standard today.

If preliminary surveys show the hotel will have a good portion of businessmen patronage, it's advisable to provide some rooms with larger-than-average hotel desk surfaces. Most recently built hotels have a goodly number of executive suites. But it's more important to have more regular rooms with greater desk areas, even if it's accomplished with a raised drop-leaf.

Whatever the survey shows as to proportion of business men and vacation travellers, it is safe to predict for the future some interesting changes in clientele trends, as the downtown hotels go out for the highway business, and the motor hotels move ever closer to downtown to reach for the business-man business.

More and more, motels are becoming part of other developments: 15. hotel with office building with architects bureau of building products, the DuPont Plaza Center, Miami, Frank H. Shuflin, John Edwin Peterson, architects. 16. a prototype design for Howard Johnson's southern restaurant-motels, this one for Portsmouth, Va., Rufus Nims, architect, with Carl Koch Associates; and 17, a similar prototype for northern areas, this one for Wilmington, Del., Carl Koch and Associates, architects, with Rufus Nims. 18. One of the important motels crowding into downtown territory, 1200 Beacon Street, Boston, Sturgis Associates, architects. 19. Many hotels are adding drive-in entrances, this one the Adams Hotel, Tucson, Ariz. 20. San Francisco seems a city where motels get downtown easily, this Holiday Lodge, by Hertzka & Knowles, architects. 21. A representative Miami Beach Motel, this one the Pan American, Carlos Schoeppl, designer.

LUXURY HOTEL FOR AIR-CONSCIOUS BEIRUT



PLANNING HOTELS *for the exotic, exciting cities that appeal to American tourists may have a romantic sound, but it is strictly business for Intercontinental Hotels Corporation, a subsidiary of Pan American World Airways. In the words of Byron Calhoun, president, "When you design a hotel, you are not designing a building; you are not designing a shelter for a business; you are designing the business itself." On this theme he, with Joseph Salerno, chief architect, and Richard S. Smith, construction chief, study the income potentials for hotel schemes, whether the designs are their own or those of architects they have commissioned. This hotel design and the two shown on succeeding pages, are examples of current projects, with analytical notes supplied by Intercontinental.*

□ As air travel to the east has grown, Beirut has become a great airport city, one of the busiest in the world. Besides being the air entrance to the east it is the recreation center of its corner of the world, where one can swim in the Mediterranean or ski in the mountains; it is an oasis then for American colonies throughout the middle east. The hotel thus combines a business and luxury tourist trade, and is designed to dominate in both categories.

□ Feature is ballroom and theater combination. Theater can operate separately as a movie house, or it can join with the ballroom for business functions. As a convention auditorium it far surpasses the folding chair arrangements. Or, it can be used for exhibits, with virtually the whole ballroom becoming its stage.

□ Ballroom can be arranged in various space combinations, with or without adjoining ante rooms.

□ Theater-ballroom traffic kept entirely separate from general hotel activities.

□ Extensive shop areas at ground level. Most of these, it is planned, will be developed as native bazaars, possibly with several concessioners together in one store space. All of this activity, however, is fairly well isolated from main hotel areas, especially from the extensive terrace areas and cabañas around the pool.

□ Trellises around terraces will serve to break up direct sunlight, but will be punctured by openings to permit sunbathing.

□ Coffee shop and snack bar open to the pool areas, also a cocktail bar.

□ Another bar will be located at the lower level at the deep end of the swimming pool, which will have under-water windows so that bar patrons can watch swimmers.

Hotel Phoenicia Intercontinental, Beirut, Lebanon, for Intercontinental Hotels Corporation. Edward D. Stone, architect. Peter Bruder,. mechanical engineer. Gorlin & Atlas, structural engineers.

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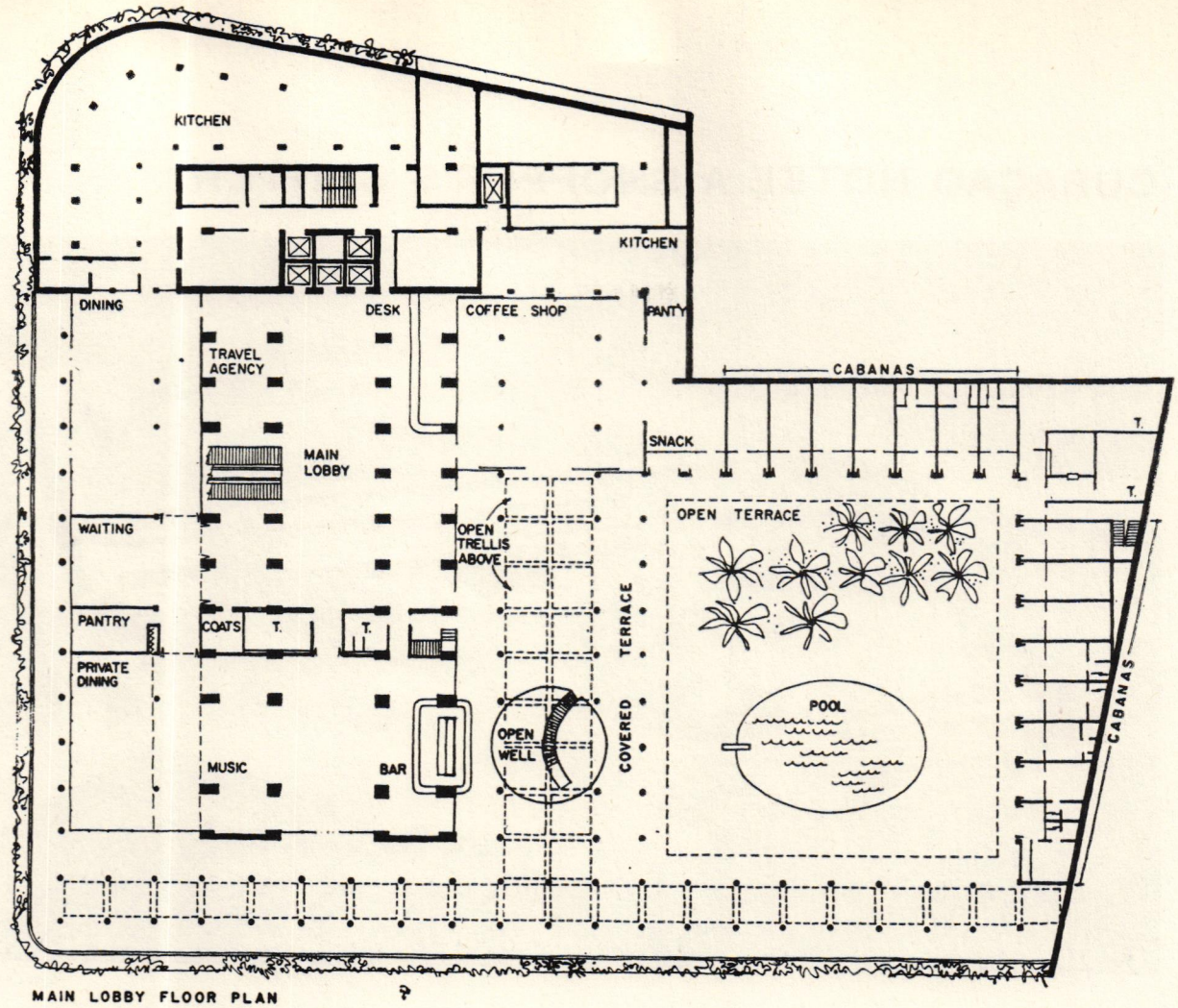
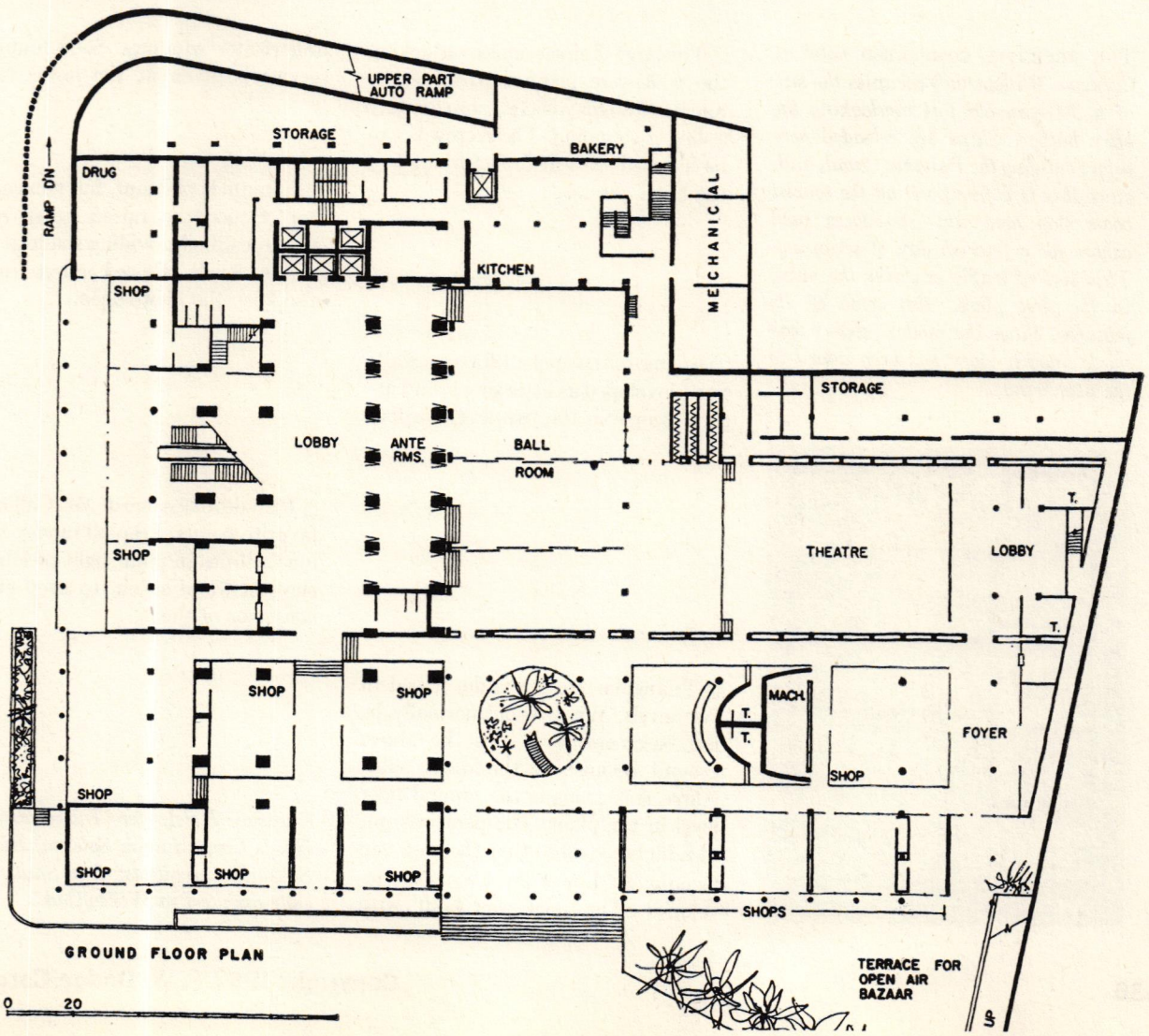


MAIN LOBBY FLOOR PLAN



GROUND FLOOR PLAN

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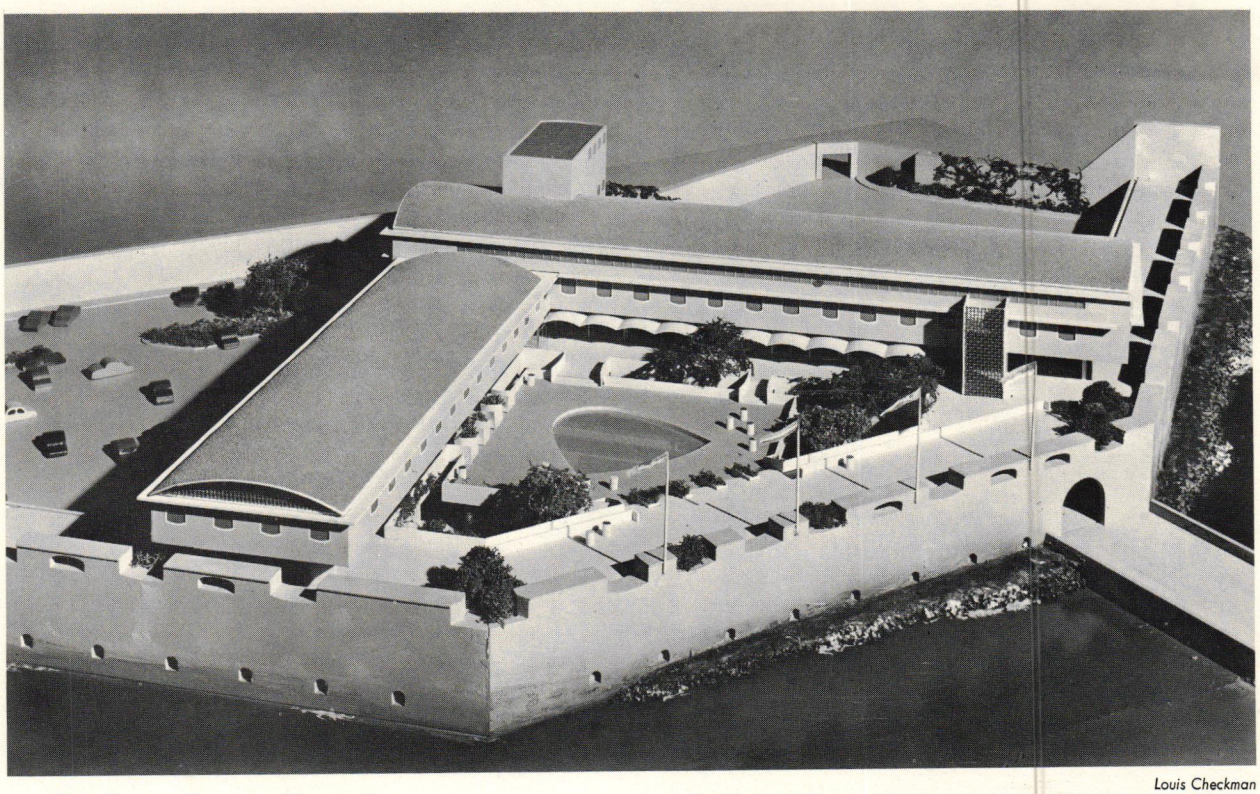
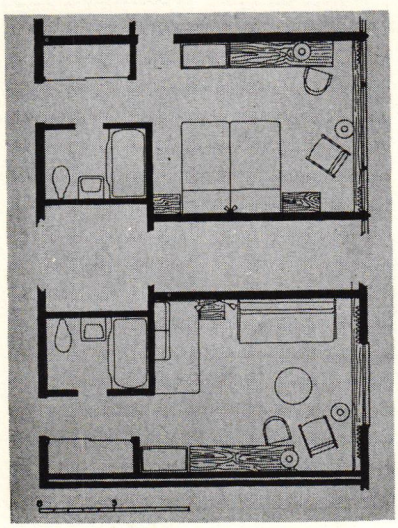
CURAÇAO HOTEL A SHOPPER'S CENTER



Louis Checkman

THE RECENTLY COMPLETED *hotel at Curacao (Willemstad) occupies the site of a 300-year-old fort overlooking the busy harbor. Ships are reloaded here before entering the Panama Canal, and, since this is a free port, all the tourist boats stop here and passengers rush ashore for a feverish day of shopping. This sort of traffic explains the hotel, in the first place, also some of its features. Since the model (above) was made another story has been added to the near wing.*



□ The large dining rooms overlooking the pool were planned to serve the tourists who may leave a ship for only a day of shopping. These crowds can be handled with little disturbance to the hotel guests.

□ Rooms in the ancient fortress walls were developed as little shops, and attract people in the two-level garden.

□ Triangular garden is developed in two levels. What would normally be the basement level must be above ground because of the water table (three feet); this is the ground floor level in the plans. The pool was put at a higher level so that the view can be enjoyed. Lower level was also developed. The pool was built with underwater windows. Soda fountain service is given at the lower level.

□ Climate is pleasant, but sun can be hot. Hence the raised guest room wing on stilts, providing shade at two usable levels. Raised guest rooms also keep the views open.

□ Plan develops one of Mr. Calhoun's favorite points: keep all money-making facilities in plain sight of lobbies, elevators, and so on, to keep guests conscious of them.

Curaçao Hotel, for Intercontinental Hotels Corp. Joseph Salerno, Richard S. Smith, architects; Ben Smit, associate architect in Willemstad.

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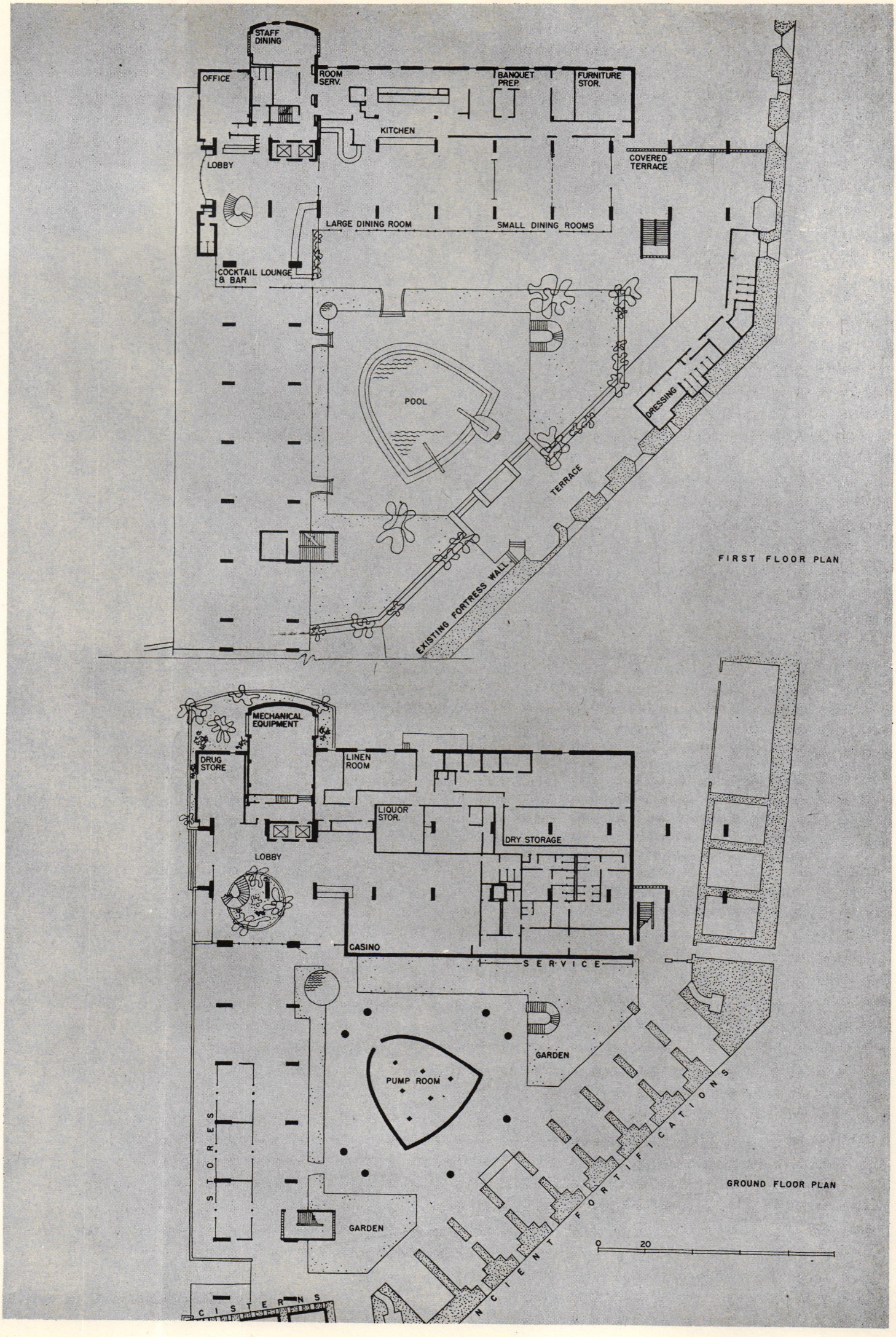
STAFF DINING
OFFICE
ROOM SERV.
BANQUET PREP.
FURNITURE STOR.
KITCHEN
LOBBY
COVERED TERRACE
LARGE DINING ROOM
SMALL DINING ROOMS
COCKTAIL LOUNGE & BAR
POOL
DRESSING
TERRACE
EXISTING FORTRESS WALL
FIRST FLOOR PLAN
MECHANICAL EQUIPMENT
DRUG STORE
LINEN ROOM
LIQUOR STOR.
DRY STORAGE
LOBBY
CASINO
SERVICE
GARDEN
PUMP ROOM
STORES
GARDEN
CISTERNS
ANCIENT FORTIFICATIONS
0
20
GROUND FLOOR PLAN

SAN SALVADOR HOTEL FOR MORE TOURISTS



SAN SALVADOR, *capital of El Salvador, is another of those locations combining business, diplomatic and tourist activity for a hotel, though some of this potential is yet to be developed. This Central American country is wealthy and stable, with heavy coffee investments contributing to prosperity. The new hotel, planned to be THE one, is set on the outskirts of the city, in the line of growth and on the Pan American highway which will be connected to this point in due course. The hotel is exceptionally well arranged for caring for its multiple functions.*

□ Central placing of kitchen makes for ideal service to various locations. It serves conveniently in four directions, to four separate dining facilities: to the meeting rooms, to room service via service elevators, to coffee shop and supper room, and (downward on plan) to a bar and barbecue combination that has been added on the terrace above the service driveway.

□ One of Mr. Calhoun's principles is that the kitchen should not be too large. Most hotel kitchens, he points out, are costly because they are too large: more steps to be taken by all concerned, inefficient operations. The chef usually manages to hire another employe for every extra corner of a large kitchen. This particular one is kept small and efficient, is augmented by some food preparation areas in the basement.

□ Cocktail lounge is well placed for multiple service. It works by itself as bar lounge, it serves the swimming pool area, or becomes part of the supper club for the night hours.

□ Coffee shop and cocktail lounge prominently placed to attract business.

□ Hotel is compactly planned, but has adequate storage and maintenance shop areas in basement.

□ Round front desk provides very good control in all directions. An important point in any hotel, particularly in one planned for efficient use of personnel.

□ Service drive at lower level in the rear, for quiet unobtrusive operation.

□ Good shopping areas to develop interest for guests and income for hotel.

Hotel El Salvador, San Salvador, El Salvador, for Compania Hotelera Salvadorena, S.A., and Intercontinental Hotels Corporation. William B. Tabler, architect.

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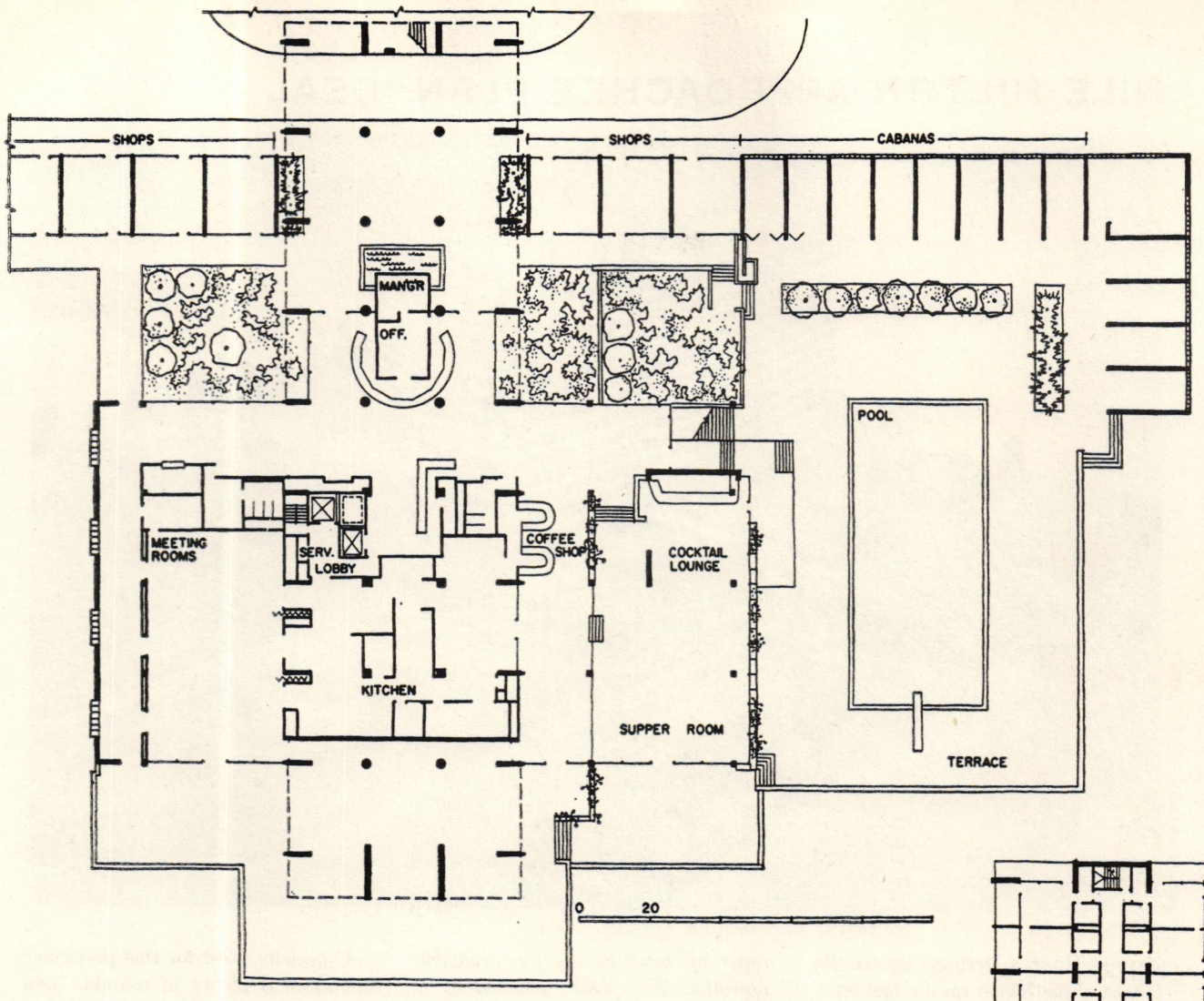
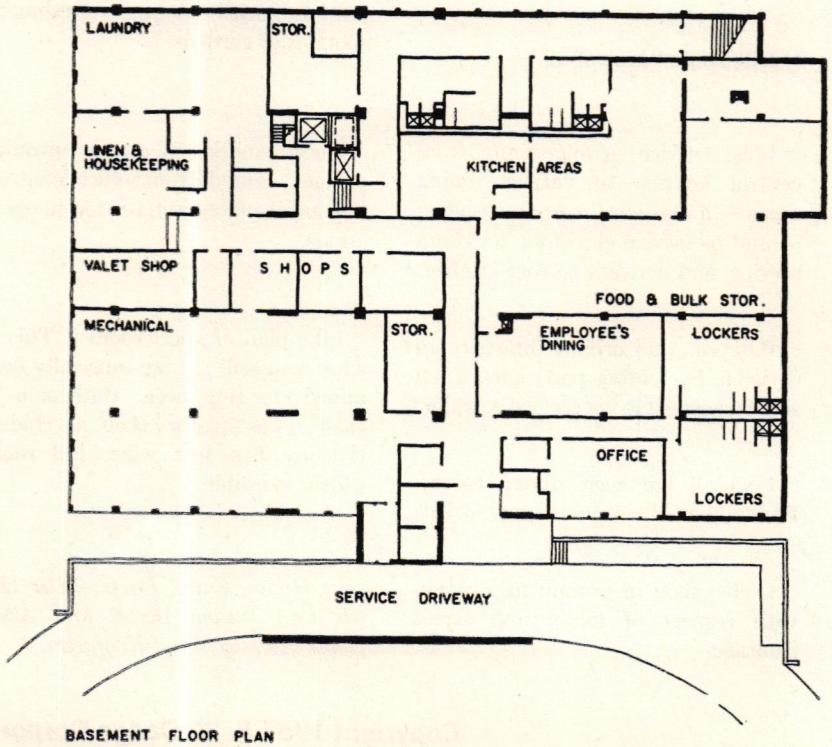
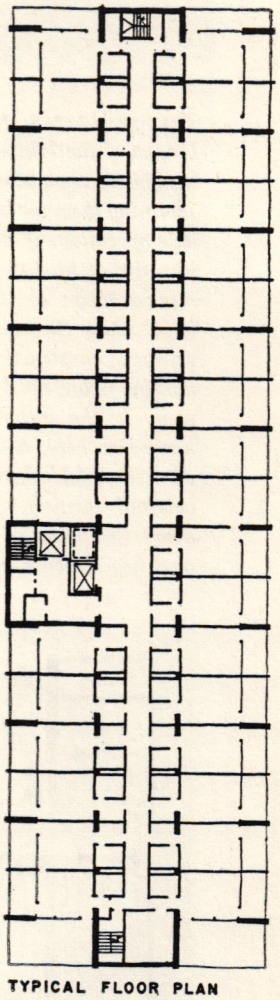


LOBBY FLOOR PLAN

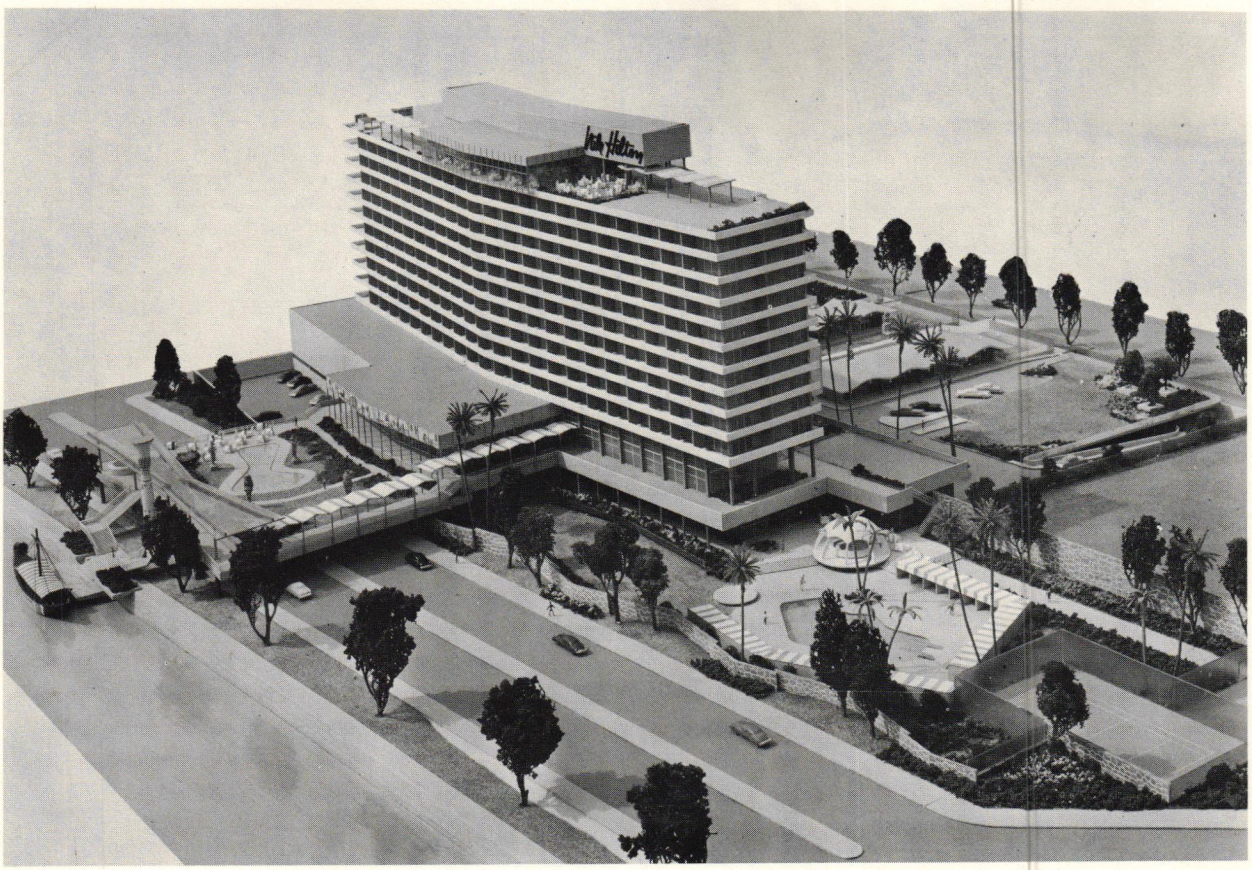


BASEMENT FLOOR PLAN



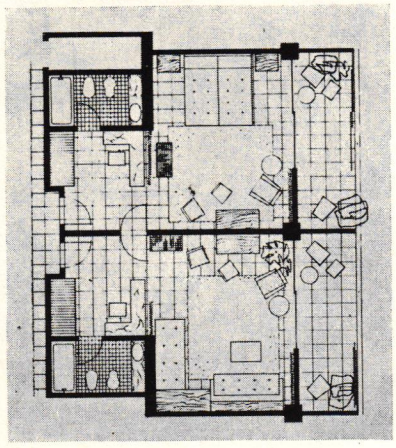
TYPICAL FLOOR PLAN

NILE HILTON APPROACHES PLAN IDEAL



Herbert Bruce Cross

HILTON HOTELS INTERNATIONAL, *the branch of the Hilton empire that operates foreign hotels, also takes a hand in planning them for best and most profitable operation; if not in fact the client they are at least the client's American representative in dealing with architects. Curt Strand, vice-president in charge of construction, assisted by Emmanuel Gran, head of the architectural unit, is the focus of the functional know-how here; he has been known to work a hotel scheme up to twice its original earning capacity. Comments about the plans of this hotel and the next two shown are typical of the concerns of hotel design for profitable operation. This hotel, planned as a luxury operation catering largely to American tourists, represents a particularly satisfactory planning effort, and an especially good example of the desiderata of this operation.*



□ Kitchen is "best of all."

□ Ideal service arrangements from central kitchen to various dining areas — a matter of many man-hours — and to service elevators, for room service, and delivery to roof kitchen.

□ Ballroom and private dining room divisible by folding partitions. Each section accessible via service corridor.

□ Cocktail bar near dining rooms. Bar (not on these plans) near street.

□ Coffee shop in prominent location with respect of lobby and street frontage.

□ Especially good for this particular operation is plenty of rentable area for shops.

□ In a city where outdoor living is an age-old custom, intensive development of the site is plainly indicated. This scheme develops its income potentials, with shops, refreshment spots, roof gardens.

□ Good handling of double entrance problem. Good front office control. Executive offices well related to operations.

□ Like plan of guest room ("This is what you sell"). Like especially curtained dressing area. Bathroom is good — has lavatory shelf, also bidet. Balcony five feet wide, full room width, is usable.

Nile Hilton, Cairo, Egypt; Misr Hotels Co.; Welton Becket and Associates, Architects and Engineers.

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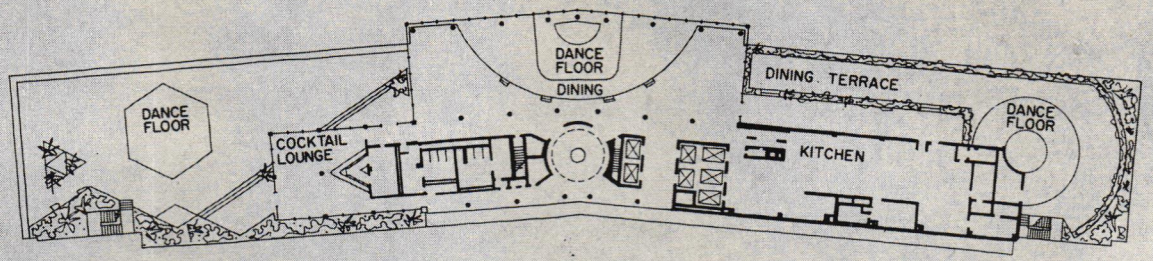
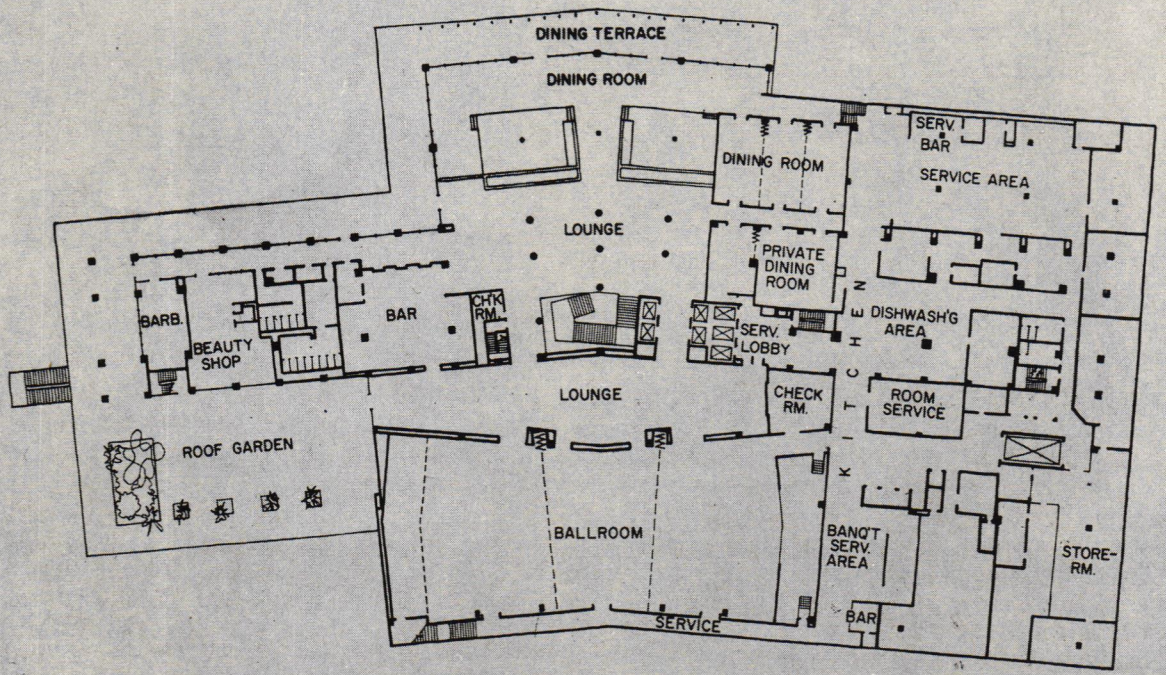
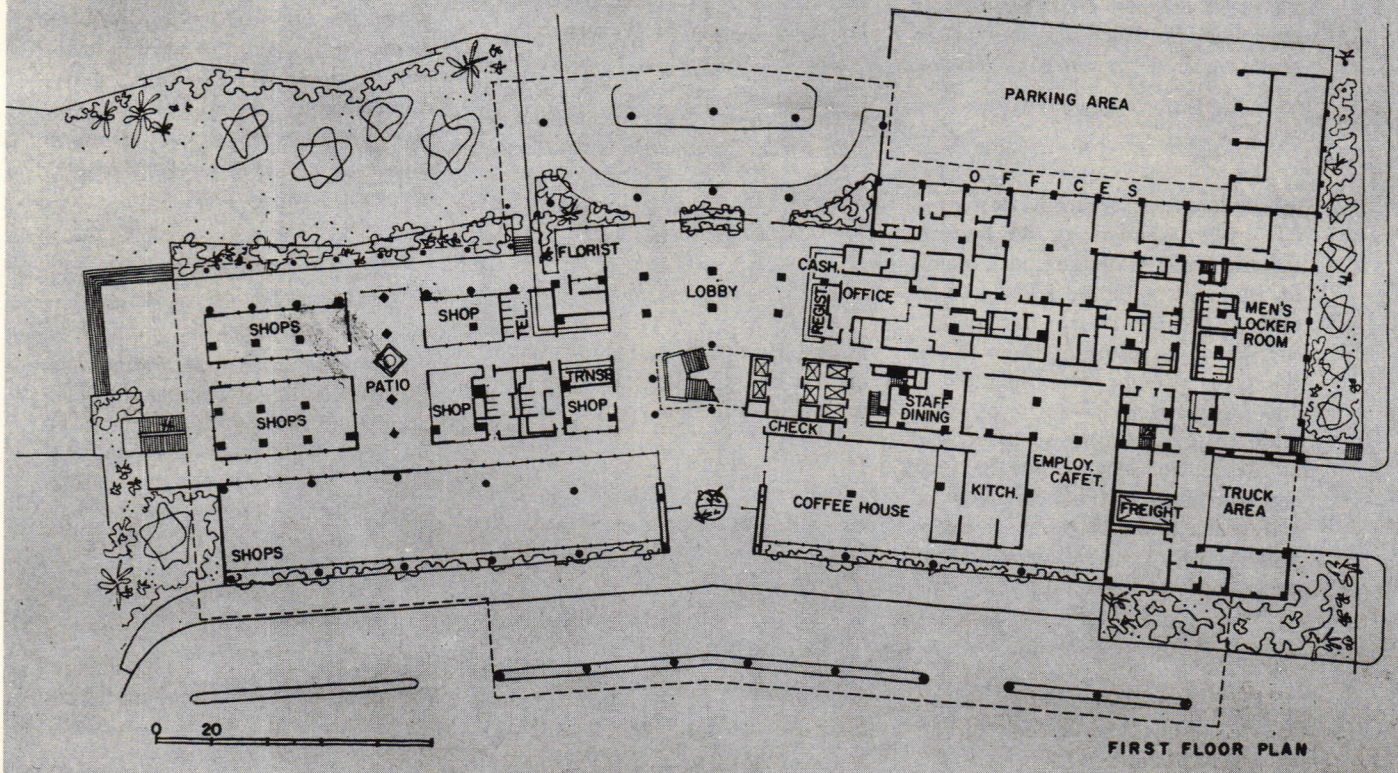


ROOF TERRACE PLAN

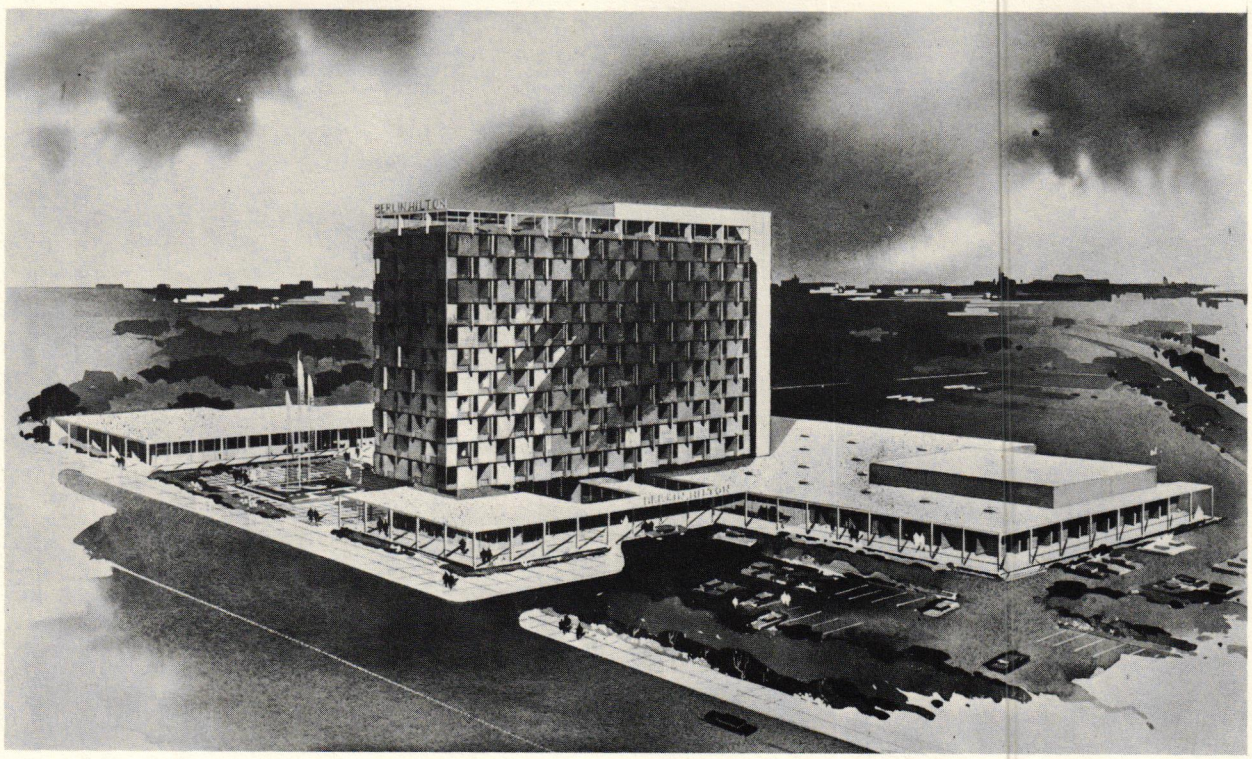


SECOND FLOOR PLAN



FIRST FLOOR PLAN

BERLIN HILTON A BUDGET ASSIGNMENT



Klaus Mueller

BECAUSE OF A GREAT HOUSING NEED *in Berlin, there was no inclination to make this hotel a luxury project; it was built to meet a budget. This is not to say that it is exactly a hovel, with its nice eating places, not to mention its pool, its facilities for important diplomatic functions, and so on, but it does not have all of the luxury items of some of the more glamorous of watering places. It occupies an important site overlooking the Tiergarten, and will be much used by traveling public and v.i.p.s. alike.*

□ Any hotel needs some item of especial appeal, budget or no budget. Here it is the swimming pool, which in the heart of Berlin is likely to be more talked about than the pool of, say, the Nile Hilton at Cairo. Thus the pool becomes the visual focus, and sort of activity focus as well. Sliding doors will open many rooms, in seasonable weather, to the pool and its terrace. The fondness of Europeans for eating out of doors suggests very good business in these poolside areas.

□ American touches are much valued in hotels of this type. A soda fountain for example, is not only an excellent conversation piece in Berlin, but a source of worthwhile profit.

□ A modern American hotel touch is the variety of small dining rooms of the specialty type. A rotisserie is featured here, much as it might be in America, and there is no doubt that it should prove just as successful as similar ones in our own land.

□ The European eating-out habits are catered to also with extensive hofbrauhaus facilities on the roof.

□ Serving all these eating places focuses the kitchen problem in hotel planning. Here a large central kitchen is arranged to do this job with maximum convenience. Direct serving corridors reach from kitchen to all eating places except the coffee shop (this one always gets its close-to-street location and never-mind-the-kitchen-location).

□ Ballroom is exceptionally well placed not only for serving but also for crowd handling. As usual in modern planning, folding partitions make it possible to cut up the ballroom space into separate function rooms, each with anteroom attached for the inevitable cocktail parties.

□ Front desk gives good control view of entrances, elevators and so on. The circulation route of hotel guests is also good; he is made conscious, first of pool and its terrace and eating rooms, then of dining rooms and bar indoors to the rear of the pool.

Berlin Hilton for Hotelbau-Gesellschaft, Pereira & Luckman, architects.

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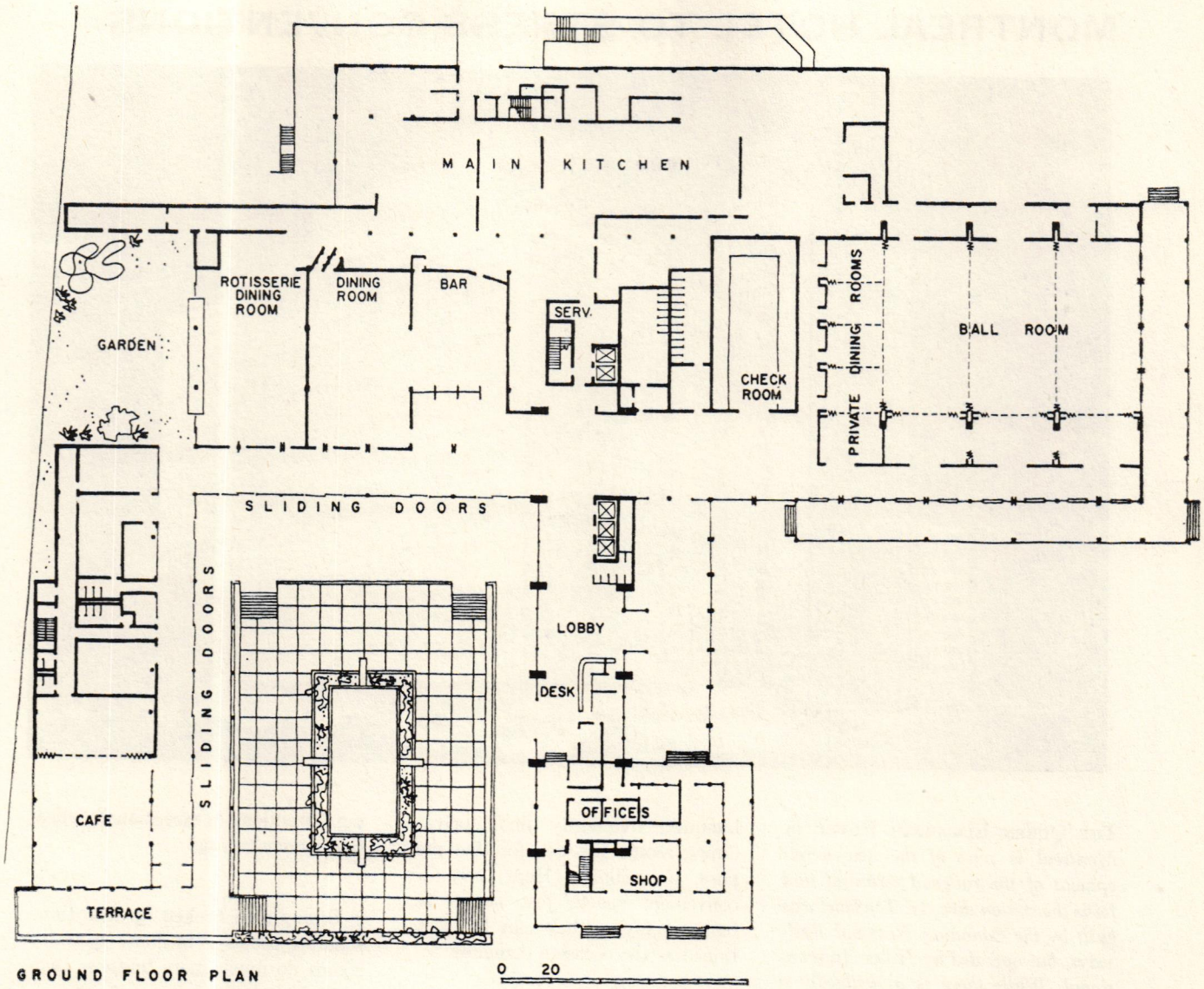
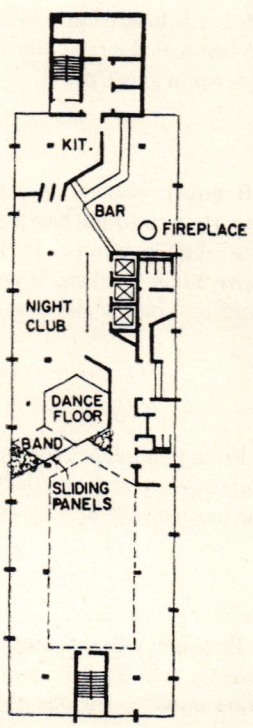
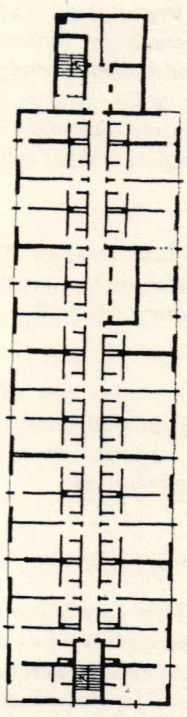


GROUND FLOOR PLAN



ROOF BAR PLAN



TYPICAL FLOOR PLAN

MONTREAL HOTEL TO STRESS CONVENTIONS



THE QUEEN ELIZABETH HOTEL *in Montreal is part of the new development of the railroad terminal and joins the station directly. The hotel was built by the Canadian National Railways, but operated by Hilton International. While there is undoubtedly a tourist business, the building was not primarily designed to draw the tourists for lengthy stays, but for business men, especially for conventions. So the income-developing study gives first attention to the extensive banquet facilities, to insure economical service and profitable food and bar sales.*

□ Main banquet room can be extended by two progressive additions, via movable walls.

□ A whole row of private dining and/or conference rooms, which can be arranged in a great variety of combinations.

□ It is very important, says Strand, that each banquet room or large private dining room have its own foyer space for the cocktail hour before the banquet; frequently small private dining rooms are used for that purpose, if available. Here there are convenient spaces just across the banquet foyer; they can be partitioned as the occasion demands.

□ A bar is located at a focal point on the banquet floor; at times it can be a source of great profit.

□ Banquet kitchen is well located with respect to all banquet and private dining rooms. It is directly above main kitchen, is served from there by kitchen elevator.

□ From preliminary to working drawing stages, planning study increased the income potential by 100 per cent.

□ Principal public dining rooms open directly off lobby; location keeps hotel guests conscious of hotel's dining attractions, is exceptionally effective merchandising.

□ Dining area broken up into three separate rooms — intimate specialty rooms do much more business than large formal rooms.

□ Main hotel kitchen serves all dining areas efficiently.

□ Coffee shop located for street traffic; is still close to main kitchen.

□ Lobby kept relatively small. Circulation good from entrances to desk to elevators to shops to dining rooms.

The Queen Elizabeth Hotel, Montreal, Canada; Canadian National Railways, H. C. Greensides, Chief Architect.

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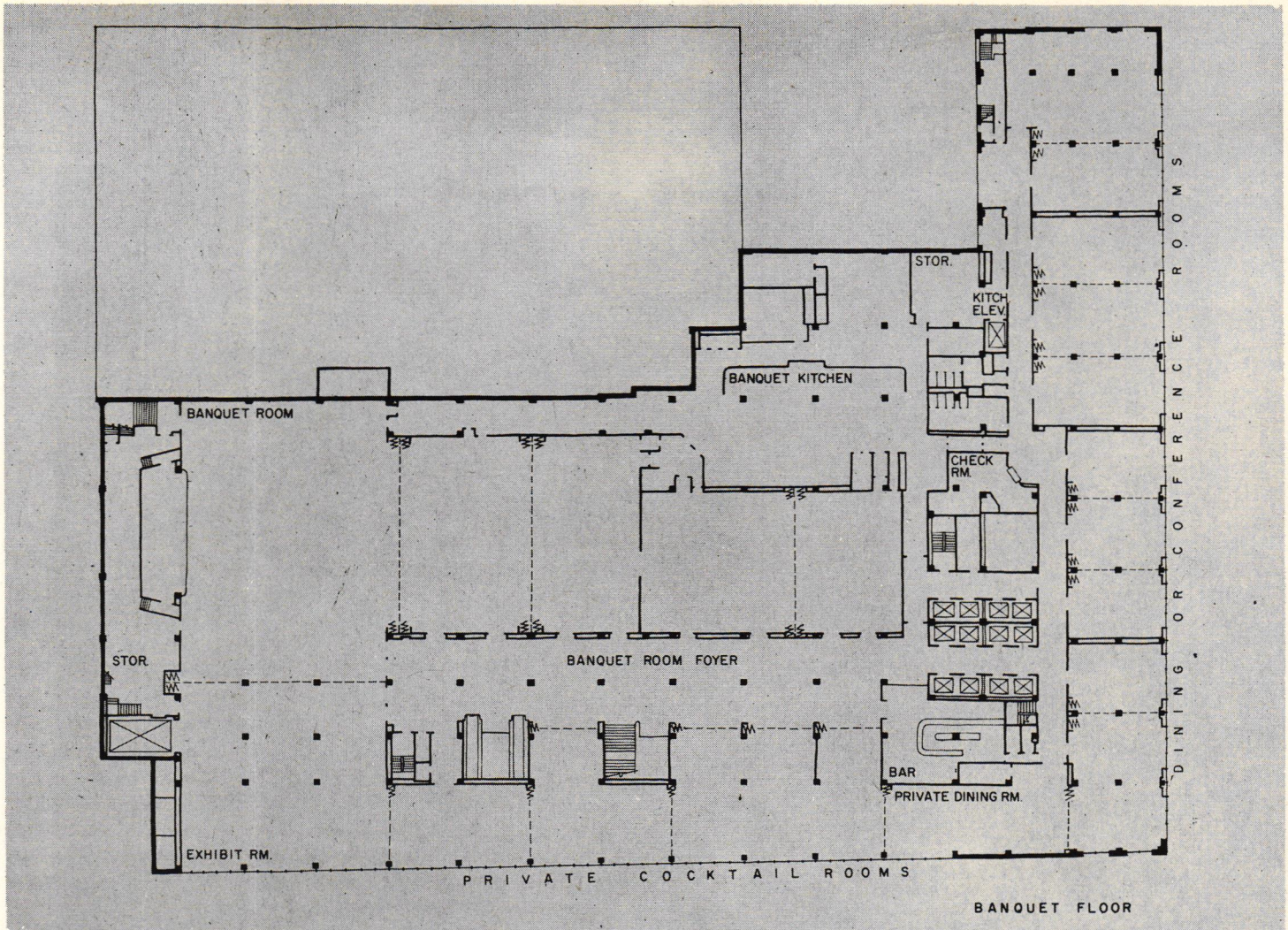
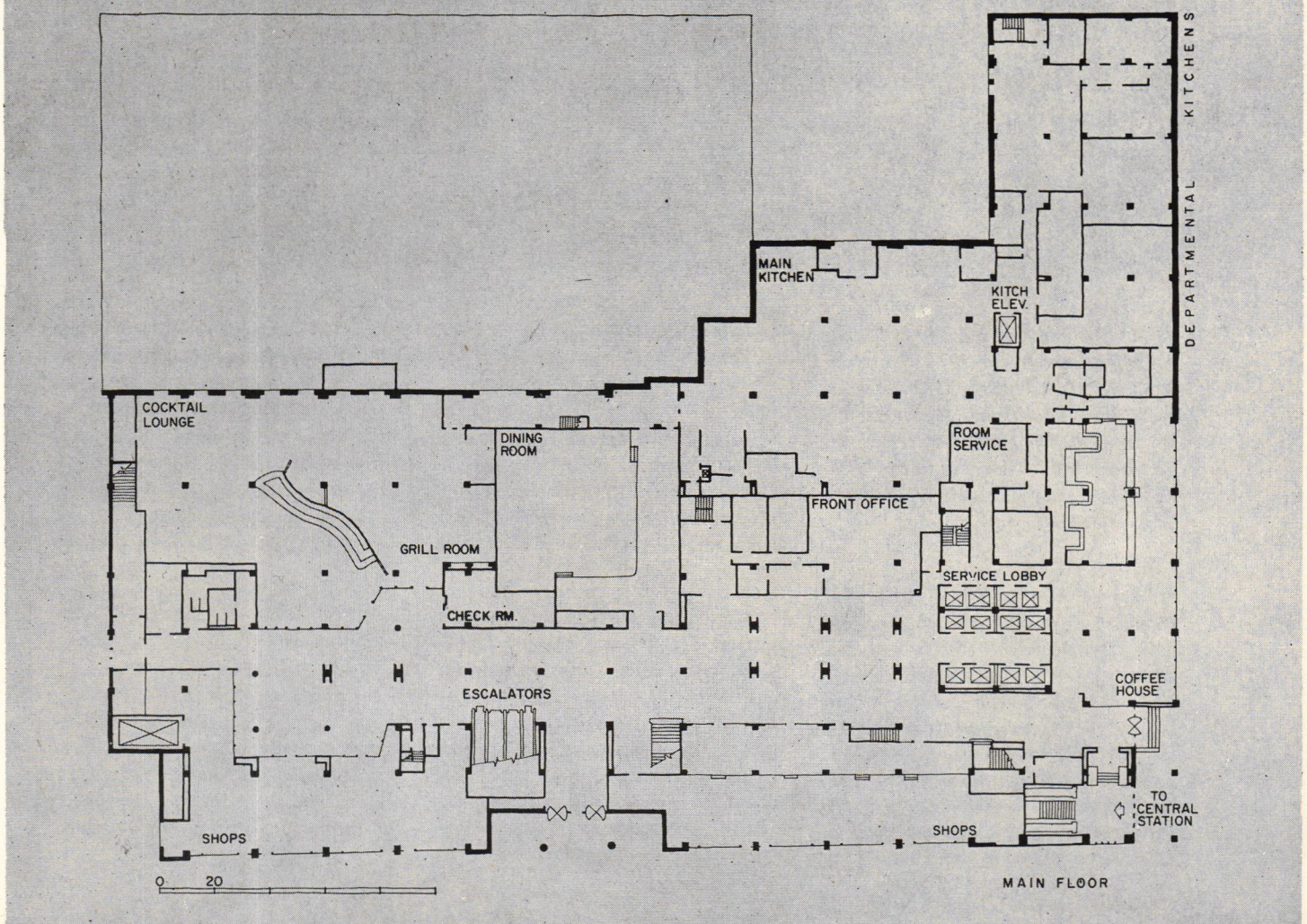

STOR.
KITCH ELEV.
BANQUET KITCHEN
BANQUET ROOM
CHECK RM.
DINING OR CONFERENCE ROOMS
STOR.
BANQUET ROOM FOYER
BAR
PRIVATE DINING RM.
EXHIBIT RM.
PRIVATE COCKTAIL ROOMS
BANQUET FLOOR


MAIN KITCHEN
KITCH ELEV.
DEPARTMENTAL KITCHENS
COCKTAIL LOUNGE
DINING ROOM
ROOM SERVICE
FRONT OFFICE
GRILL ROOM
SERVICE LOBBY
CHECK RM.
COFFEE HOUSE
ESCALATORS
TO CENTRAL STATION
SHOPS
SHOPS
0 20
MAIN FLOOR

CONTINENTAL HILTON IN MEXICO CITY



James Vincent

THE CONTINENTAL HILTON *possesses the first requisite of a good hotel, and one not always enjoyed by large hotels in great urban centers. It is situated conveniently and pleasantly on one of the magnificent circular intersections of Mexico City's wide, tree-lined Paseo de la Reforma.*

□ In choosing this site the owners and architect were confronted with the considerable job of integrating an existing structure into the new whole. This task has been generally successful, and it will be the rare guest who is aware of the marriage. It is difficult to know how much the architect may have been inhibited by this aspect of the program. Certainly the general exterior character of the work seems not as strong as the handling of the individual interior spaces.

□ Outstanding among its successes is the handling of the entire arrival procedure, from auto approach to room entry. Initially, the one-way traffic, tree-separated side lanes of the Paseo permit a quieter, roomier auto arrival. But the great genius of the plan is revealed in the way the guest proceeds from entrance to registration desk. Most importantly, one can see the desk from the entrance, and on the way there can see as well where the elevators are, and — of real significance to guest and management — can see and get some sense of the quality of the first-floor cocktail lounge on one side and the restaurant on the other. Since these make a good impression, there is an excellent chance that the guest will spend his first pesos right in the hotel. In a city filled with first-class food and drink dispensaries this has considerable importance to the management. The course from desk to elevator and elevator through generous lobbies to individual guest rooms continues easily.

Continental Hilton, Mexico City, for Construcciones Internacionales, S.A., Hilton Hotels International de Mexico, lessee. Fernando Parra Hernandez, architect and general contractor. David T. Williams, decorator.

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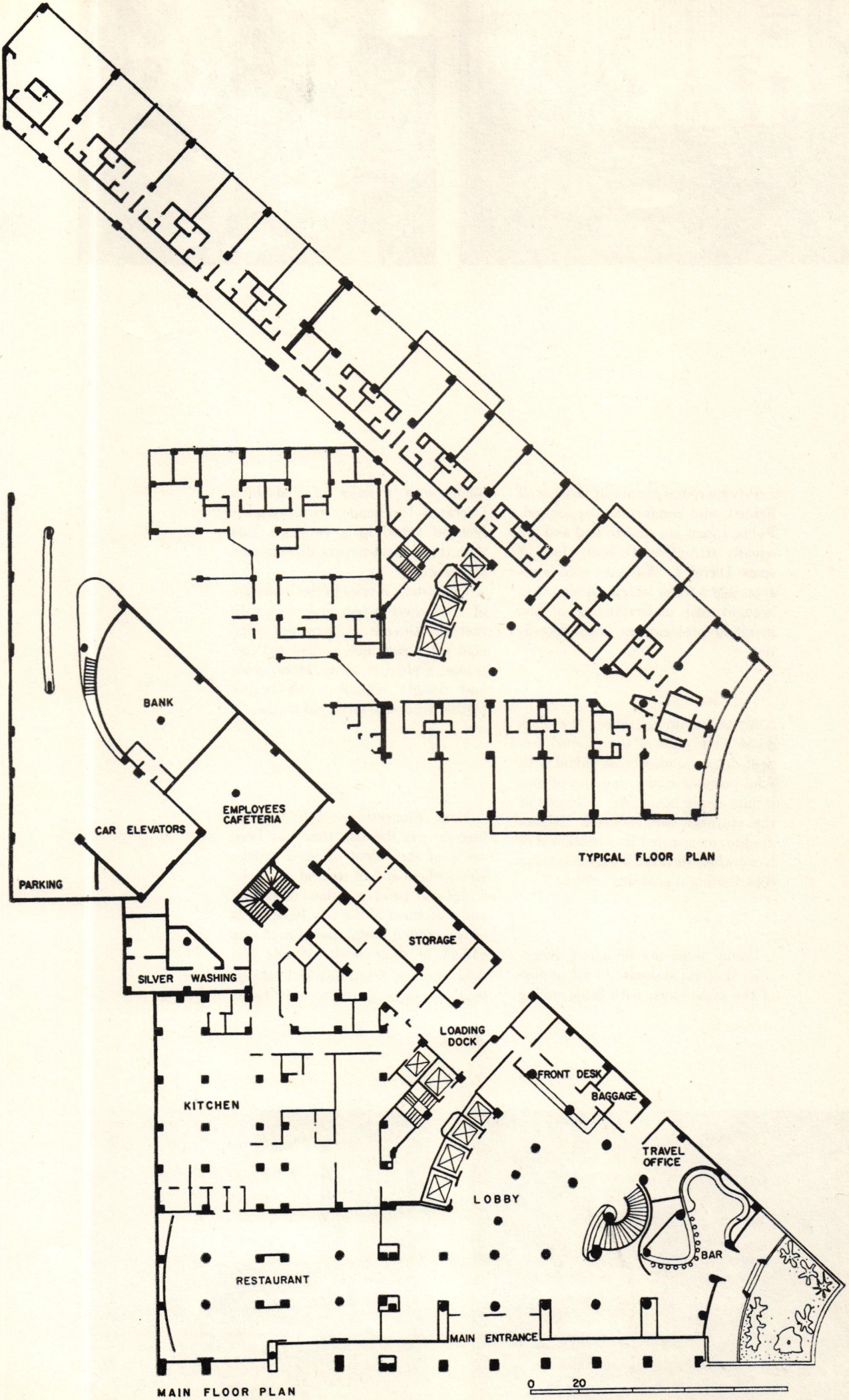
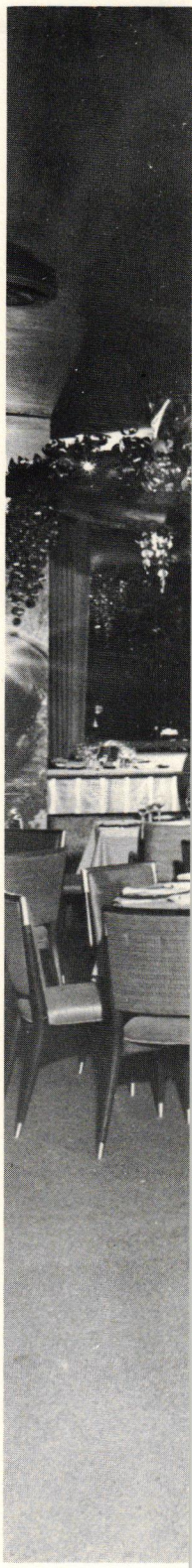

BANK
EMPLOYEES CAFETERIA
CAR ELEVATORS
PARKING
TYPICAL FLOOR PLAN
STORAGE
SILVER WASHING
LOADING DOCK
FRONT DESK
BAGGAGE
KITCHEN
TRAVEL OFFICE
LOBBY
BAR
RESTAURANT
MAIN ENTRANCE
0 20
MAIN FLOOR PLAN







□ Private rooms are amply sized, well lighted, and comfortably appointed. Public rooms are easy to find and are equally attractive. To both kinds of space David T. Williams, who is responsible for the interior design, has brought real understanding of the manifold problems in hotel decoration.

□ At the main entrance, the glass doors have pulls of the plumed serpent design in cast brass, inlaid with semi-precious stones, mosaics of malachite, lapiz lazuli, etc. Columns at the entrance are of black Belgian granite; uncarpeted floor section is of ivory white terrazzo with brass chips contributing a gold dust effect.

□ Lobby walls are of native ivory-colored onyx; staircase to mezzanine of the same onyx, with brass railing inlaid with mosaics of malachite. Carpet is handmade; background is blended tweed in a two-tone gold with the plumed serpent done in gold shearing.

Upholstery fabrics in the lobby are of handwoven wools and silks with metallic threads. Colors are deep gold with black and varicolored metallics; a plaid of green, blues, golds and fuschia metallic, and bronze leather trimmed with gold leather.

□ Most interesting — and far too unique — is the use that has been made of the talent of local artists. Everywhere and in myriad ways the sculptors, painters, fine designers, and craftsmen of the city have made of the hotel a useful and stimulating gallery of their work. Murals and door handles, fountains and fabrics, lend a unique finish to this hotel.

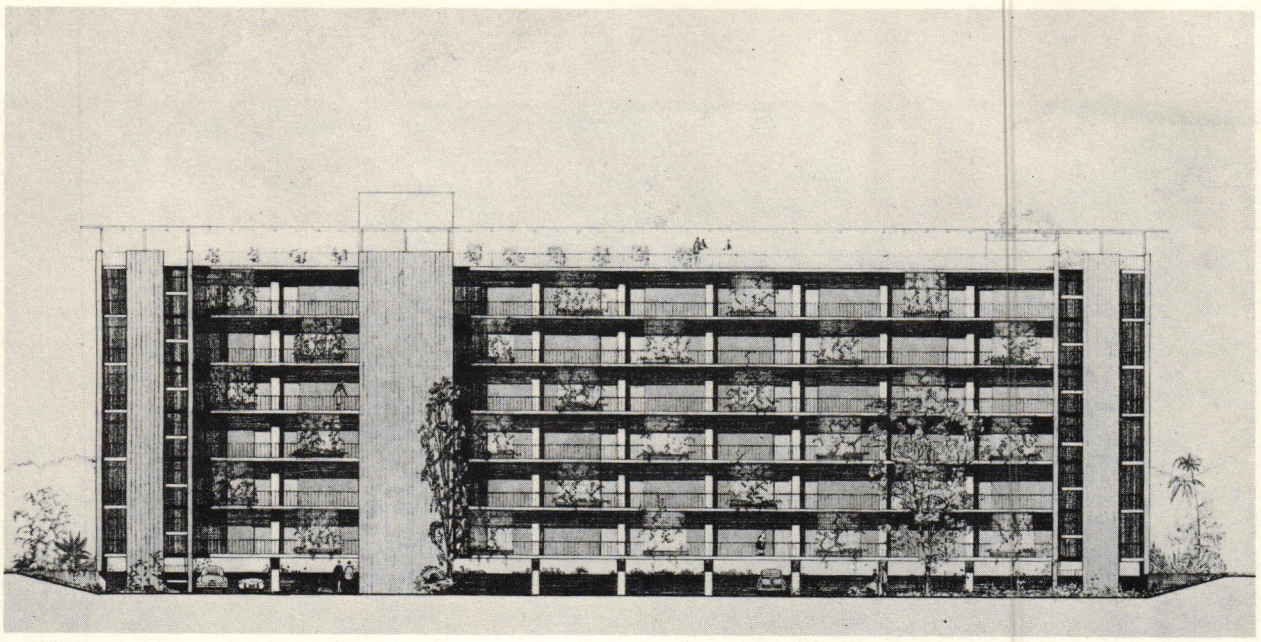






James Vincent

SIX-STORY ADDITION TO GARDEN HOTEL

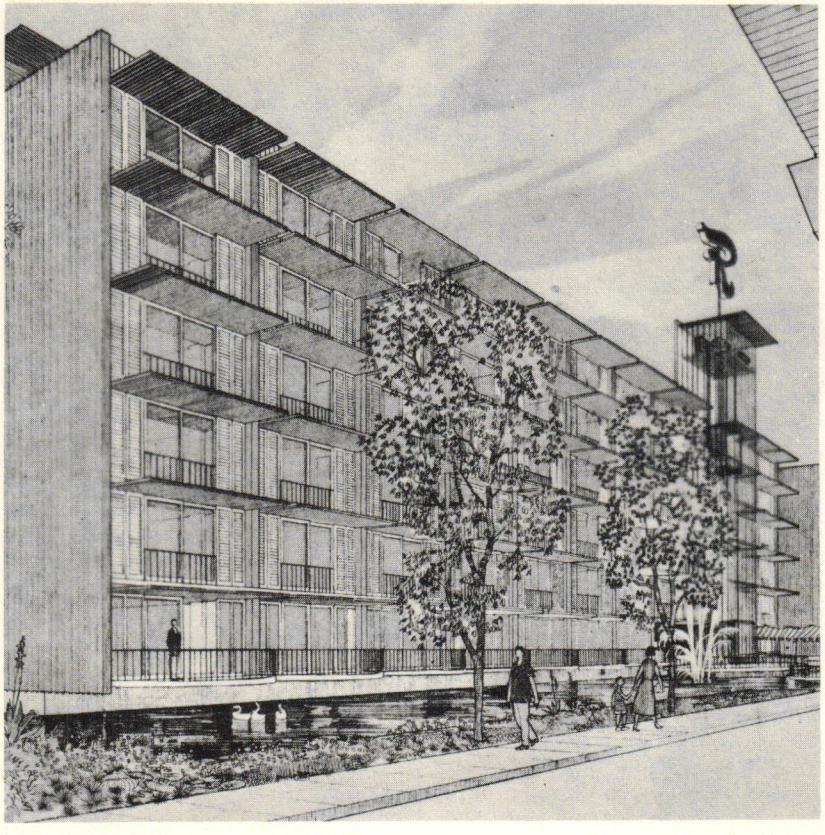


Moulin Studios

IT SEEMS CHARACTERISTIC *of the times that as the small, intimate, horizontal hotels achieve more success they tend to extend themselves upward. Here is a six-story addition to the well known Studio Inn Garden Hotel in Palto Alto. It is carefully planned and placed to suggest rather an enclosure of the garden than a change in character.*

□ The new building, measuring 36 by 190 feet, arises from a depressed water garden area extending under the first floor. Access to the entrance lobby and an unusual free-standing steel and glass elevator enclosure, is gained via a curved bridge from the garden.

□ Individual rooms, eleven to the floor, are commodious, to cater to permanent as well as transient guests. Each room is entered from a balcony corridor extending at each level along the rear. There are no windows on this side, and the outer side of the corridors is screened with a ceiling-height trellis to insure privacy, both for guest and for nearby residents.



□ Every guest room has a tile-floored lanai with wood jalousies, sliding glass doors and ornamental iron railings. This arrangement is calculated to give a sense of garden living, not to mention a planned place for sun-lounging.

Hotel addition to Studio Inn Garden Hotel, Palo Alto, California. Office of Ernest J. Kump, architects

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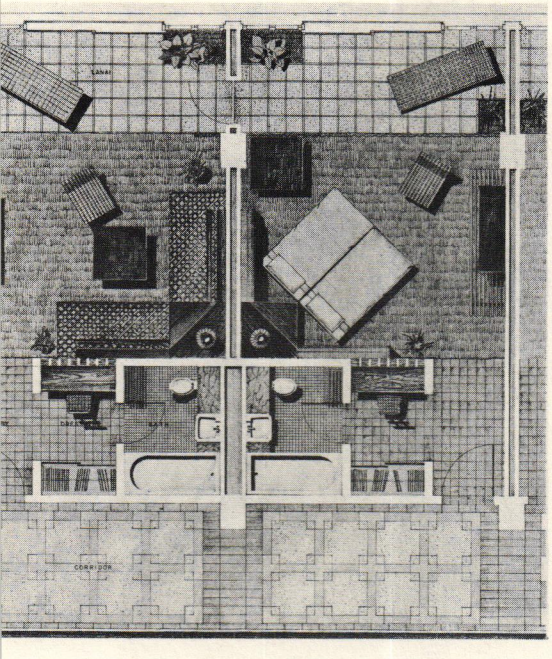
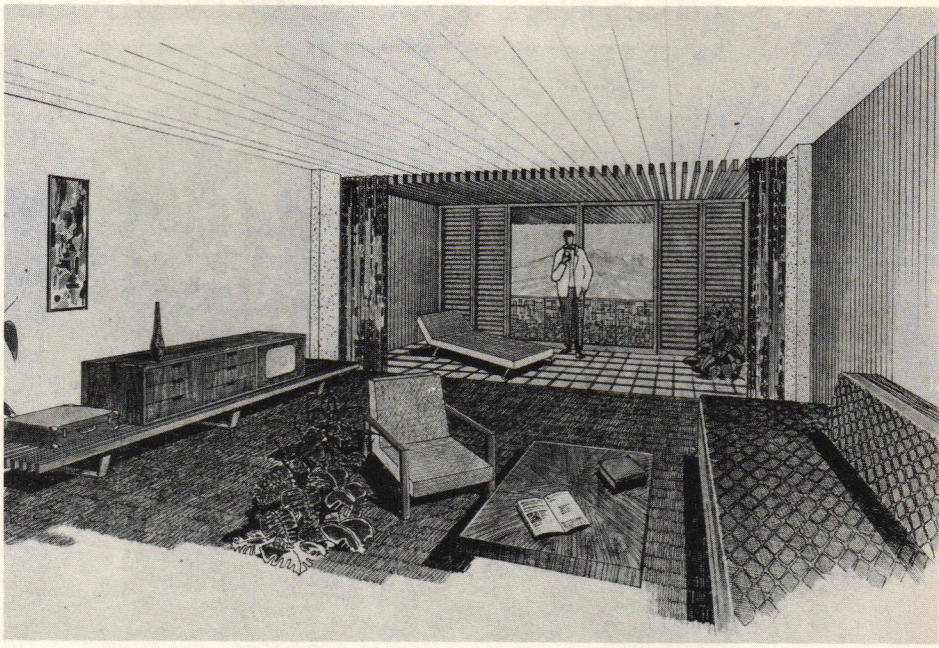
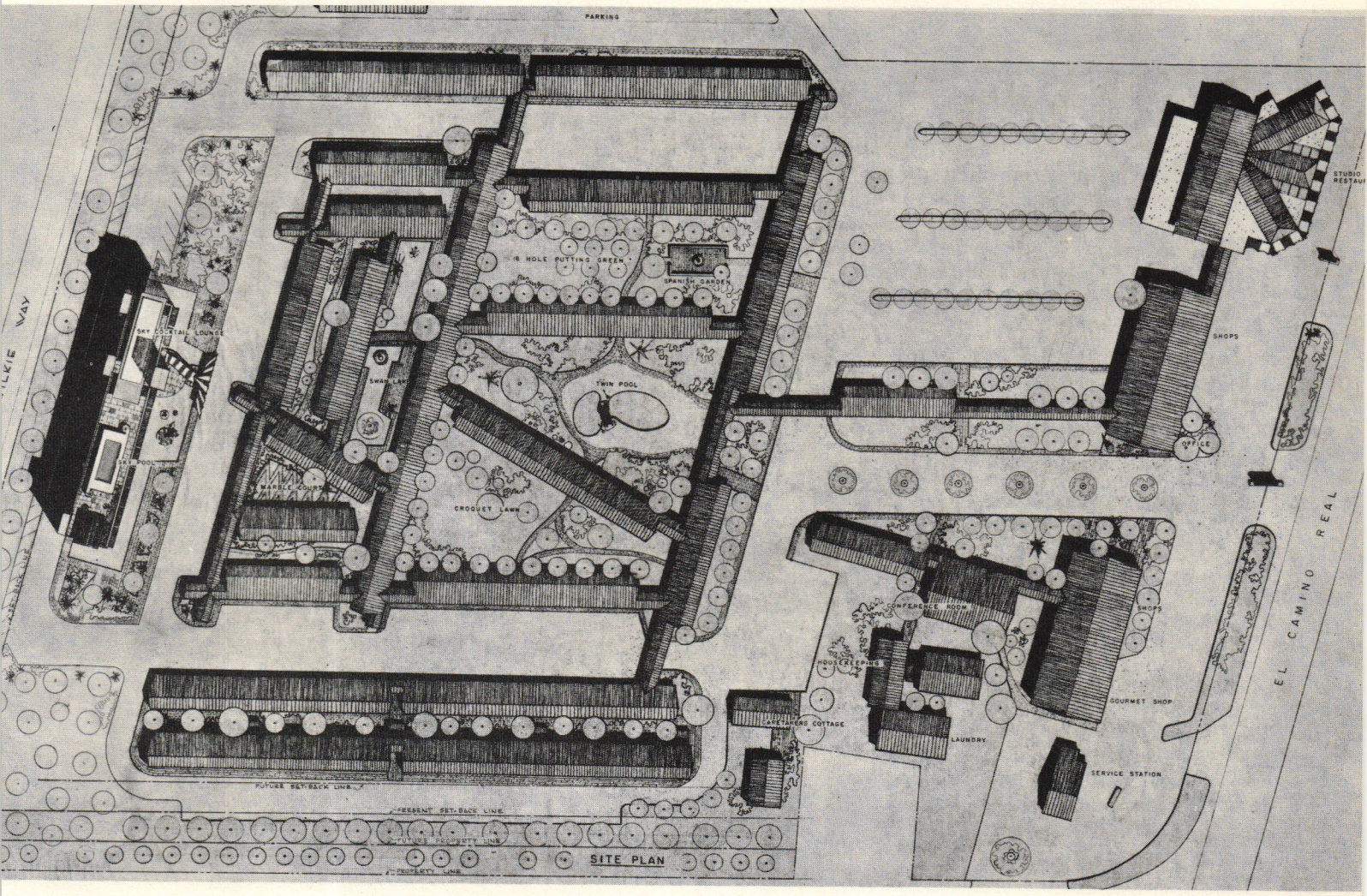
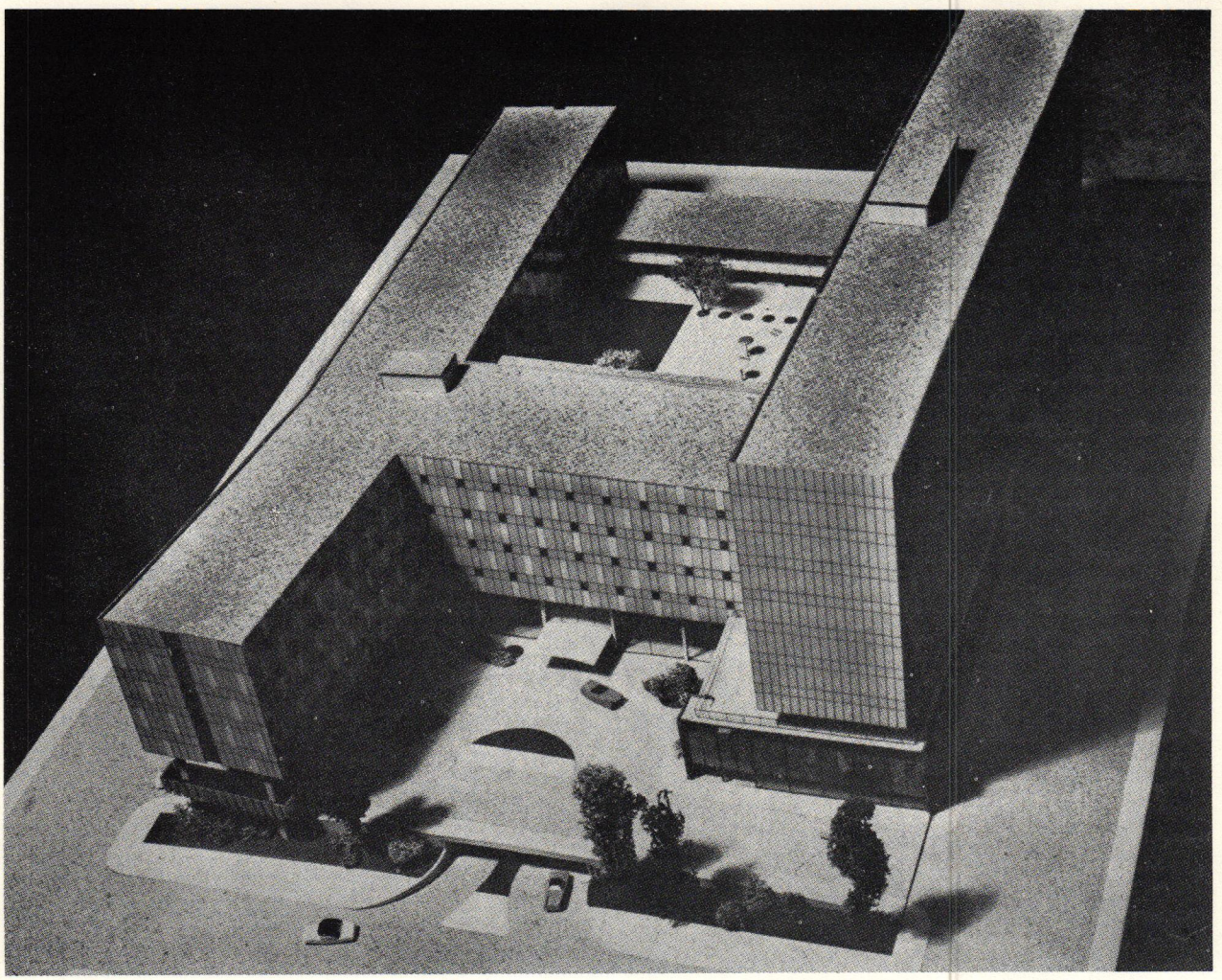





PARKING
18 HOLE PUTTING GREEN
SPANISH GARDEN
SKY COCKTAIL LOUNGE
SWAN LAKE
TWIN POOL
MARBLE COURTS
CROQUET LAWN
SHOPS
OFFICE
STUDIO
RESTAU
CONFERENCE ROOM
SHOPS
HOUSEKEEPING
GOURMET SHOP
CARETAKERS COTTAGE
LAUNDRY
SERVICE STATION
EL CAMINO REAL
FUTURE SET-BACK LINE
PRESENT SET-BACK LINE
PROPERTY LINE
SITE PLAN

HIGHWAY HOTEL COMBINED WITH OFFICES



THE HIGHWAY HOTEL *is not only moving downtown, it is also becoming an office building. Here is an interesting project showing how the old motel idea has developed. It has not lost its identity with the highway, nor with the informal ways that the automobile seems to conduce to. The effort here is to bring the convenience and relaxed air of the travel court together with close-in location values and other city amenities.*

Site is a full block between Post and Geary Streets, San Francisco (these two streets bound Union Square a few blocks away; and Van Ness Avenue (Highway 101, to Golden Gate Bridge) and Franklin Street. Major elements of the project will be 1) a 400-room hotel, 2) 150,000 sq ft of office space; and 3) a 600-car garage.

"We have thought," writes the architect, "that the hotel should provide all the amenities, the glamour and the convenience of location associated with a downtown hotel and at the same time the convenience of movement of the tourist court and the relaxed atmosphere of the resort. Incorporated in the design are those features expected of a fine hotel, such as restaurants, bars, meeting rooms accommodating up to 1000 people, laundry, garage, central air conditioning, circulating ice water, barber shop, beauty shop, valet, etc. Once the hotel amenities have been incorporated, there is left the problem of offering the guest the same convenience he can find in a tourist court . . .

"Our solution to this problem is to place the hotel rooms atop a 4-story parking garage laid out for self parking and equipped with several elevators located in convenient quadrants of the building and traveling through all floors of the garage and the hotel. By simply locating a registration desk in the garage entrance we have made it possible for the guest to register and go directly to his room, just as he would in a tourist court. But once he emerges from his room there is no resemblance in the variety of recreational, entertainment and business facilities furnished by this hotel and that furnished by the normal tourist court . . .

"The idea of incorporating an office building into this project has numerous advantages, not the least of which is that of adequate parking-garage space. The tenant can drive directly into the garage and take the elevator to his floor. Or, he can stop off for breakfast, or take a client to lunch in one of the smart eating spots in the hotel, or entertain a business prospect in the poolside cocktail lounge. The larger company can also call its out-of-town sales force in, house the people in the hotel and use the hotel's meeting rooms and catering service — all under the same roof."

Hotel and Office Building for C. A. Sammons, San Francisco, Cal. Thomas M. Price; Hertzka & Knowles, Associated Architects. Thomas D. Church, Landscape Architect; R. L. Reid and Graham & Hayes, Structural Engineers; Joe A. Poole, Mechanical Engineer.

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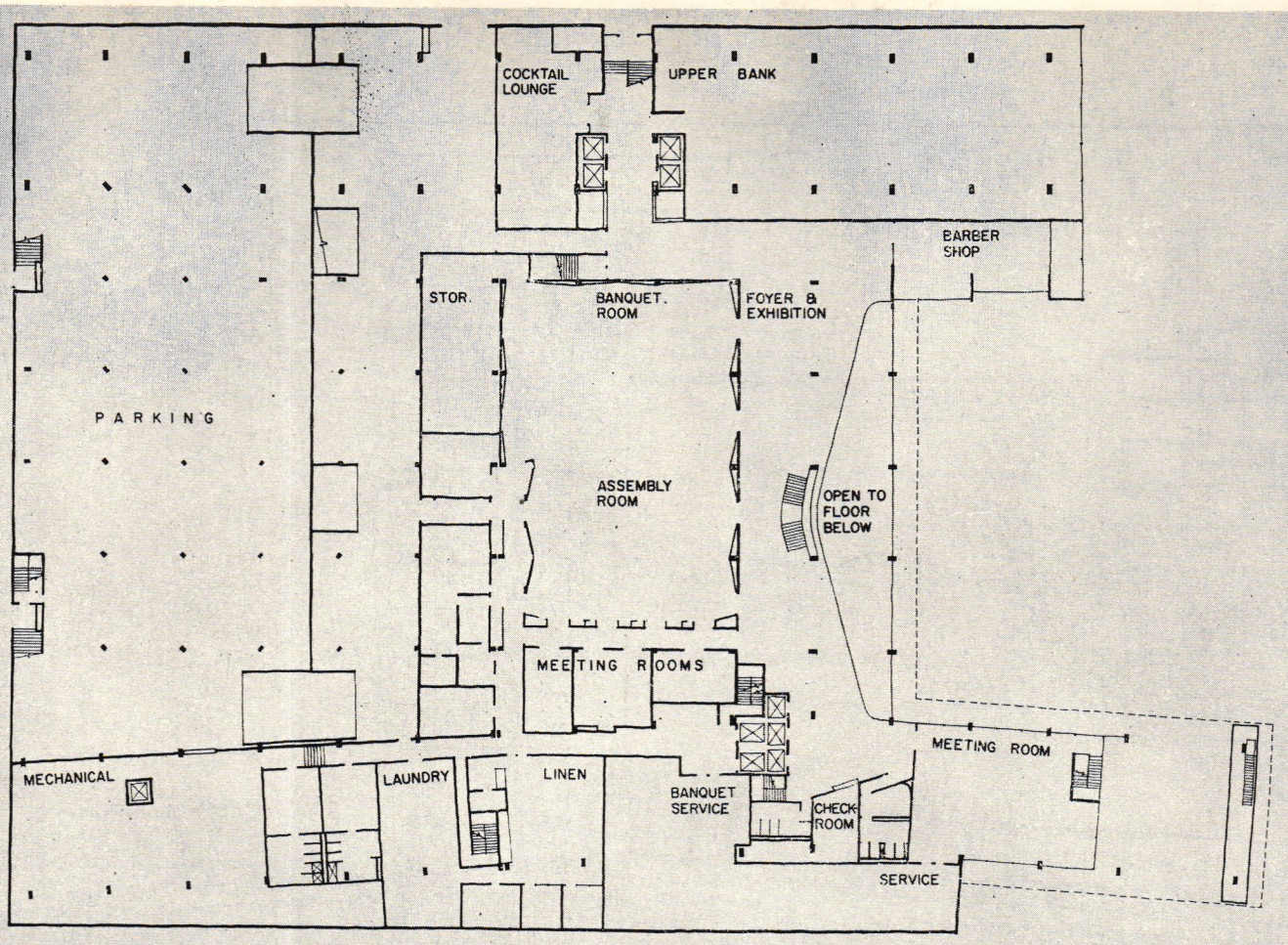
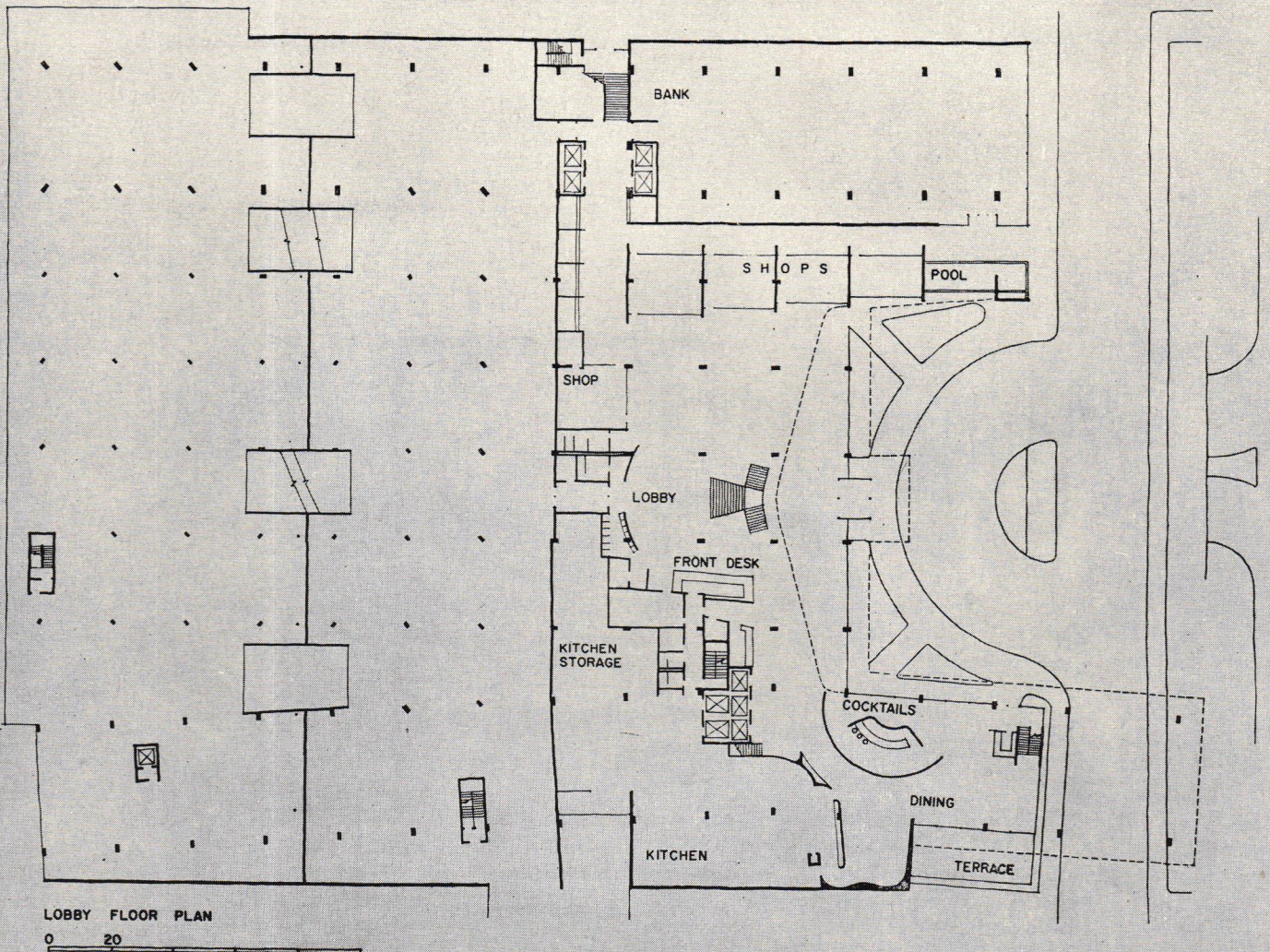
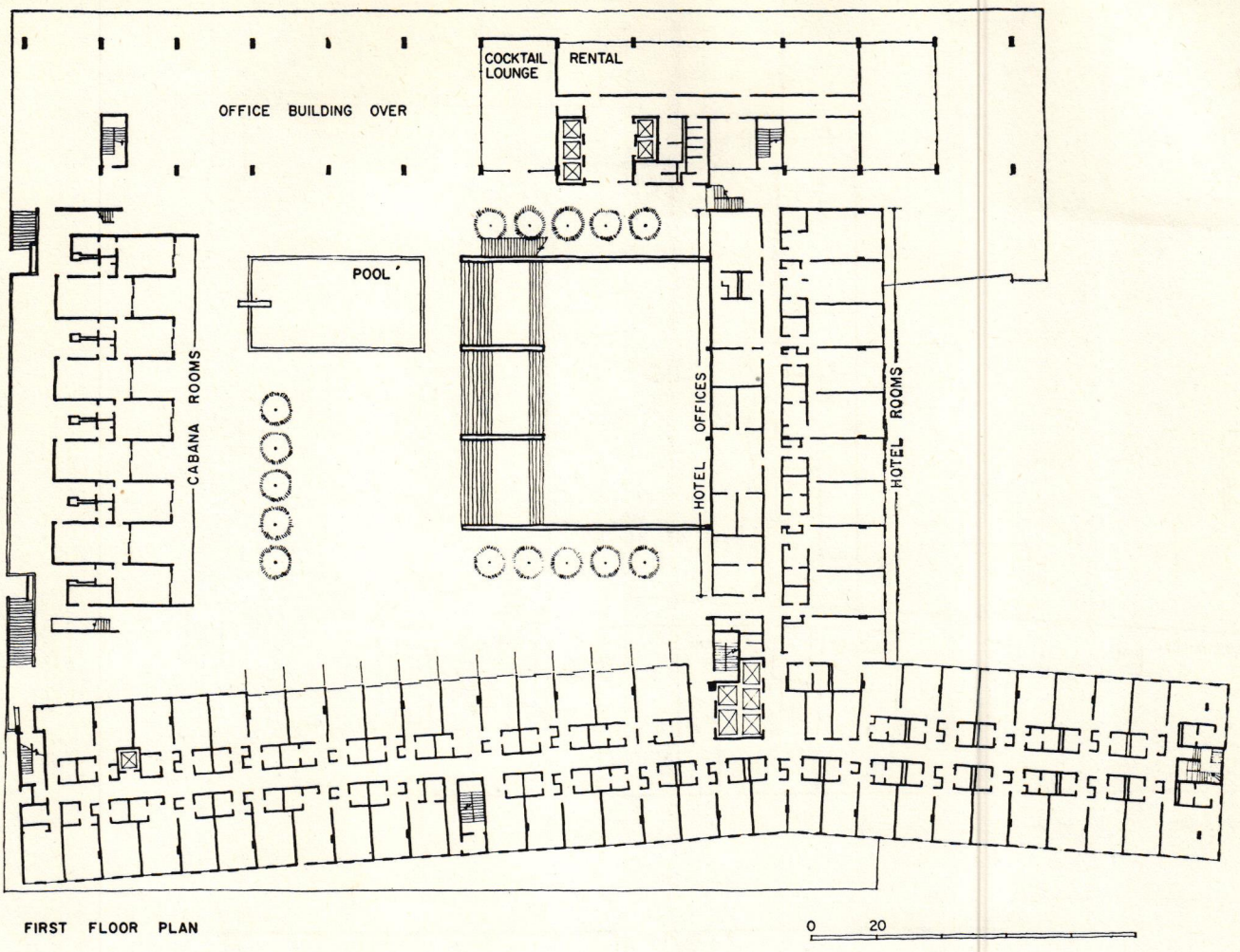


MEZZANINE FLOOR PLAN

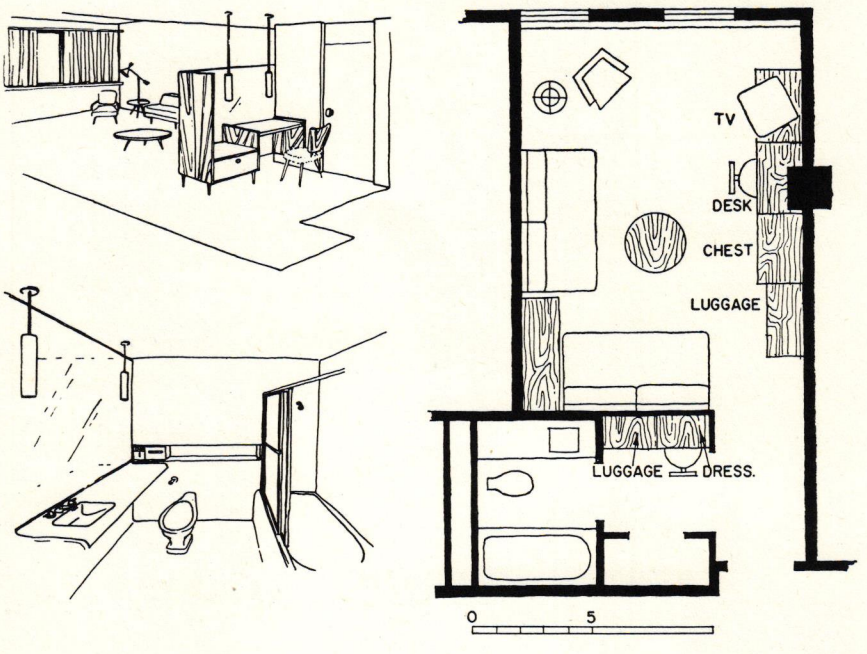


LOBBY FLOOR PLAN

0 20



FIRST FLOOR PLAN





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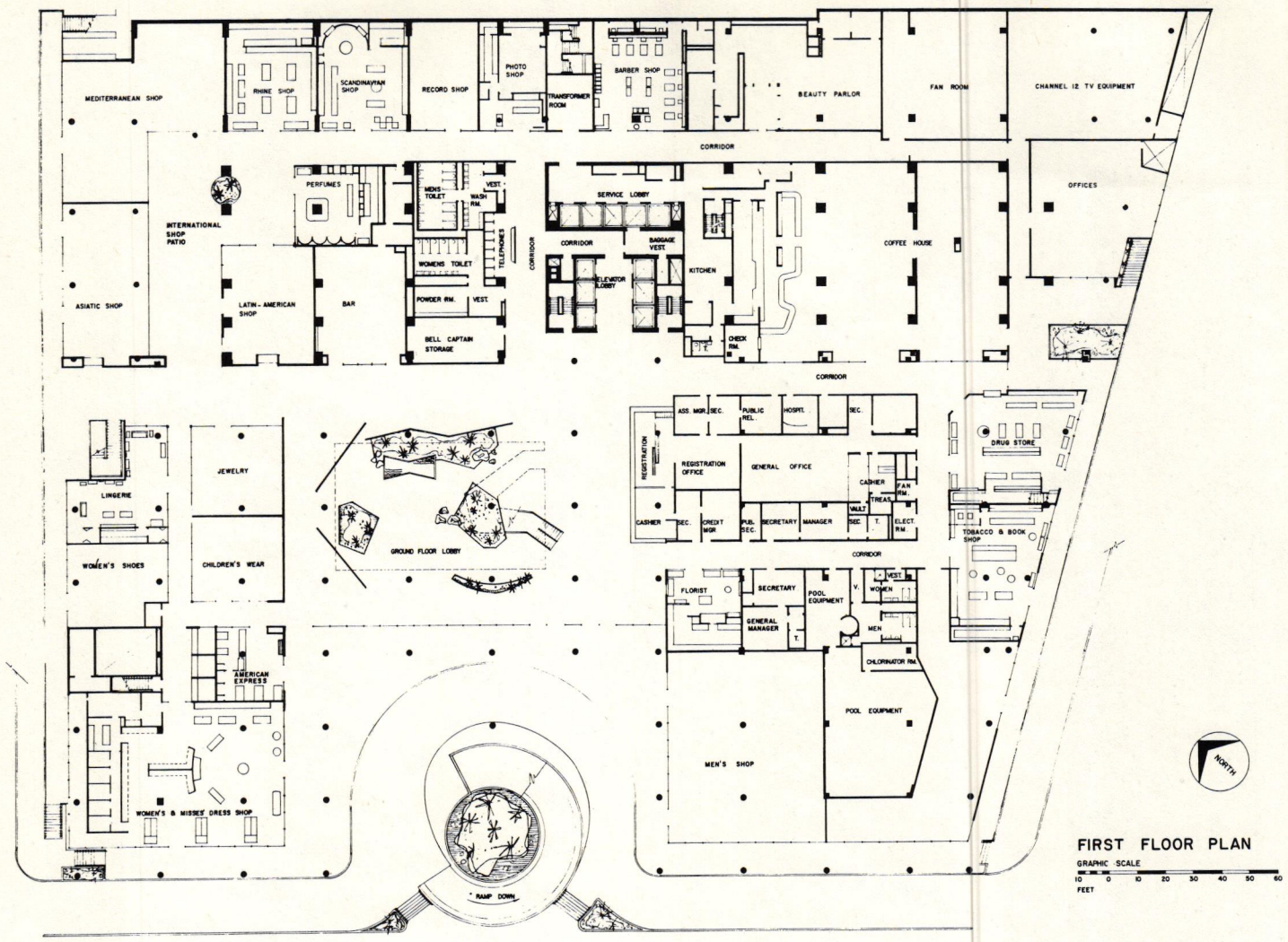
THE HABANA HILTON



A thirty story skyscraper of six hundred and thirty rooms, Havana's new hotel is the largest and tallest building in Latin America. Operated by Conrad Hilton, it is owned by the Cuban Catering Workers Union, who partially financed its cost of $24,000,000 by means of their retirement fund.

The design consists of two major elements: a structural tower so planned that each hotel room has a balcony, and a low wide base of six levels containing a garage, equipment rooms, public rooms, shops and a terrace swimming pool. The building rests on a concrete "spread footing" foundation based on grouted coral (highly porous coral, pressure-filled with concrete). The main shaft of the structure obtains its lateral strength from a design which provides a concrete stiffening wall at two-room intervals, plus a rigid central service core.

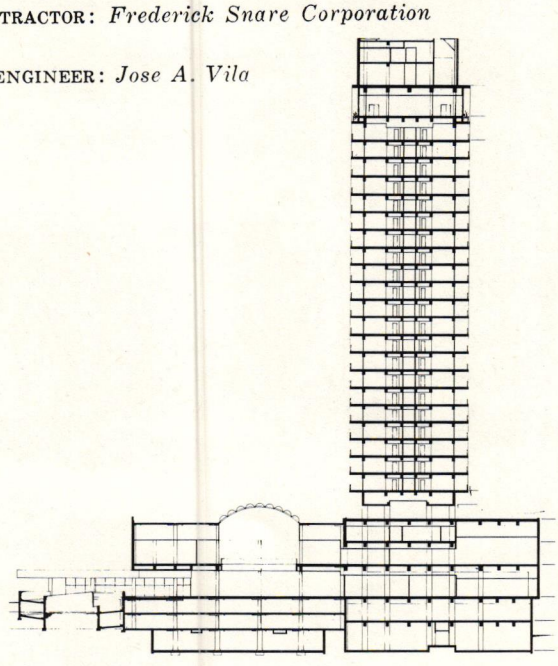
The architects have used many Cuban materials for exterior and interior finish. Generous use was made of native woods. Although the main body of the structure is finished in blue glass mosaic imported from Italy, its lower elements are of native volcanic stone. Cuban artists were invited to cover large areas of the exterior with bold mosaic murals. Paintings and sculpture by Cubans appear in the public rooms and suites.

ARCHITECTS: *Welton Becket and Associates*

ASSOCIATE ARCHITECTS: *Nicolas Arroyo and Gabriela Menendez*

GENERAL CONTRACTOR: *Frederick Snare Corporation*

STRUCTURAL ENGINEER: *Jose A. Vila*



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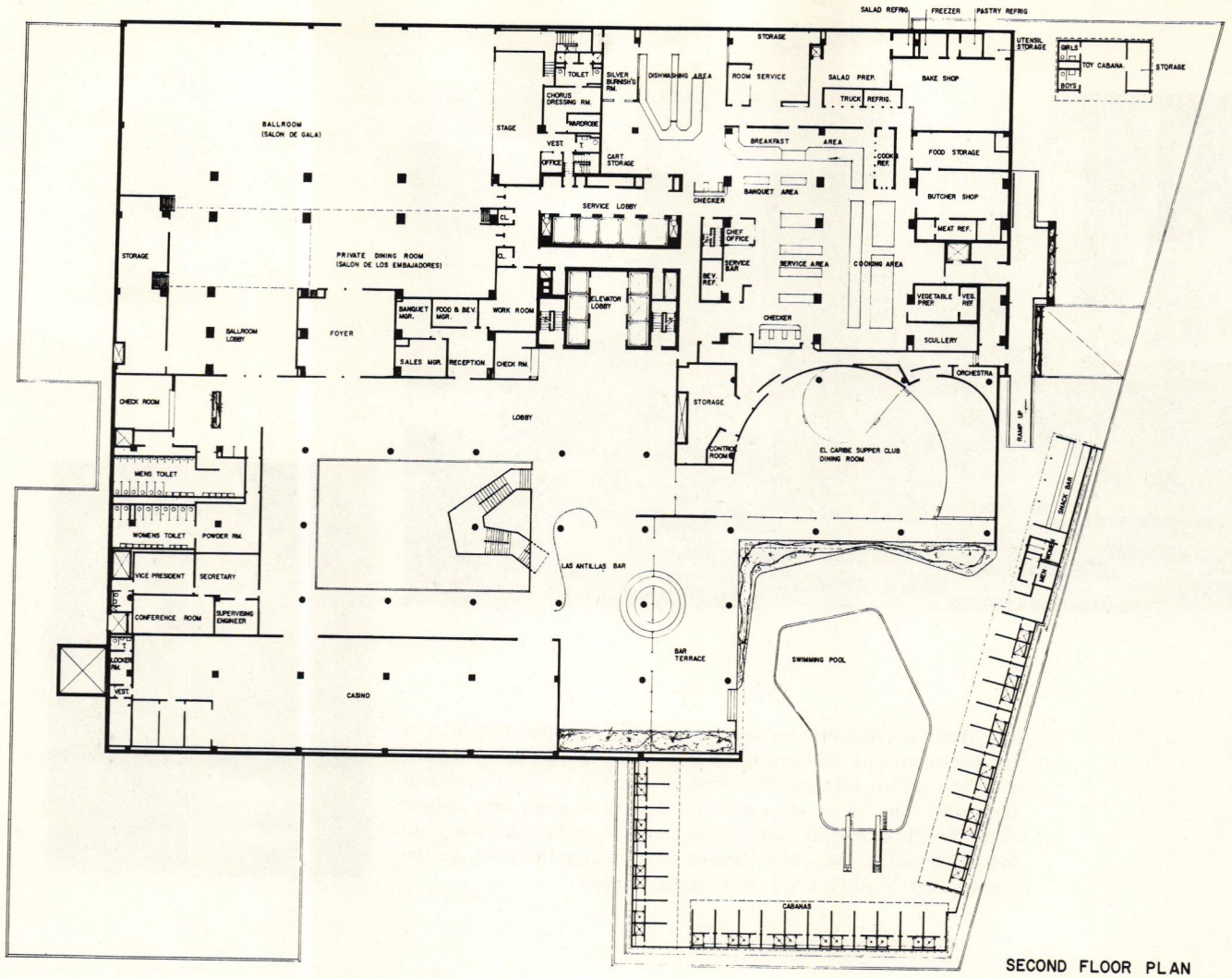
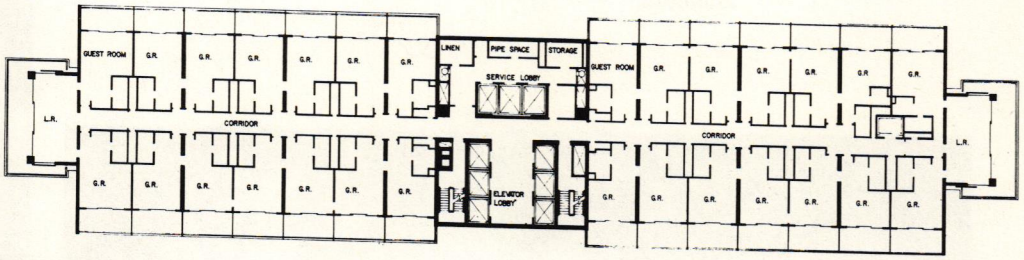
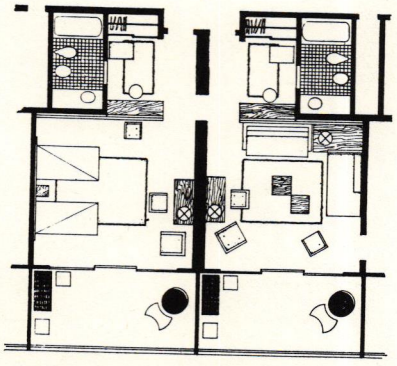


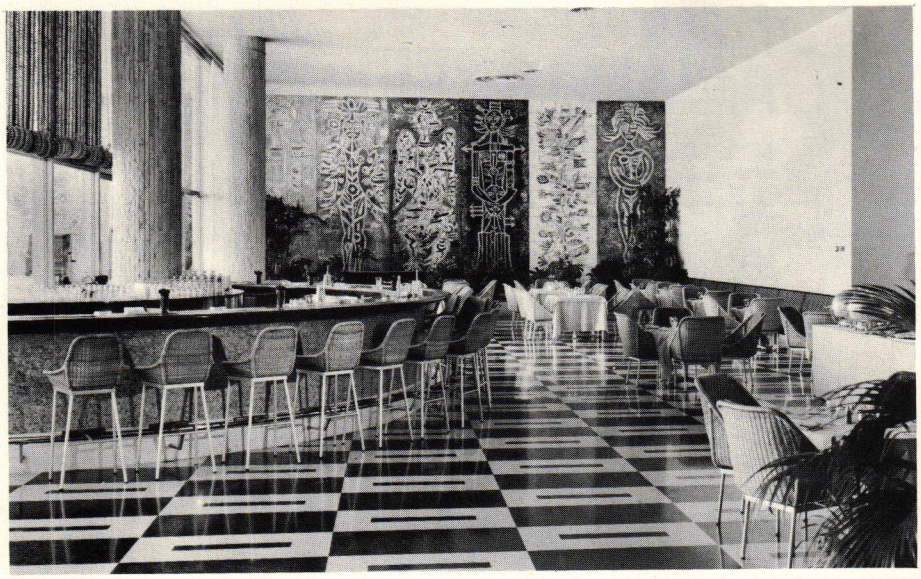
SECOND FLOOR PLAN

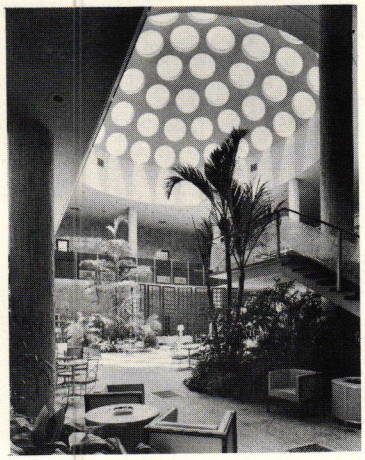


TYPICAL FLOOR PLAN

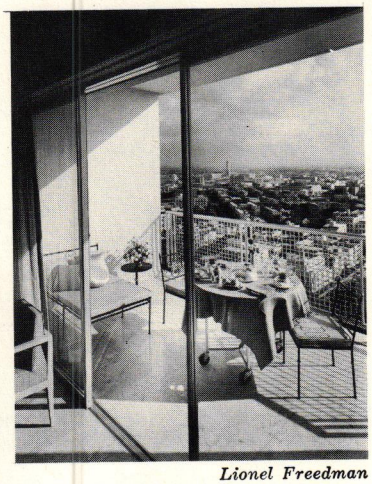


At first floor level (see plan opposite page) the hotel visitor may arrive at the main entrance and turn his car over to an attendant who drives it down an adjacent spiral ramp to the basement garage. The individual room unit (left) is flexibly arranged so that it can be a sitting room by day and a bedroom by night. Intercommunicating doors offer a parlor and bedroom suite combination. Dressing area is well planned



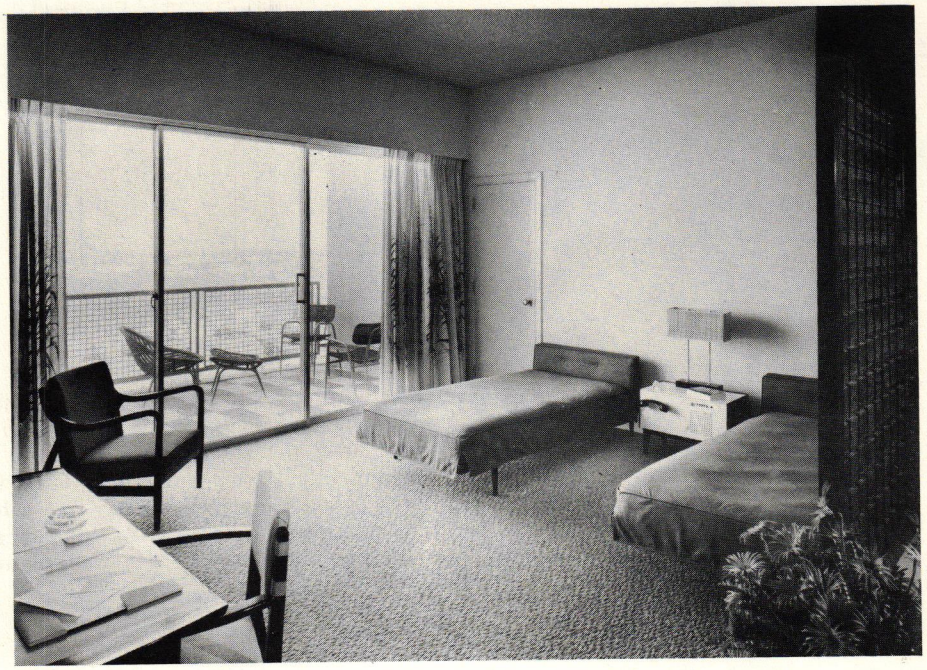


The Antillas Bar on the upper lobby floor is dominated by a ten-panel ceramic tile mural by Rene Portocarrero. Each panel in the mural represents a legend or myth of the Carribean area. Bar and table tops are faced with orange and yellow Venetian glass mosaic. The bar is circular and extends beyond the glass wall to an open terrace overlooking the pool. In the main lobby (right) are lush tropical plants



Lionel Freedman

Sliding screen which separates dressing area from bedroom can be seen on the right in the photograph below. It is of stained mahogany and particle board. Balcony floors are of terrazzo. Railings and sliding windows are of anodized satin aluminum



STATLER CENTER, LOS ANGELES: THE PLAN



Holabird & Root and Burgee

Architects and Engineers

William B. Tabler

Associate Architect

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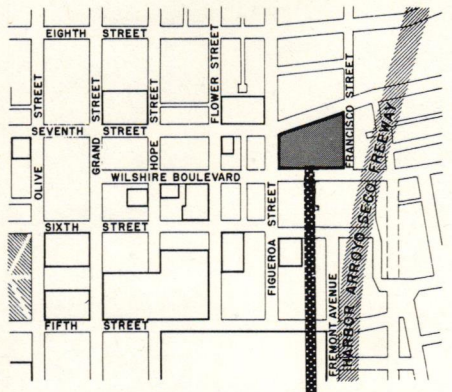
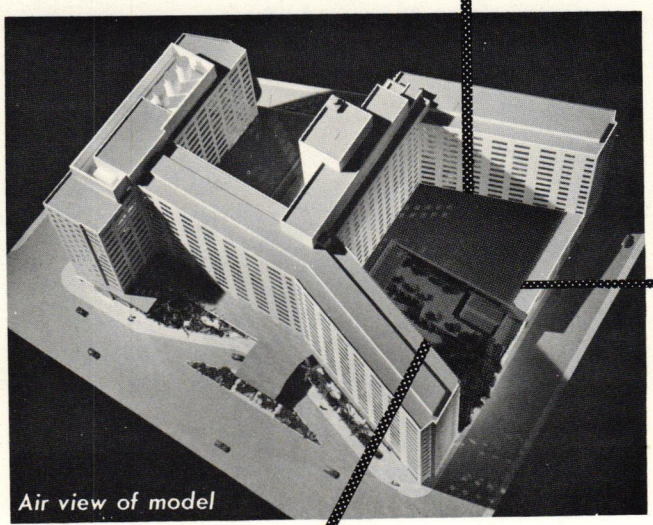
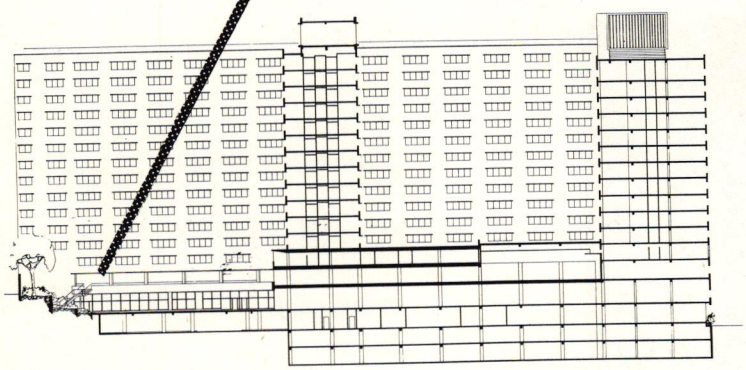
STATLER CENTER, LOS ANGELES



Site in relation to downtown Los Angeles



Air view of model



Schematic section showing garden court

Unique among commercial hotels, Statler Center in Los Angeles was planned to offer many types of accommodations and a hospitably open character.

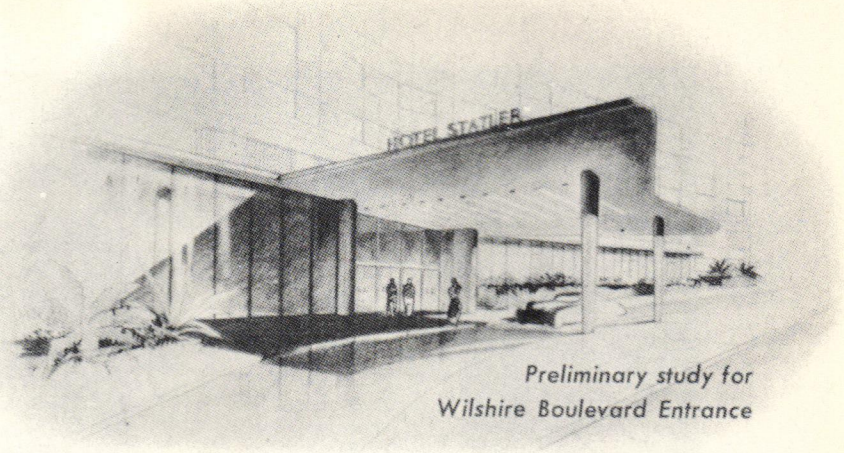
The east wing was to be a 13-story office building with 150,000 sq ft of rentable space; the hotel portion would have 1275 guest rooms; public areas would contain 70,000 sq ft of shops; in the basement would be a 3-level garage. The decision to include all these facilities was made for reasons almost wholly economic.

The Statler organization's long experience at picking a proper city, and within that a suitable site, plus the architects' knowledge of their needs, led to selecting this particular location. Like Washington, Los Angeles was judged to need downtown convention, meeting, and display space. Office facilities in the older Boston Statler had long provided welcome extra revenue; Los Angeles needed office space; to put a complete office building on the very large plot entailed no additional expense for land, and the income from it would help defray the increasing cost of operating the hotel and its three spacious levels of public area.

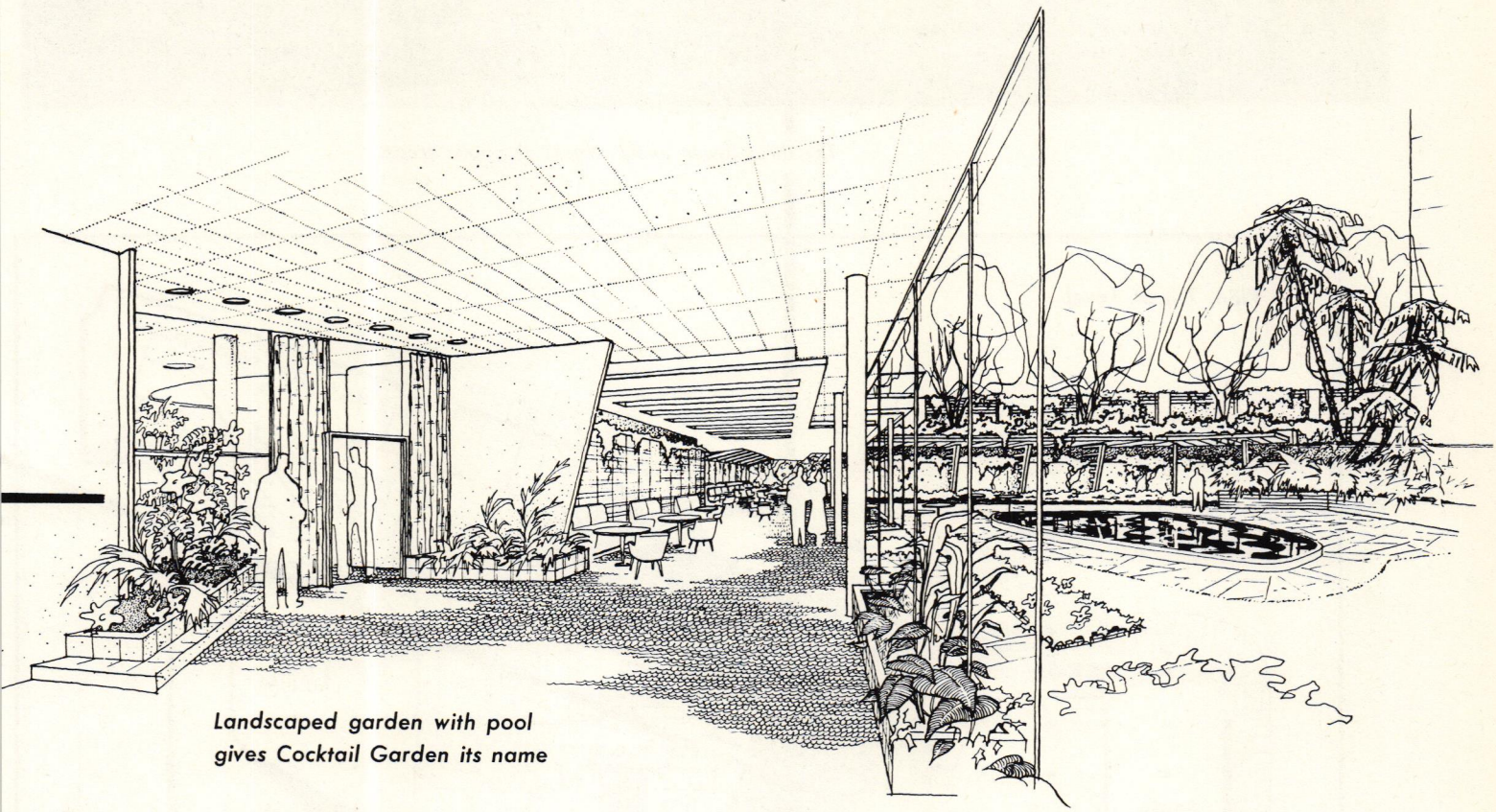
There were other design determinants. Statler Center, Los Angeles, could not be just another big-city hotel, as appropriate for Chicago as for a semi-tropical metropolis. It had to have openness and vegetation suitable for Southern California; hence its hotel wings are spread wide; a guest is scarcely conscious of the space between them as a "court"; no bedroom window faces another window directly. Tropical plants enhance all courts and main entrances.

The city, the Statler organization and the architects worked together through months of preliminary negotiations, each giving and taking by turns, to fit the Center into its locale. Hotel entrances from Wilshire Boulevard and Seventh St. have off-street driveways so lines of taxis will not block traffic. The design at first called for an off-street trucking dock and garage entrance from Seventh; this was rejected by the city as causing too much congestion on Seventh. The city is extending Francisco St. (which formerly stopped at Seventh), with Statler donating a strip of land 10 ft wide and the city condemning the remainder. Now garage and truck entrances are near the corner of Seventh and Francisco; and, with the new street, taxicabs can leave guests at the Seventh St. entrance, circle the Center and pick up fares at the Wilshire doors.

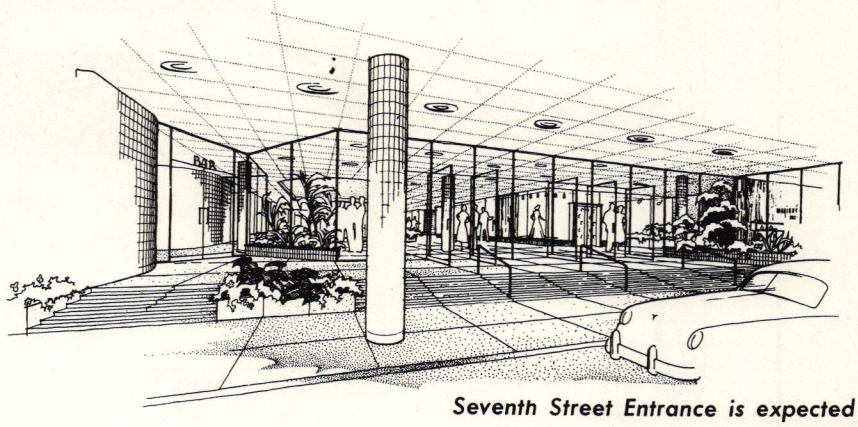
Height restrictions—thirteen stories above basements to a maximum of 165 ft, excluding penthouses—were another matter. To get into the Center the number of rooms required to insure success, and at the same time maintain a Californian openness, all the plot has had to be utilized. The entire Center is air conditioned from a Fan Gallery Mezzanine above the Ballroom level, from which conventional air supplies lead down to public areas and high velocity systems rise to offices and guest rooms.



Preliminary study for Wilshire Boulevard Entrance

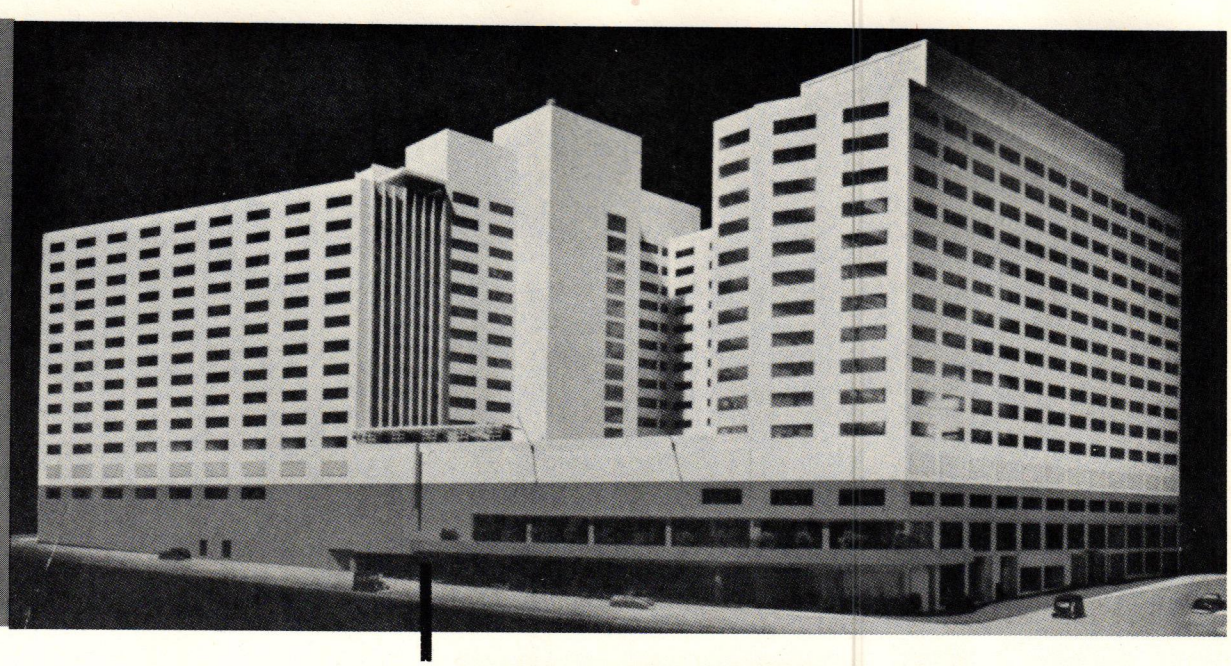


Landscaped garden with pool gives Cocktail Garden its name



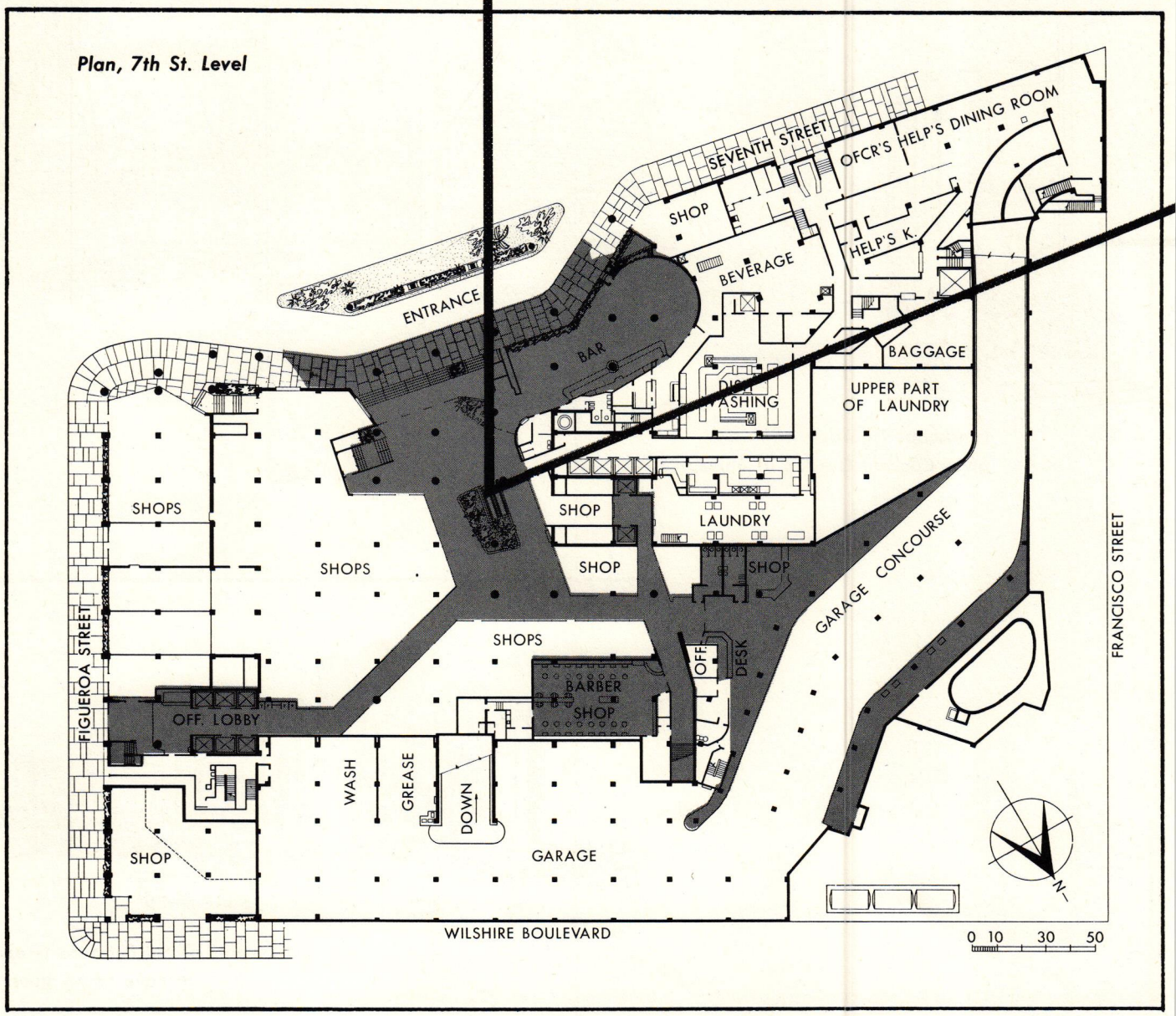
Seventh Street Entrance is expected to have heavy guest traffic

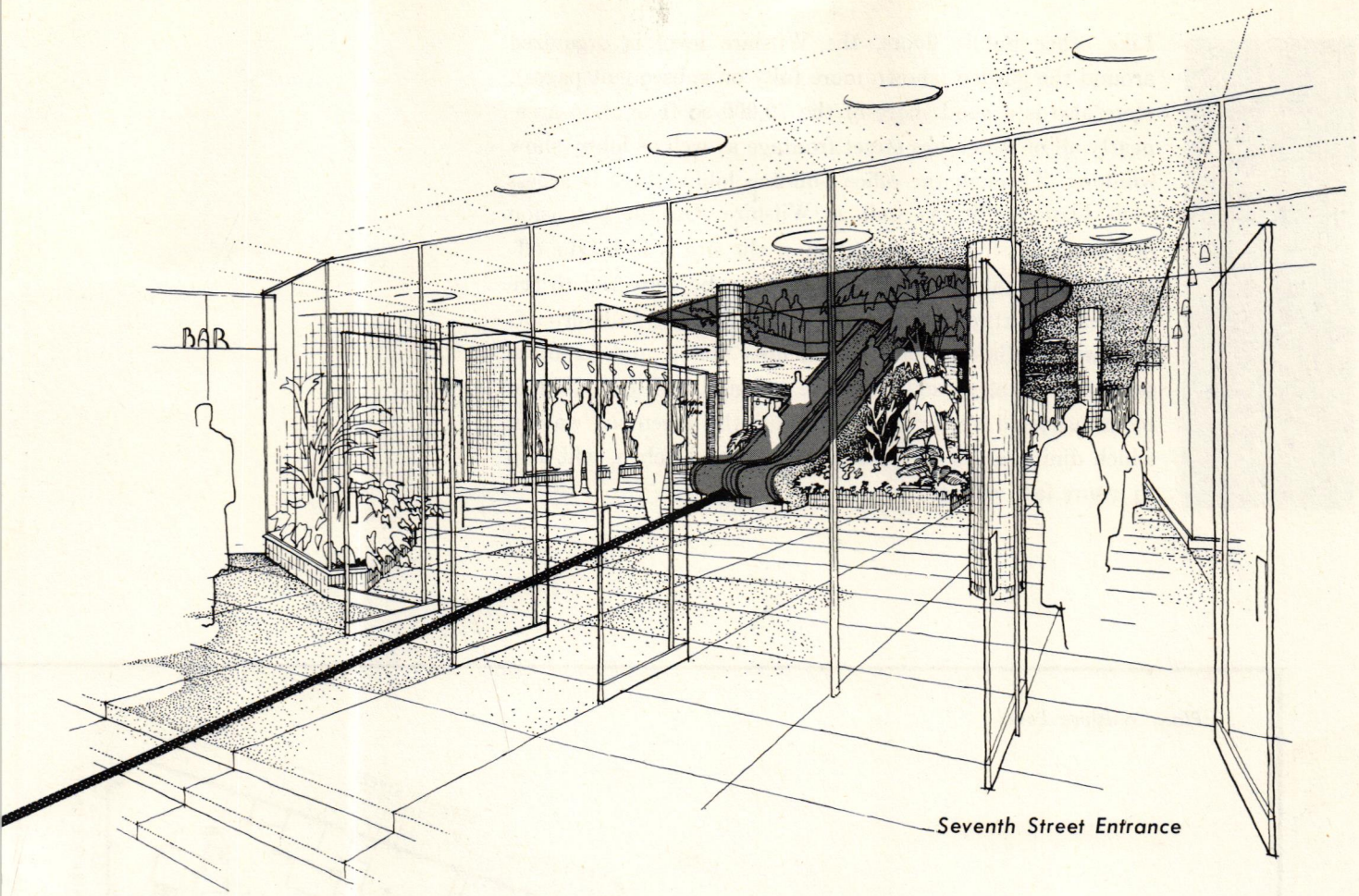
STATLER CENTER: 7TH ST. LEVEL



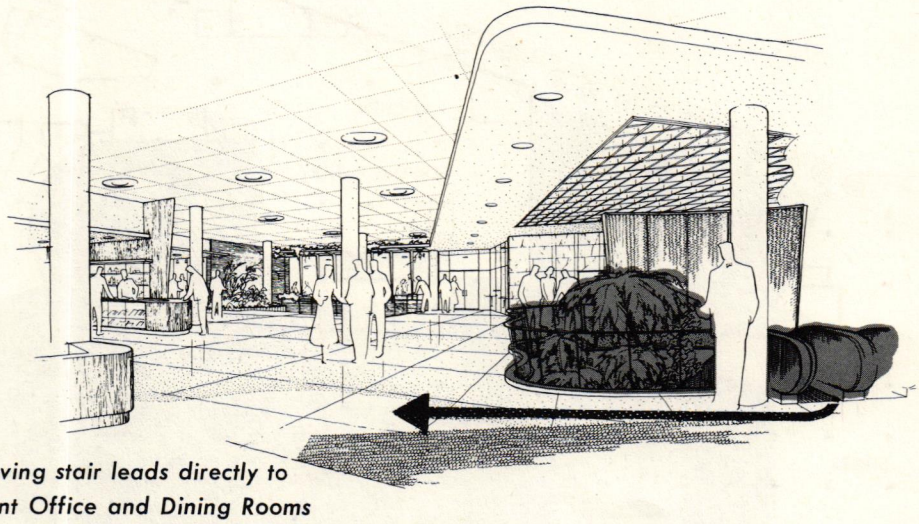
The three lower levels contain all public areas.

Plan, 7th St. Level





Seventh Street Entrance



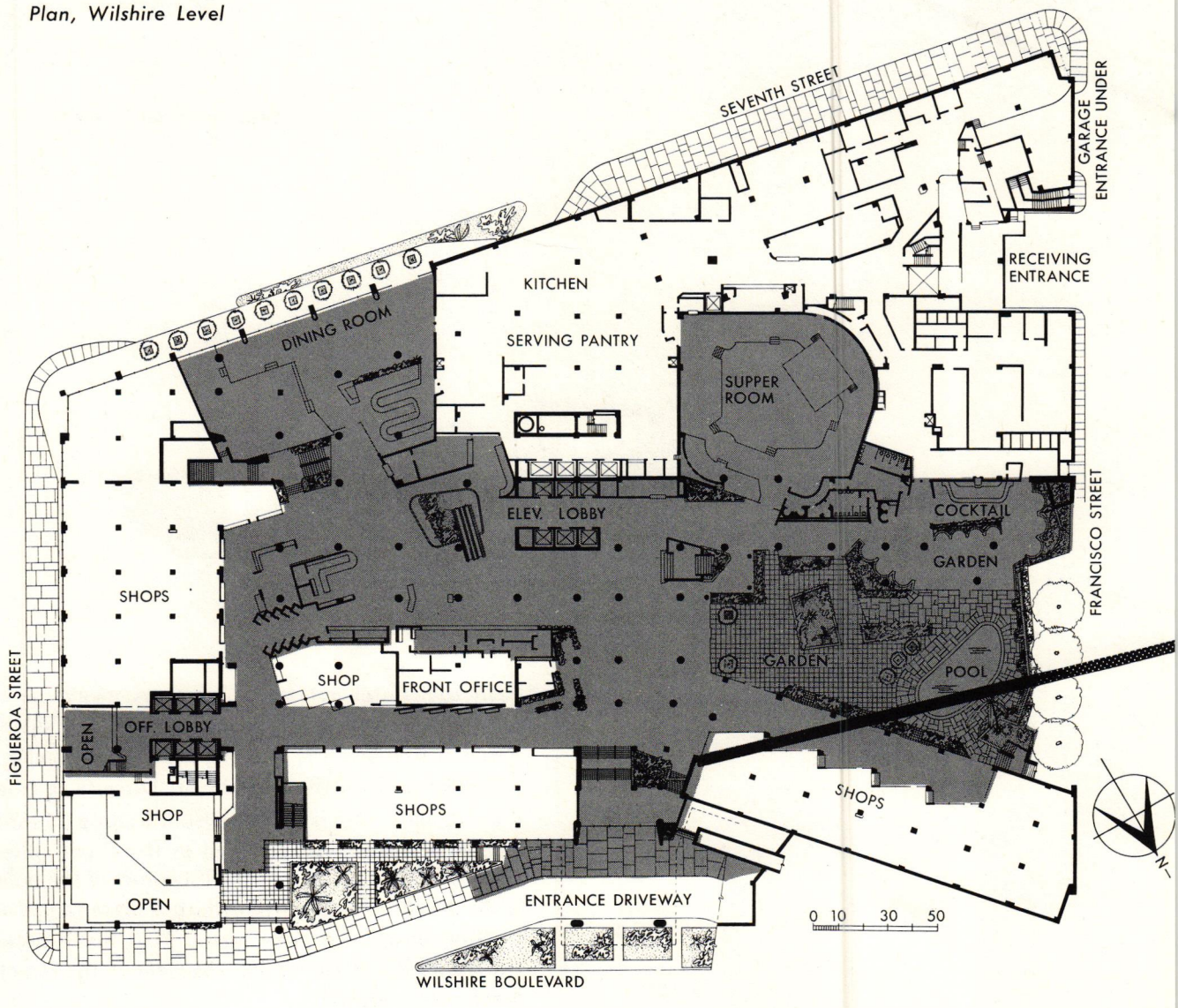
Moving stair leads directly to Front Office and Dining Rooms

Principal hotel entrances have driveways so taxis need not obstruct the thoroughfares; public sidewalks curve in to follow the building wall. Most hotel guests are expected to arrive via 7th St. Directly in front of this entrance there is a moving stair leading up through a wide, invitingly planted well to the Front Office on the level above. At the southwest corner of the building is the garage entrance from which a drive ramps down to three floors of parking space. Well worth noting is the simplicity of circulation throughout the structure, despite its complexity.

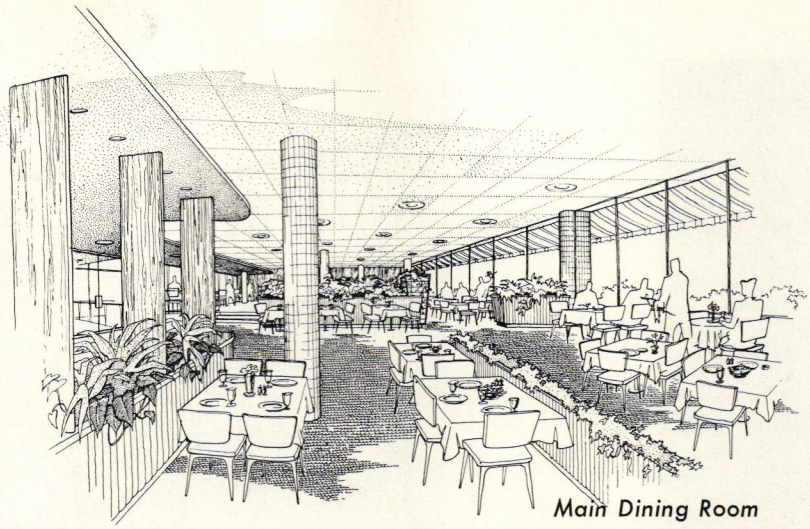
STATLER CENTER: WILSHIRE LEVEL

Like other public floors, the Wilshire level is organized around the garden (shown more fully on subsequent pages). Here also is a good share of the 70,000 sq ft of shop area, nearly all of which has street frontage as well as lobby show windows. Through the office building lobby there is access from Figueroa St. as well as Wilshire. On the extension of Francisco St. at the west end of the site is to be the off-street loading dock, where supplies can be delivered to the kitchen on virtually one level; only for service to ballrooms and private dining rooms on the floor above, and for room service to hotel guests and office tenants, will food need to be transported vertically. This, plus the ingenious way in which dining areas are placed around the kitchen, will help to insure fast, efficient service.

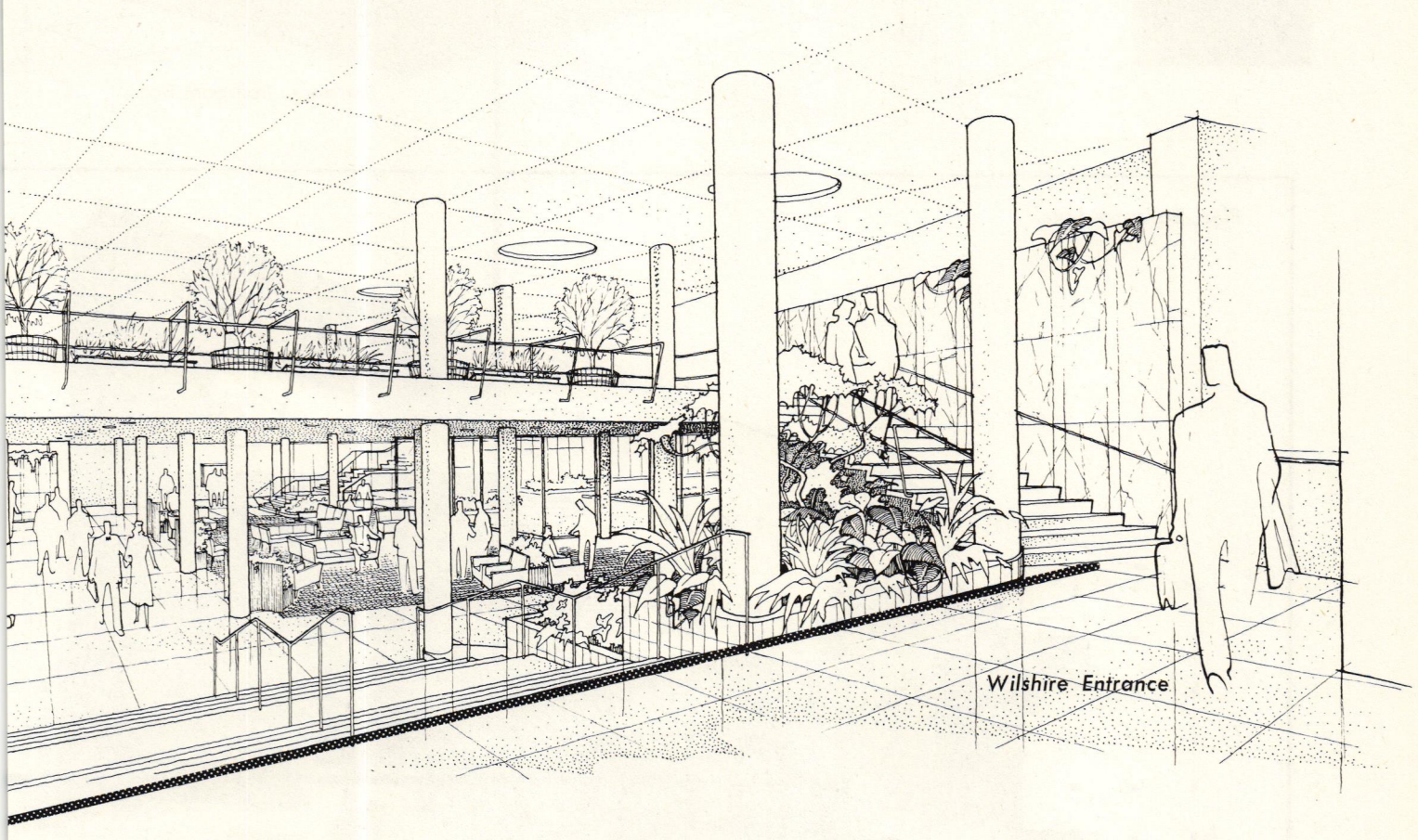
Plan, Wilshire Level



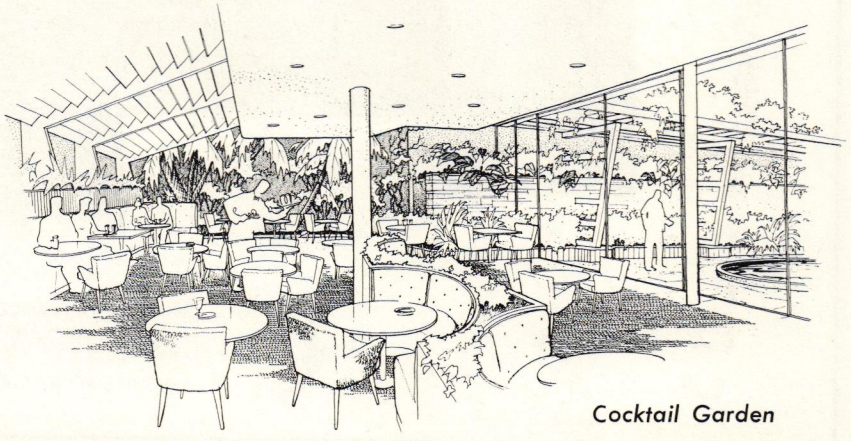
Open planning is not confined to wide spacing of the upper-story wings; at entrances, notably from Wilshire Boulevard, every effort is made to impress one with a hospitably open atmosphere. The most important stairs lead directly to the lobby which contains the front office, and from which dining rooms, Supper Room and Cocktail Garden are reached



Main Dining Room

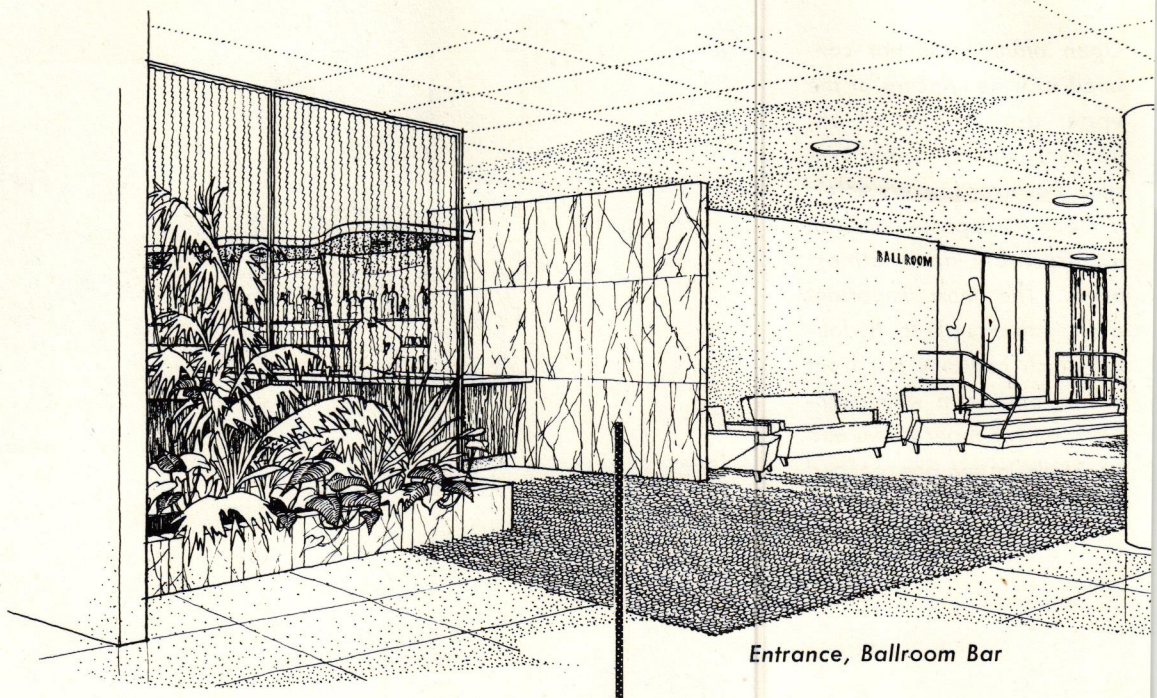


Wilshire Entrance



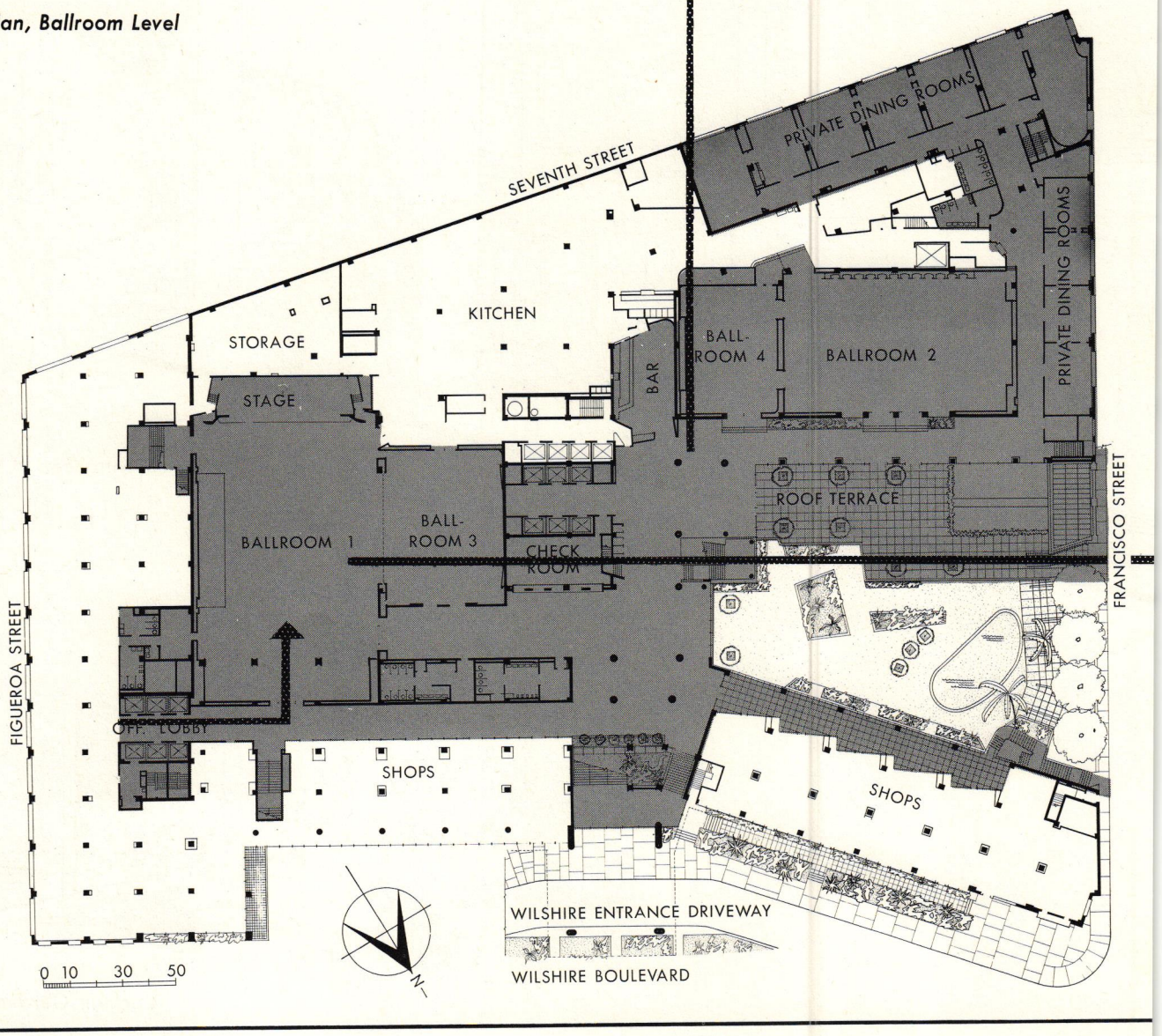
Cocktail Garden

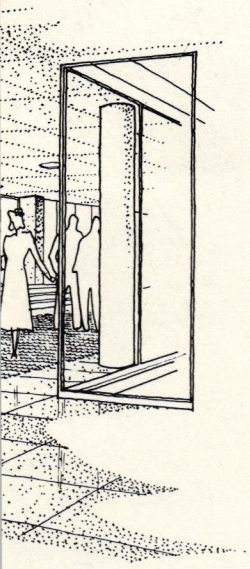
STATLER CENTER: PUBLIC AREAS

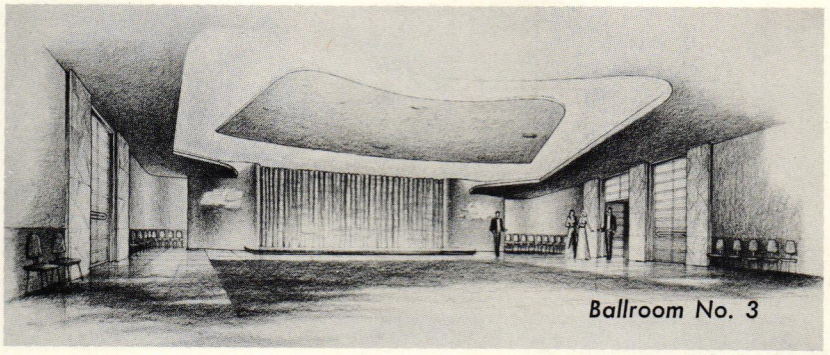


Entrance, Ballroom Bar

Plan, Ballroom Level

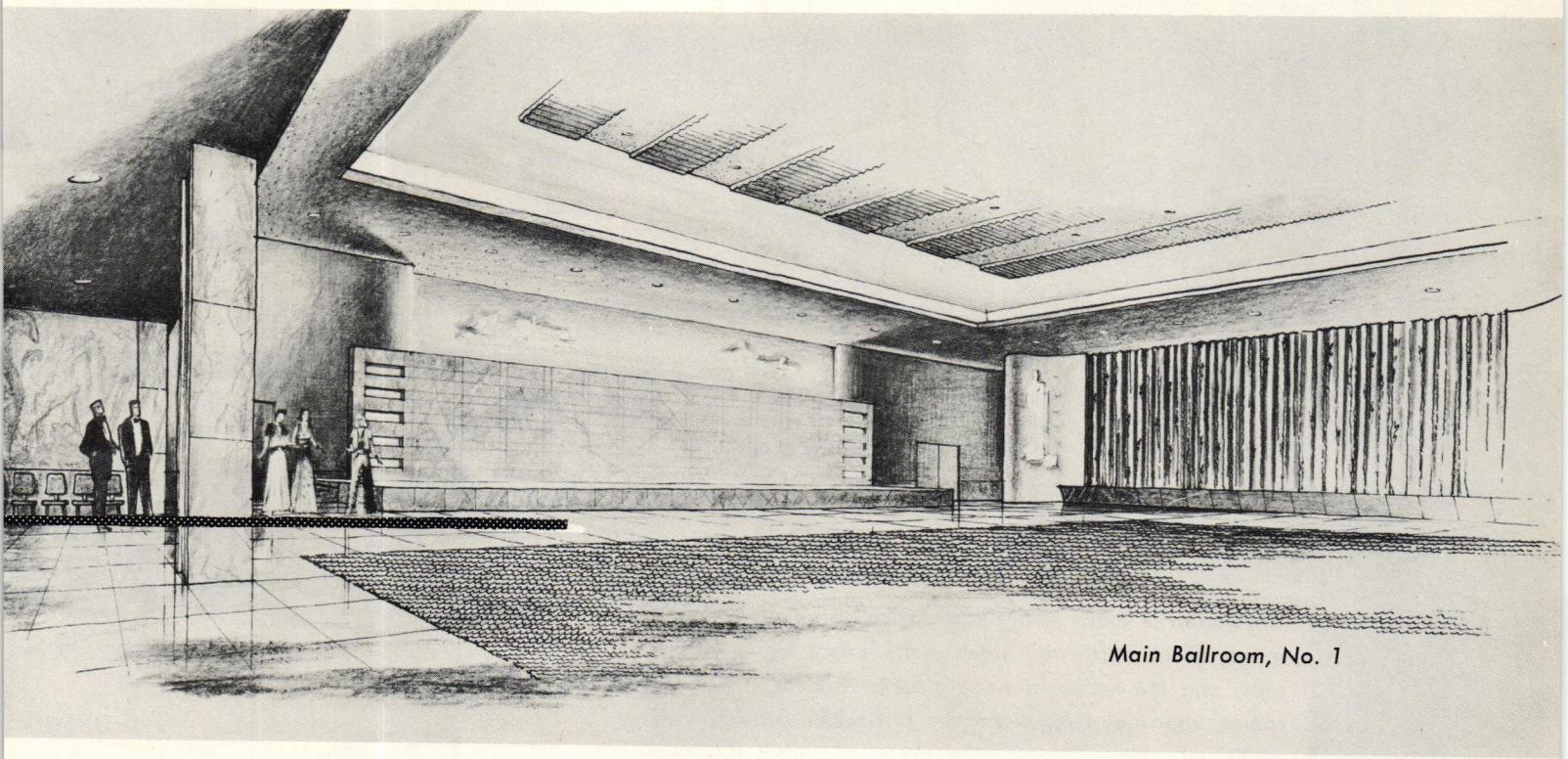






Ballroom No. 3

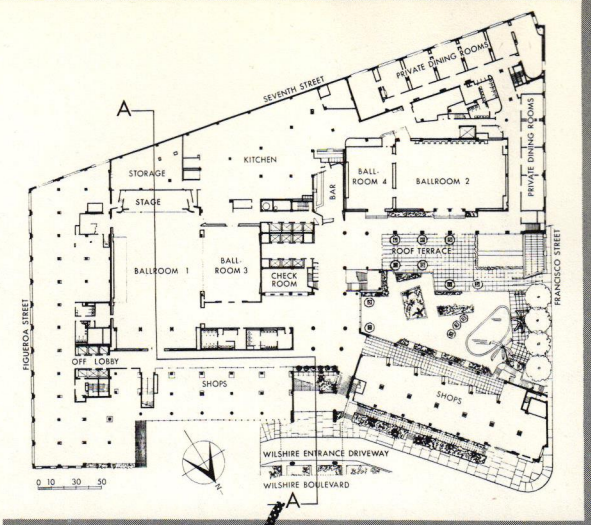
In the past, ballrooms have often been placed at the topmost levels of hotels. In Statler Center they have been placed as close to ground level as possible, so that people not resident in the hotel can reach all public functions without either traversing guest room areas or burdening elevators. This simplifies traffic control and makes possible efficient elevator service at relatively low installation cost. Again, the conventional air conditioning required

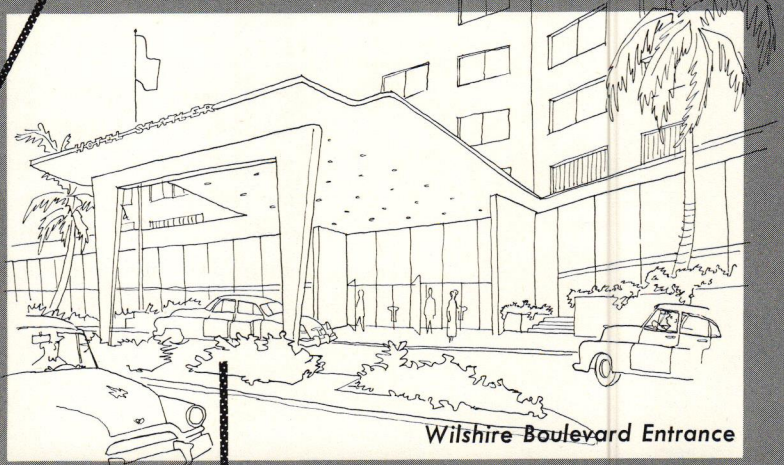


Main Ballroom, No. 1

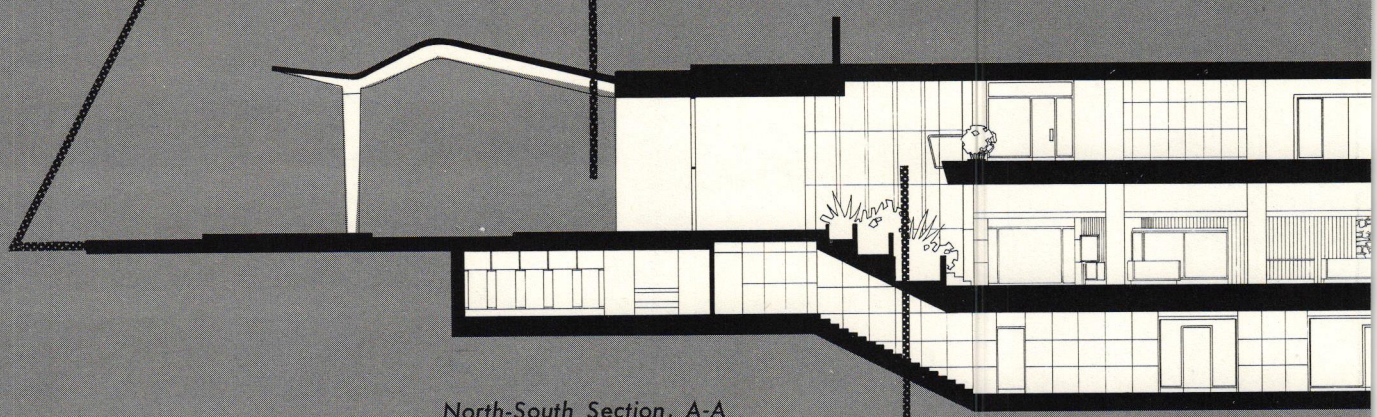
for public areas can all be supplied directly from the fan gallery immediately above; the short ducts need not cross guest room floors, which have separate supply systems. At Ballroom level the office building floor will serve as exhibition space for manufactured products. Hotel and office areas are interconnected at this level, making available to office tenants all function facilities of the hotel.

STATLER CENTER: PUBLIC AREAS



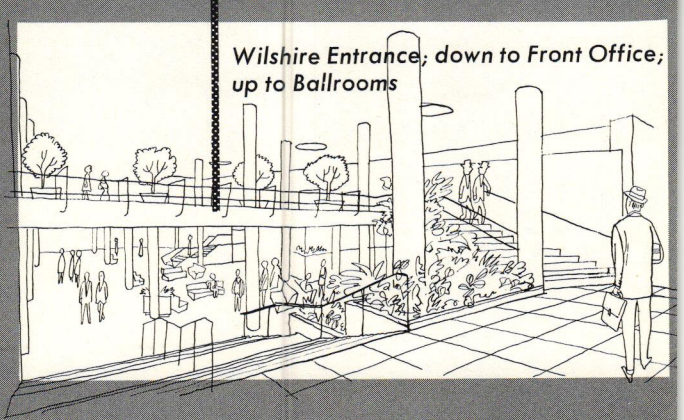


Wilshire Boulevard Entrance

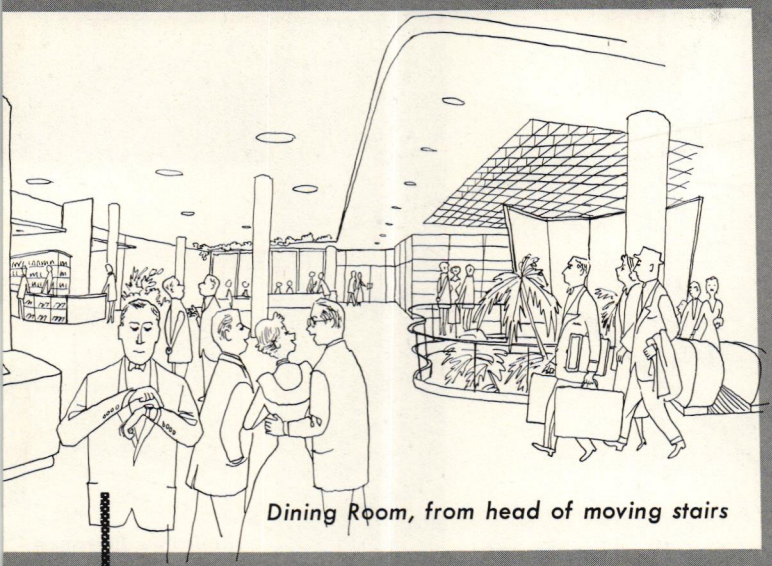


North-South Section, A-A

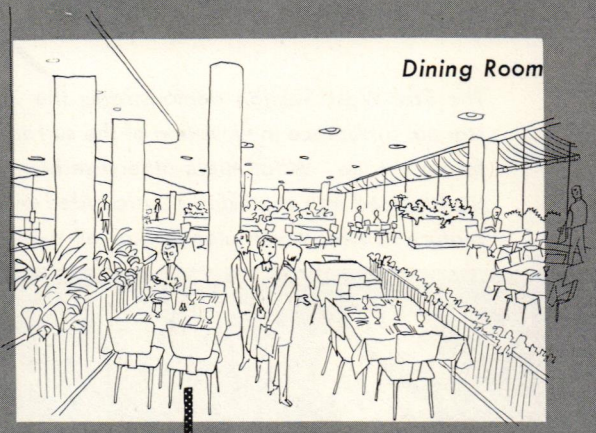
Circulation in lobby floors is a difficult problem in any hotel. Here, with hotel guests, office tenants, and the traffic of non-residents to dining rooms, shops and functions, the difficulties are multiplied. Not only are the areas of public floors great; there is also the emphasis upon openness. The resulting design has what might be termed a unique "looseness" which is intended to produce exactly the opposite of the frequently stuffy hotel lobby. Ahead of one making his way through there will always be a vista enhanced by appropriate greenery; at the same time, certain landmarks will stand out to guide him



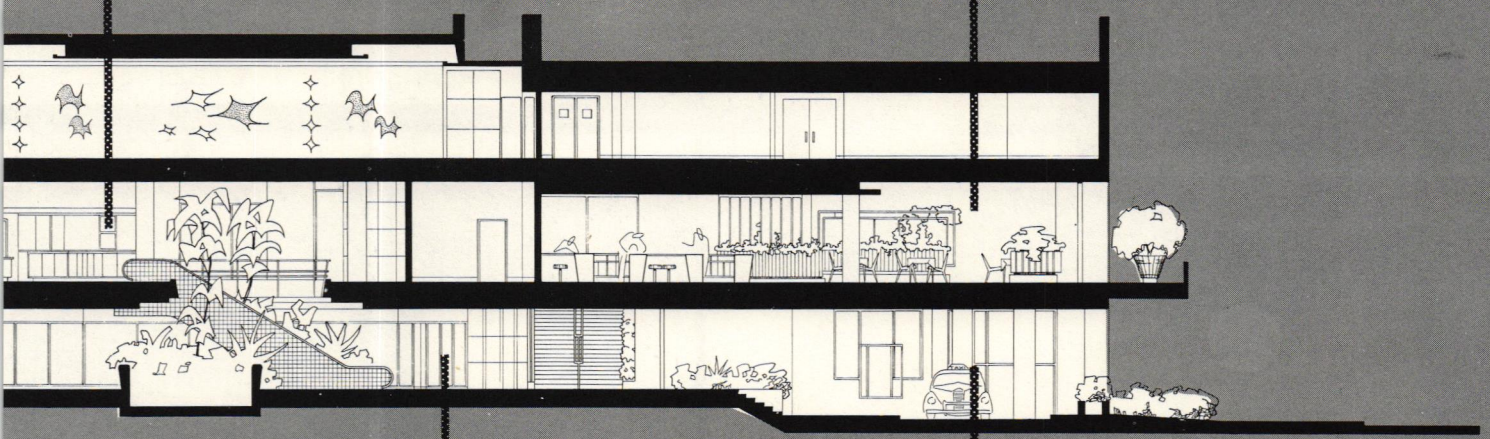
Wilshire Entrance; down to Front Office; up to Ballrooms

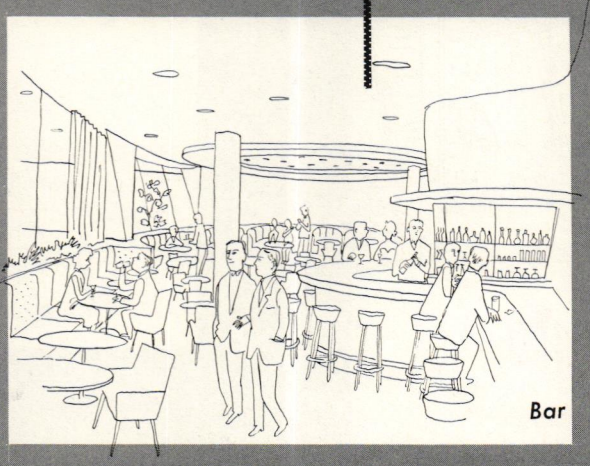


Dining Room, from head of moving stairs

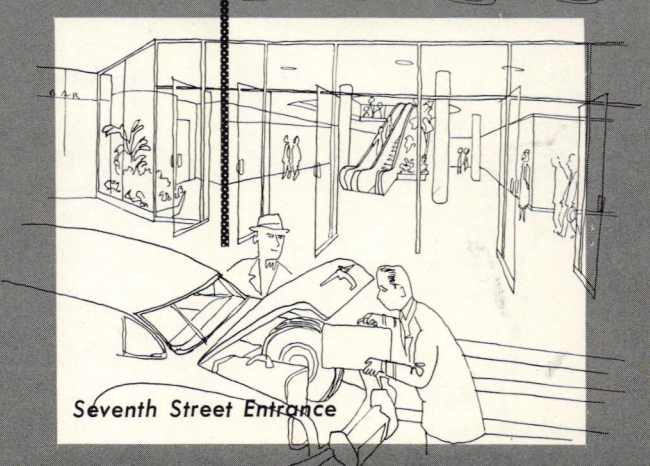


Dining Room



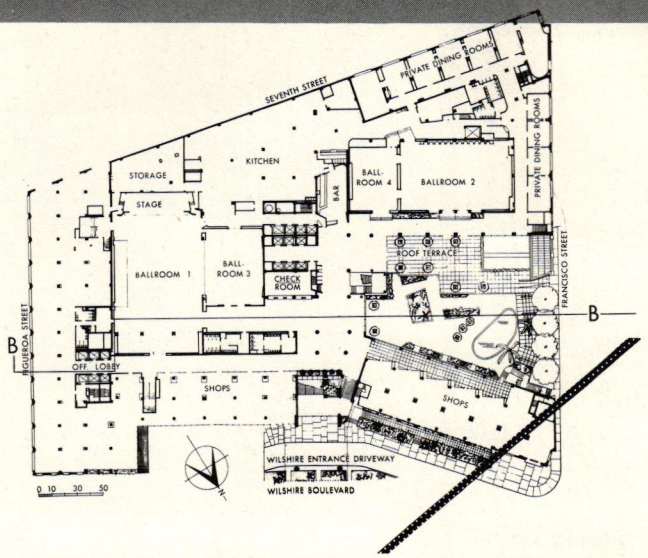


Bar



Seventh Street Entrance

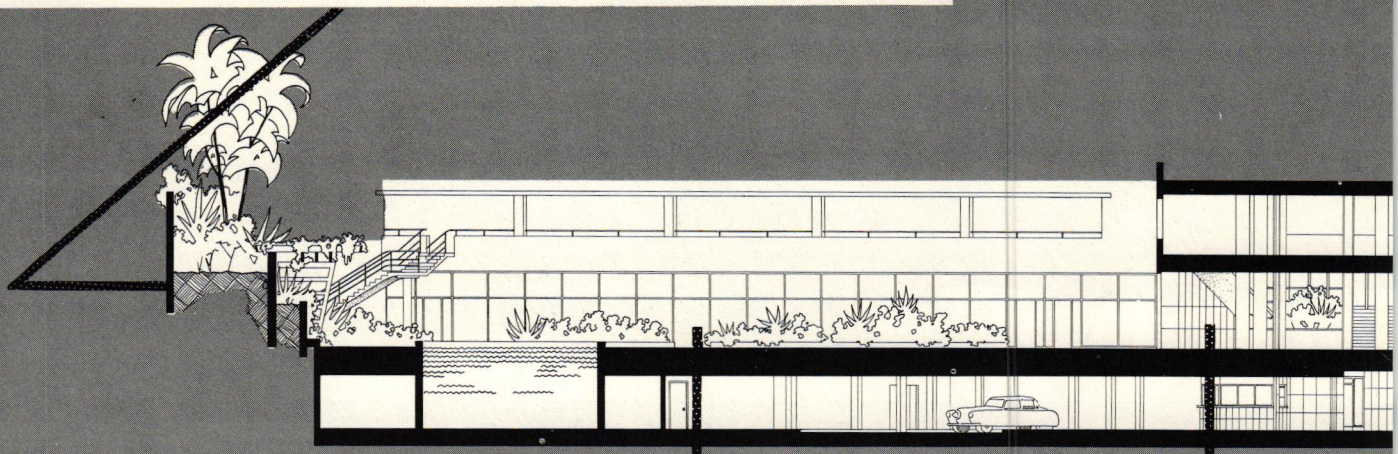
STATLER CENTER: PUBLIC AREAS



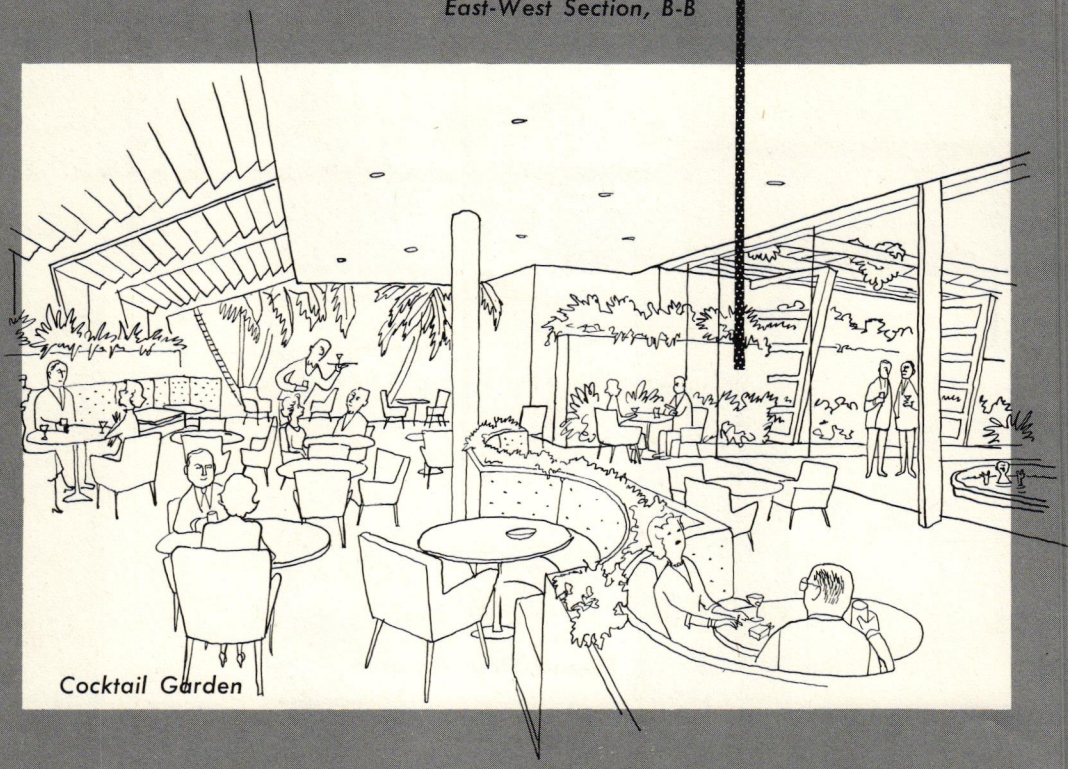
The East-West Section demonstrates the ingenuity with which the substantial difference in elevation of the surrounding streets has been turned to advantage. What might otherwise have only basement use has been transformed into a garden. Surrounded by glass walls, this becomes the feature around which planning of all public levels revolves



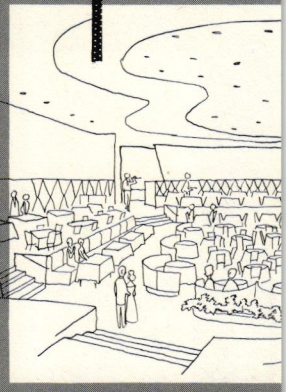
Ballroom Entrance



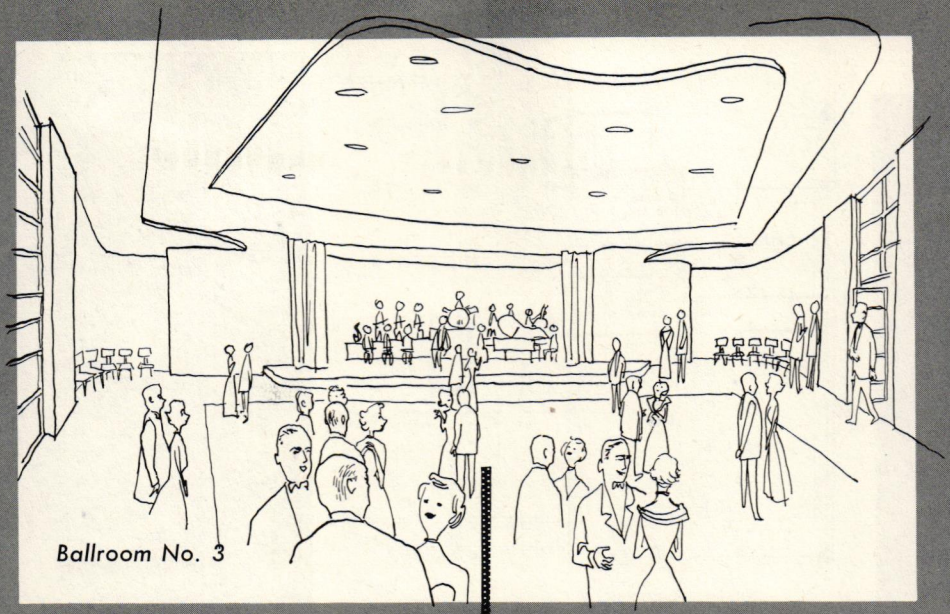
East-West Section, B-B

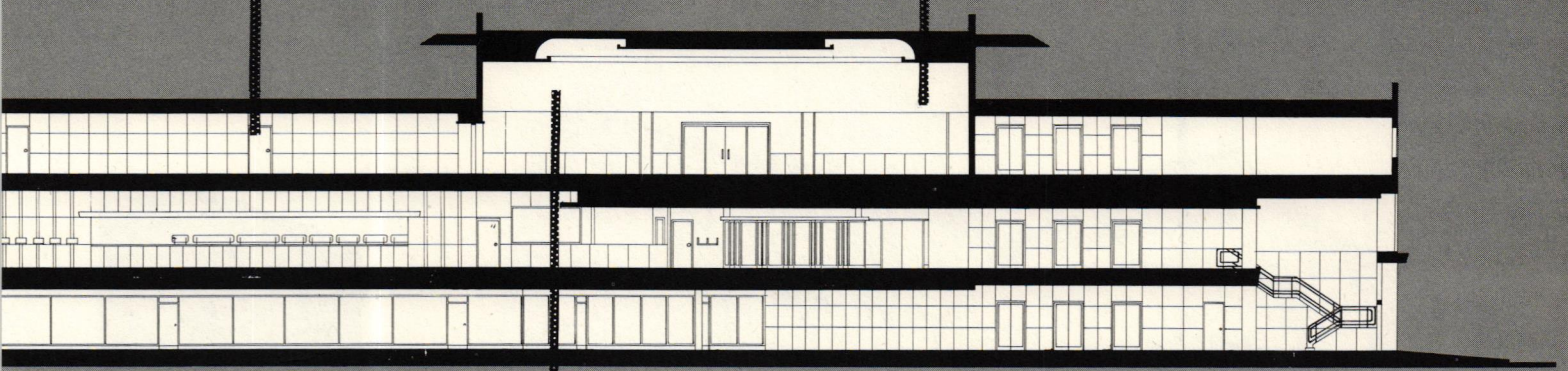


Cocktail Garden

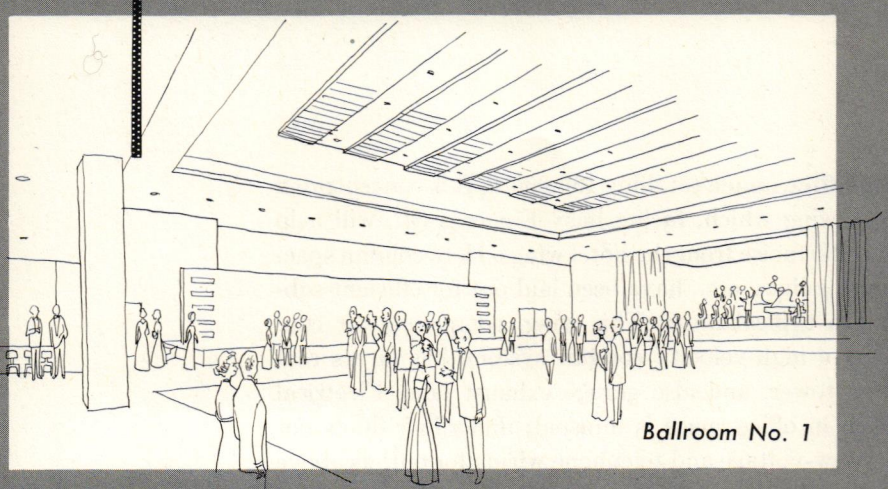




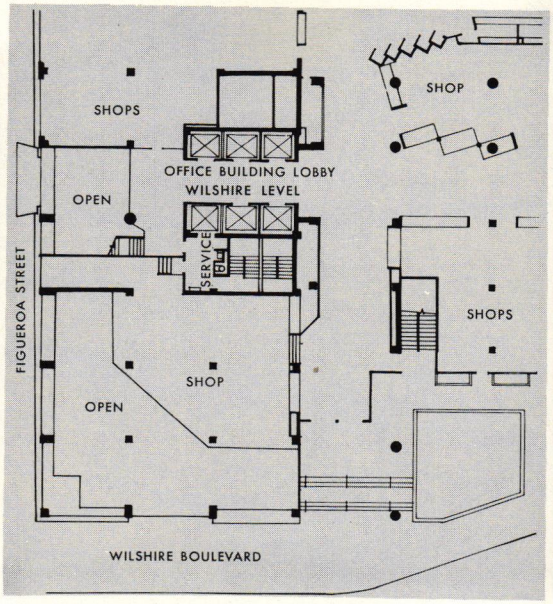

Ballroom No. 3



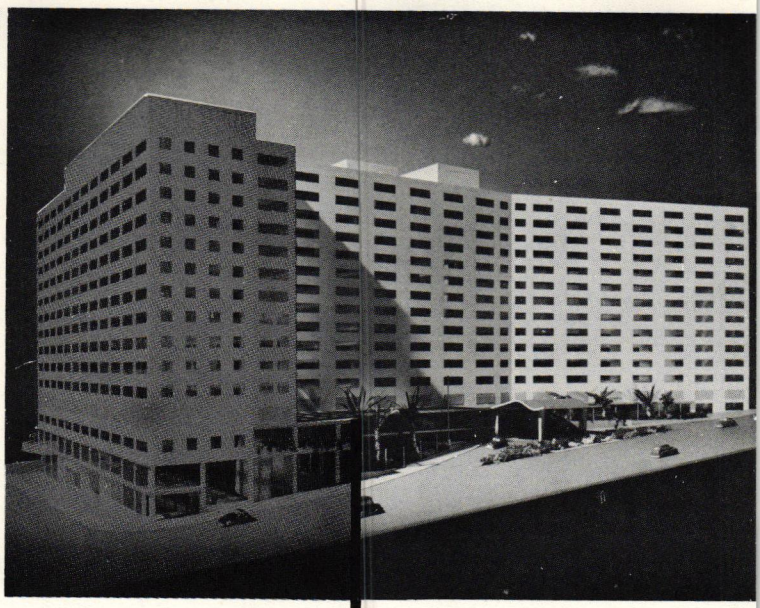

Supper Room


Ballroom No. 1

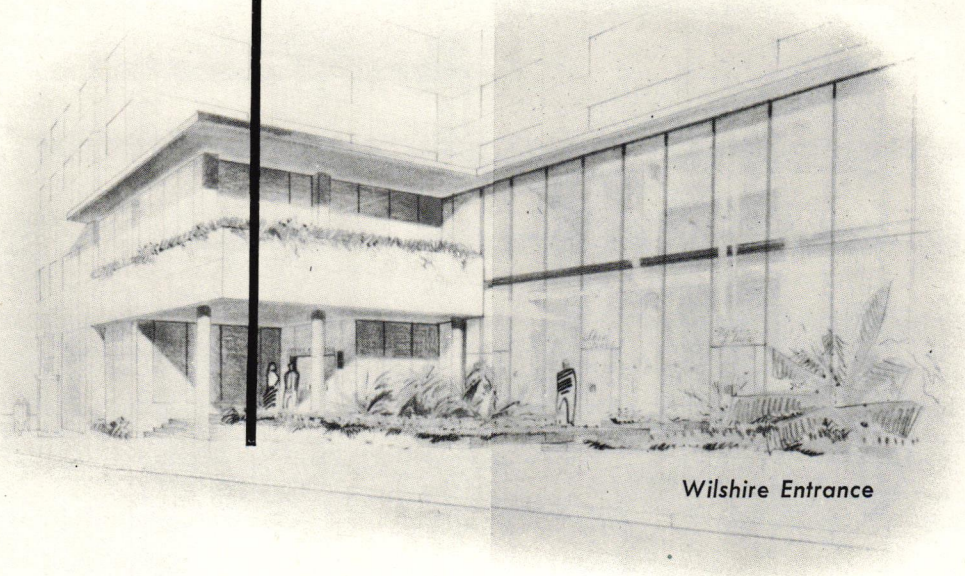
STATLER CENTER: TYPICAL FLOOR



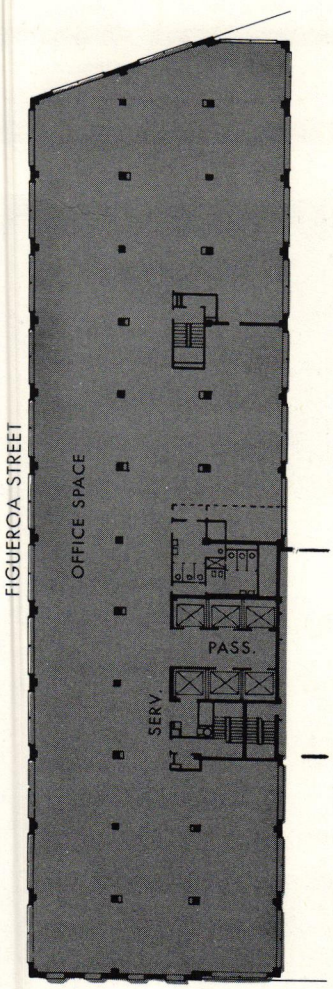
Office Building



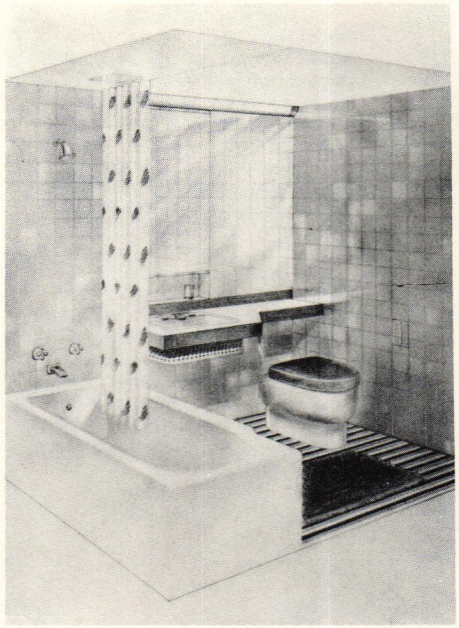
Hotel

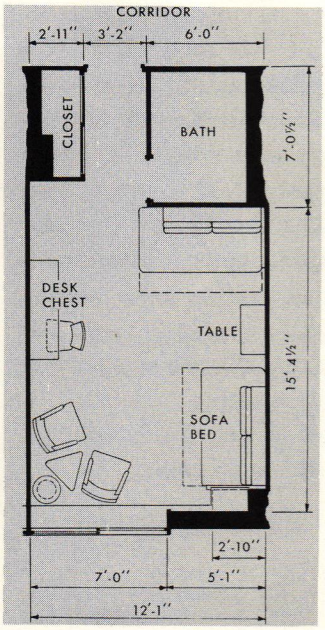


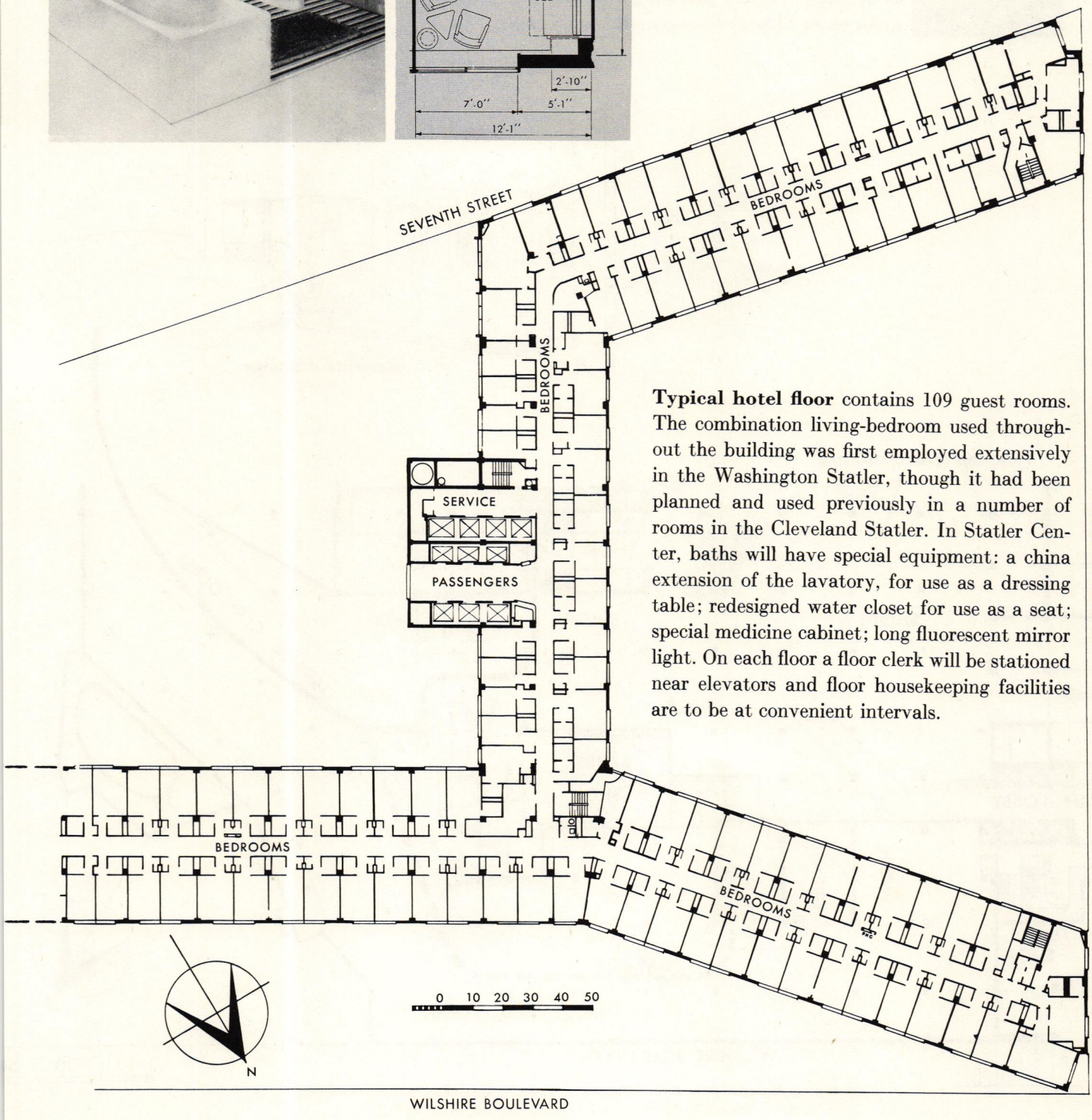
Wilshire Entrance



Rentable office space totalling 150,000 sq ft is concentrated in the east wing which, facing busy Figueroa St., will help block off traffic noise from the hotel wings. Here column spacing, plumbing lines, etc., have been laid out for efficient subdivision into typical units. This wing, completely air conditioned by a high-velocity conduit system, has on its roof the cooling tower, and also garage exhaust fans. Electrical distribution in office space is unusual: underfloor ducts not only carry low-voltage and telephone wiring for outlets above the floor slab, but also can be tapped for lighting outlets on the ceiling below. Lighting pull boxes are in corridor areas so tenants will not be disturbed when wiring is changed.





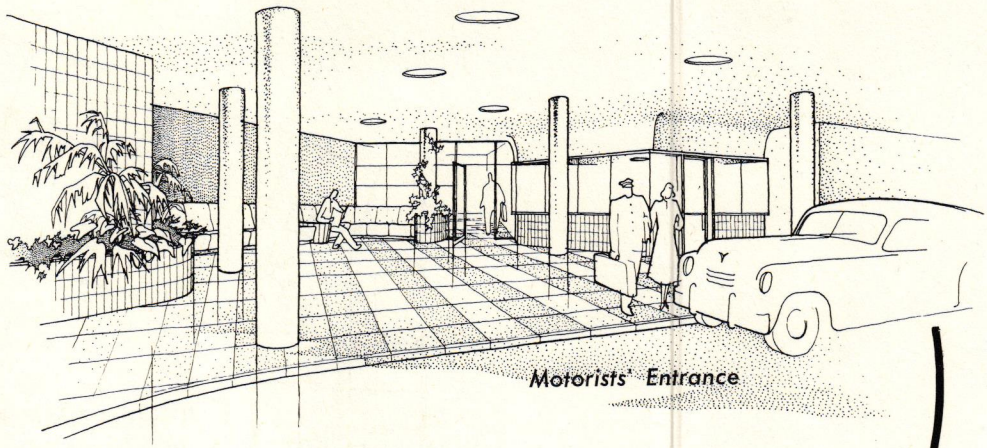


Typical hotel floor contains 109 guest rooms. The combination living-bedroom used throughout the building was first employed extensively in the Washington Statler, though it had been planned and used previously in a number of rooms in the Cleveland Statler. In Statler Center, baths will have special equipment: a china extension of the lavatory, for use as a dressing table; redesigned water closet for use as a seat; special medicine cabinet; long fluorescent mirror light. On each floor a floor clerk will be stationed near elevators and floor housekeeping facilities are to be at convenient intervals.

STATLER CENTER: GARAGE

The Parking Garage, like the off-street loading docks a city requirement, is to occupy most of three basement floors. If the clients and architects had been willing both to sacrifice some upper-level facilities and to accept a less open general scheme, or if restrictions had not limited the hotel's height, the several-hundred-car space might have been built above grade. Underground, the garage needs elaborate ventilation and sprinkler systems. On the other hand, grade-level space can realize greater income than a garage would produce. After such matters were weighed the basement garage was decided upon. A travel-weary guest arriving by car will not realize this; he can drive in, turn his car over to an attendant, register at a desk almost as he steps out, and proceed by special elevator directly to his room without traversing the main lobby.

This presentation has been prepared in collaboration with the architects and the staff of Hotels Statler Co., Inc. Members of the Statler organization who were concerned with design of the Statler Center include: Harold B. Callis, Senior Vice President and Secretary, Hotels Statler Co., Inc.; Kenneth M. McCann, Vice President, Hotels Statler Co., Inc., Vice President and General Manager, Statler Studios, Inc.; Fred E. Smith, Asst. Vice Pres., Statler Studios, Inc.; W. Randolph Leber, Asst. Vice Pres., Executive Engineer, Hotels Statler Co., Inc.; Edward Podmayer, Asst. to Mr. Leber; Ernest Wottitz, Architect, Chief Designer; I. Noel Simon, Staff Architect; Helen McQuillan, Staff Decorator.



Motorists' Entrance

Plan, top level of Garage

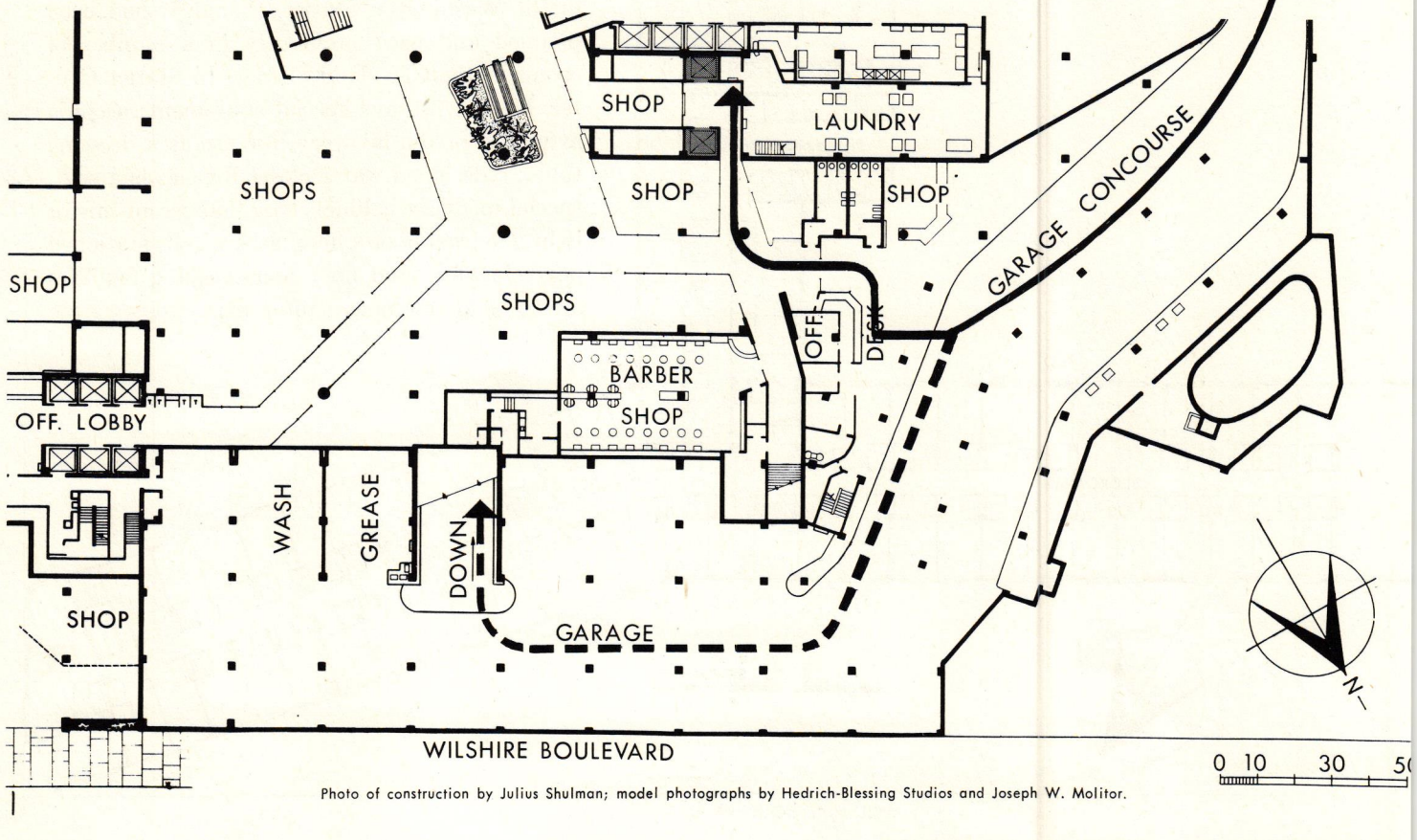


Photo of construction by Julius Shulman; model photographs by Hedrich-Blessing Studios and Joseph W. Molitor.

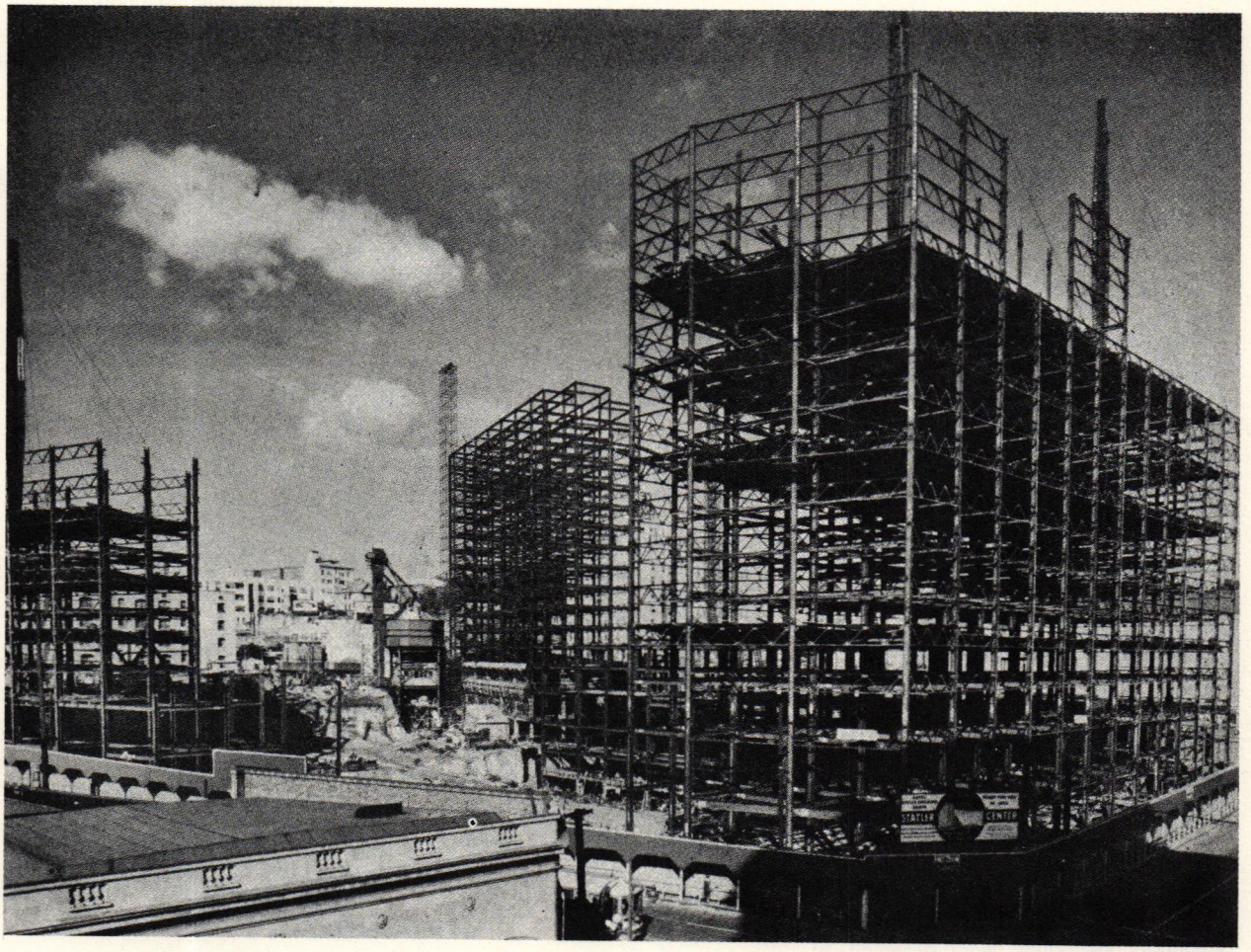
STATLER CENTER, LOS ANGELES: THE ENGINEERING

Statler Center, Los Angeles

Holabird & Root and Burgee, Architects

William B. Tabler, Associate

Julius Shulman Photo

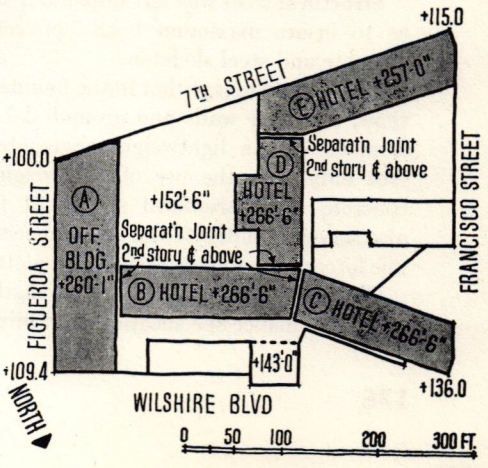


This photo, taken towards the corner of 7th and Figueroa Streets, shows state of construction in January 1951. Note the trusses for reinforcing and earthquake resistance of spandrel walls and the cement plant to left of frame in background.

FROM the very start, structural, mechanical, and even electrical requirements played an essential part in the architectural conception of Los Angeles Statler Center. These requirements were dictated to a considerable extent by the desire for open planning and the decision to add an office building and shops to the hotel. Equally important were the earthquake resistance requirements mandatory in Los Angeles and the local building height restriction. In fact, this height restriction, coupled with the high air conditioning and ventilating demands led to the development of a rather unconventional, but most logical, location for the fans and cooling equipment.

Engineering aspects of design affected by the above requirements include: (1) design and materials of the frame (or frames, since there are five independent buildings, structurally speaking, above the second floor level), (2) exterior wall material and type of fenestration, (3) location and design of air conditioning and ventilating equipment — in fact some of this equipment had to be redesigned to fit into the available space.

Separation joints between units A, B, C, D and E are designed to prevent damage in the event of a severe earthquake



Copyright 1951 F. W. Dodge Corporation

Structural Design

Earthquake Resistance. The plan, arranged to give both Wilshire Blvd. and Seventh St. hotel entrances and to provide every guest room with sunshine some time during the day, as well as to face the office building on another street, lent itself ideally to earthquake design. Statler Center is separated into five units so that seismic loads can be taken in each by the coaction of concrete walls and steel frames in efficient, clean design. Concrete exterior walls are being used because their rigidity provides high resistance against seismic forces. For this reason, the windows are not strip type, but rather are "punched" in the walls to preserve the inherent rigidity of the concrete.

Above the second floor level, the building is divided into units A, B, C, D and E (see plan, page 175) by 6-in. separation joints, designed to prevent damage in case these units might pound together during a severe earthquake.

In units B, C, and E, the seismic forces in the long direction are taken by the reinforced concrete enclosing walls, and in the short direction by the structural steel frame.

In units A and D, the seismic forces are taken entirely by reinforced concrete enclosing and interior walls.

Below the second floor, these forces are taken by interior concrete walls and the steel frame.

In all cases, the seismic forces are distributed to the structural elements in proportion to their relative rigidities. Direct loads due to overturning action are taken by the steel columns.

General Structural Features. Solid concrete floor slabs are poured monolithically with the structural steel fireproofing. The slabs were designed to distribute seismic forces to the frame and concrete walls at each floor, particularly at the second floor level, below which no separation joints occur.

All enclosing walls, except those near street level, will be painted concrete, monolithic with column and spandrel beam fireproofing.

Structural steel was left unpainted so as to insure maximum bond between concrete and steel skeleton.

All concrete except that in the foundations, retaining walls and ground slabs is made with a lightweight aggregate. Not only does the use of lightweight concrete save structural steel, but it also serves to mitigate the effect of seismic forces by reducing dead weight aloft.

Concrete is supplied under a strength and performance specification with mixing done in a batch plant constructed at the site.

Interior partitions are either metal lath and plaster, hollow masonry units or concrete. Use of the 2-in. solid plaster partitions throughout guest room floors permits larger rooms and, according to the architects, sacrifices nothing to the conventional type of sound transmission or rigidity.

Mechanical Design

Ventilation and Air Conditioning. Instead of one central supply air fan room in the basement, there are five of them spotted advantageously around the perimeter of a Fan Gallery Floor sandwiched between the Ballroom level and first Typical Guest Room Floor. This means that spaces with the highest ventilation and air conditioning demands, the public areas, can be served by short, efficient supply ducts. There is no need for a huge fresh air intake duct since louvers are provided in the perimeter of the Fan Gallery. The Fan Gallery also provides additional height below guest rooms to remove them farther from street noises.

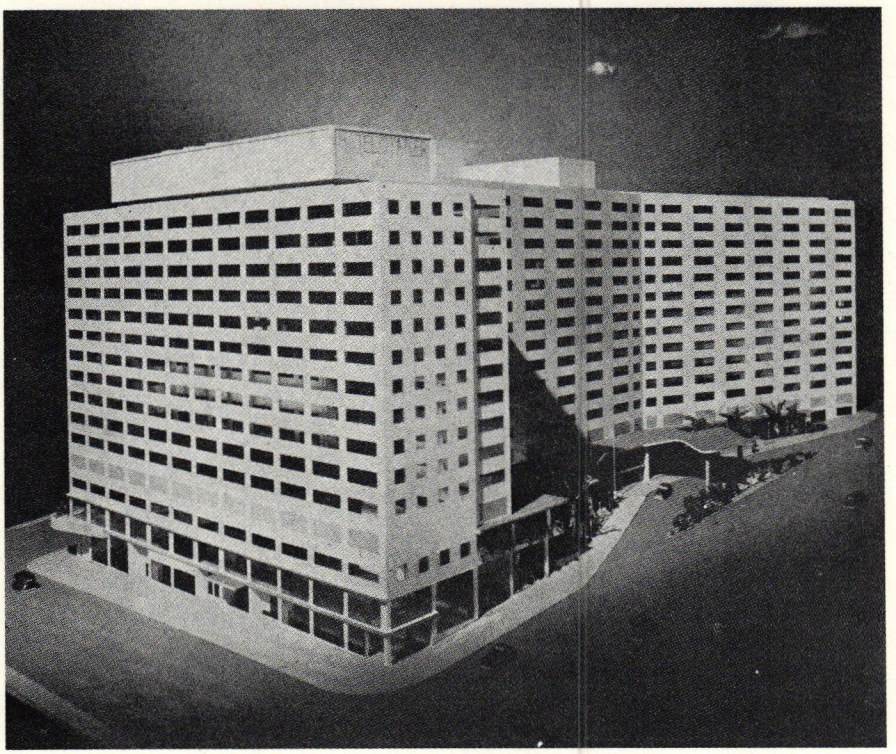
Actually, the minimum story heights dictated by the building height restriction precluded use of a horizontal air distribution system — central main supply ducts with horizontal ducts radiating from them — since ceilings could not be furred down to enclose them.

The cooling tower is located on the roof of the office building and takes care of both air conditioning and commercial refrigeration. In the penthouses are exhaust fans for the garage, kitchens, laundry and toilets.

Conventional, low-velocity air conditioning is used for the public areas of the hotel. Shop areas are ventilated and are provided with chilled water so the tenant can install air conditioning if he so desires.

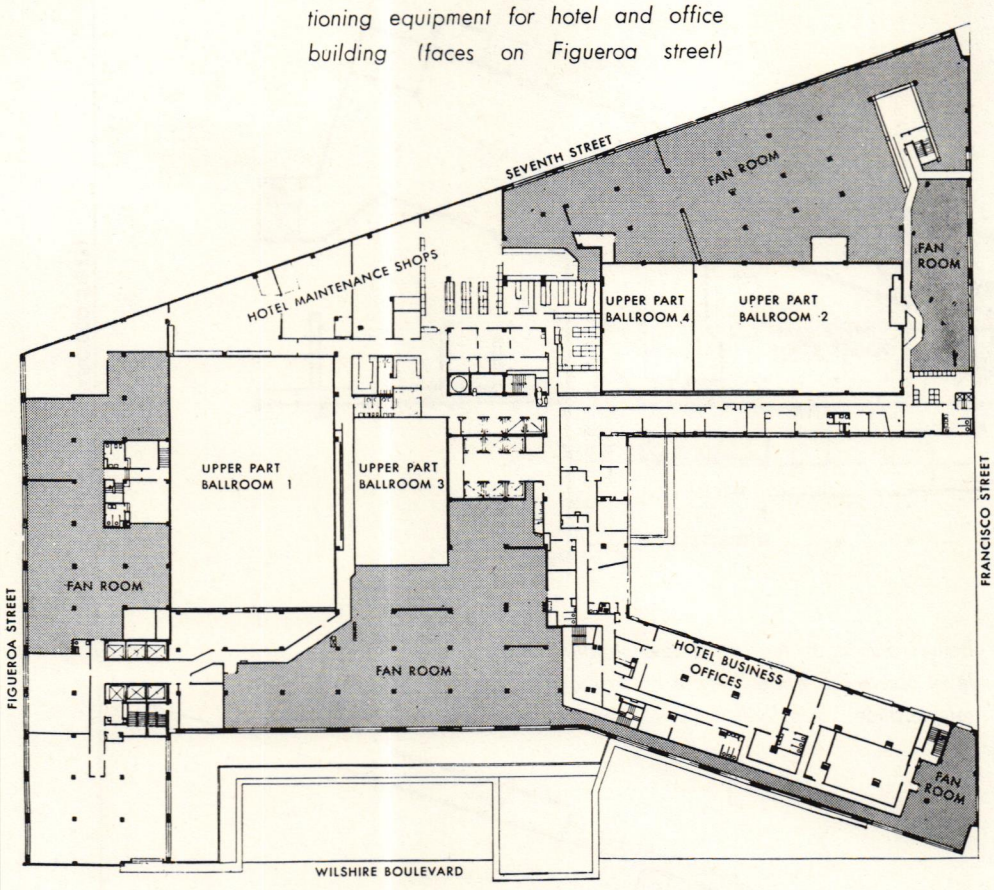
Air conditioning for the offices and guest rooms is another problem. Individual control has been provided because

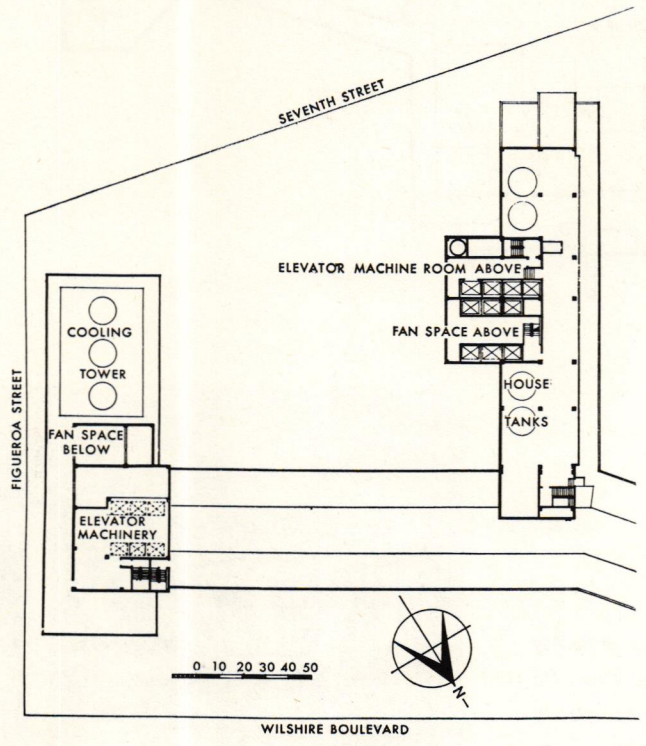
Joseph Molitor Photo



Fan rooms are spotted conveniently around the perimeter of a single floor located between the Ballroom level and the first typical guest room floor. Thus ducts to spaces requiring largest amount of air conditioning can be very short. Note louvers for fresh air intake to the fan rooms (one row above the first typical floor in the office building which is the block in left foreground). On the roof of the office building are the cooling tower, exhaust fans and elevator machinery. *See bottom plan on opposite page*

Shaded areas on Fan Gallery plan indicate rooms which contain all air conditioning equipment for hotel and office building (faces on Figueroa street)





Roof plan shows equipment enclosed by penthouses seen in photo across page. Cooling tower is atop office building

it is expected in guest rooms, and desirable in the offices.

At first it was proposed to use the new double duct high velocity, all-air conduit system for both areas. In the hotel guest rooms, the conduits are run up through interior shafts with the special aspirating diffusers being located over the vestibule and manual controls in the entry way. Locating the diffuser here insures good mixing and distribution of the air. Also, due to the mild Los Angeles climate, it was not necessary to have under-window air conditioning units. This permitted furniture to be placed along outside walls.

In the office building, all-air conduits proved to be too large to enclose along exterior walls. Substituted was the familiar high pressure conduit system in which the conduit supplies tempered ventilation air, brought to desired temperature by heating and cooling coils located in under-window units.

Heating. Three large boilers and one small one (for valet shop use), located in the lowest level in the building, are fired by either gas or oil. Gas is the primary fuel. Oil is used only as a standby to take care of any interrupted service of gas.

Space between the suspended ceiling and the slab over the boiler room is mechanically ventilated, and the ceiling itself is insulated.

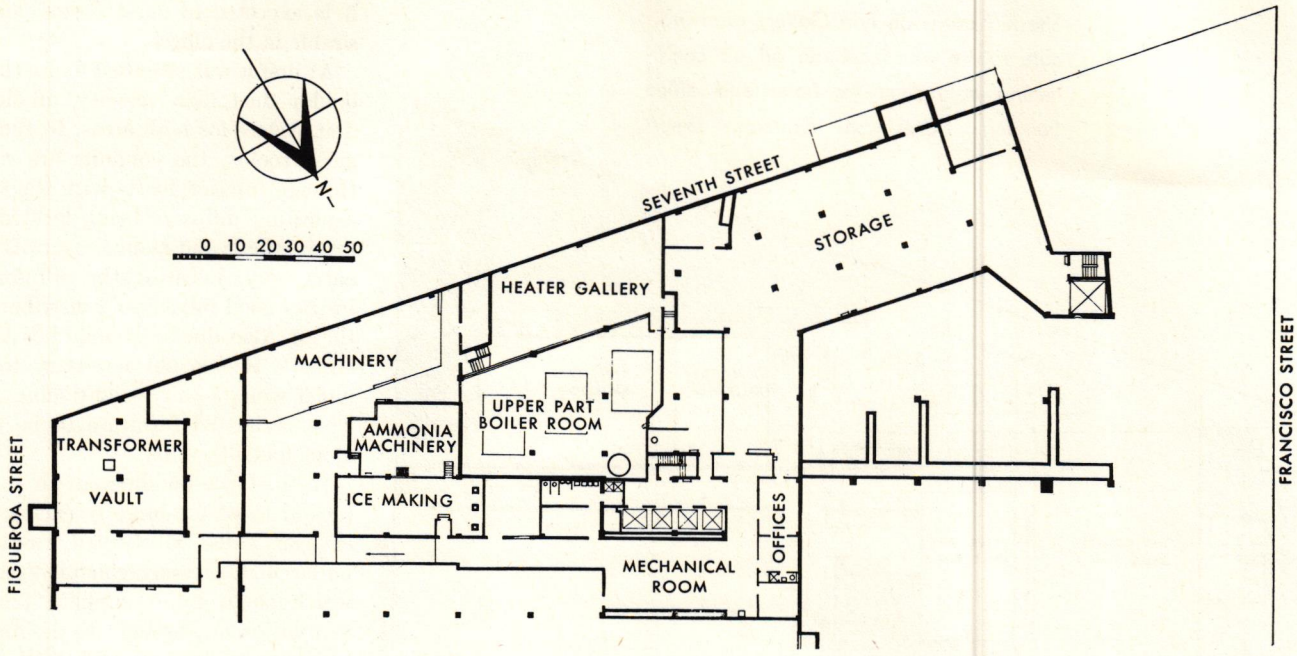
Fire Protection. All basement areas are equipped with automatic sprinkler systems. There is a dry standpipe system in each stairwell as well as a complete wet standpipe system within the building. All grease hoods in the kitchens are equipped with steam fire-quenching apparatus.

Waste Disposal. Garbage will not be dumped, but is to be processed into a saleable commodity by a dehydration plant. Vapors are exhausted.

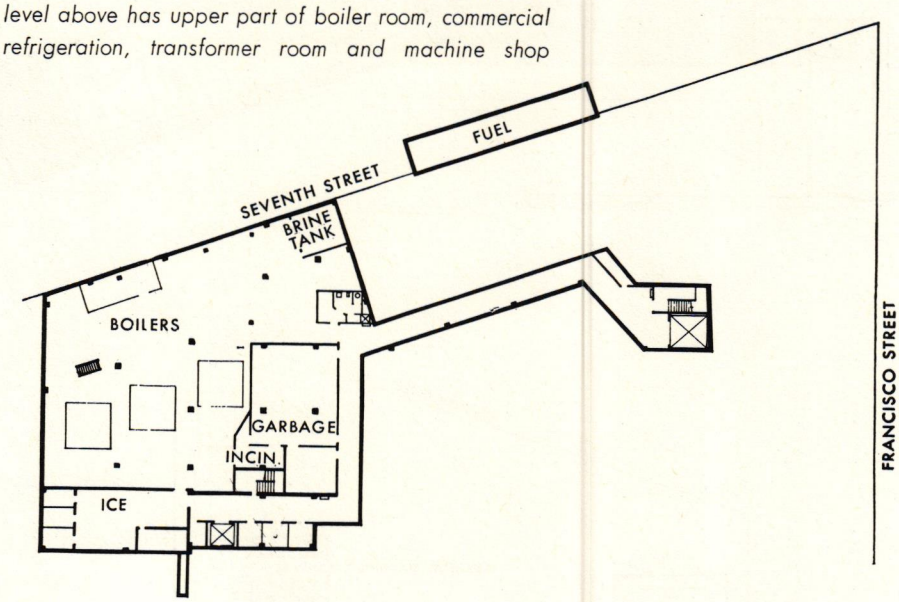
Electrical Design

Voltage Supplied. Power to the hotel is supplied by two substations at 4800 v, either of which can carry the full load, with continuous service being insured by automatic switching equipment.

Distribution. The office building has an underfloor duct system for both high and low voltage wiring. The duct system provides both receptacle outlets above and lighting outlets below the floor slab. Well thought out design is exemplified here by the access to the raceway being located in the corridors — tenants need not be disturbed when wiring changes are made.



Boiler room is on the lowest level (plan below). Next level above has upper part of boiler room, commercial refrigeration, transformer room and machine shop



Lighting and Other Electrical Equipment. Public area lighting is keyed to the needs of a downtown hotel, with the accompanying special demands of office building tenants who will want to put on shows in the ballrooms. In the ballrooms, recessed downlights and coved lighting, all on dimmers, make possible practically any combination to fit the occasion. The main ballroom has projection, sound and spotlight facilities and also provision for TV pickup.

A full range of voltages from 4800 to 110 v, is available in ballrooms, so that all types of equipment can be displayed for manufacturers' shows.

The garden and pool can be softly lighted from the sides or flooded with light from spotlights on the roof. The pool also has underwater lighting.

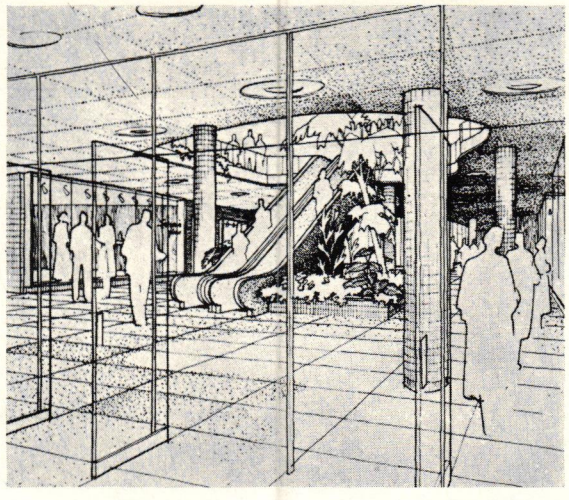
Lighting in the garage driveway is of graduated intensity so that guests will not encounter too abrupt a change when driving in or out.

Guest rooms will have provision for radio and television.

Vertical Transportation

Guests arriving at the principal entrance on Seventh St. reach the main lobby by means of moving stairways due to the difference in elevation of various street entrances. A belt conveyor transports luggage.

Principal vertical transportation is supplied by 19 elevators, two dumbwaiters and two subveyors. Passenger and service elevators travel at a speed of 700 fpm, and are equipped with telephones. Passenger elevators have loudspeaker systems for music.



Right: moving stairway takes guests from 7th Street entrance up to the main lobby floor

STATLER CENTER, LOS ANGELES: THE COMPLETION



Julius Shulman

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On August 6, 1952, the first few floors of guest rooms in the Los Angeles Statler were opened. Some weeks before, tenants had begun moving into the Center's office building wing. On October 27 the entire Center was formally dedicated. Constructing and equipping this hotel project — the largest built in the United States in more than 20 years — took a little over two years; construction started July 5, 1950. Preceding even this date were an exhaustive analysis of the needs and potentialities of Los Angeles as a city in which Hotels Statler Company would be prepared to invest some $25,000,000; selection of the 3-acre site, twice as large as that of the 1943 Washington Statler; and determination of a program which took into account the Statler budget, rising construction costs, building and zoning regulations, site and traffic conditions, desirable allocations of cubic contents and square footage to the various purposes, and above all the number, type, size and arrangements of the guest rooms which remain relatively the most profitable part of any hotel.

Following the programming, design proceeded through a number of preliminary stages. At one point it was found that, considering trends in operating and maintenance costs, a building designed solely as a hotel might not produce adequate profit at room rates in keeping with Statler policy. Since the Company had had experience with rental office space at its Boston hotel, the decision to include an office building on the large Los Angeles site was comparatively easy to make.

The program aimed at 1300 guest rooms; as built, the Center contains 1275, 70 per cent of them studio twin bed rooms refined from the Washington Statler precedent. These occupy 52 per cent of the cubic contents of the Center's hotel portion; function and public rooms, hotel offices, services, mechanical plant, etc., occupy the other 48 per cent. Net area per hotel floor devoted to guest rooms is 53 per cent of the gross, compared with 47 per cent in the Washington Statler. It was early decided that Los Angeles needed public and service areas comparable to those provided in Washington; the new Center has more square footage but only five per cent more cubic content. Likewise,



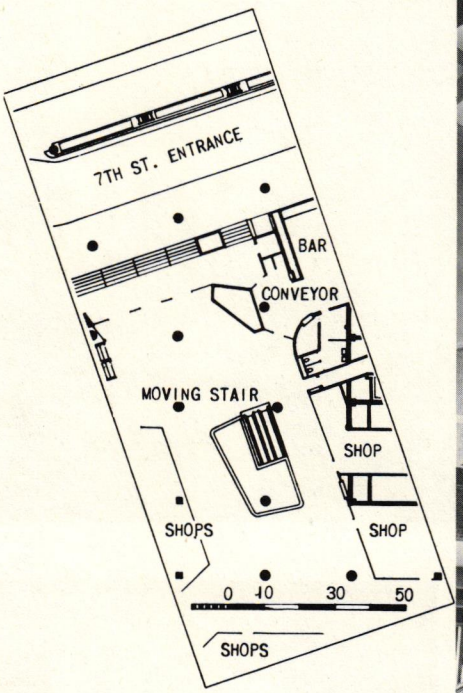
Julius Shulman



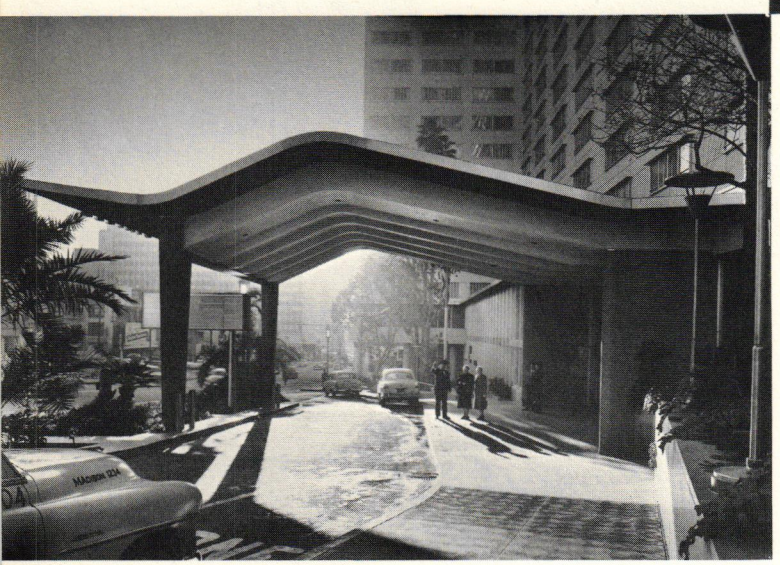
70,000 sq ft of shops were provided; the subterranean garage has space for 465 cars, with a supplementary check-in desk and elevators so travel-weary motorists can go directly from their automobiles to guest rooms without traversing public areas. The office building wing contains 150,000 sq ft of rentable area. Total content of the structure is 12,206,000 cu ft. For the entire Center, the contract cost was within estimates made three years earlier although construction prices had meanwhile increased 12 per cent.

Photo at top left shows the office building portion on busy Figueroa Street, convenient to other commercial areas of the city, and placed on the Center's site to shield the hotel portion from the noise of traffic and commerce. At top right is the Wilshire Boulevard side which provides a suitable "address" but, due to traffic conditions, is less convenient for most arriving guests than the opposite (Seventh St.) side. At right, high point of the sharply sloping sight, corner of Wilshire and a new street, Francisco, provided by the city on land partly donated by Statler.

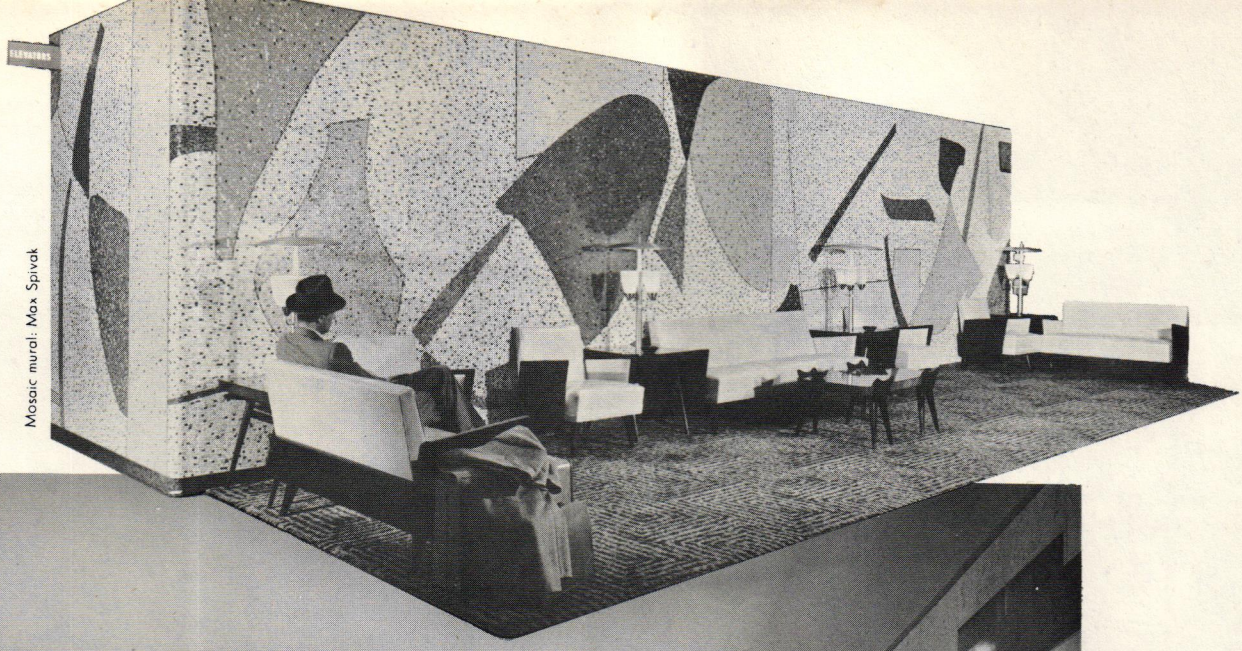
PUBLIC AREAS







The sloping site permitted placing much of the extensive shop area at the various street levels and facilitated arrangement of public space on the three main floors (see preceding chapter, pages 159 through 168). Interior design is here no superficial matter of finishes and furniture. It is all-important and three-dimensional. For entering guests, circulation is direct. Tenants from the office building find convenient passages to dining rooms apart from the guest lobby. Conventioneers, drawn by the gay garden, cocktail lounge, supper club and promenades, find themselves mounting a prominent stair to ballrooms above. Behind the successfully brilliant mosaic mural (top photo) is the elevator lobby, located so that it cannot become a passageway.



Mosaic mural: Max Spivak



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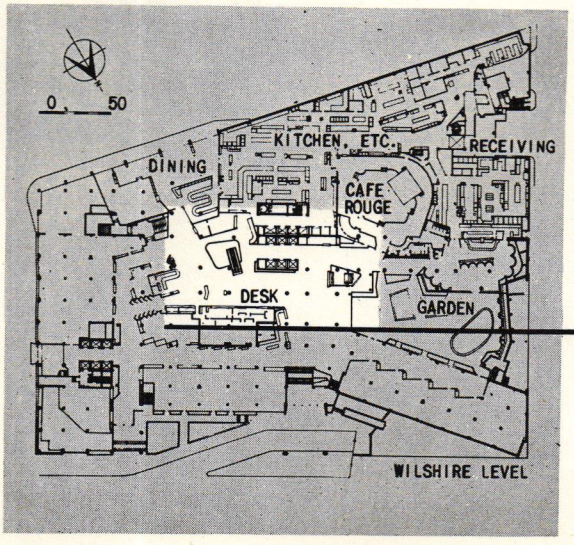
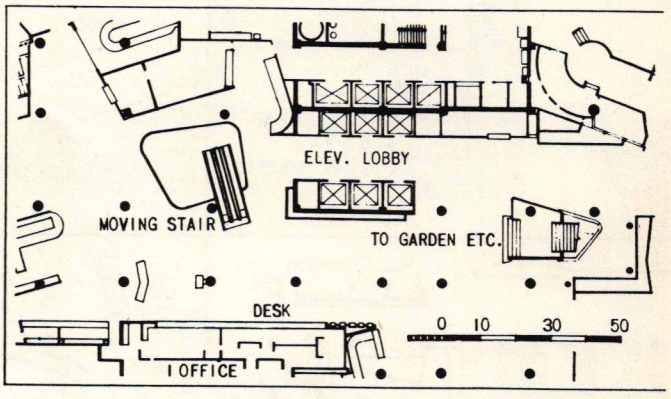
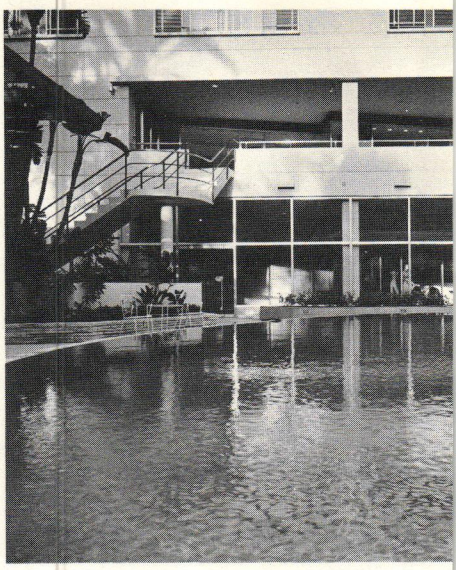
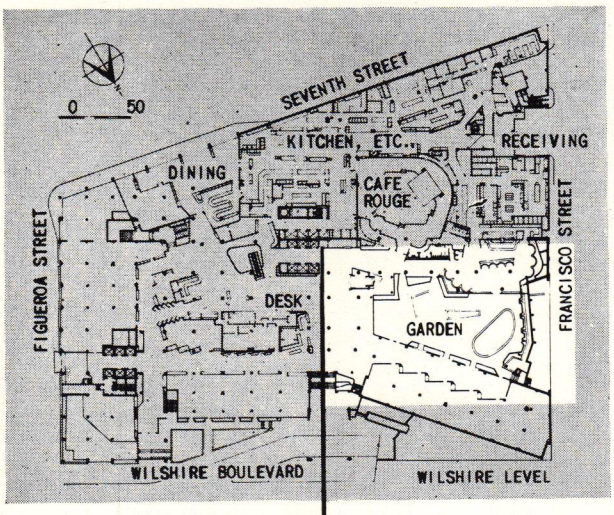




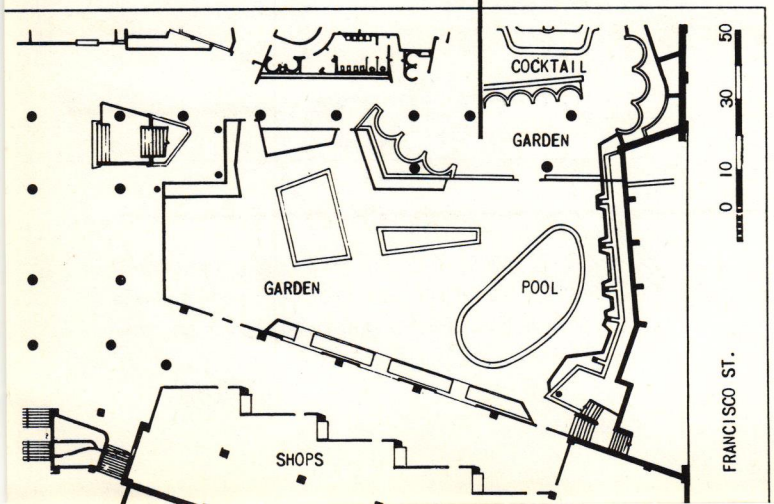
Most guests reach Wilshire level (left) by moving stair (above); on arrival they face desk with business section to one side, garden and public rooms on other






0 50
SEVENTH STREET
KITCHEN, ETC.
RECEIVING
DINING
CAFE ROUGE
FIGUEROA STREET
FRANCISCO STREET
DESK
GARDEN
WILSHIRE BOULEVARD
WILSHIRE LEVEL




COCKTAIL
GARDEN
GARDEN
POOL
SHOPS
0 10 30 50
FRANCISCO ST.





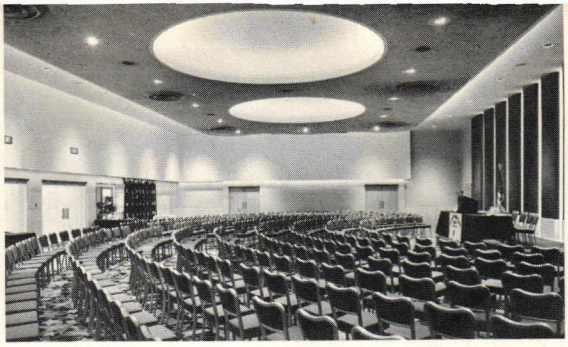




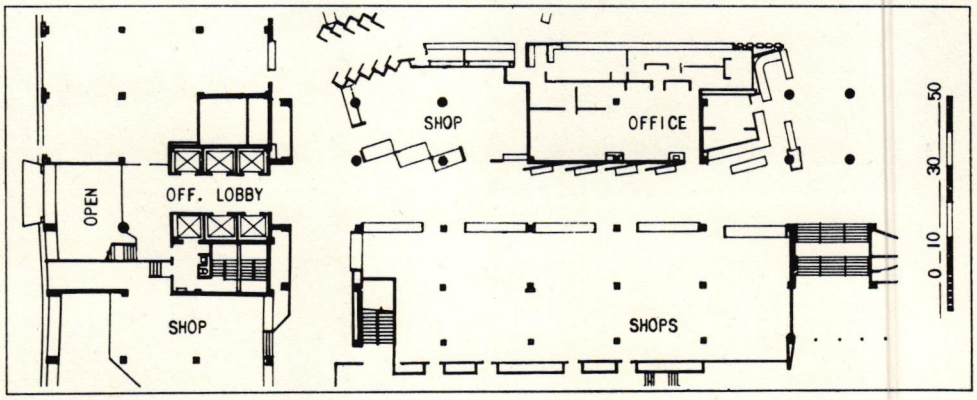
Julius Shulman

Clustered around the garden in the court which separates the north and south hotel wings are several public areas. To the east the garden is protected by the planted retaining wall that supports Francisco Street and by the street itself, from the possible encroachment of future buildings. Photos: far left, view from stair to ballrooms; left, across garden pool toward two-story promenade and shops; above, on the promenade; right, garden stair. Below, left, Veranda Cafe and cocktail lounge; and right, from roof terrace above Veranda Cafe. Brightly lighted at night, the garden might some day be a setting for a spectacular show or aquacade.











At top of page are, left, Cafe Rouge (popular priced dining room), divided into intimate sections by wood screens, plant boxes, color treatment and changes in level; center, Golden State Room, and right, Pacific Ballroom, two of the four ballrooms and eleven private dining rooms, all on one floor, and all served from one kitchen. Function facilities of the Statler Center are booked solid for many months. Pacific Ballroom in conjunction with adjoining Sierra Room can accommodate 1200 at a banquet when soundproof partition between them is raised. A small bar on this floor has proved extremely profitable.

Many shops in the Statler Center were designed by independent architects for individual tenants. Left below, cases project into the hotel lobby to provide profitable merchandising space. Right, sliding panels open another shop to corridor leading to the office building; airline ticket offices in background







Julius Shulman

PUBLIC ROOMS, SHOPS, OFFICES



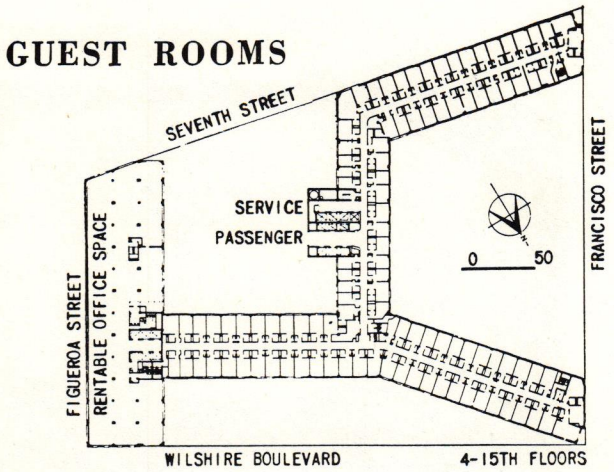
Above, tenth-floor office building elevator lobby forms reception area for the Foote, Cone and Belding advertising agency. Right, looking down corridor from office building toward hotel lobby; airline offices at right of picture

STATLER CENTER, LOS ANGELES

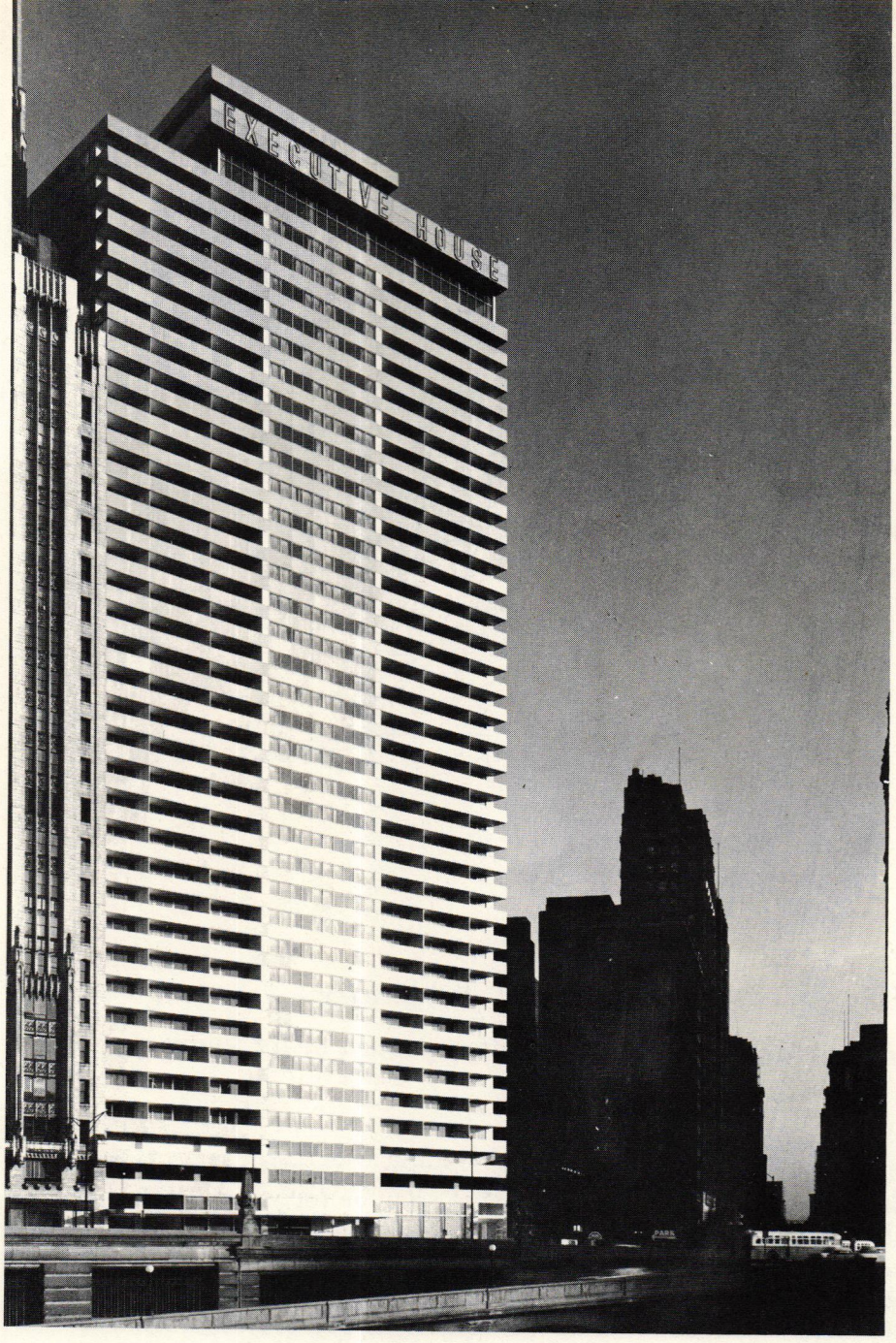


Julius Shulman

Above, the studio type of guest room used for 70 per cent of the rooms in the Los Angeles Statler. Below is the bathroom vanity-lavatory









EXECUTIVE HOUSE OFFERS UNUSUAL FACILITIES

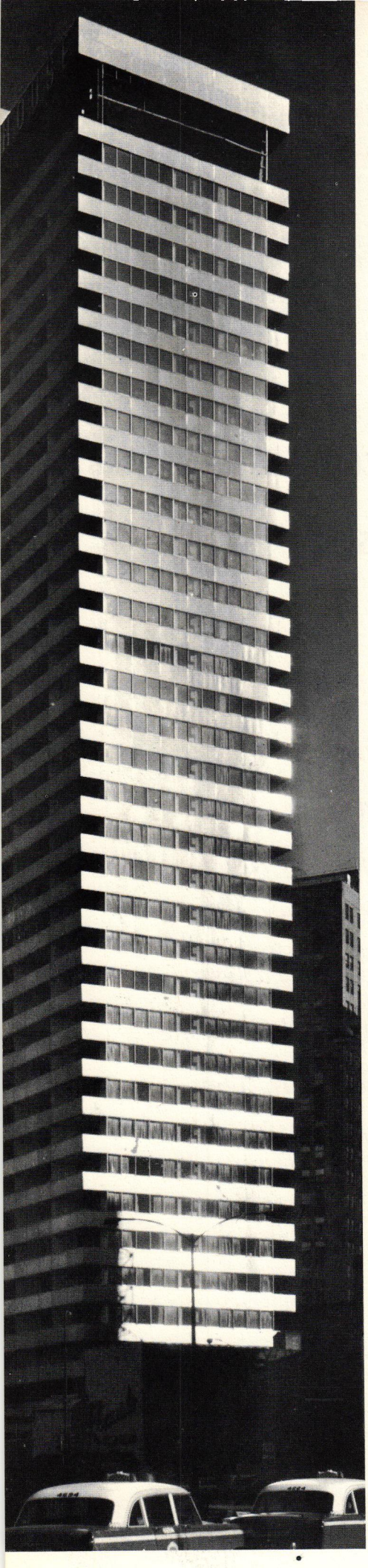
Chicago's First New Downtown Hotel In 28 Years Also The Tallest Reinforced Concrete Structure In The United States

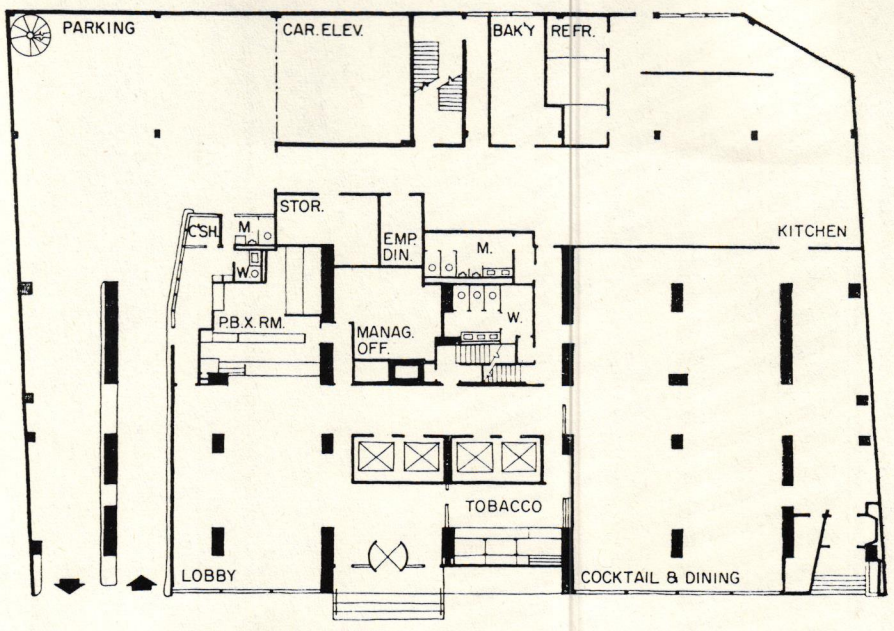
Executive House, Chicago

Milton M. Schwartz & Associates
Architects

Miller Engineering Company
Structural Engineers

©1959 F. W. Dodge Corporation



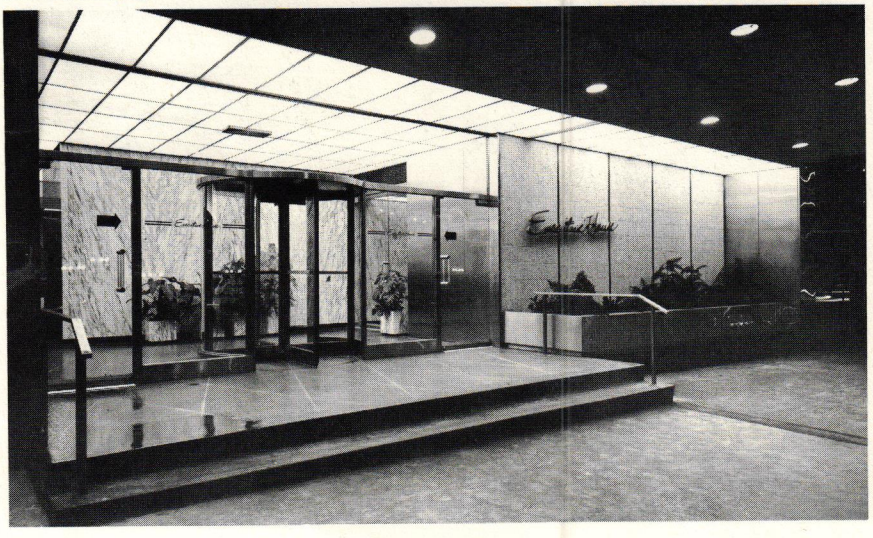


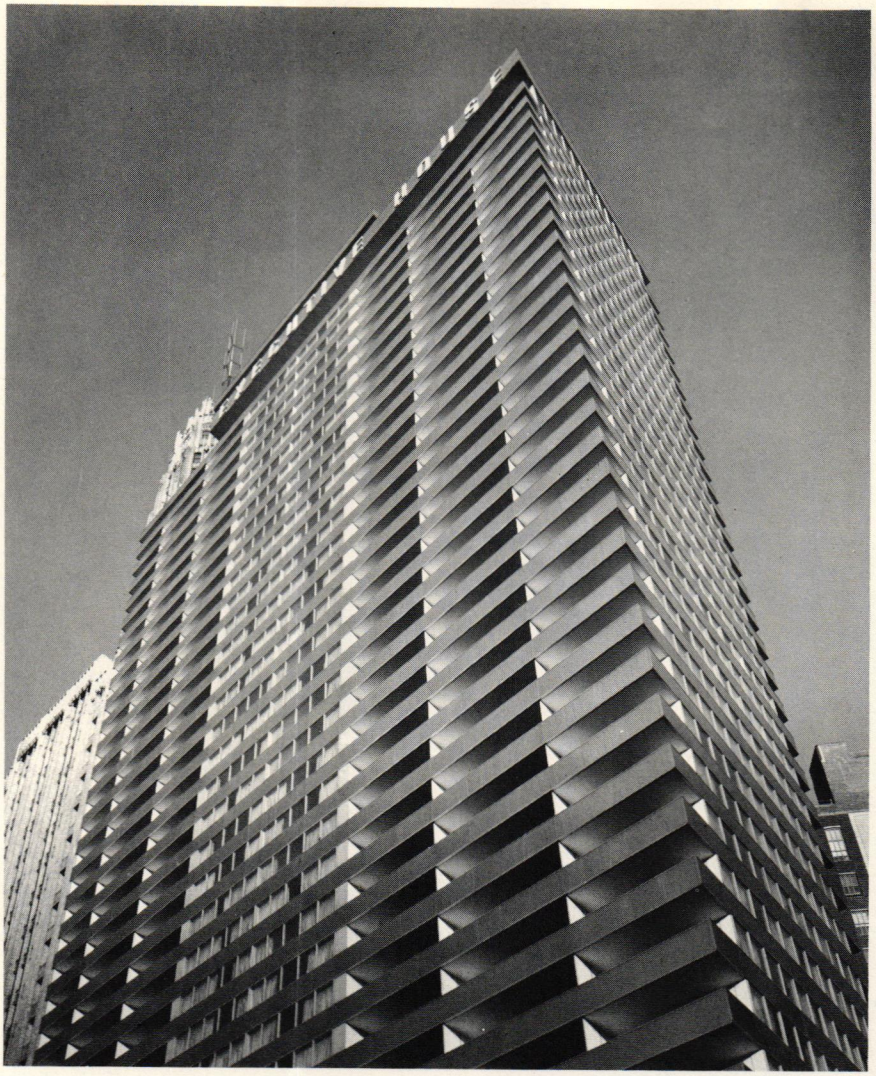
LOBBY FLOOR PLAN

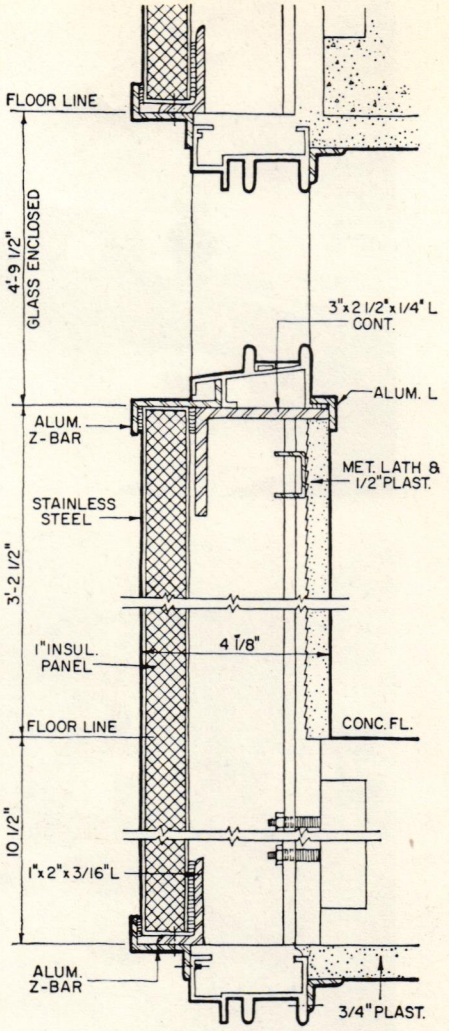
Many-balconied, stainless-steel clad hostelry offers amenities for business entertainment or for living

Designed for a new kind of hotel service, Executive House offers 448 suites and studios for rent by the day or for years. Each unit has a kitchenette for business entertaining or light housekeeping; most of the apartments have at least one balcony 6 by 20 ft. Phone service permits direct dialing; calls bypass the hotel operator and are merely metered for billing. A 200-car, two level garage connects directly by elevators to rooms. There is a dining room and cocktail lounge at ground level; the penthouse is planned for meeting rooms

Hedrich-Blessing







INSULATED CURTAIN WALL DETAIL

4-ft bands of stainless steel encircle the building, forming parapets for the balconies or spandrels under the sliding windows of the central section. The 4- by 8-ft panels consist of a 26-gage stainless face, a 1-in. foam glass core, and a 24-gage galvanized steel back-up sheet. For the balcony parapets, the back-up sheet is covered by a white plastic sheet to prevent possible rust. The panel elements were laminated in a 100-lb, hot platen press

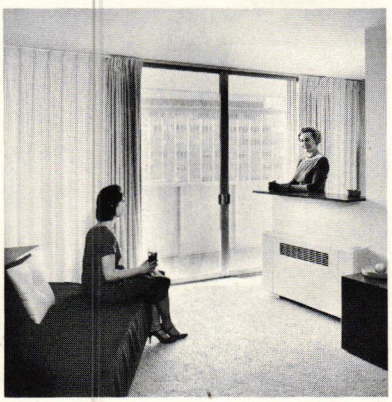
and a night club. The Chicago Chapter, A.I.A., cited the building for a Merit Award in a recent design competition.

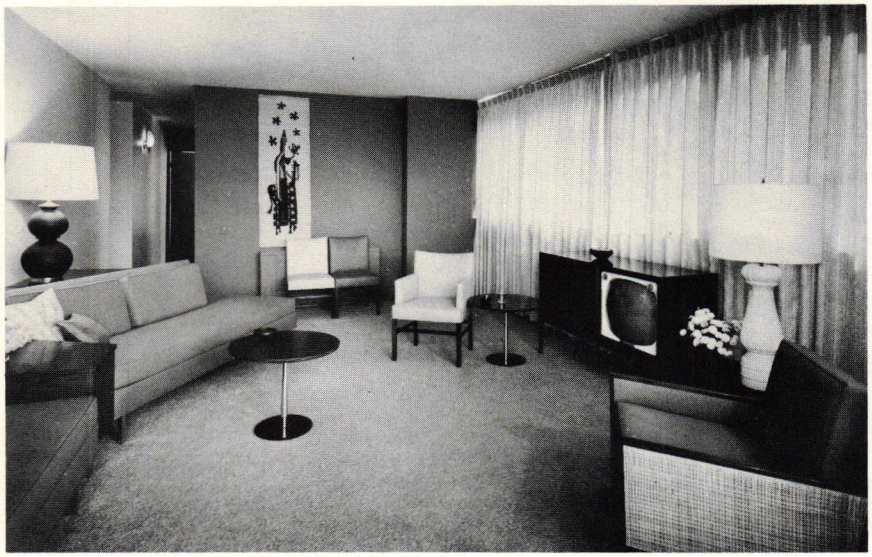
The 40-story, 370-ft structure rests on 57 caissons extending 120 ft below ground line to bedrock. Shear walls—to combat wind stresses—extend across the width of the 60- by 150-ft tower at 40-ft intervals. Columns are spaced at 8 and 16 ft transversely, 20 ft longitudinally, and are typically 20 by 60 in. in cross-section, with the long dimension placed laterally.





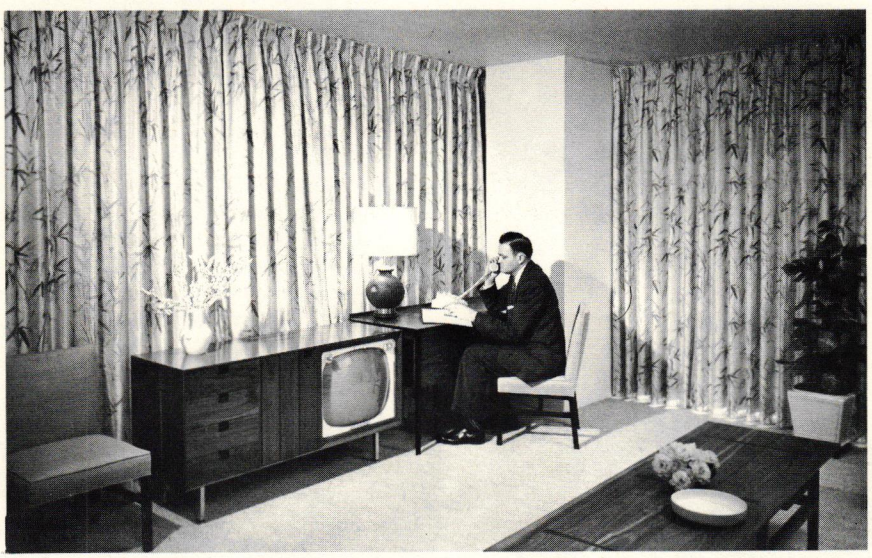


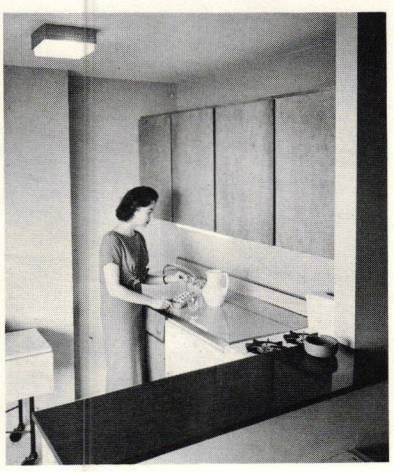


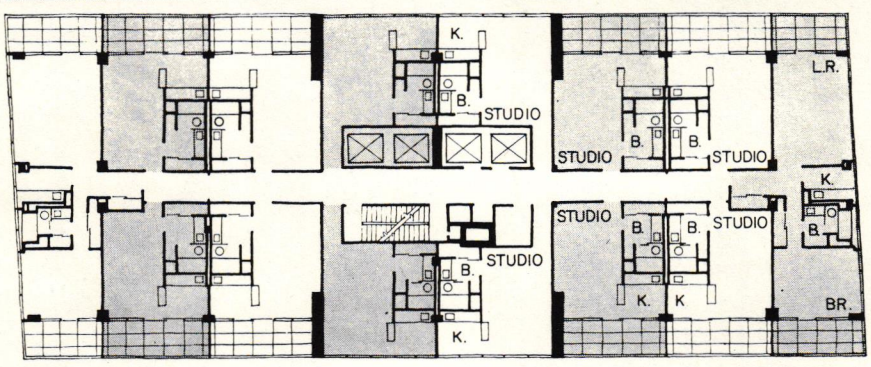


The typical kitchenette (above and below) has a refrigerator with freezing compartment, a 4-burner range with oven, storage cabinets, pots, pans, flatware and dishes. The rolling drop-leaf table can be used for dining or as a tea wagon.

Each unit has a dressing room in conjunction with the bath (see plan); access to balconies is by way of floor-to-ceiling sliding aluminum doors, glazed with ¼-in. plate. Walls and ceilings are painted plaster; baths are ceramic tiled; floors are carpeted in living and sleeping areas and of vinyl tile in kitchens and dressing rooms. The hotel is completely air-conditioned

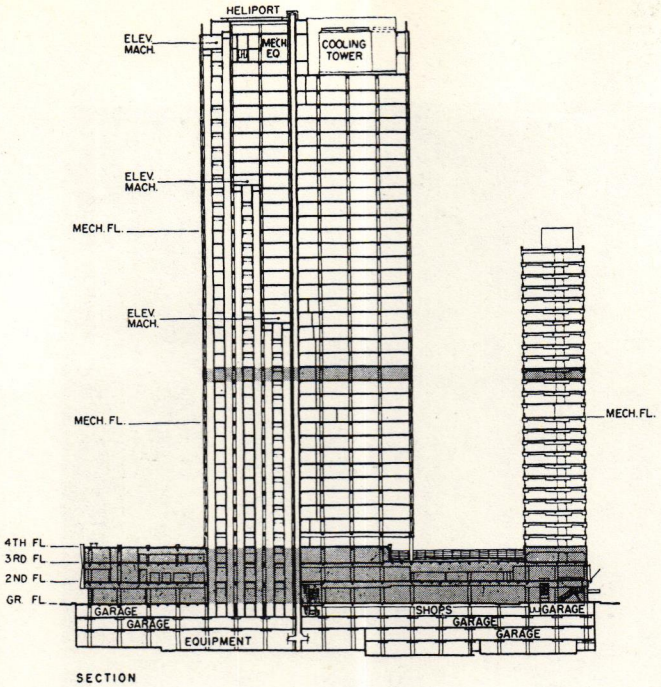






TYPICAL FLOOR PLAN

10



SECTION

OFFICE BUILDING AND HOTEL COMBINED

SOUTHLAND CENTER
DALLAS, TEXAS

Welton Becket and Associates, Architects and Engineers

Mark Lemmon, Consulting Architect

Murry Erick Associates, Structural Engineers

Edwards & Hjorth, Consulting Structural Engineers

Zumwalt & Vinther, Consulting Mechanical Engineers

Mason-Johnston & Associates, Geologists-Engineers

J. W. Bateson Company, Inc., Contractors

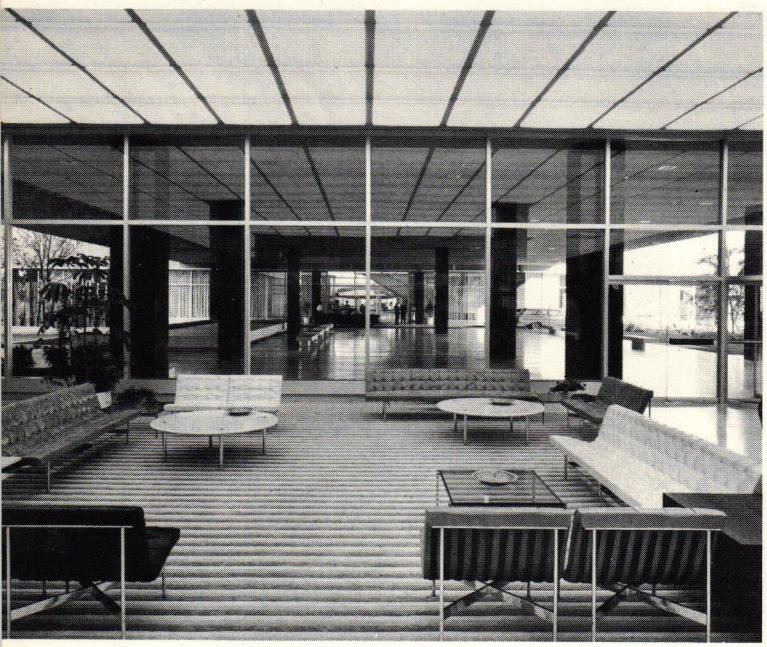


John Rogers

©1959 F. W. Dodge Corporation



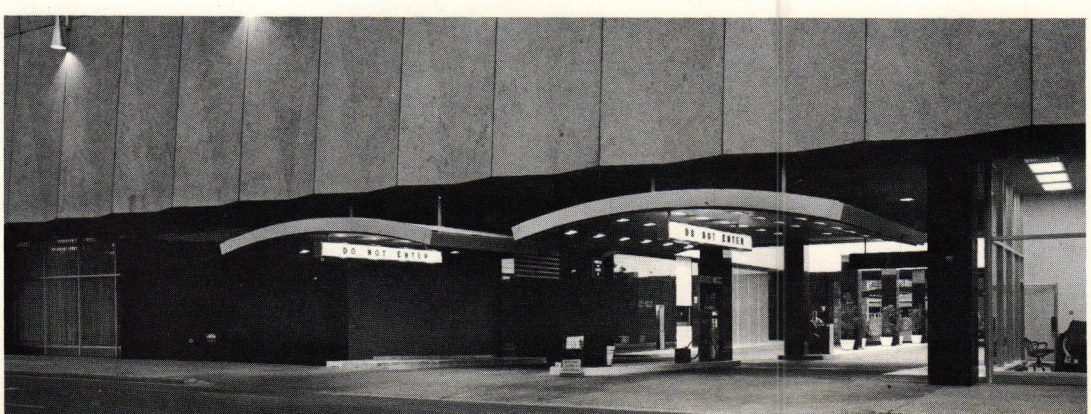


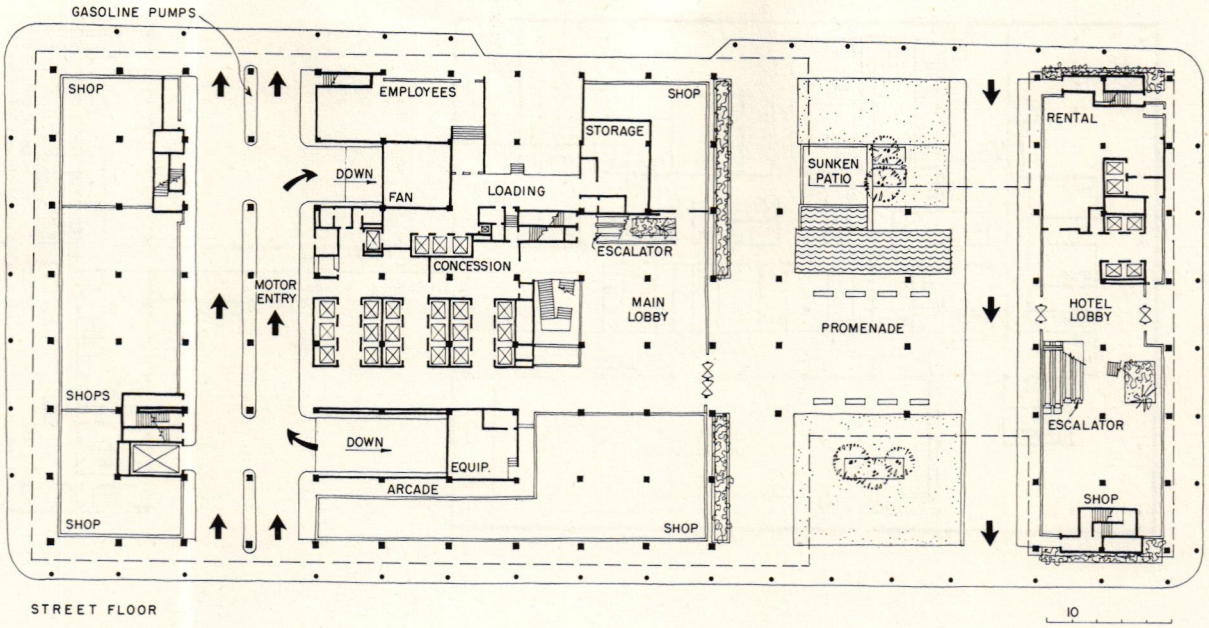


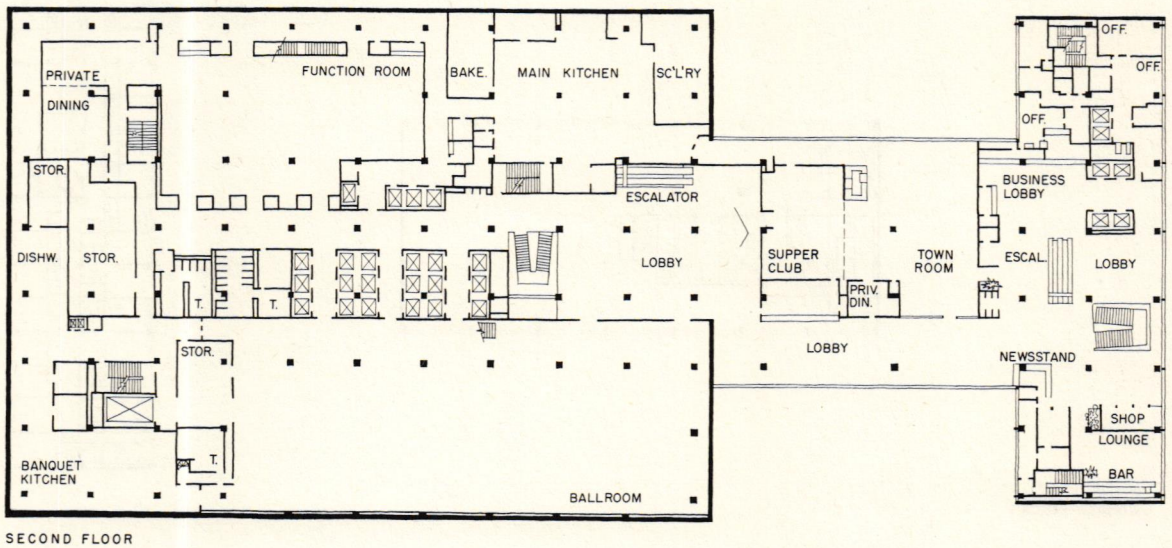
Office Building and Hotel

An important factor in the extremely open and spacious feeling of the center is the plaza area (about one-third of the total site) which is located between the office and hotel lobbies (upper left). Two pools are located adjacent to a sunken patio area (upper right). Sculpture is used to enhance the spaces, and to create more intimate closeup views of planting and surroundings to contrast with the open vistas. Left: from the office lobby, a view is obtained of the plaza and beyond it the hotel driveway. Lower right: In addition to the hotel automobile entrance, the main motor entrance drive may be used by all building occupants. Running through the building under the office tower, the drive is entered under canopies similar to those shown. Automobiles are left with attendants who park them underground via ramps as shown on the plans. Incorporated into the motor entrance are an automobile service station and a conveniently located cashier's position

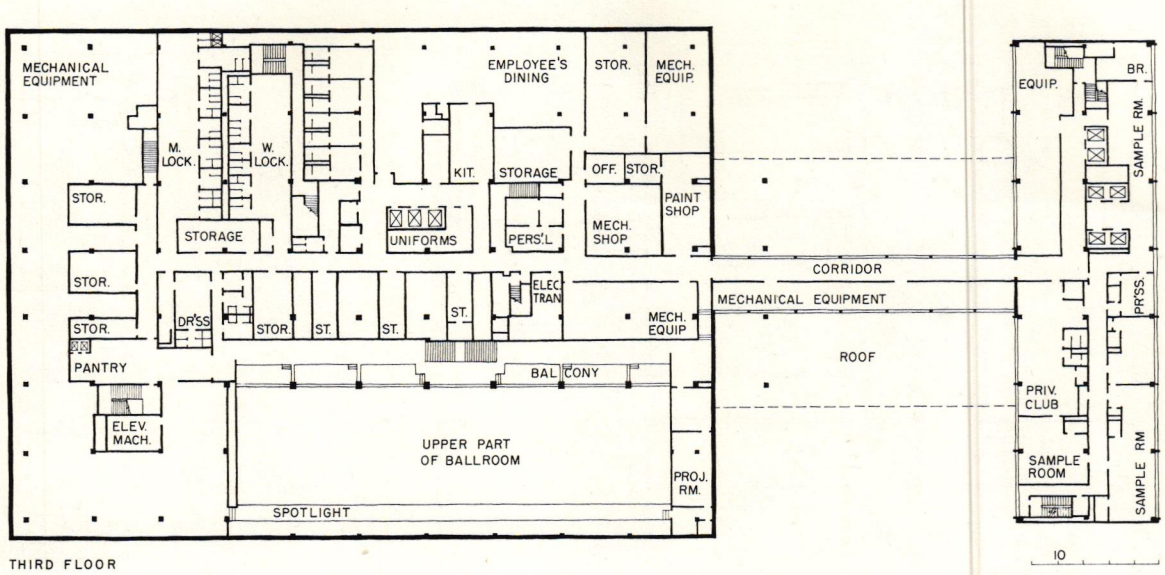
John Rogers photos



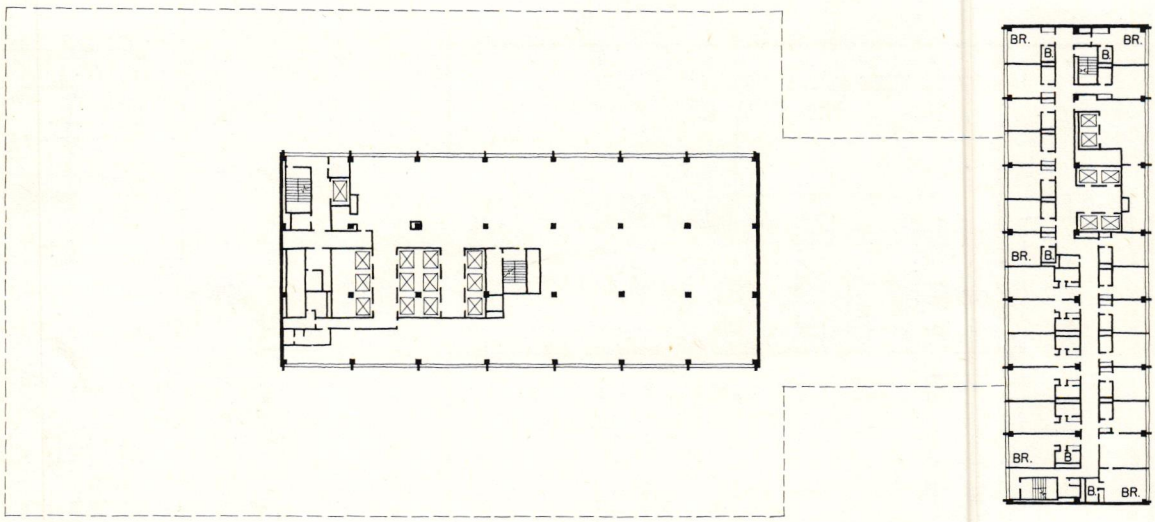




In this large building complex, the architects have successfully provided for the varied functions required for a 600-room hotel, a 41-story office building, numerous shops and stores, and parking for all guests and occupants. At the present time, the center contains more than 1.5 million sq ft of floor area. A third tower to be built at some later time will bring the total area to approximately 2 million sq ft. Four below-grade floors, each equal in area to the ground floor, contain parking areas, shops, and equipment spaces. The ground floor includes—in the area under the hotel tower—the entrance lobby of the hotel and its related covered off-street automobile entrance, shops, and a coffee shop. Separated from these areas by an open plaza is the main lobby area of the office tower, additional shops and offices, and the main motor entrance. Also located here are a number of storage-service facilities for the hotel. Escalators, located near the office lobby, allow patrons to go directly to the hotel ballroom and other public rooms on the second floor. By similar means, patrons reach the second floor main lobby and registration desk of the hotel tower. Near the second floor hotel lobby are the staff offices and several shops. The hotel lobby at this level is joined to the office tower by a glass-enclosed concourse and lounge on which are located two of the dining rooms. The concourse leads to the grand ballroom which accommodates 2500 for meetings, 1800 for banquets. This room may be subdivided for use by smaller groups. Several other public rooms of various sizes and the required kitchen and service areas are located on this floor.



THIRD FLOOR



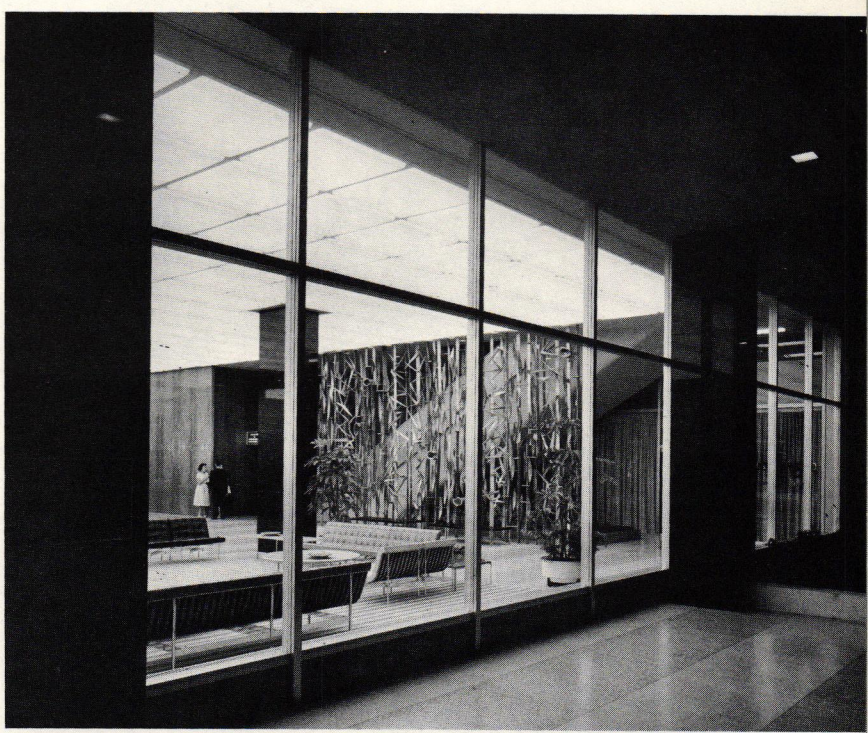
TYPICAL FLOOR

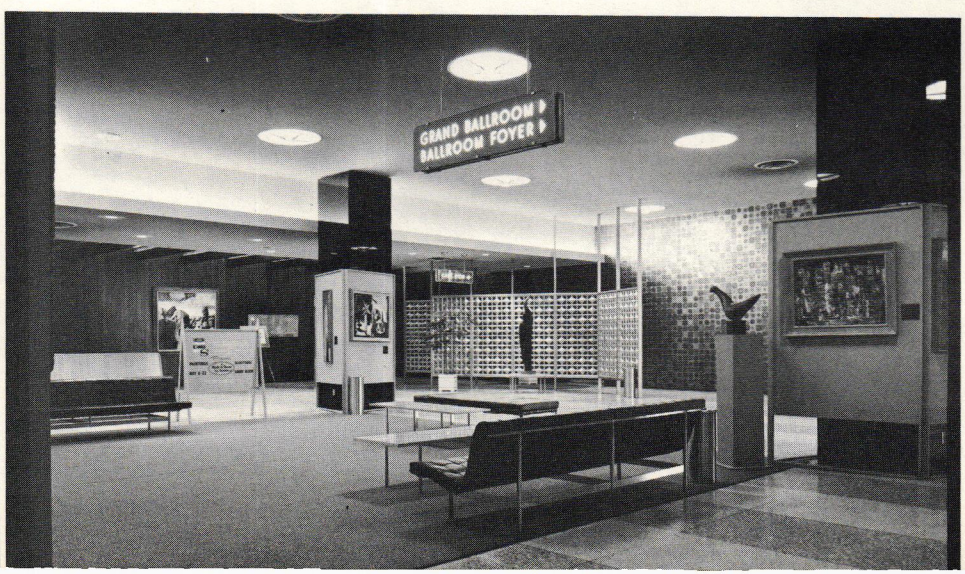
The third floor of the Center is mainly devoted to service facilities and employe's areas, except for spaces used for private clubs. By placing most of these facilities on a single floor, the architects were able to simplify the design of the hotel and offices and to provide for easier operation and maintenance. The office tower fourth floor is used primarily for employe dining and lounge, required by the owners who occupy the fourth through 18th floors. These areas face landscaped terraces on the third floor roof deck. Office tower floors (other than the 13th and 27th which are used for equipment) are planned around a nucleus of service facilities with otherwise open floor areas. Subdivision will be made in accordance with the requirements of individual lessees. The 36th and 37th floors are cantilevered eight feet from the face of the building on two sides. These floors will be leased to clubs or other organizations for headquarters, dining, or other private uses. Each hotel tower floor above the third contains 15 typical guest rooms (the smallest is 14 by 14 ft), six luxury rooms, and a two room suite. Exceptions are the top floor which contains only luxury suites and the 15th floor which is used for equipment. Fireproofed steel frame with cellular steel and concrete floors are used throughout the Center. Exterior walls are prefabricated lightweight concrete curtain walls, finished with exposed quartz aggregate on the end walls and integrally cast Italian glass mosaic tile on the others. Windows throughout are aluminum with alternating fixed and top-hinged sash. Subdivision of interior spaces is with metal stud, lath, and plaster solid partitions.



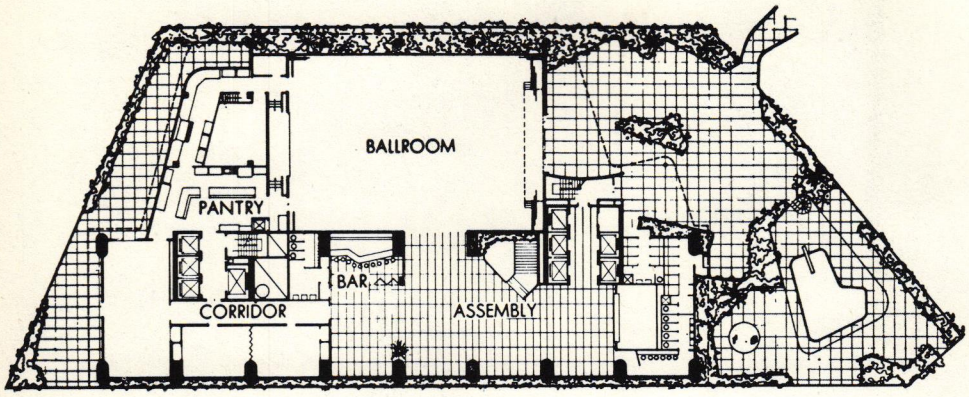


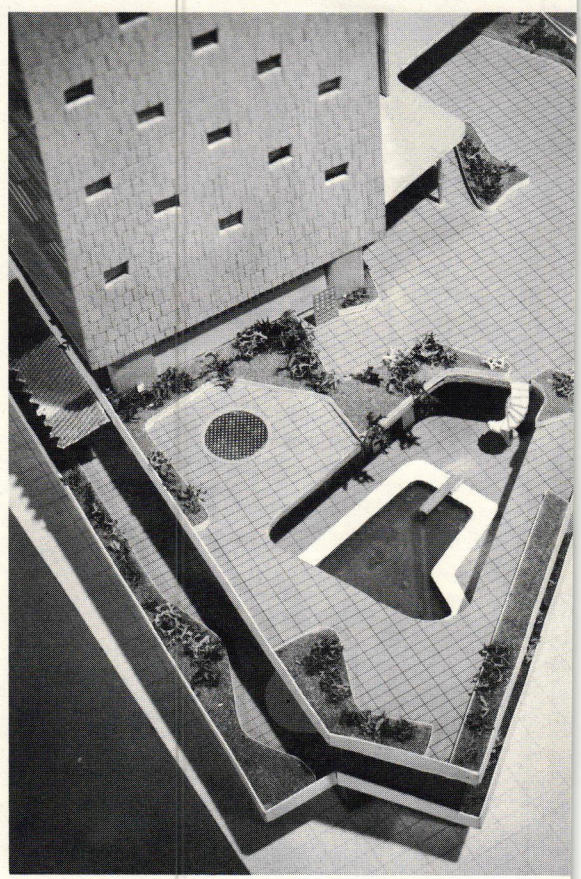
The center contains spacious and flexible public areas, in addition to the hotel guest rooms and office spaces, designed for the comfort and convenience of office workers and hotel guests. Shops of all kinds, ticket offices, an automobile service station, a stock broker, and a real estate office are among the variety of stores and services offered. In addition, there is, in the office tower, a heliport on the roof, an observation deck and snack bar on the 41st floor, and a chapel seating 25 persons on the 39th floor (upper left). Circulation throughout the center is made more efficient and agreeable by the use of large, relatively unimpeded lobbies and foyers in a number of locations. Upper right: the entrance lobby of the hotel is utilized almost entirely for guest circulation. Center right: the main office building lobby and lounge area as viewed from the landscaped plaza between the towers. Lower right: hotel grand ballroom lobby



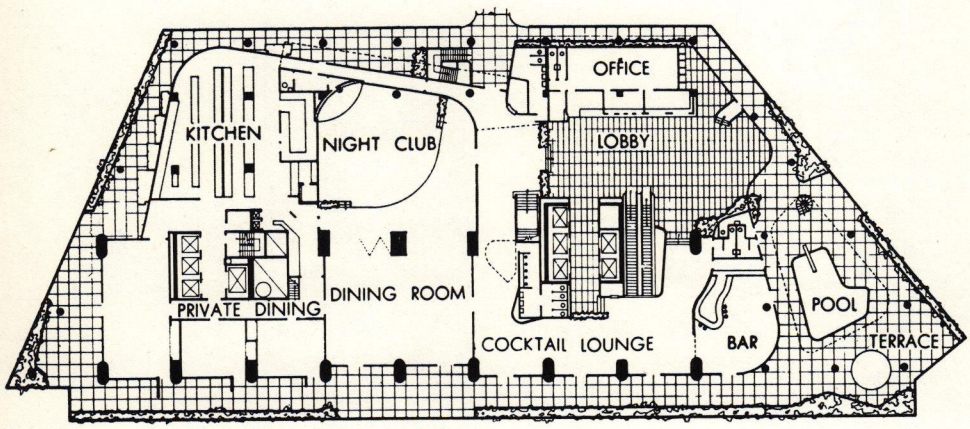


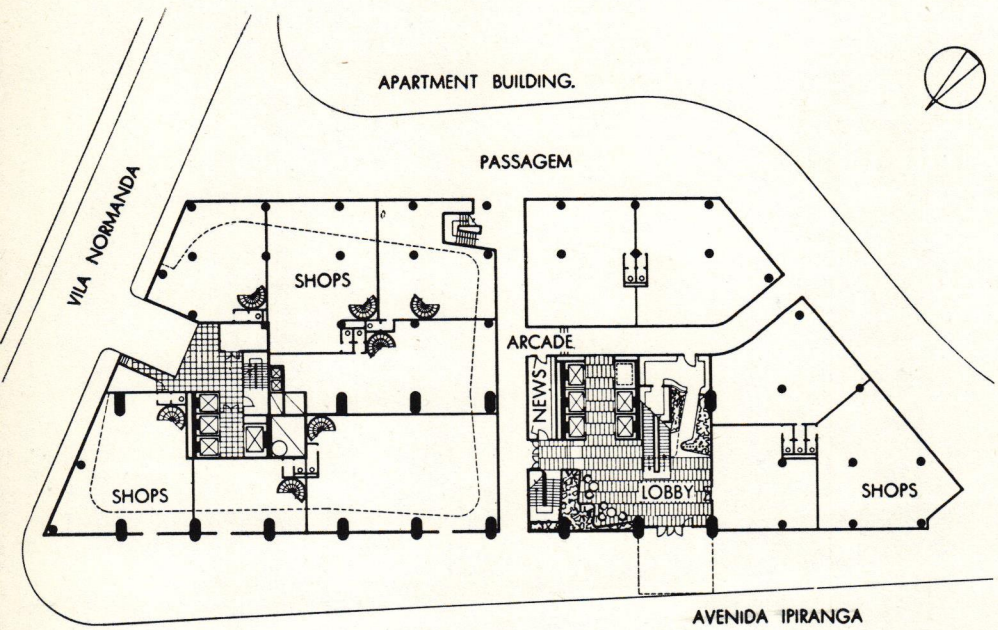
John Rogers photos

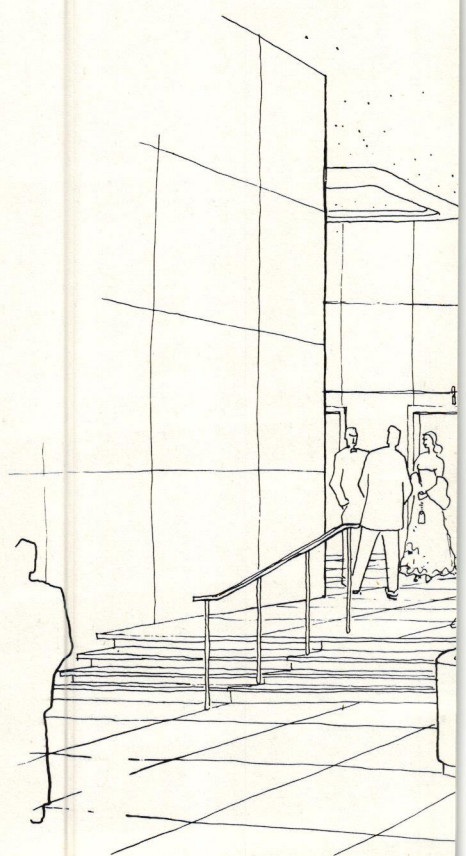




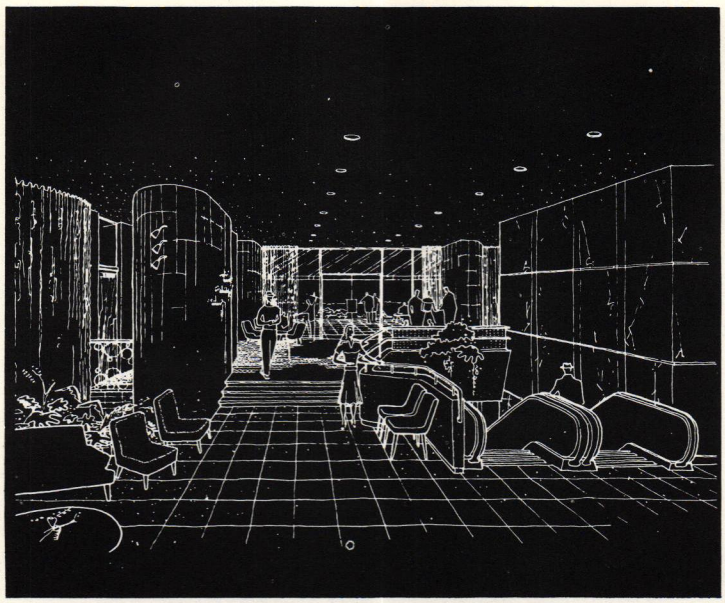
Bill Hedrich, Hedrich-Blessing

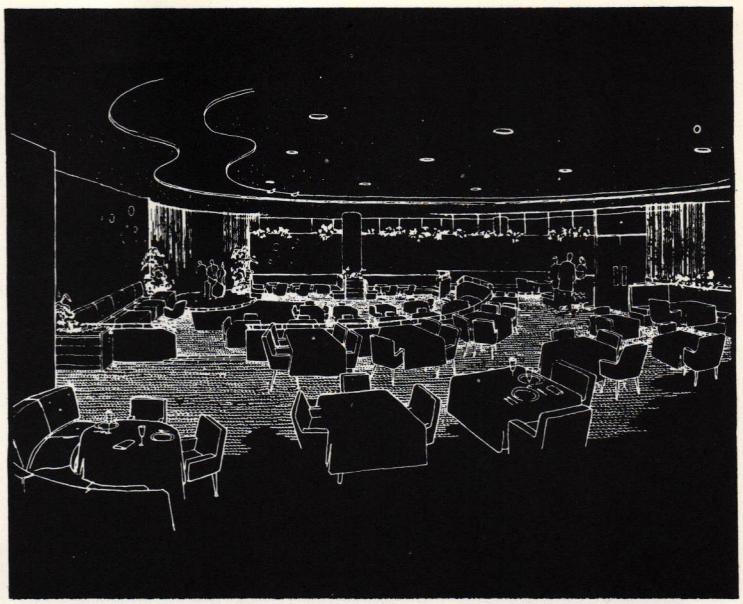






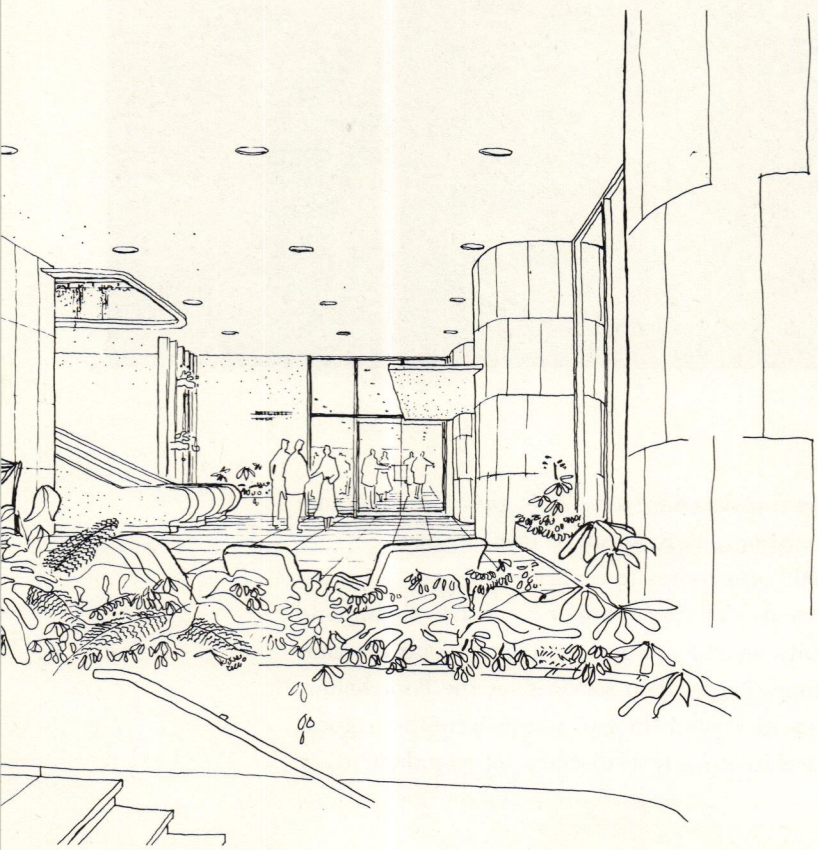
Copyright 1953 F. W. Dodge Corporatio





SÃO PAULO, which has two and a half million people and is growing, is the center of Brazil's industrial area, the greatest concentration of industry in South America. Yet it has lacked adequate hotel accommodations; and due to its location, climate and transportation as well as the city's progressive character, it needs social and convention facilities. One evidence of this is the extraordinary amount of outstandingly progressive new building in São Paulo, which will celebrate its bicentennial next year.

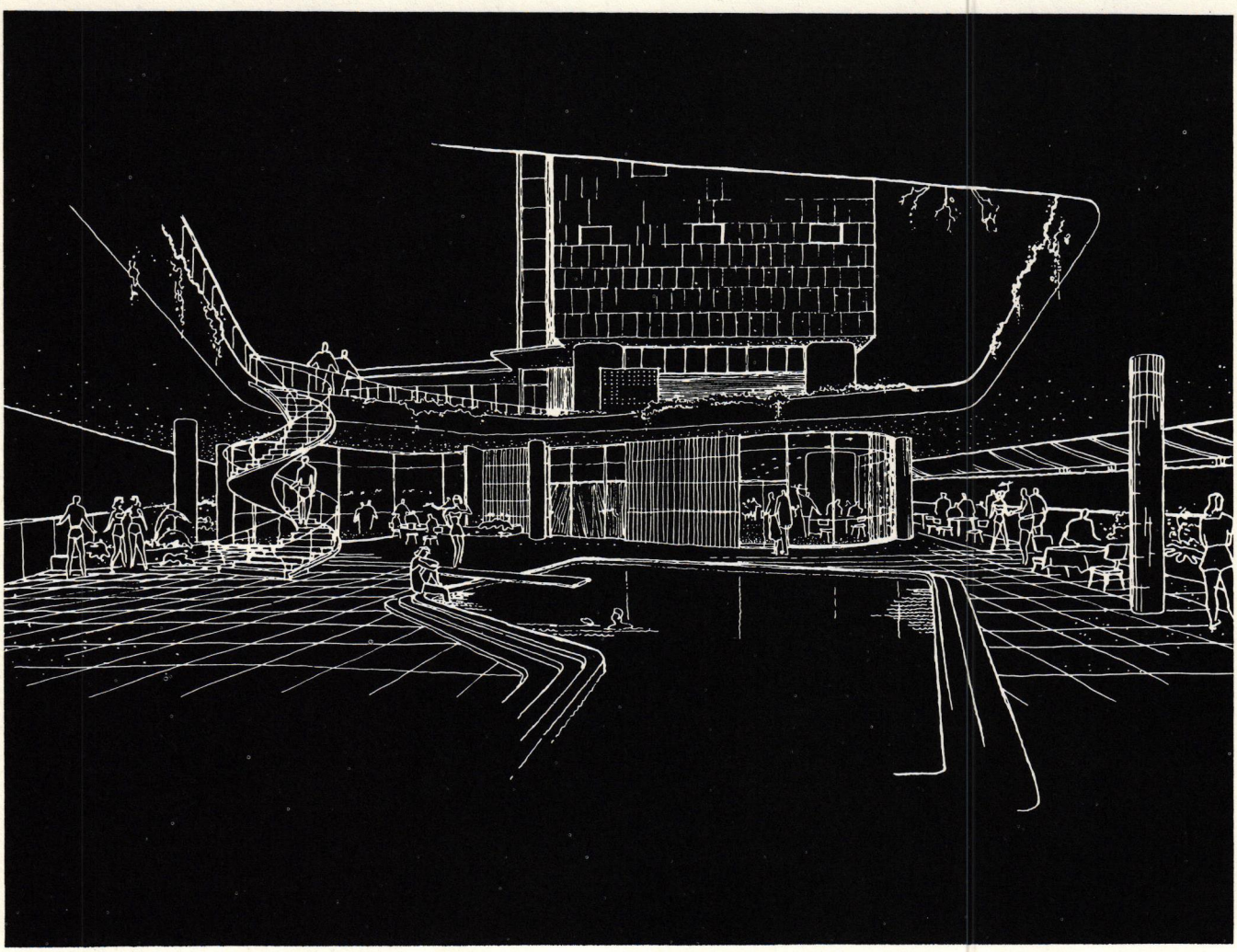
Recognizing these factors, a Brazilian company, Companhia Pan-América-Hotéis e Turismo "Copan," was formed to develop this hotel and an adjoining cooperative apartment building (the serpentine form outlined in the plans; Oscar Niemeyer designed the apartment). Copan has financed the hotel's construction; Intercontinental Hotels Corp., of New York supervised design and construction, and operates the hotel now.



Ground floor and mezzanines are entirely shopping arcades. Two main hotel floors, immediately above, are treated like decks of a cruise ship with a variety of outdoor cafes, terraces, pool, gardens and arcades directly accessible to interior lounges, lobbies, front desk, dining rooms, night club

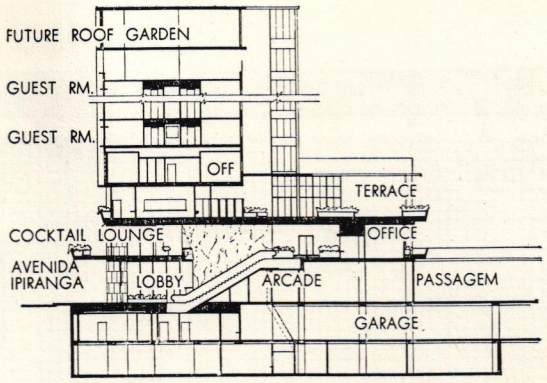
The site selected for Hotel Copan, at the intersection of Avenida Ipiranga and Vila Normanda in the heart of São Paulo, is close to the best shopping districts, principal theaters, other hotels, and night clubs. Avenida Ipiranga is the main thoroughfare to good residential areas and the airport. Three-fifths of the site is occupied by the cooperative apartments previously mentioned, which were planned to provide the hotel with an additional source of year-round revenue. To an extent —with respect to the use of the parking garage and public facilities—the two buildings will be interconnected.

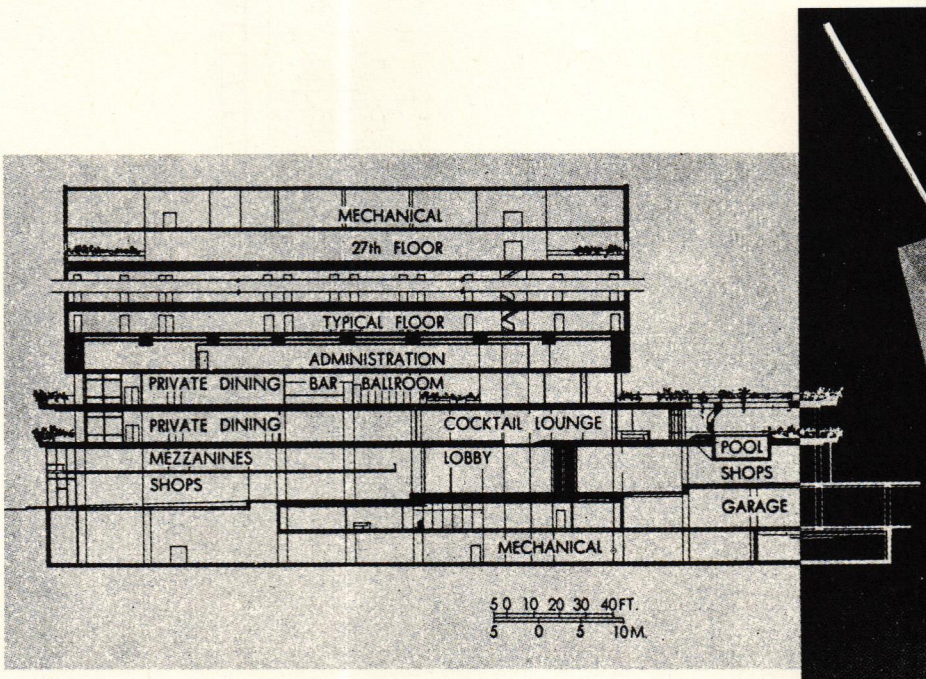
There was left for the hotel about 29,350 sq ft of land, roughly oval in shape

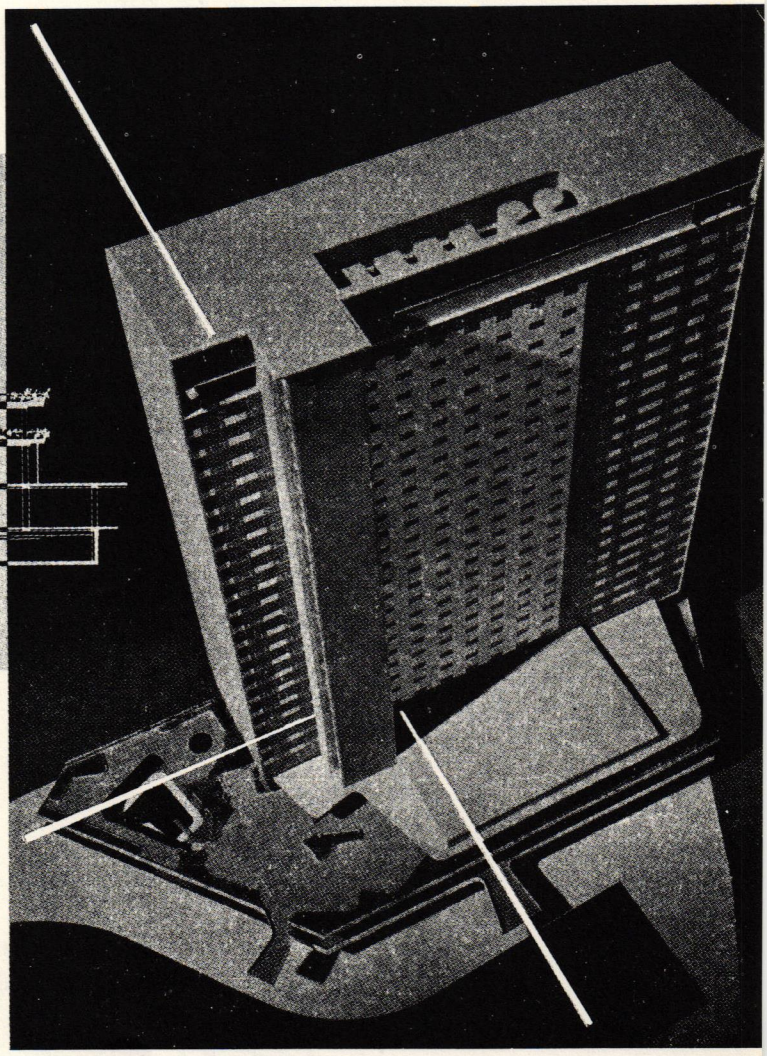


and surrounded by streets, one of them a pedestrian way. This gave the designers an opportunity to produce a building without, so to speak, a front or back.

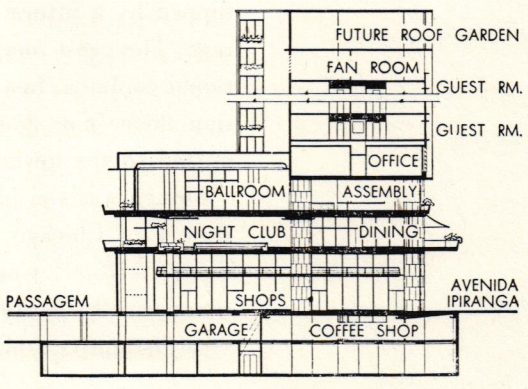
The design as developed provides 600 guest rooms in a variety of sizes, arrangements, appointments and rates. To serve its thriving community, it has a complete floor of facilities for conventions, exhibitions and public functions beyond the generous provision of lounges, terraces, dining, and allied services on the floor below. Being quite different in character and in operation, the two principal units — guest rooms and public areas — are treated architecturally as distinct yet complementary parts of the whole.



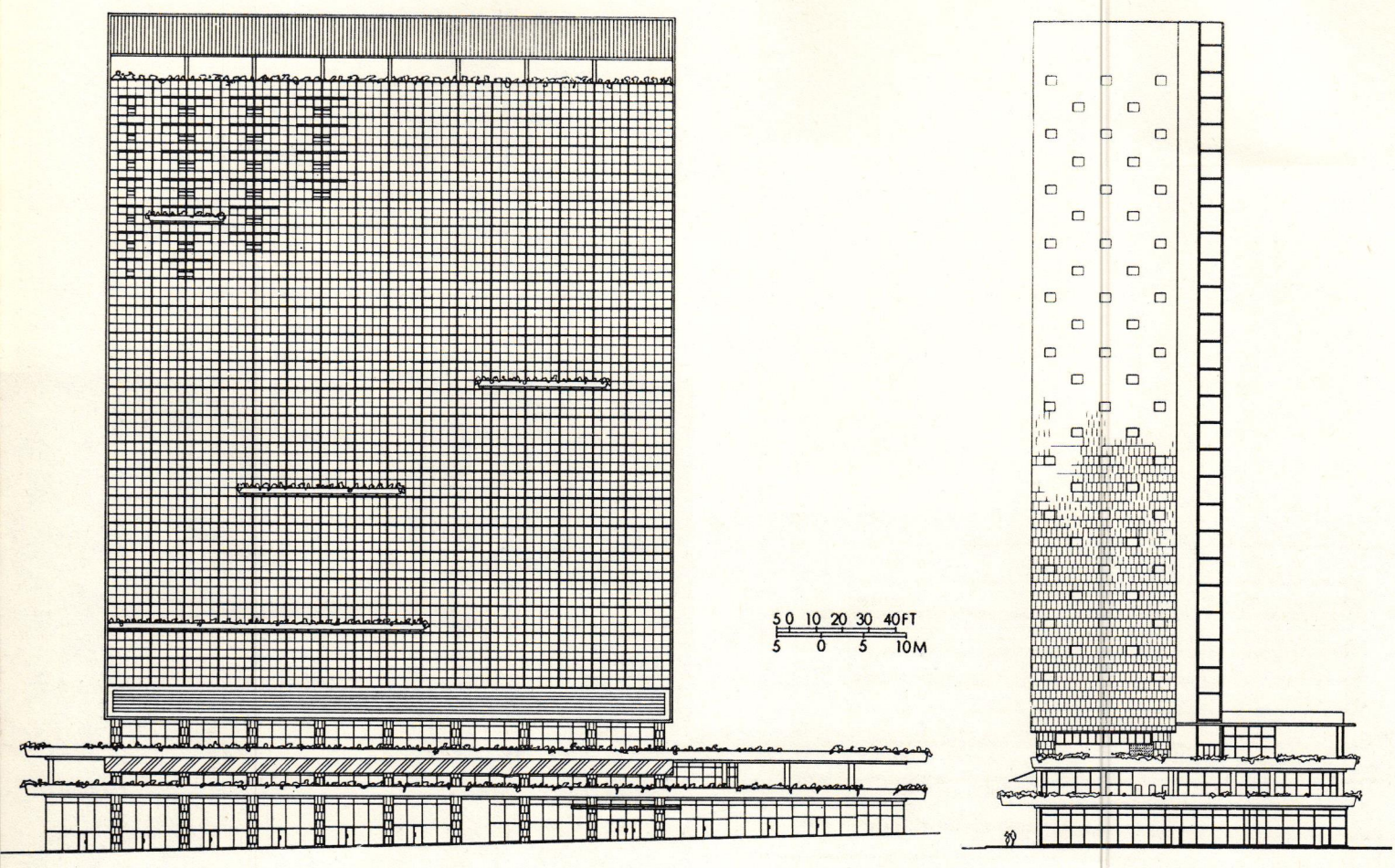




Bill Hedrich, Hedrich-Blessing



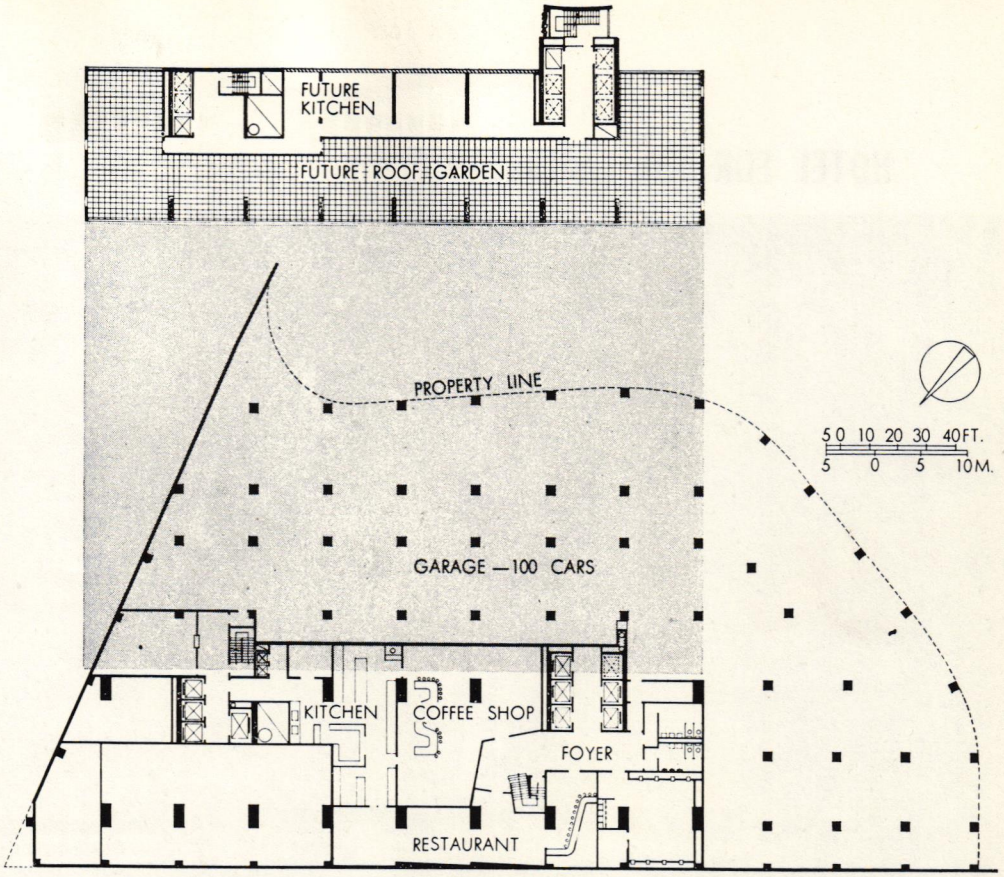
Above the 7-meter-high ground floor required by local regulations and the "decks" of public areas, the 22 floors containing 600 guest rooms form a colorfully treated vertical slab (see following pages). Drawing opposite shows swimming pool



In arriving at decisions on design, Intercontinental and the architects evaluated not only local needs but also increasing tourist travel and its possible effects; for instance, guests from abroad will probably demand heating and air conditioning; these have been included although they are relatively new to São Paulo. Physically, the building is a vertical slab of guest rooms surmounting three horizontal decks of shops and public areas, topped by a future roof garden (see plan, top of facing page) and with a basement garage. The guest room block, structurally the work of Brazilian engineers, has no conventional columns; instead it consists of bearing walls and flat slabs. Below this is a transition floor (not shown) containing offices and equipment space; here loads are transmitted to the lower pairs of huge columns visible in the plans. Foundations are piling.

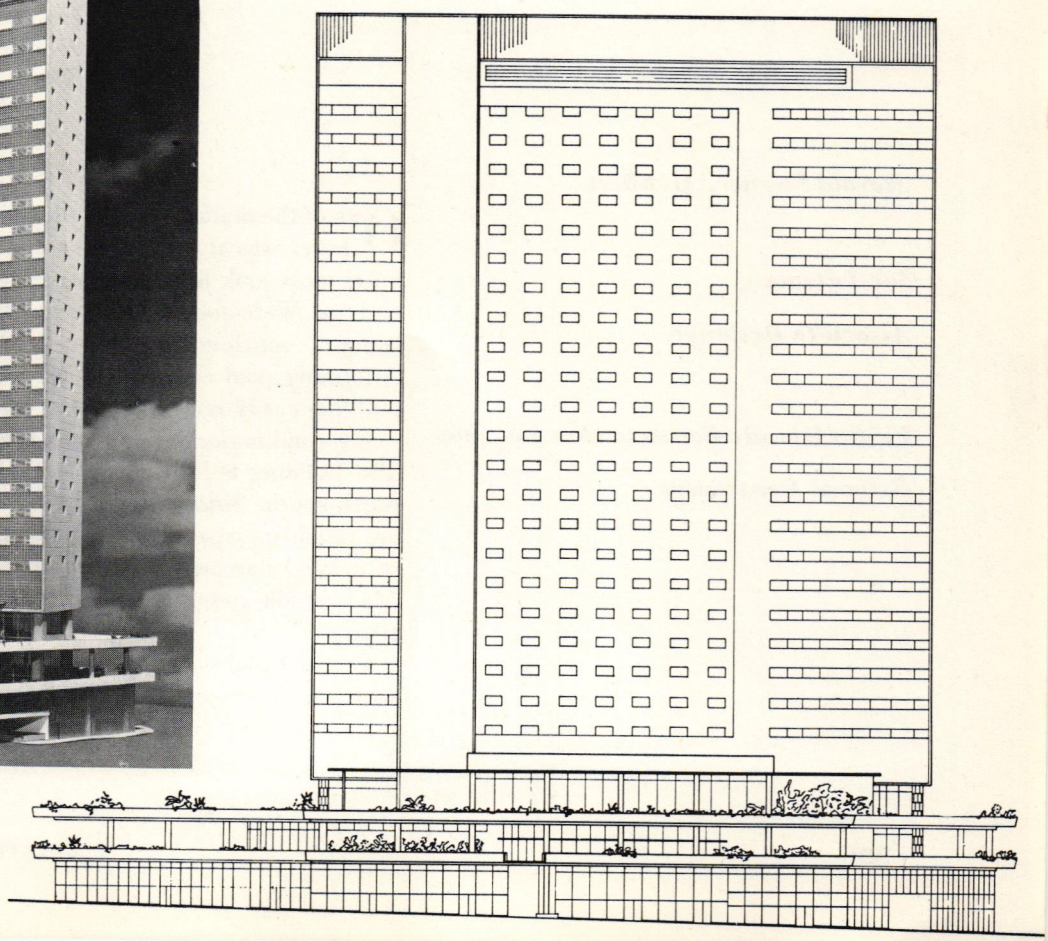
Design was the joint responsibility of Henrique Mindlin of Brazil, Holabird & Root & Burgee of Chicago, with Helmuth Bartsch of the U. S. firm in charge, and Intercontinental Hotels Corporation of New York. The building which stands now is colorful, commercially feasible and—with its sparkling multitoned facade and gay lower decks — a distinctive addition to its city's architecture.

Main guest room block, free of lower "decks," rests on pairs of columns each about 8 by 4 ft and 25 ft apart. Basement garage (plan, lower right) for 130 cars continues under adjoining apartment building



Bill Hedrich, Hedrich-Blessing





5 0 10 20 30 40FT
5 0 5 10M.

HOTEL FOR THE CARIBBEAN



Hans Namuth Photo

Harold Sterner, Architect

Jac Lessman

Associate Designer

Virgin Islands Construction Co., Inc.

General Contractor

ONE of the main factors in the design of this new island hotel was the architect's conviction that a resort hotel must look like what it is — a place for relaxation and fun. Wide and curving terraces, a sweeping entrance canopy, continuous balconies and a kidney-shaped swimming pool combine to make the character of the building easily recognized from sea or air.

A second major design factor was the island's climate. The building is located on a spur running almost due north-south. Since the very welcome prevailing winds are roughly east-northeast, bedrooms are all on one side of a long, narrow wing following the line of the spur. Main public rooms also face in a general easterly direction.

Original plans called for a modest 30-room structure, with the bedroom wing only three stories in height.

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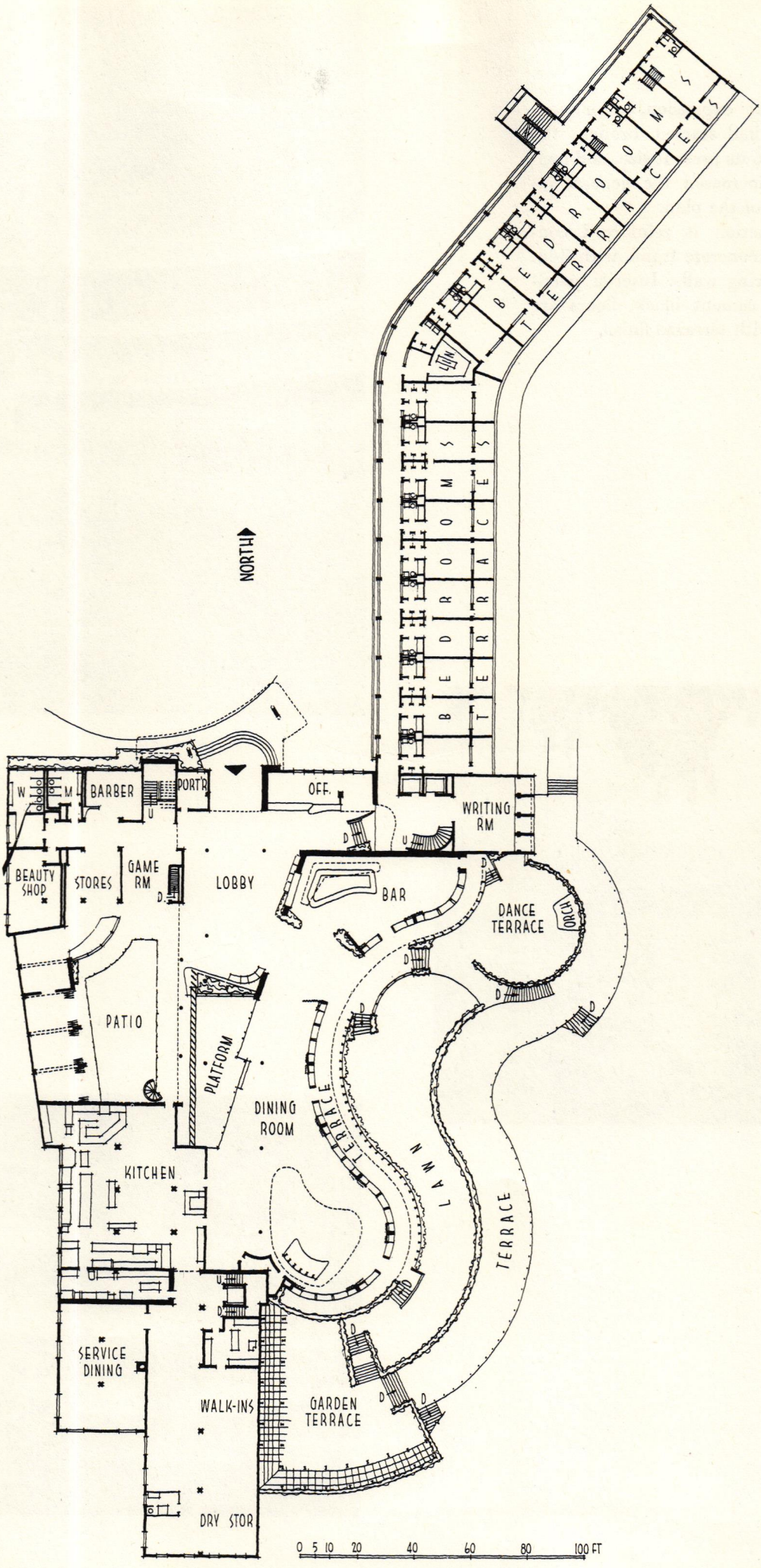

NORTH
BEDROOMS
TERRACE
BEDROOMS
TERRACE
W
M
BARBER
PORT'R
OFF.
WRITING RM
BEAUTY SHOP
STORES
GAME RM
LOBBY
BAR
DANCE TERRACE
ORCH
PATIO
PLATFORM
DINING ROOM
TERRACE
LAWN
TERRACE
KITCHEN
SERVICE DINING
WALK-INS
GARDEN TERRACE
DRY STOR
0 5 10 20 40 60 80 100 FT

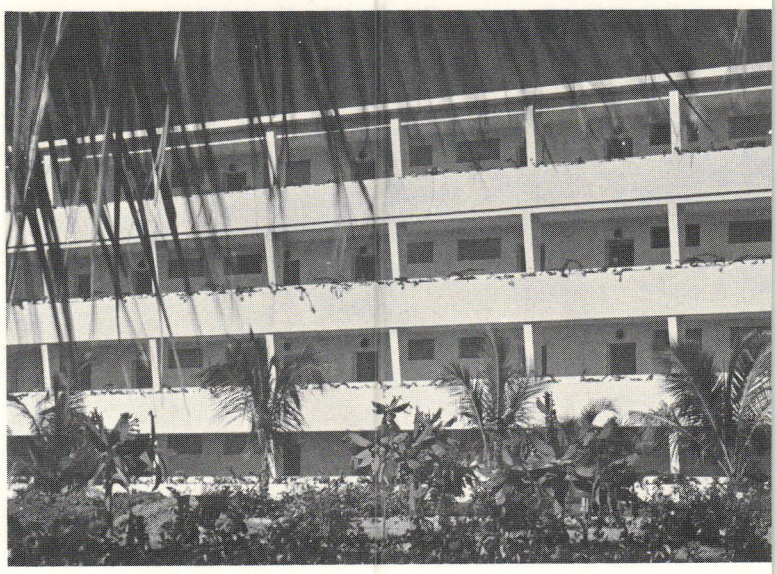
Subsequent expansion, after construction had started, brought the hotel up to its present size, and incidentally increased the general informality of the plan.

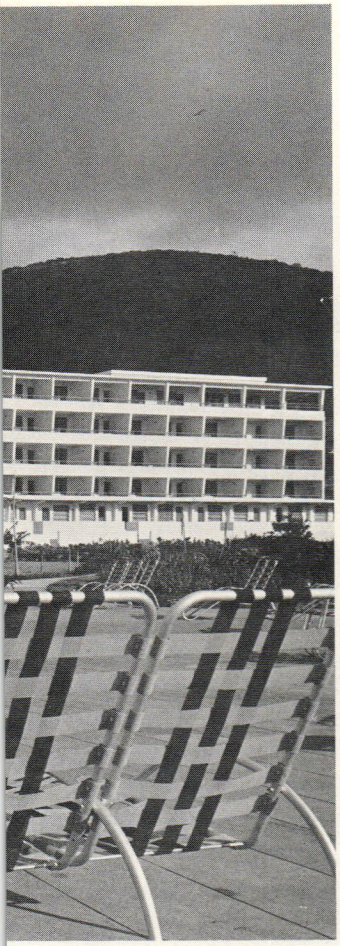
Construction is reinforced concrete and concrete frame with 8-in. block bearing walls. Interior partitions are cement block, floors are slab tile with terrazzo finish.

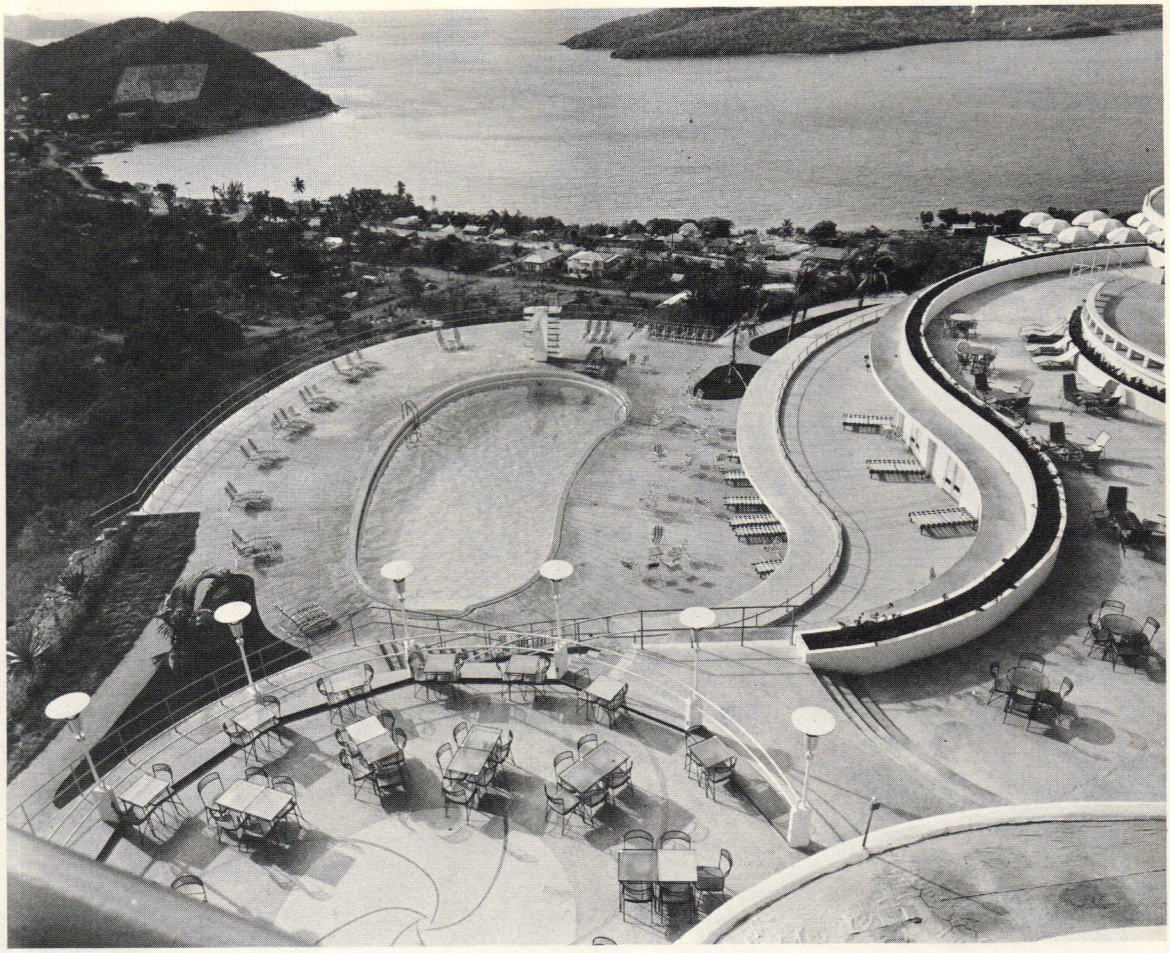


Hans Namuth Photos

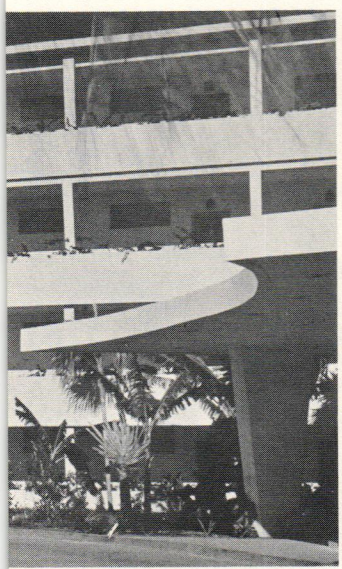








Swimming pool and terraces are the main features of the hotel. The two lower floors of the south wing are lined with cabanas on the pool side; above them (plan, page 207) *are dining room, bar, dance terrace. Main entrance (below) is at north side of main main wing, at third-floor level. Corridors in bedroom wing (bottom, opposite) are open*



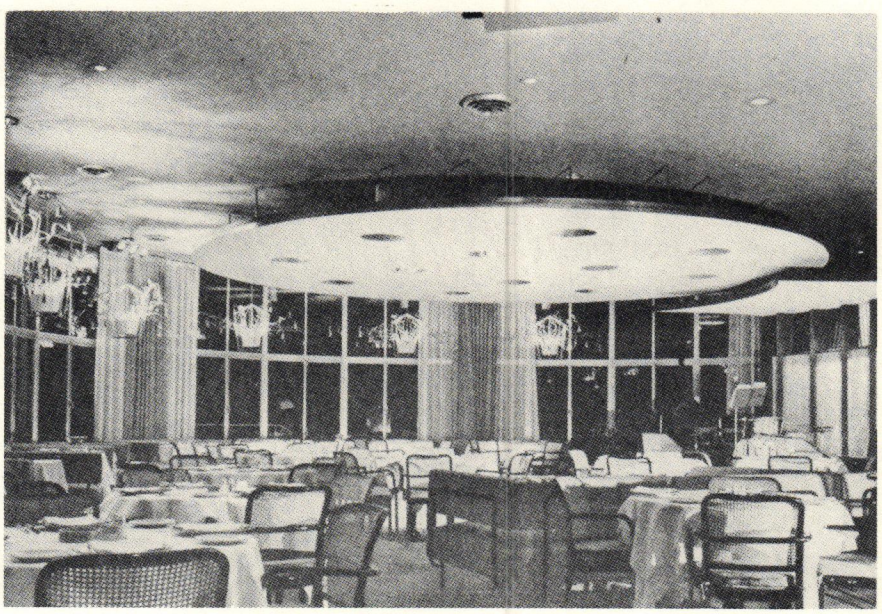






Hans Namuth Photos

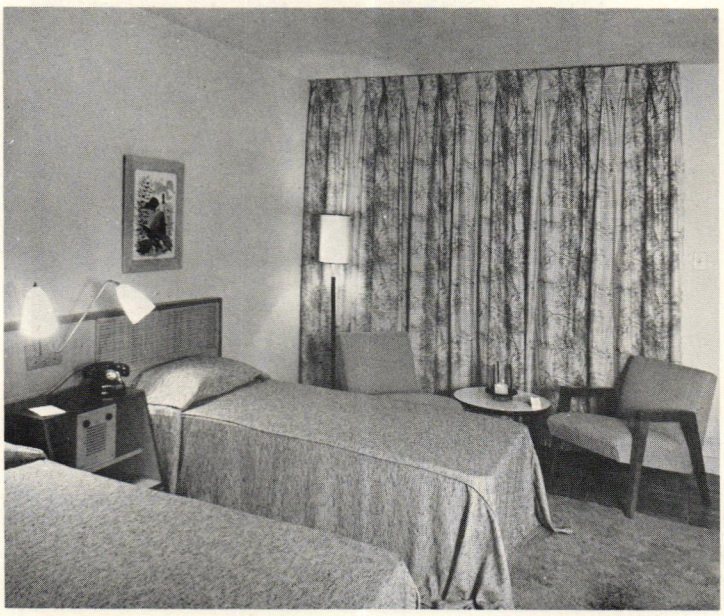
Above: steps leading up to dance terrace past the glassed-in bar. Right: the main dining room. Trade winds are sufficiently strong at mid-day peak to require glassing-in of such areas despite the mild climate







Above, left: main lobby, like other public areas, is large and airy, with open terrace only a few feet away. Above, right: the garden terrace, on south side of main wing, is well sheltered from trade winds. Below: every bedroom has its own terrace overlooking the harbor, and its own short-wave radio set; several duplex two-room suites are provided at northernmost end of wing. Furnishings throughout are mahogany and native fabrics





THE STORY OF THE DALLAS STATLER

ON A 56,510 SQ FT SITE on Commerce St. in downtown Dallas, Hotels Statler Co., Inc. has built an 1001-room hotel, the 18-story Dallas Statler. The building was completed in mid-55 at a cost between $14 and $15 million; it still is representative of the most forward-looking; trends. The hotel has been billed by its owners as "the first multi-storied building in the world to make full use of flat-slab cantilever construction," and as "one of the largest projects of its kind developed anywhere in the world in more than a quarter of a century," it possesses an exterior skin of glass, aluminum and prefabricated porcelain enamel panels. Its high-velocity peripheral air conditioning system has insulated vertical supplies exposed on the building's exterior, resembling half-round multi-story pilasters which discipline the patterned facades. This system serves the guest rooms well; public areas on the lower floors have conventional low-velocity air conditioning.

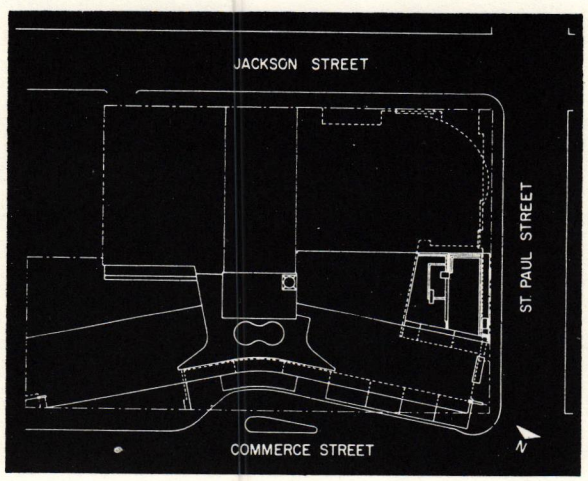
Behind the undertaking were months of deliberation, by Statler's Building Committee and their architect, which culminated in certain decisions: to build a large commercial hotel during 1953–54 when few others were scheduled and those few generally smaller or of the resort type; to select a potentially successful city and site; to employ sound structural and mechanical techniques whether or not these might be conventional; to determine the amount and disposition of public, rental and guest spaces in wings widely spread so guest rooms would not face each other across courts, and to set the actual number, size, equipment and decoration of public areas, guest rooms, service areas and administrative offices. The results now taking form in the Dallas Statler are a natural consequence of the company's experience in Boston, Buffalo, Cleveland, Detroit, New York, St. Louis, Washington, D. C., Los Angeles, and Hartford, Conn., where another new Statler will open shortly. Unlike some of these, the Dallas Statler will contain no rentable office space. However, it follows evolving Statler tradition in its cannily chosen site, in the heart of the theater and shopping district near Neiman-Marcus' department store and two Dallas landmarks, the Republic Bank's skyscraper, and the recently built Center (see pages 193-198) which houses the offices of Southland Insurance; a block from a proposed express highway; easily reached from air and railroad terminals and bus lines. Statler experience is evident, too, in the grouping of public areas on lower floors; in the gardened court with its reflecting pool; the 17,620 sq ft of space for stores and shops; the balance between guest rooms (3,106,480 cu ft or 50.5 per cent) and public and service areas (3,038,520 cu ft or 49.5 per cent) as compared with the 50–50 ratio considered optimum for a large metropolitan hotel.

As it stands, the Statler embodies a number of other "firsts" for Dallas: its Terrace Room and Cafe Rouge are kept separate by a curtain whose position can be changed so the Terrace Room can serve more people than can be accommodated in any present Dallas supper club or nightclub. Its two principal ballrooms have been divided by a new type of folding partition; united, the area can seat 2000, which Statler says is 400 more than any other west of Chicago. 3,029 persons can be accommodated on the function floor at one time. If all goes well, on the roof will be the Statler Heliport, first of its kind (Fort Worth's Western Hills Hotel has its own ground heliport) — though the city fathers hesitate to agree.

Architect: William B. Tabler

Engineers, Structural: Seelye, Stevenson, Value & Knecht; Mechanical, Electrical: Jaros, Baum & Bolles; Electrical Associates: Smith & Silverman

Builder: Robert E. McKee, Inc.



***Statler Building Committee:** William L. Marcy, Chairman of the Board; Arthur F. Douglas, President; Harold B. Callis, Senior Vice Pres.* **Decoration:** *Statler Studios, Inc., Ernest Wottitz, head designer.* **Food and Beverages:** *John B. Grande, Vice Pres.* **Kitchens, Laundry:** *W. Randolph Leber, Vice Pres.* **Financing:** *Robert L. Sussieck, Vice Pres. and Treasurer; financing by Aetna Life Insurance Co.*

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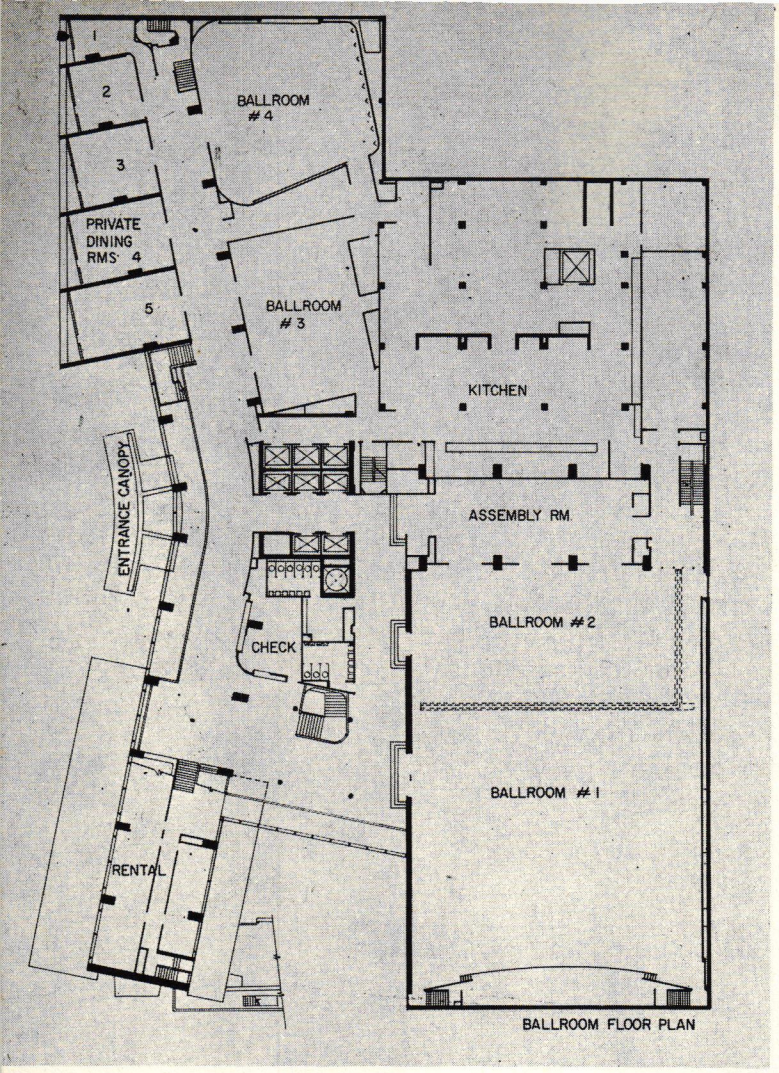
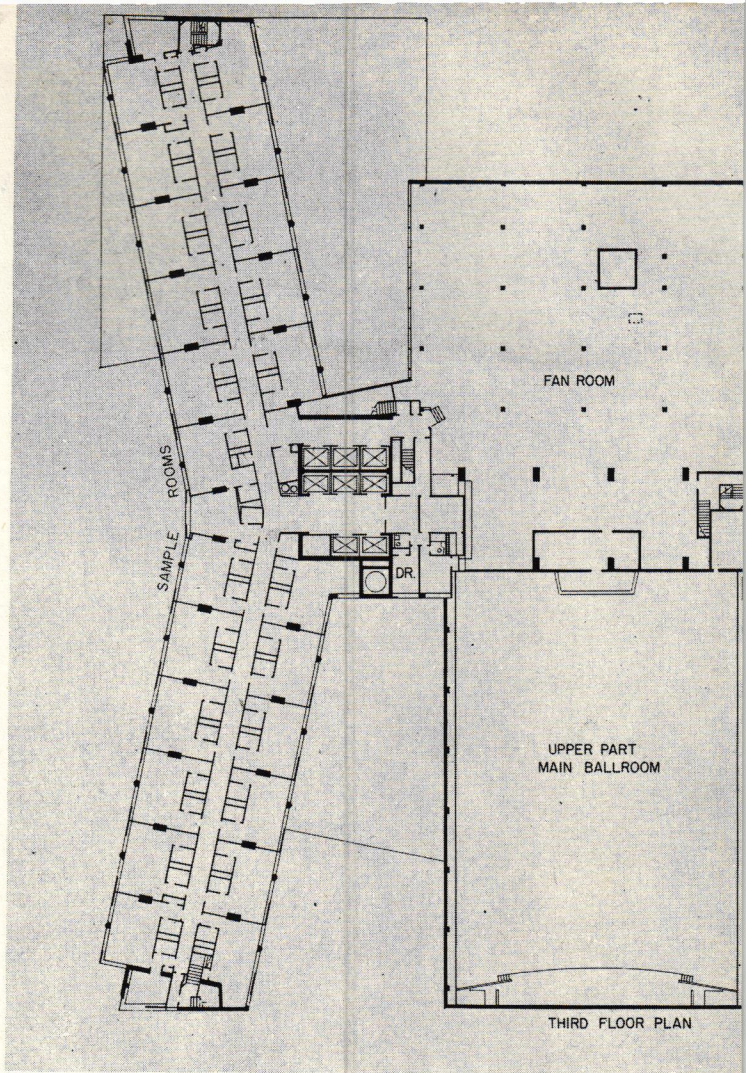
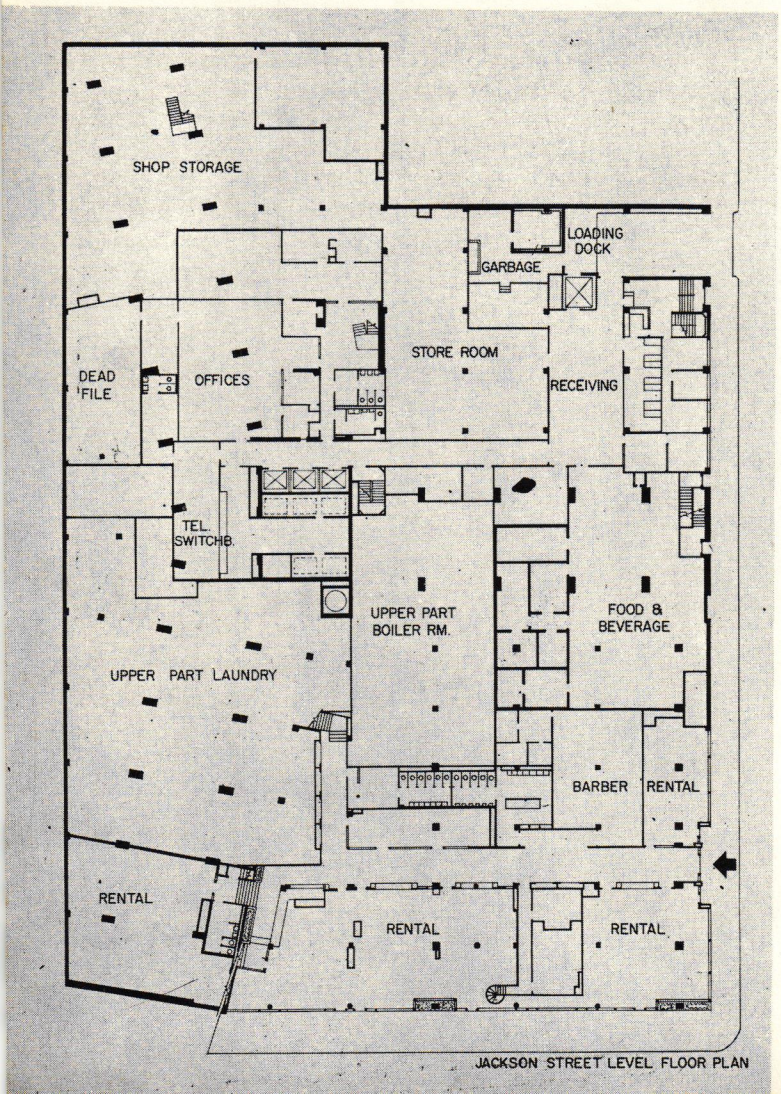
HOTEL



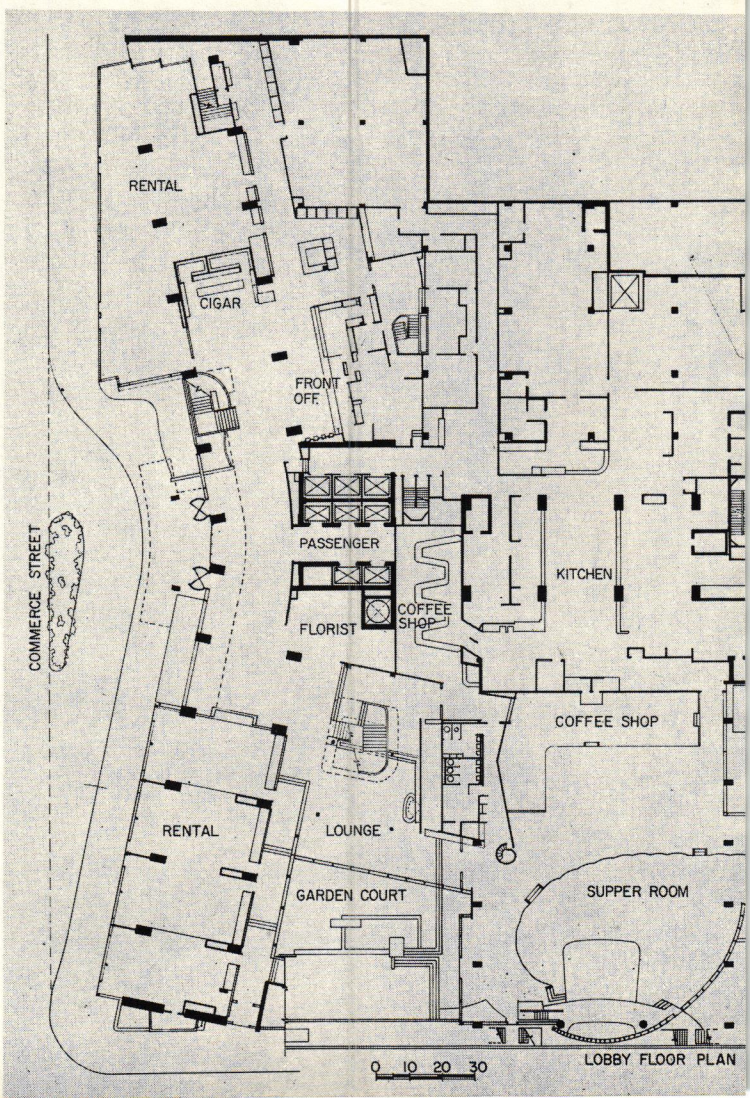
BALLROOM FLOOR PLAN



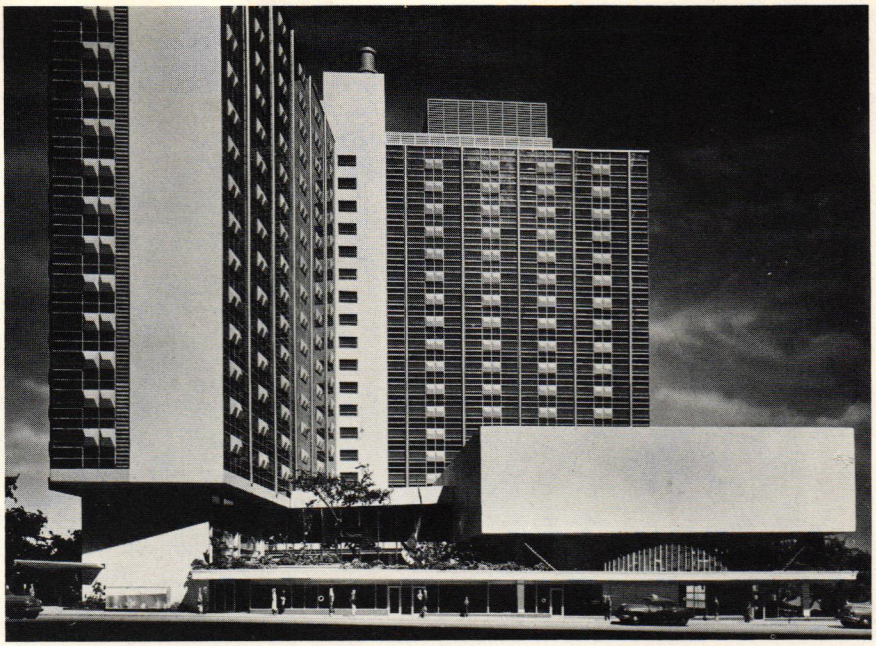
THIRD FLOOR PLAN

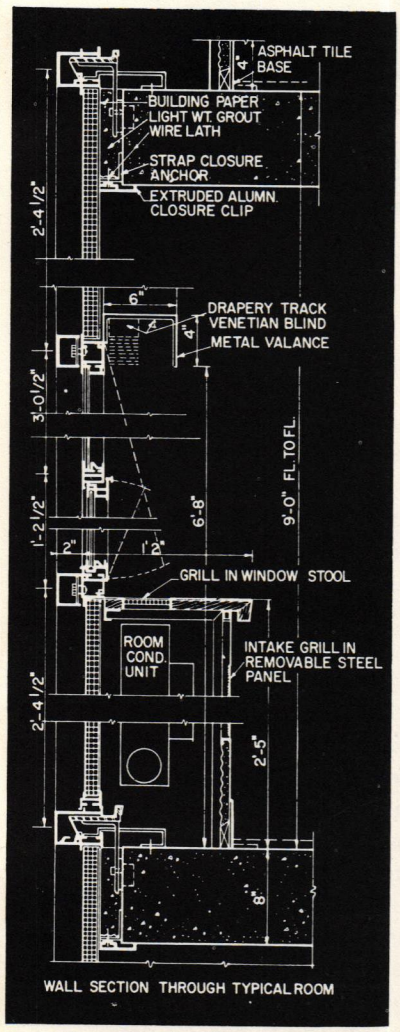


JACKSON STREET LEVEL FLOOR PLAN



LOBBY FLOOR PLAN





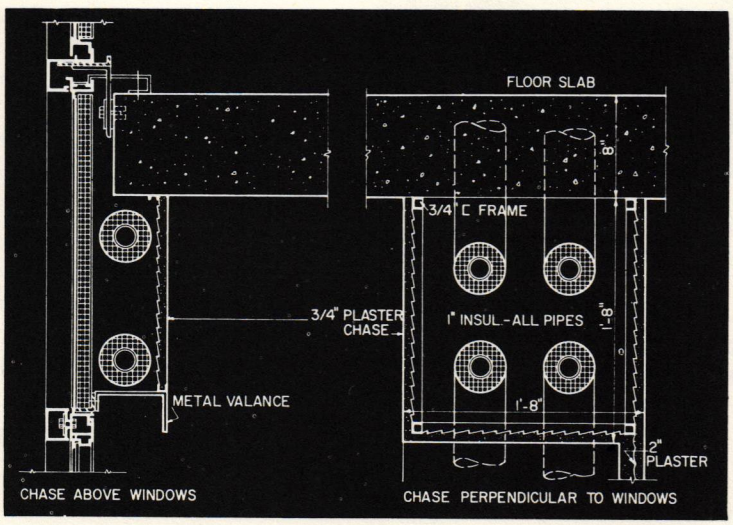
WALL SECTION THROUGH TYPICAL ROOM

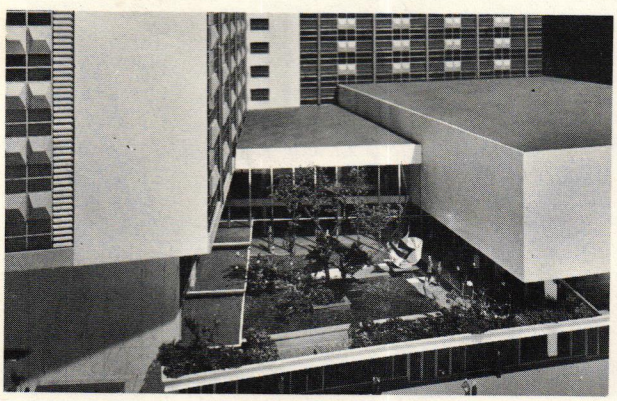
The Statler is the city's only Commerce St. building not built out to the sidewalk; landscaped main entrance drive minimizes interference with street traffic. A function floor, up broad stairs from the lobby so elevators aren't needed, provides, with other Dallas facilities, enough space for the largest convention. The main ballroom area is a steel-framed, windowless, air conditioned cube with specially designed cold-cathode lighting.

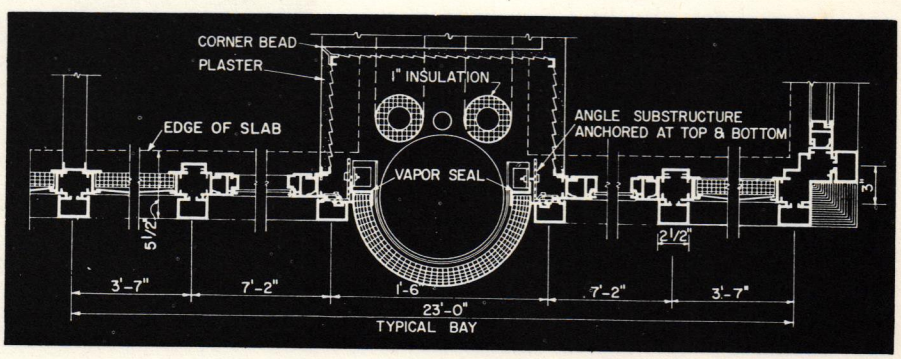
EQUIPMENT: *Main kitchen serves both the restaurants; another, the banquet and function rooms; a third, employee's cafeteria. Kitchen location, equipment and traffic flow are designed for efficiency: raw materials from truck dock in one end, finished meals out the other. Terrace Room dance floor will raise for floor shows, lower to form skating rink. The elevators are high speed automatic (700 fpm), radio equipped*

WALL CONSTRUCTION: *glass areas (picture windows and vents) hinge at top, swing in as units for washing when unlocked with a key. Solid panels are porcelain enamel backed with glass fiber board and asbestos-cement interior surface, held in light aluminum glazing sections*

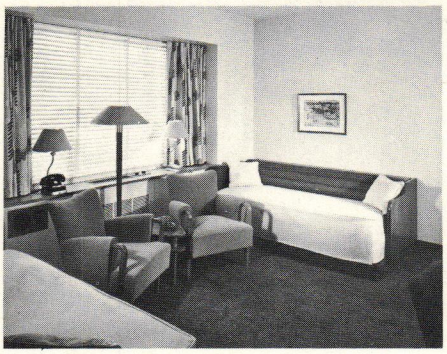
Air supplies, heating and chilling water and returns, all in vertical mullions, supply the individual room conditioners. Midway up building (9th or 10th floor) are piping expansion loops (right)



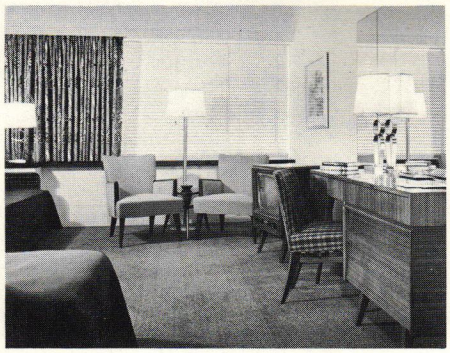




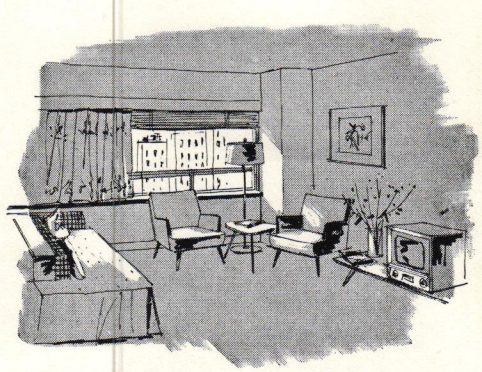
Left, Hedrich-Blessing; center, Shulman



Typical rooms: Washington, D. C.



Los Angeles, Calif.



Hartford, Conn.

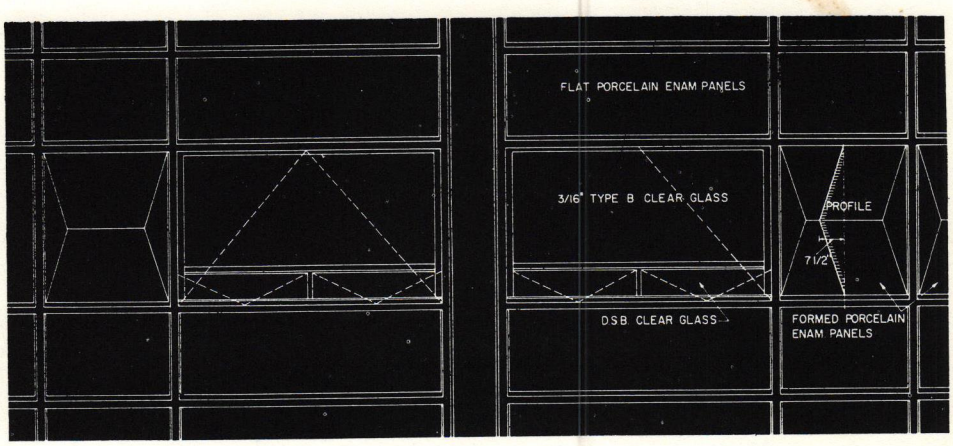


Louis Checkman

FACADE DETAIL *above. At right, exterior elevation of typical bay fronting a pair of rooms, one single, one double. Square porcelain enamel panels are shaped to increase rigidity.*

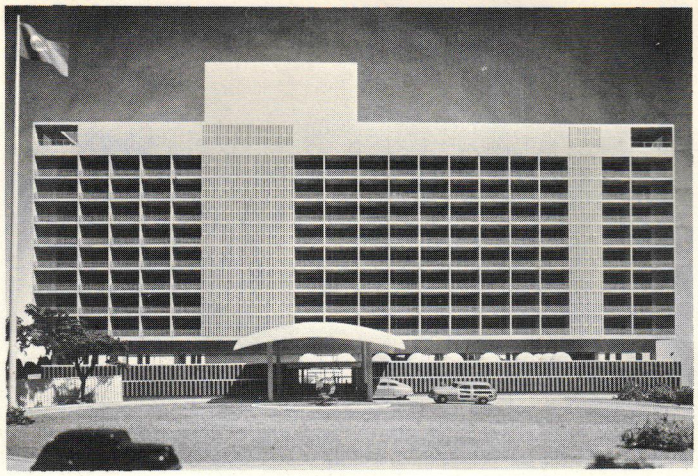
STRUCTURAL SYSTEM *is reinforced concrete in guest room wings, with flat slab floors cantilevered from a double row of interior columns. There are no exterior columns at all; insulated metal and glass skin have been hung from slab edges. Rectangular interior columns increase in thickness on lower floors, are 23 ft on centers, determine placement of thin partitions* (see plan g, facing page)

The guest room wings' unusual structural system, exterior skin and air conditioning layout have been studiedly integrated; their flat slab floors, carpeted above and painted on the underside, are both structure and finish. This leaves nowhere to bury utilities, nor do the 2-in. plaster partitions provide room for anything more than electrical conduit. Air conditioning supply lines, then, are literally pushed outdoors where, as previously noted, they look like structural elements. Such a demonstration of ingenuity is forced by the high construction costs encountered today if a reasonable cost per room is to be realized; instead of accepting the smaller rooms which conventional construction might have entailed Statler has chosen to maintain the quality of its accommodations. Almost all of the Statler guest rooms possess studio beds and furniture designed by Statler Studios, individual air conditioning units, "Servadors," TV-radio sets, venetian blinds, and drapes. Bathrooms, like those in Hartford and Los Angeles, display lavatory-dressing tables, toilets angled to become dressing table seats, wide mirrors, oversized medicine cabinets (backs removable for access to plumbing shafts), incandescent lights, and the Statler towel hook — which the Company expects to cause a saving of $15,000 a year in laundry and linen replacement.

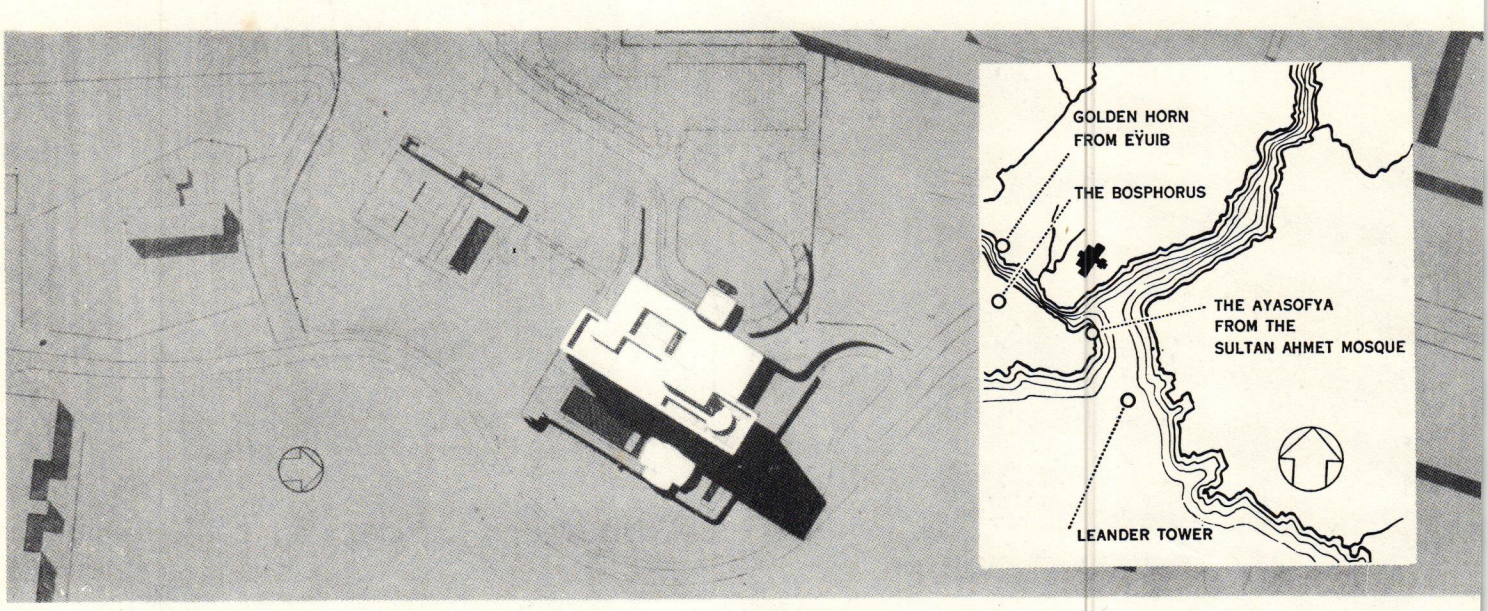




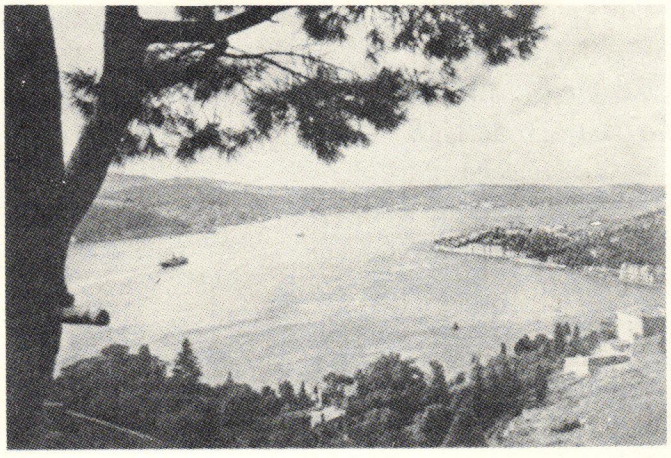
Owner: Turkish Republic Pension Fund
Advisor-Operator: Hilton Hotels International
Associated Architects: Skidmore, Owings & Merrill
Sedad H. Eldem
Partners in Charge: William S. Brown, Coordination
Gordon Bunshaft, Design



Ezra Stoller







For all of the European influences that have been felt in Turkey in its recent history, the country is still visited for historic scenic attraction. The hotel has been built upon a high hill overlooking the famous Bosporus (picture left, below). Within range of this hill (telescopic range, perhaps) are such views as the Leander Tower (left, above), and the Golden Horn (opposite page).



These purposes found their way into the architectural expression, though the interpretation is much more natural than the listing of the purposes might imply. The slick efficiency of the hotel-room shaft is manifest, and the extension of the two public floors offers no denial of this note. There is perhaps a gayer or more gracious note in the gradual movement outward of the lower floors, and there are motifs of definitely Turkish origin, these being suitable for tourist or diplomat alike. The picturesque quality of Turkish artistry will find its place in the interiors, even though the tourists have to take cabs to see the minarets.

From its beginning the hotel project seemed to accumulate a great deal of official attention, and was finally blessed with high-level approbation. Istanbul (Turkish government) had long sought to interest American capital in such a venture. ECA (now MSA) took an interest in this and other similar moves toward extension of commercial and tourist trade. An official tour was organized, with Conrad Hilton and John Houser of Hilton Hotels International, and Louis Skidmore and William Brown of the architectural firm, who visited London, Rome, Istanbul, Athens. Istanbul was the first city selected; there may be others. The enthusiastic cooperation of the Turkish government was a factor; funds and collaboration were made available. Also the choicest possible site; indeed the site is part of an ambitious park development for Istanbul, and but for official enthusiasm could not have been made available for any hotel, with or without international backing.

A contract with the Turkish government was signed by the Turkish minister of Foreign Affairs and Hilton Hotels International, and was subsequently assigned to the Turkish Republic Pension Fund for administration and for carrying out the provisions. The Hotel is to be operated under a 20-year lease by Hilton Hotels International.

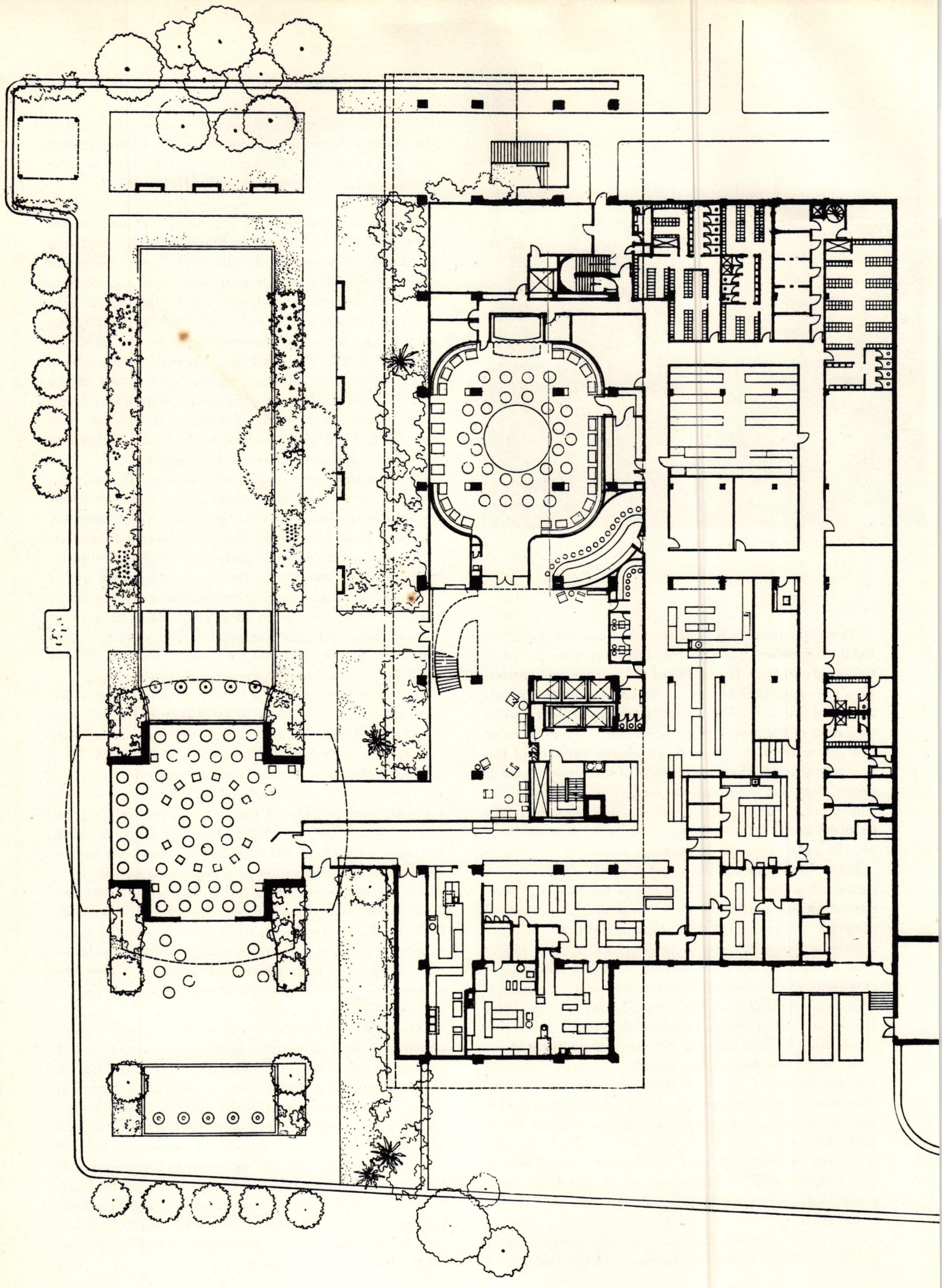
As a design assignment, the hotel had an unusual tie for Skidmore, Owings & Merrill, for the firm had previously been retained by the Turkish government to survey town planning, housing and building. Gordon Bunshaft, partner and design chief, had led a field group in a two-month trip through Turkey, culminating in a major set of recommendations to the Ministry of Public Works. The findings of the survey do not have too much bearing on this project, but the fact of the study did do much to smooth the planning procedures. Turkey does have much of modern technology, but like all Eastern cities is lacking in basic things like steel and cranes and tools and techniques.

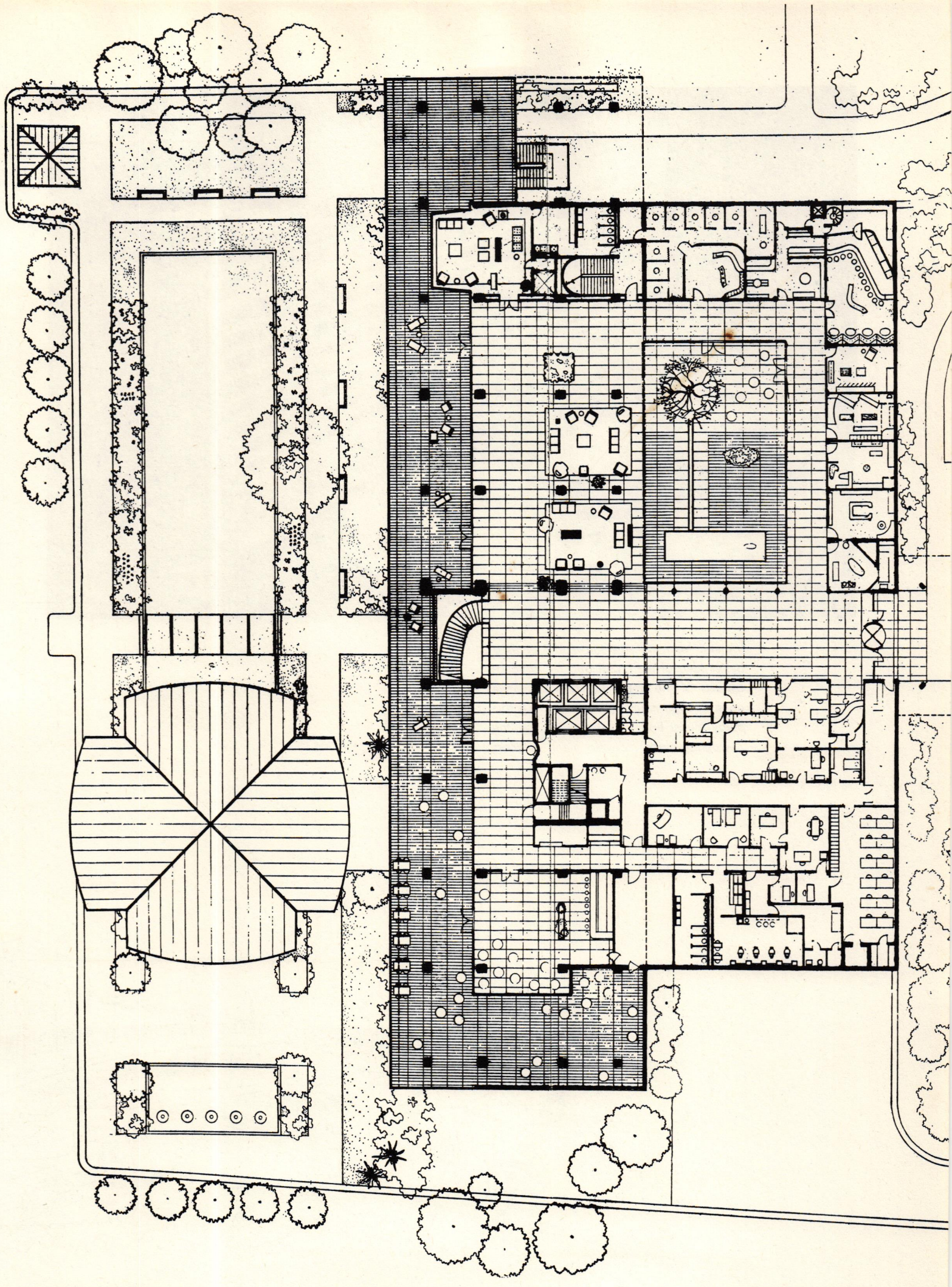
Perhaps this hotel project will advance in some degree the firm's own recommendations about developing local industries. It is true that most of the materials will have to be brought in, but the project will have an unusual amount of participation by Turkish interests. Sedad Eldem, an award-winning contemporary architect, was an active participant in the early planning, spending many months in New York. Basic design was done in New York, also engineering. But working drawings were done in Istanbul by Eldem's office, with two S. O. & M. men working there for interpretations.

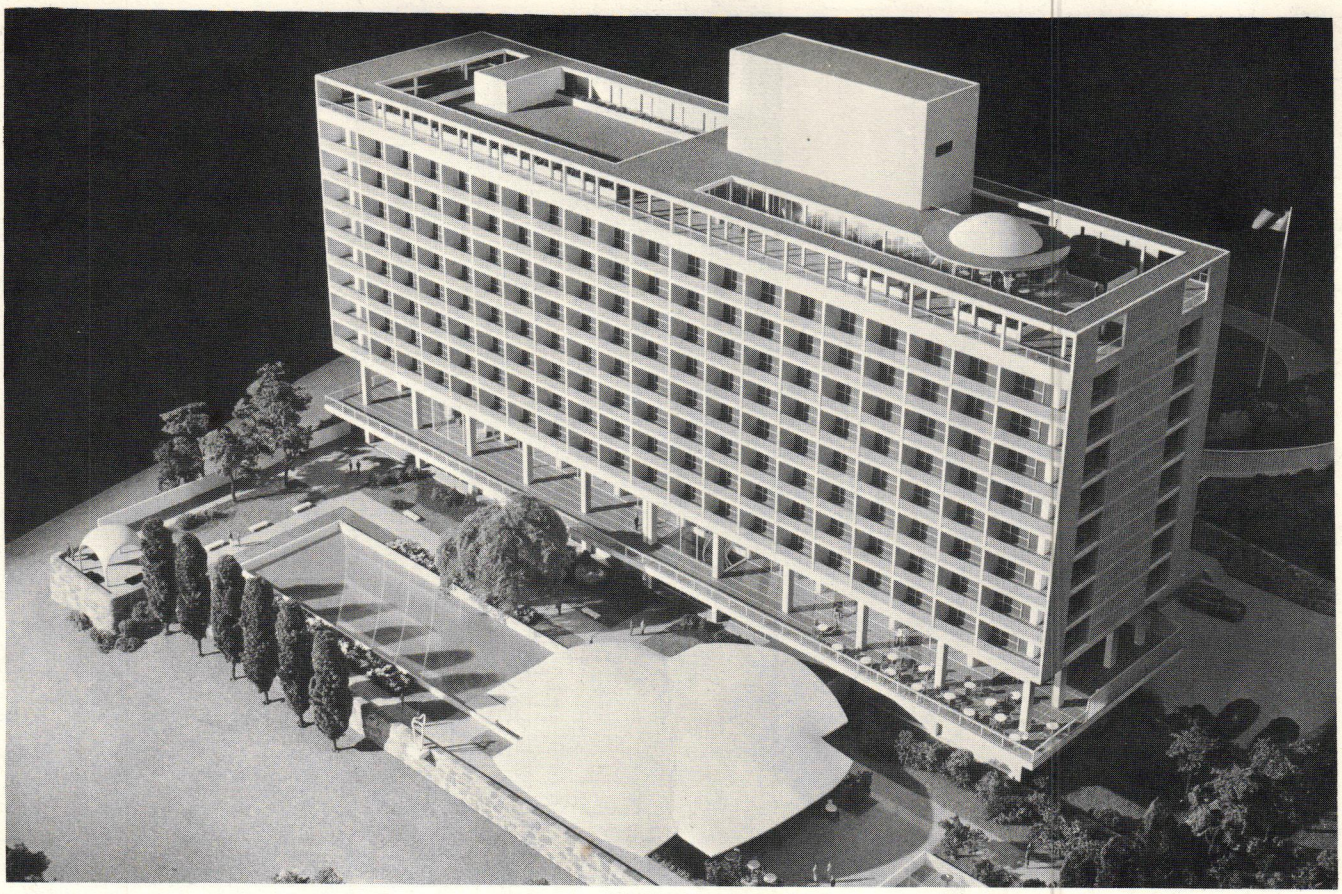
In design terms this is a normal project, affected by local shortages principally in steel-saving devices. The structural design, in reinforced concrete, was developed to use steel rods with exceptional economy. The structure stands on continuous footing beams, with reinforcing rods carefully placed to match the tension stresses, but designed without too much reliance on bonds. Beams throughout the building get over-sized, not only because of the steel saving, but also for an earthquake condition of second-degree magnitude.

The overall design takes full advantage of a site difficult to match in any of the tourist centers of the world. Bellevue Park, on the top portion of which the hotel stands, is a high promontory that overlooks the strategic Bosporus, with views and breezes to give the steamship and air lines much copy for their tourist folders.

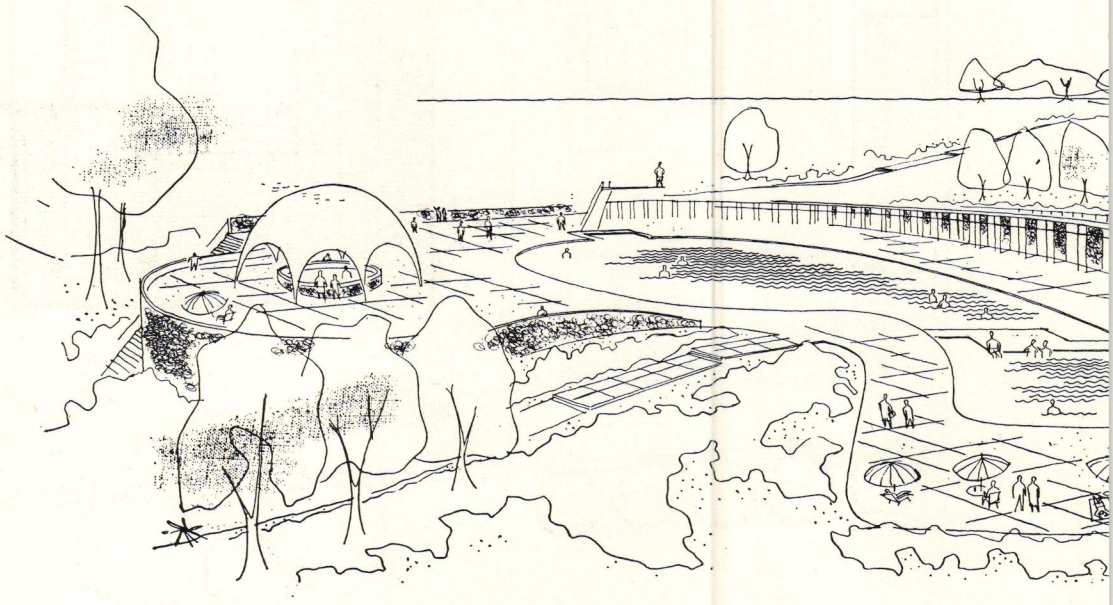
Integration of indoors and outdoors, stressed so heavily in modern tourist hotels, is extensively but very naturally done. The upper (entrance) floor has an open patio in the center, surrounded by a group of shops on one side, main lobby on the other. Lobby opens on the other side to a very long cocktail terrace overlooking the garden, a modern version of the old front porch. Below, on the garden side the near visual focus is a reflecting pool, to be used also for skating. The hillside falls away rapidly toward a huge free-form swimming pool, with tennis courts and cabanas; farther still, to one side, is an amphitheater. And in the distance, those terrific views.



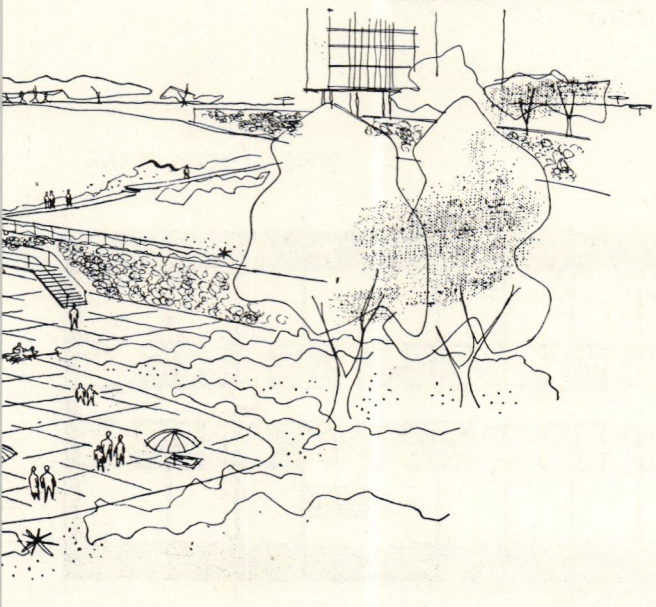




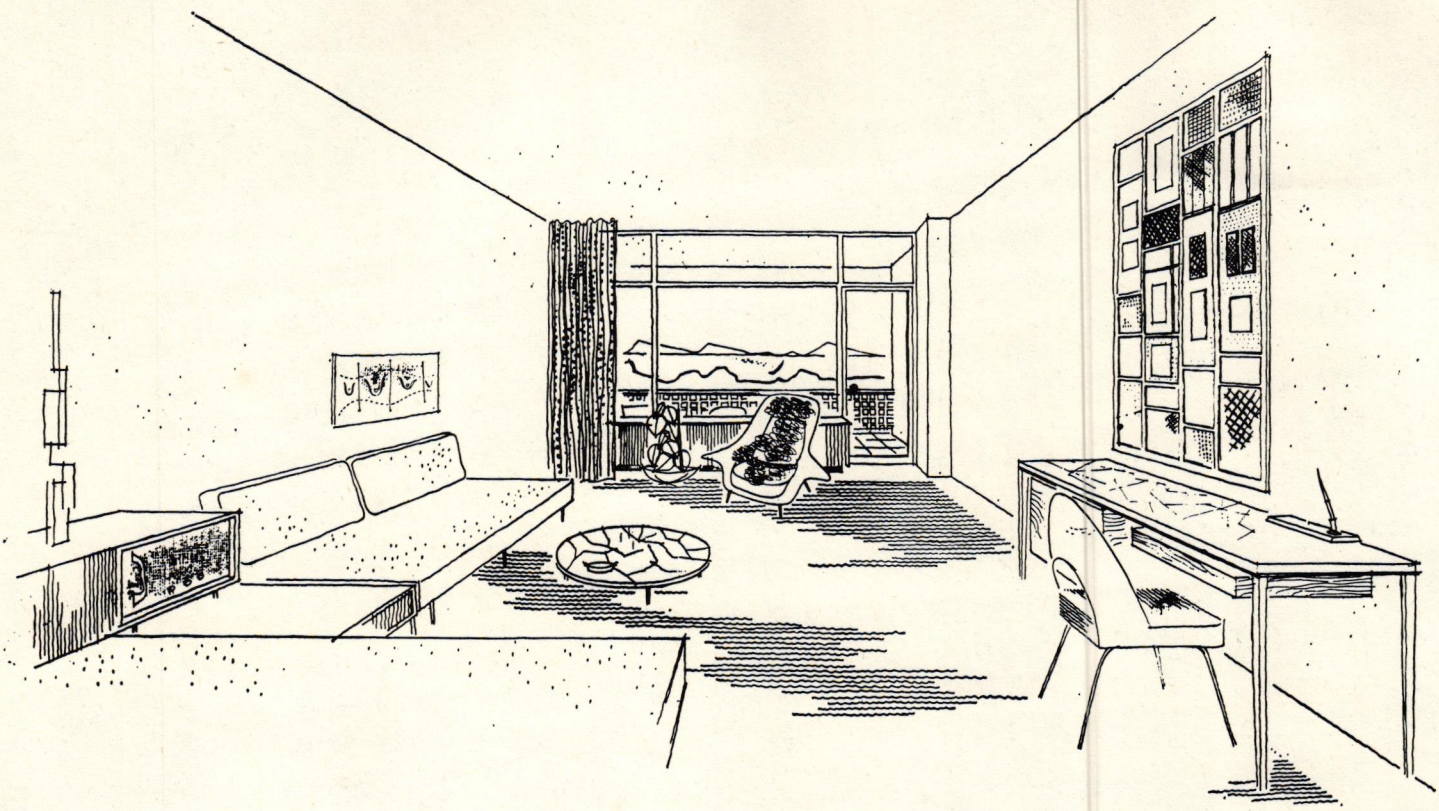
Viewed from this side the model gives a better idea of the social and recreational aspects of the hotel Resort hotels have gone through many changes, but the far-away tourist hotel utilizes to the full the "watering-place" development outdoors

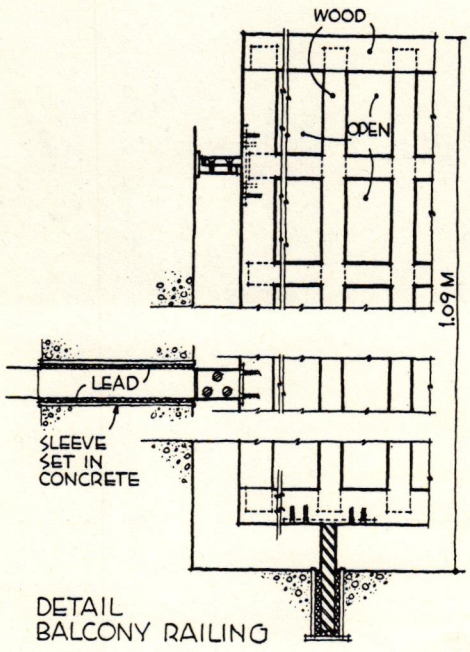


Ezra Stoller



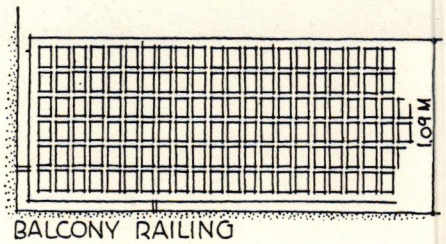
ISTANBUL HILTON





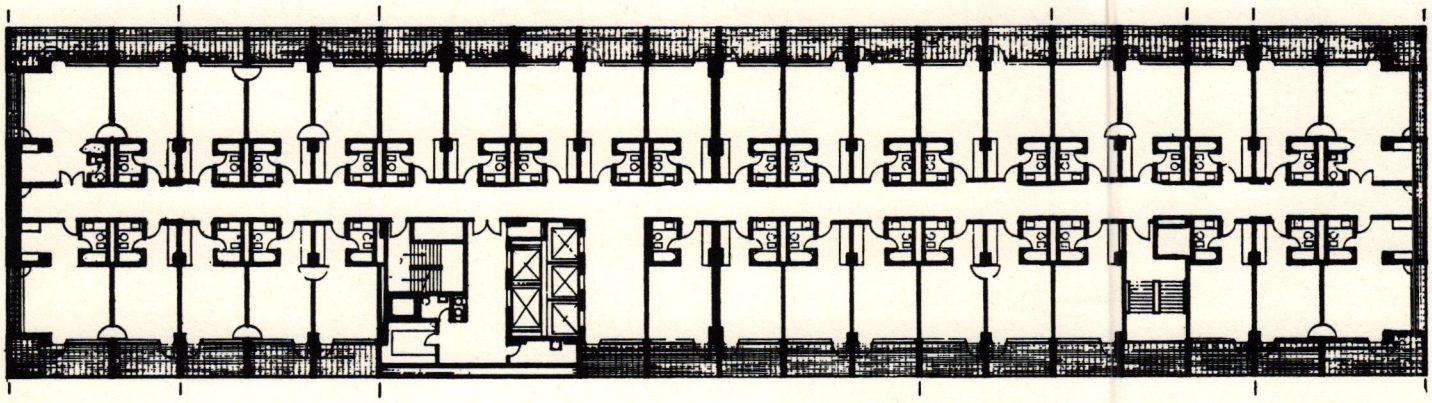
DETAIL
BALCONY RAILING

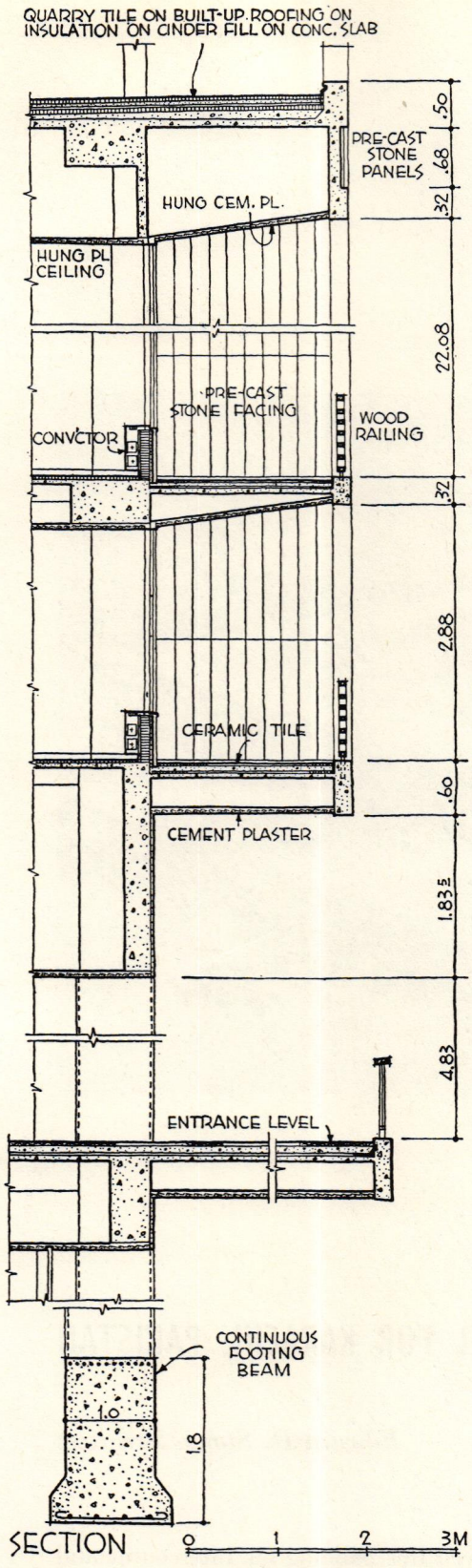
Each sleeping-room floor is identical, with all rooms alike except at the corners. A penthouse floor will have a few larger suites

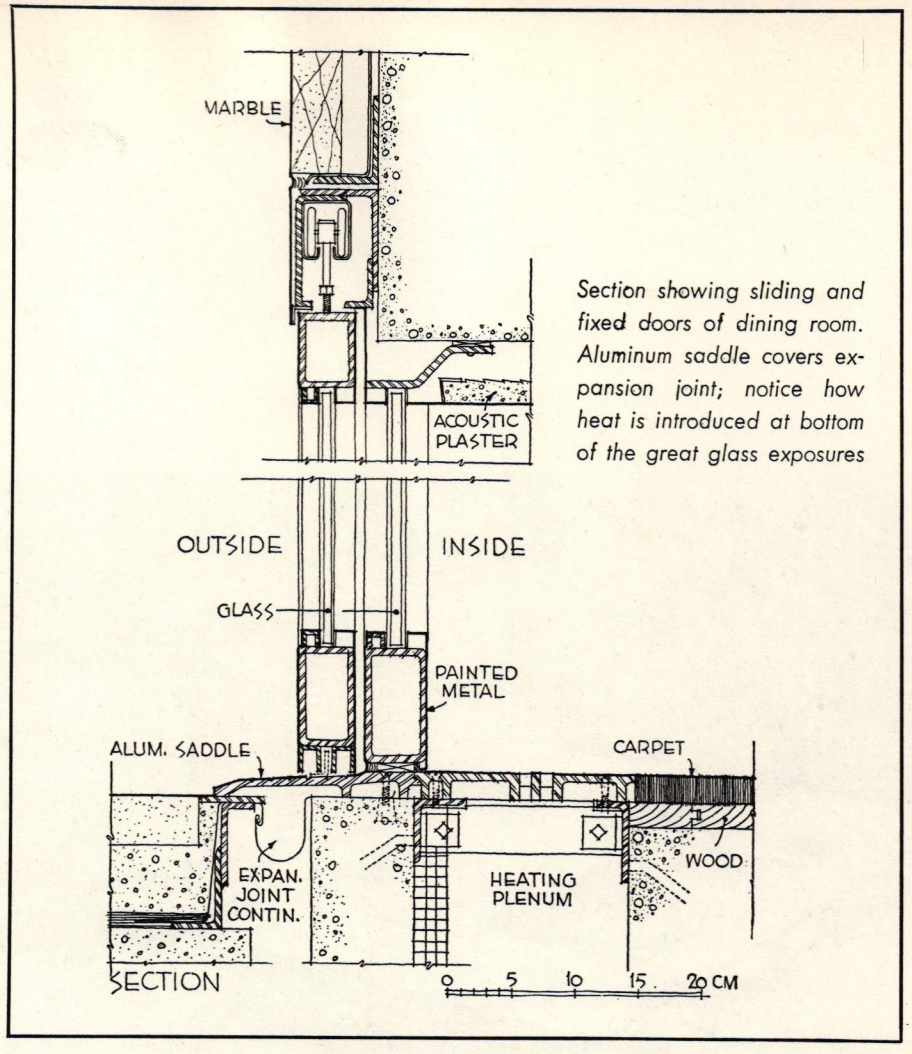


BALCONY RAILING

TYPICAL FLOOR PLAN

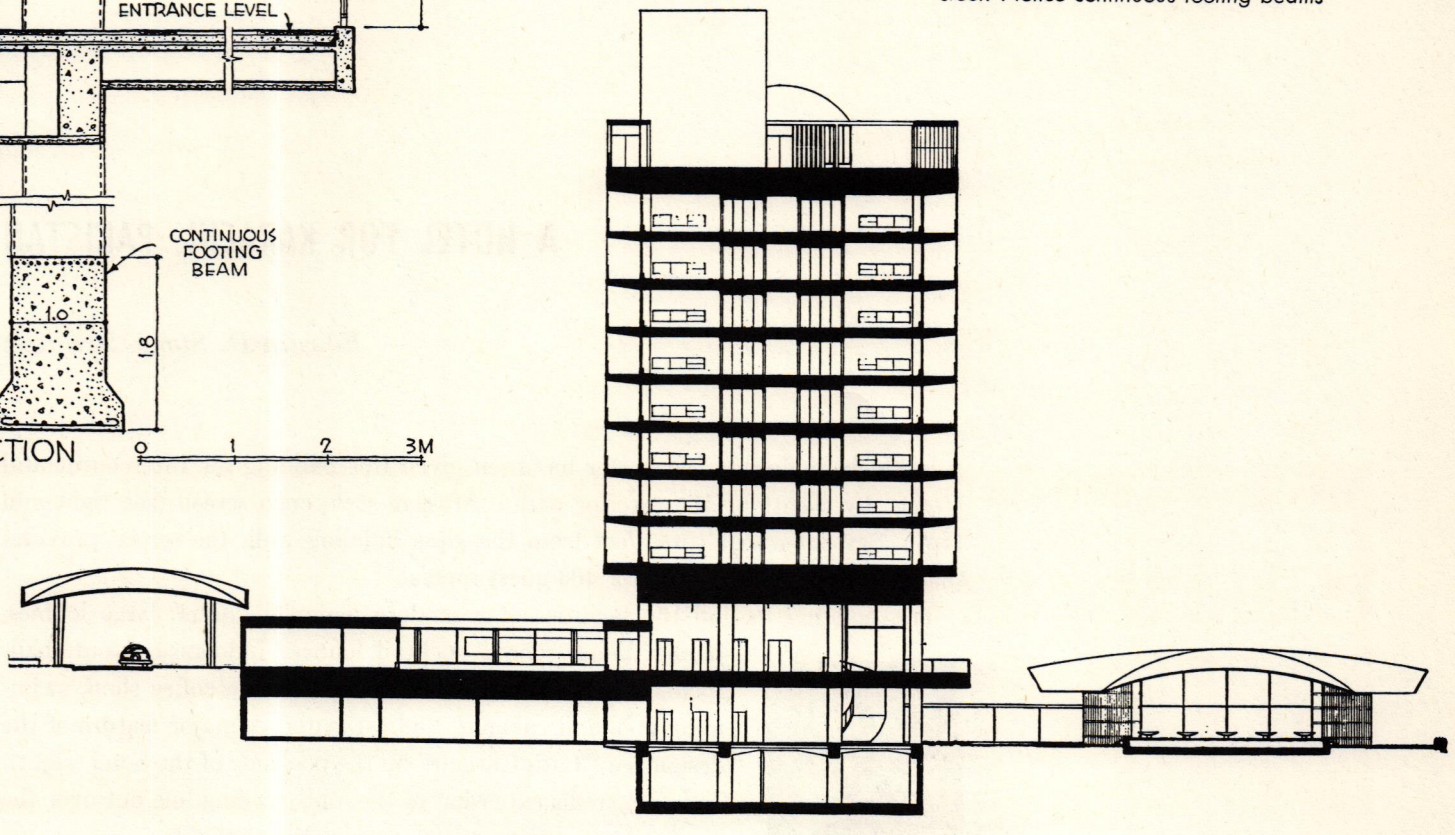


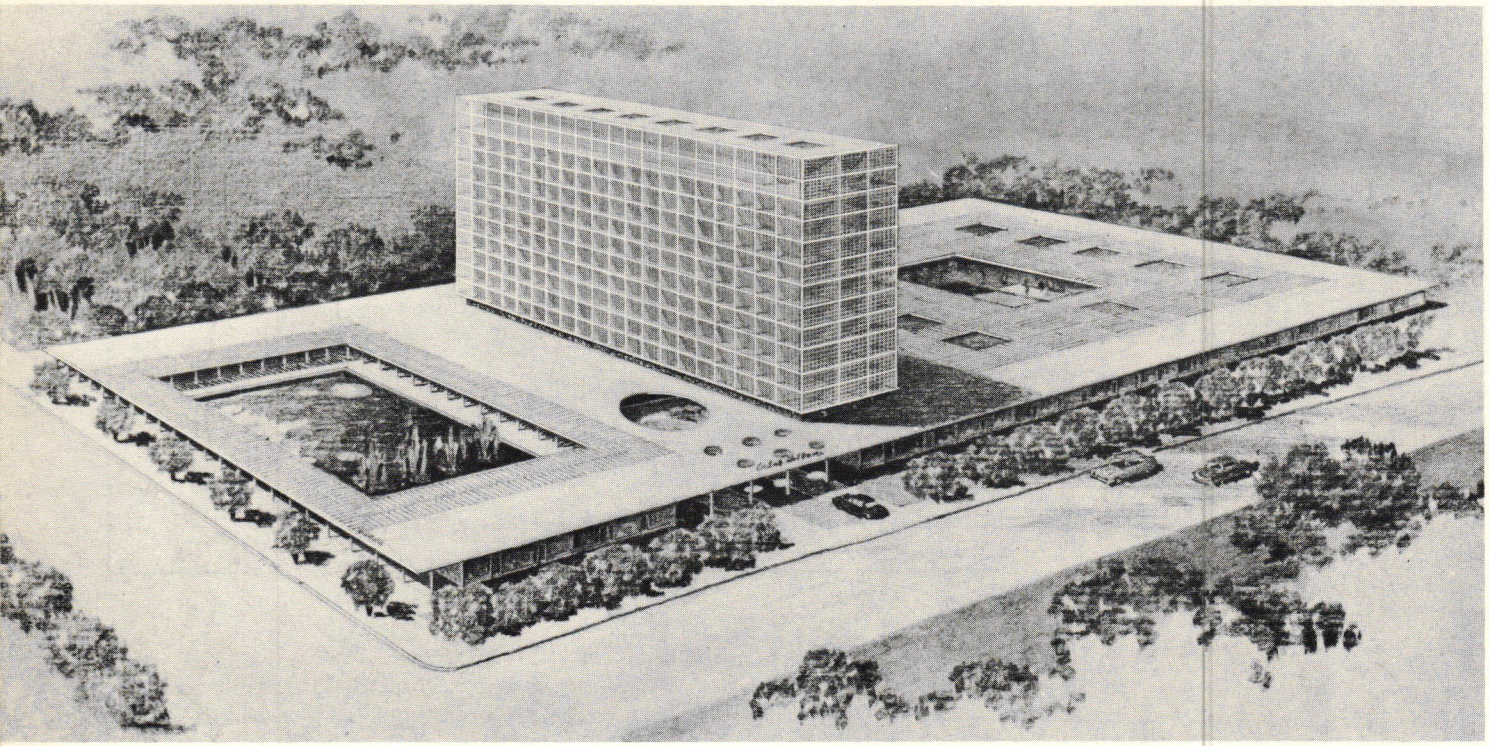




Section showing sliding and fixed doors of dining room. Aluminum saddle covers expansion joint; notice how heat is introduced at bottom of the great glass exposures

Typical wall section shows great size of concrete beams, to save reinforcing steel. Notice continuous footing beams



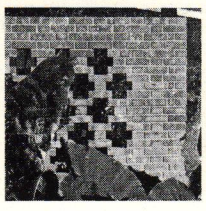


A HOTEL FOR KARACHI, PAKISTAN

Edward D. Stone, Architect

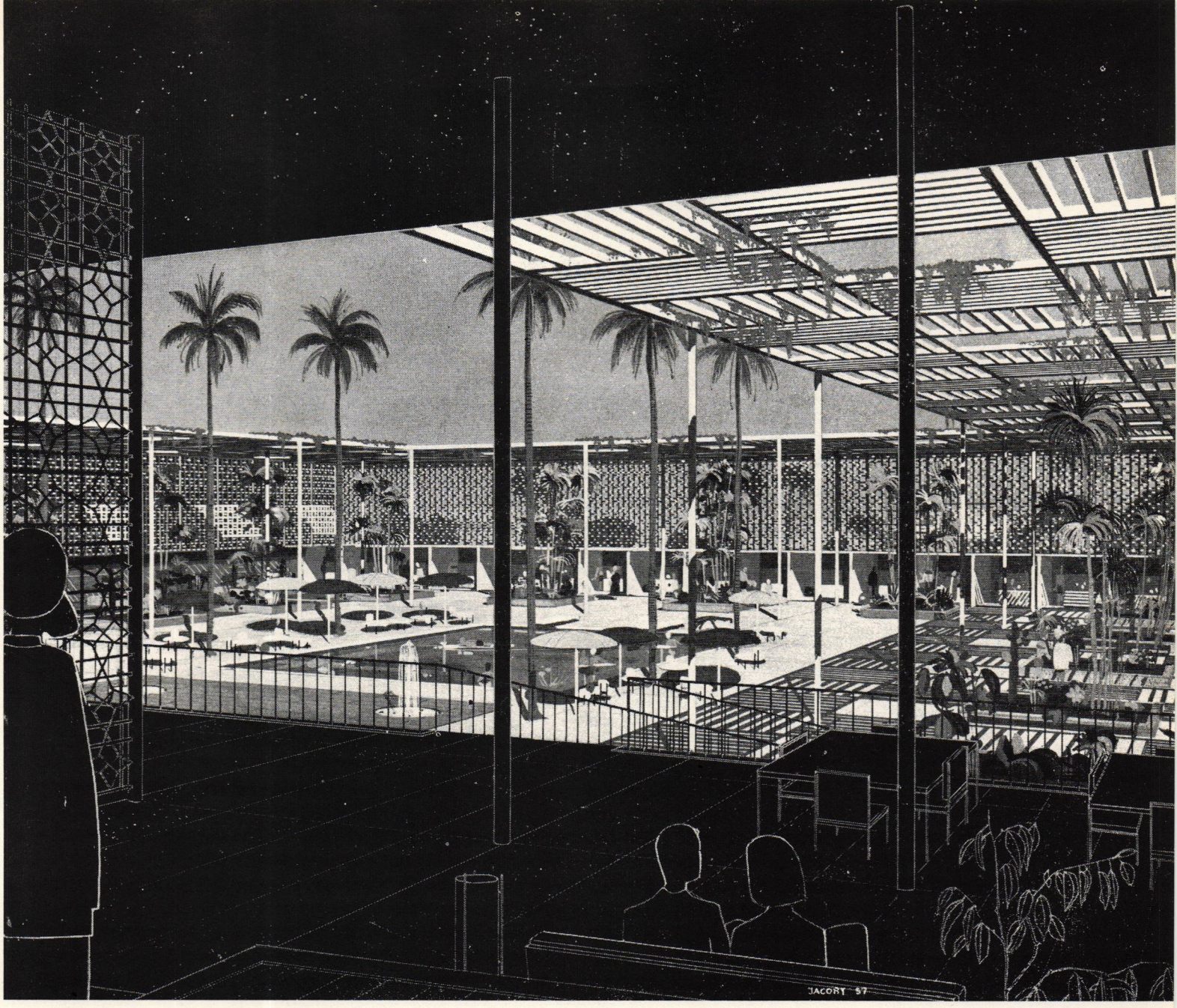
A uniquely indigenous character has been given this building for Intercontinental Hotels, by sheathing the exterior with a Moslem-style open screen (see right and top). Set out about three feet from the glass building wall, the screen provides shade, views, and balconies for 400 guest rooms.

The building has all the facilities of a modern, complete hotel: large lobbies, public dining rooms, cocktail lounges indoors and out, ballrooms, reception rooms, exhibition halls, a coffee shop, swimming pool and cabañas, and a theater. A major feature of the design is a "Lath Garden" on the pool side of the hotel (right). This is a trellis extension of the lobby ceiling line out over the pool and recreation area to temper the sunlight.



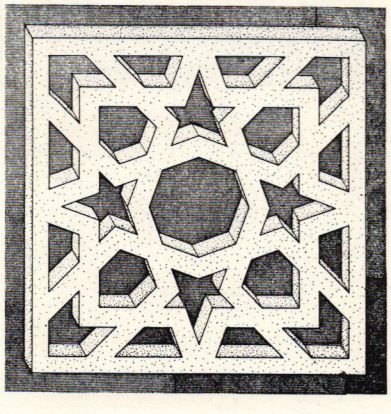
Wall, El Panama Hotel, 1946

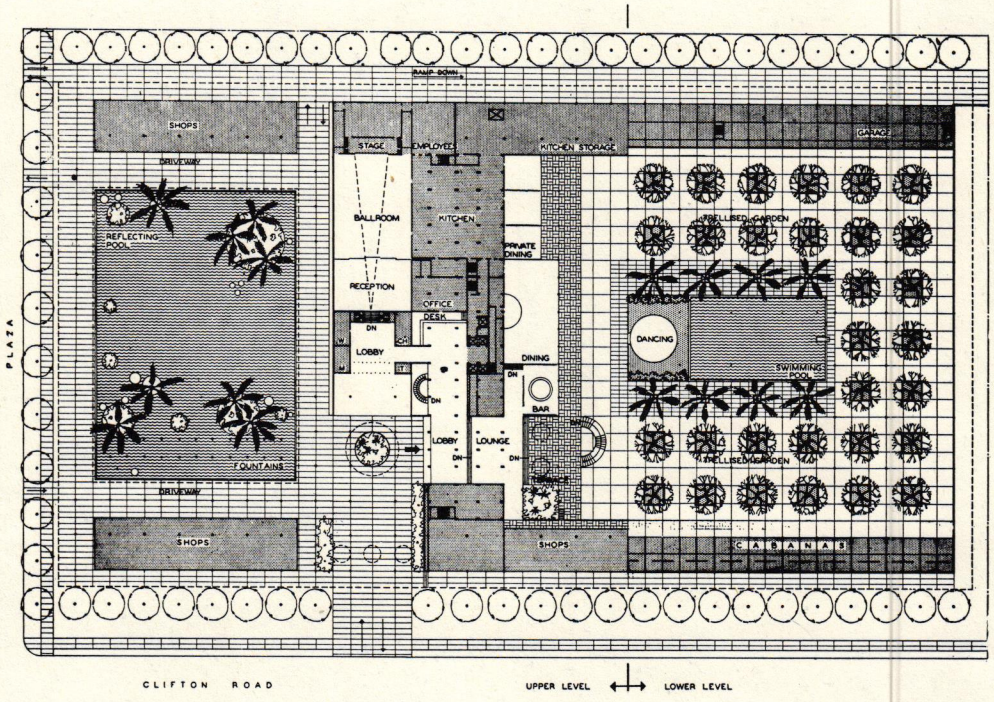
Copyright 1957 F. W. Dodge Corporation

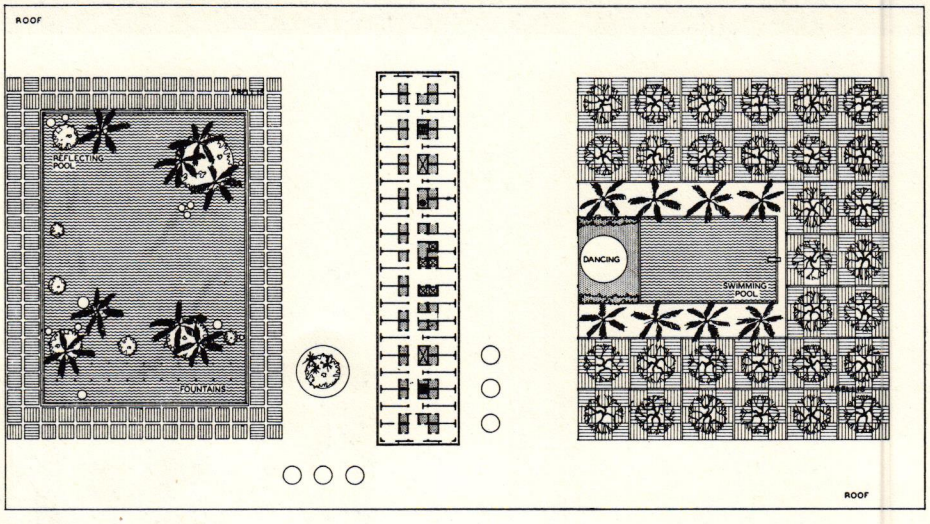


Rendering by Jacoby

Exterior Grill, Karachi




RAMP DOWN
SHOPS
DRIVEWAY
REFLECTING POOL
FOUNTAINS
DRIVEWAY
SHOPS
PLAZA
STAGE
EMPLOYEES
KITCHEN STORAGE
GARAGE
BALLROOM
KITCHEN
PRIVATE DINING
RECEPTION
OFFICE
DESK
LOBBY
DINING
BAR
LOBBY
LOUNGE
TERRACE
SHOPS
ROLLISED GARDEN
DANCING
SWIMMING POOL
ROLLISED GARDEN
CABANAS
CLIFTON ROAD
UPPER LEVEL
LOWER LEVEL

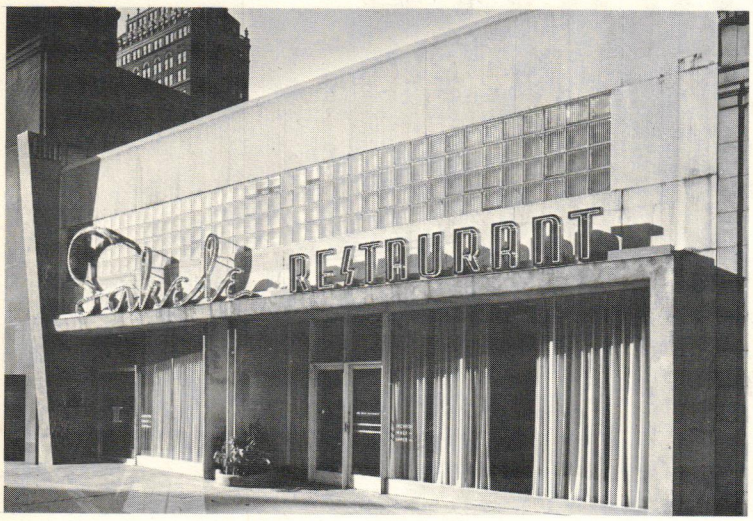

ROOF
REFLECTING POOL
FOUNTAINS
DANCING
SWIMMING POOL
ROOF

MOTELS
HOTELS
RESTAURANTS
AND BARS

SECTION 3

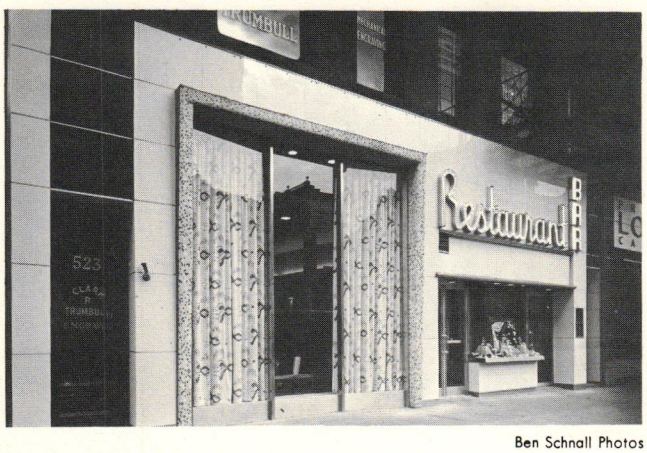


This globe, one of three in Sakeles' main dining room, gives general light, relieves a disproportionately high ceiling, and transmits ineluctable attraction to the glimpser from street



Above: Sakele's, Brooklyn.

Field's, New York City. Large restaurant window (left) discloses features within; discreet bar window (right) discloses mostly bottles. Separate bar entrance, far right. (Siegel – Rapp)



Ben Schnall Photos

ARCHITECTURE FOR

By Herman H. Siegel

THE definition of *Restaurant* might really be extended to bring it under the broader concept of *Store*. For after all, restaurants of every type and sub-type are strictly in the business of merchandising food. The same fundamentals of planning and design are involved here as in any other selling operation — first, analyzing and organizing factors of receipt, storage, processing and delivery of the goods for sale, in this case cookery and drink items; then, the attraction, distribution, comfort and convenience of customers.

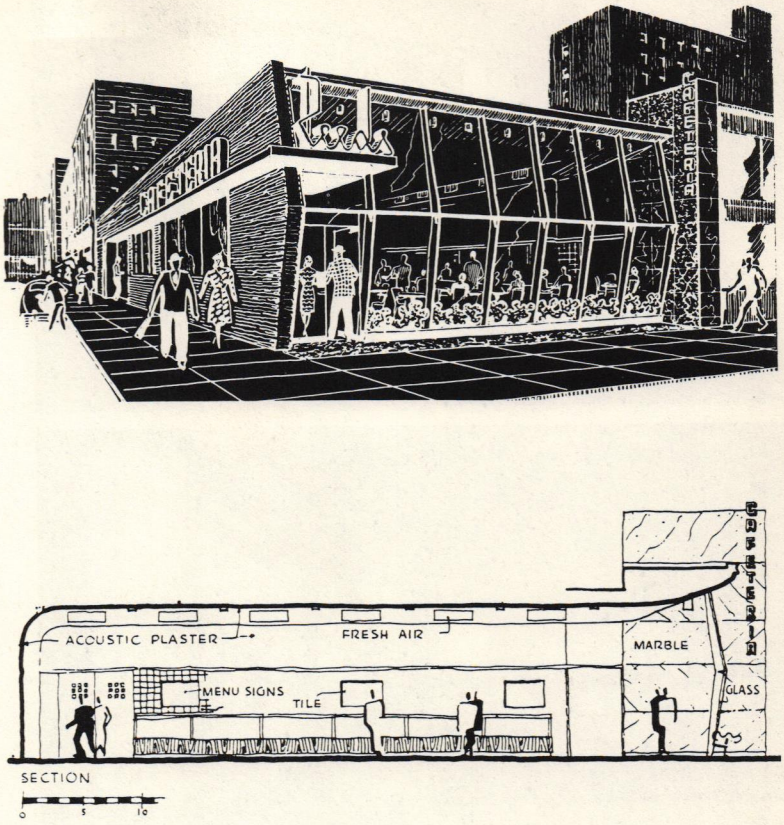
The Restaurant General Plan. Every restaurant operation is of course unique, even among chains, in that it follows to some extent its own methods and notions in catering to a predominant client type, existing for a particular location. However, it may be said that *all* restaurants are subject to a general plan, almost always involving consideration of the following basic elements: *entrance areas*, *dining areas*, *kitchen areas*, and frequently *bars* and cocktail lounges.

Entrance Areas: *Exteriors, Entrances and Anterooms.* In all restaurant types — down to the most frenetic luncheonette — exterior appearance, as a first consideration, should imply the particular operation's essential character. Within this figurative limitation, elements of the exterior must then *attract*, *advertise*, and *compel* to the entrance, and then inside, the patronage desired. Further, and within *material* limitations, the exterior treatment must take in account the contingent nature of existing locations (a condition imposed on the architect in perhaps 75 per cent of cases). The restaurant front should be distinctive, *not* disharmonious, in its given surroundings.

As a possible example, I shall cite Sakeles' (see photo to left), where effort was made to achieve definite character and compulsiveness in the front, at the same time regarding it as a compositional element in a larger given setting. To an existing fascia of cast stone and glass brick, the marble pier was added as architectural background for vertical signs advertising name and function. Within a new plaster surround, large glass areas with stainless steel trim were put at glare-reductive angles.

From this example, I believe it is possible to illustrate another cardinal tenet in treating the front. Restaurant windows should expose, where possible, to potential patronage outside, all manners and varieties of inducement to come and dine within. Among these is the spectacle of diners already on location, enjoying ap-

Copyright 1947 F. W. Dodge Corporation



The design of Reed's Cafeteria, New York City, is intended to give theatrical starring to its biggest selling feature, the counter.

petizing food amid conducive surroundings and brisk service. Perhaps this exposé technique is less applicable to restaurants (in the restrictive sense) of the larger and more fashionable type; certainly, it is less so in cases such as Sakeles', catering not so much to a transient trade which must be induced, as to a more or less repetitive clientele. Sakeles', however, will serve to illustrate the point. Note in the photograph that behind the windows of the right-hand (dining-area) half, the curtains are partially open, to disclose not only a suggestive view of the diners and services within but also of such compulsive internal features, projecting their attractions through to the outside, as the globe of light illustrated on this page. Note also that the curtains on the left-hand, or bar-area, side are tightly drawn, permitting no certain disclosures either of internal features or of imbibing patrons (about which nicety more will be said later). Field's Restaurant, illustrated on the opposite page, shows these principles carried architecturally further.

Exterior treatment should reflect restaurant *character*, as we have shown, and as character varies further according to *type*, from the large restaurant with its air of veiled dignity — perhaps even seclusiveness — through the lesser *chi-chi* varieties, down to the cafeteria and luncheonette, we find the tendency in fronts toward more and more openness and forthright disclosure of what goes on inside. *Chockfull o' Nuts* is a widespread example of a luncheonette chain disclosing its *all* to street visibility. In much the same way, the completely open front of Reed's, a cafeteria illustrated on this page, is intended to show off the food-selection counter to outside appraisal, as a major inducement to enter in and partake.

The technique of bringing the actual service and even preparation of food out as far as possible through the show window is by no means confined to self-service and counter types. *Lindy's* and the *Brass Rail*, famous big operations in New York City, have contributed to the fad of refrigerated show windows, in which the displays of meat, fish, and fowl and vegetable vary according to season. Other forms of such display are the featuring of liquor, where the cellar is celebrated, or pastries, where baking is a house specialty. And then there are all the processes of hamburger, griddle-cake and do-nut making shown directly in the front window. Every one of the "glorifried" ham 'n' eggs served to patrons in the specialty sub-type houses of that name, are prepared in full view of the potential customer looking on from the sidewalk.

Entrances, the actual doors, obviously should be the operative climax of all the attractive and compulsive efforts put into the exterior as a whole — a flawlessly operating springboard to the inside. Architects generally, I should assume, are already enough aware of the many marketed possibilities in full or semi-glass doors, operating on gravity hinges, etc., and responding like gelatin to push or pull, that I need not enlarge on this point. However, I should like to emphasize that wherever possible, in my own practice, I plan separate outside entrances into bar and restaurant areas under one roof, as in Sakeles' and Field's.

Anterooms. These areas will be strictly defined, of course, only in the larger operations, perhaps as foyers, vestibules, lounges, etc. In the less elaborate restaurant types, they tend to become simply open space allowances for circulation and orientation of entering and departing traffic; and in these respects must be carefully calculated, according to seating capacity and internal circulation, to avoid conflicts detrimental to trade.

Checkrooms and cashier-counter fixtures in these spaces should be unmistakably evident, but, if possible, not *obtrusive*. Wash and retiring rooms for customers are sometimes provided in anteroom areas. Preferably these facilities should be as close as possible to dining room and bar, certainly on the same level at least, although in many cases they are tucked up or down stairs to conserve essential service or dining space. This is an equilibrium that every architect must work out for himself in each particular situation.





Alfred Cook Photos

Entrance-Area Materials and Equipment. A salutary trend here, I believe, is away from such veneers as porcelain enamel, and even architectural glass, toward more use of brick, terra cotta, cast stone, terrazzo and marble, the suitability and proportions of each in any application to be determined by existing building relationships and the intent and character of the particular operation. Where the novelty technique in exterior expression involves refrigeration — as in Gallagher's Steak House, with the raw primary product displayed in the front window — consideration must be given to impervious show-case linings such as tile, Carrara glass or marble. And, of course, the surrounding clear glass areas must be triple-glazed, or otherwise adequately insulative.

In designing windows for liquor display, remember that these items are highly subject to pilfer, and must be safeguarded in some form of secure enclosure.

Dining Areas. Here the architect frequently finds himself using his persuasive utmost to bring the owner down from dreams of numerical seating maxima to realistic figuring on the number and types of seats most *effective* for his kind of business. I believe that in any kind of operation (excluding the strictly counter-seat), so-called "Pullman booths," used entirely, will accommodate more customers than any other seating method. This solution, on the other hand, is obviously static and uninteresting and does not, in my opinion, provide an *effective* long-range maximum. Furthermore, the architect, in working with the owner on the seating question, must continually be thinking of relationships to kitchen-area capacity, and to circulation allowances for customers and service between the seat and table combinations finally adopted. When, within these limitations, a workable numerical maximum has been calculated, the architect must then persuade the owner to let him make it really effective with variations and combinations among Continental settees, Hollywood settees, Pullman booths, and ordinary tables and chairs, whether stock or custom built. *Seating variations* cannot be overemphasized and the most fortunate architect in this respect is the one whose site and given circumstances permit him to vary his dining-room floor levels, enabling patrons to look up or down at their public eating companions. (For example, see project illustrated on page across.) Such variations in level are useful also in planning to make dining areas expansible or contractible in keeping with fluctuations of custom.

Dining-Area Equipment and Materials. *Seating:* the very best booths and settees, I believe, are those constructed of hardwood frames, coil-spring seats topped with "air-foam" cushions, and spring backs with "air-foam" pads. A popular and serviceable covering is leatherette. Numerous plastics are now being used as covering material, but I believe they should be regarded largely as still experimental. Mohair fabric is sometimes used, but it is not nearly so wear-resistant nor easily cleaned.

Left: Glorifried Ham 'n' Eggs, N. Y. City; Samar Construction Co., Dsnrs. Below: Hollywood settees in Sakeles'; Continental settees, Pullman booths, along left wall; Rubber tile floor



Ben Schnall Photos





Left: plastic-top, chrome-pedestal table in Hollywood booth at Tropical Gardens. Curtain is glass fabric; floor, asphalt tile; color scheme, red, white and mahogany. Above: table tops in Field's are plastic "real wood." Certain table units here (not those in center, see left and right) illustrate the principle of "deuces," that is basic two-placers that can be almost endlessly combined, but do not permit space wastage by one or two patrons. Floor is asphalt tile; walls are mahogany wainscot. Below: restaurant project for Florida. Siegel, Architect; Rapp, Designer. Seating is on rising levels not only for variety and flexibility, but also for picture-window view. Arrangement for air conditioning outlet and intake system (see section) is considered close to ideal. Special sketches by Ernest D. Rapp

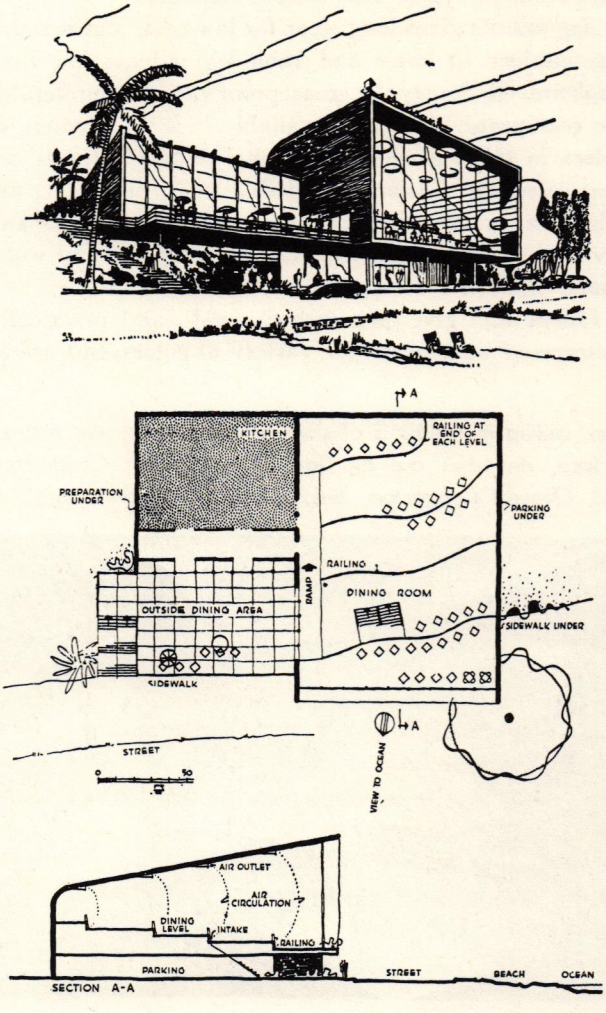
Settee and booth seats should be at least 18 in. deep and about 18 in. high. Standard booth width for one person is 26 in.; for two, 44 in. Back heights seldom should exceed 4 ft.

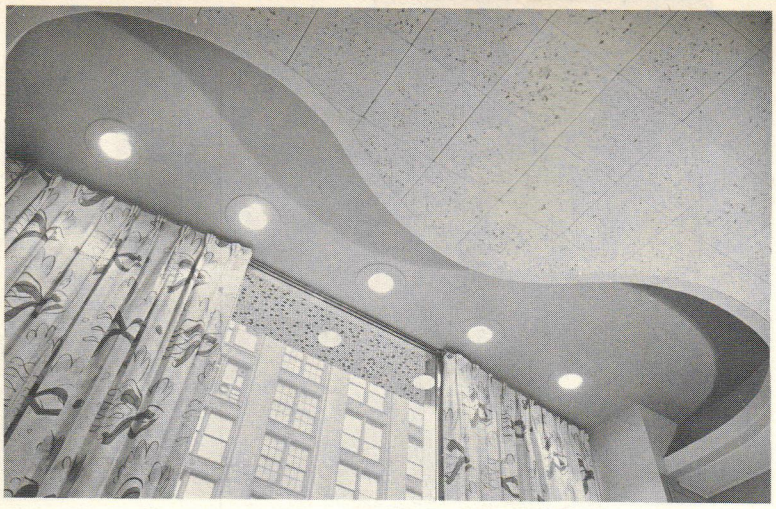
Chairs are preferably constructed of hardwood frames, with innerspring units covered by a layer of hair and at least 2 in. of "air-foam," then muslin and top covering. Backs and arms of chairs should be separated from seats to prevent débris collecting. Booth seats and backs, for like reason, should be removable.

Tables. Primary considerations here, as with other furniture, should be wear resistance and ease of maintenance. Hardwood tops are fine looking, particularly in "atmosphere" operations, but are greatly subject to stain and cigarette burns and require ceaseless attention. Thickness of hardwood tops should be between 7/8 and 1 1/8 in. In restaurants making full use of table cloths, unfinished plywood tops are a possibility.

Probably for all-around utility, linoleum or plastic tops are the best specification, with the latter being particularly impervious to wear and easily maintained. The architect, however, should be certain of what's beneath the surface. Best foundations for both linoleum and plastic are 7/8 to 1 1/8-in. plywood panels, with the top layer hardwood to prevent ripples in the surface covering. Lumber should be kiln-dried and the glue waterproof. Edging should be stainless steel.

Chrome-plated pipe *pedestals*, of about 4-in. diameter, are quite satisfactory. Four-legged tables are no longer much in evidence, because of the irksomeness of cleaning around them. *Bases* are preferably one solid piece, the





Ben Schnall Photos

heavier and broader, the more stable and desirable. Tables on *carpet* should have *heavy bases with broad spread.*

Floor coverings may be considered under two general headings: *resilient*, including asphalt tile (plain and greaseproof), plastic tiles, linoleum and linoleum tile, rubber tile, cork and carpet; *rigid*, including glazed tile, quarry tile, magnesium composition, colored concrete, terrazzo and slate. Bases for the resilient types must be smooth and even (nail heads and grains of sand will show up under rubber tile, blemishing the wax finish; uneven flooring will cause cracks in asphalt tile). A well-laid double wood floor is usually successful with resilient types; also, *smooth* concrete.

Asphalt tile gives long wear for low cost, and is much less subject to chair and table-leg indentation than linoleum. Obviously the greaseproof variety is preferable for restaurant use. It is available in a wide range of colors in three grades, of which "Deluxe" affords the best selection. Easiest obtainable sizes, currently, are 9 by 9-in. squares, and 9 by 4-in. strips for borders and divisions. Thickness of $\frac{3}{16}$ in. is recommended for wood bases; $\frac{1}{8}$ in., for concrete.

Plastic tiles give long grease-, acid-, and practically waterproof wear in a wide variety of colors, but are at present still hard to get in quantity. The resin types, in my experience, give best performance.

Linoleum is again available in many colors and patterns, and with burlap backing, the only type to be considered for restaurant use. It tends to disintegrate under standing water and excessive heat; in these respects the "lino tiles" (oil-bonded finish) are a major improvement.

Rubber tile, in my opinion, is the best looking and among the best wearing of all the resilient types. It is also a great aid in acoustical treatment.

Carpet, of course, is the richest appearing and most resiliently luxurious of all coverings, and the most expensive. In general, I might say that both wool and worsted *Wiltons* are preferable to *Velvets* and *Axminsters* where heavy traffic is expected. *Chenille* weaves are woven seamless up to 30 ft., in width, have great sturdiness, luxuriousness, and variety in color and design.

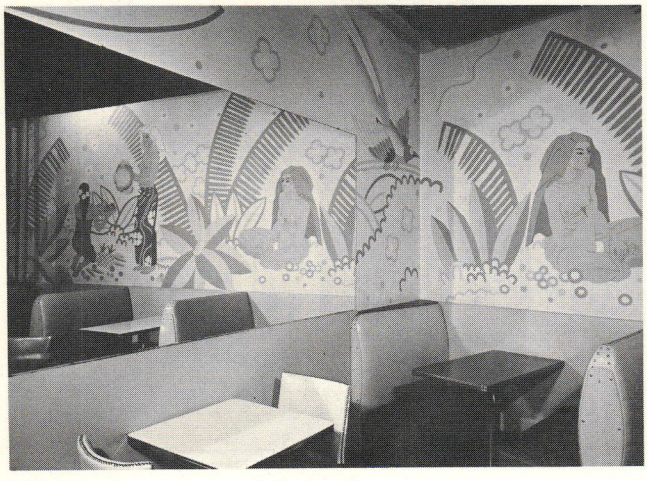
Quarry tile, among the rigid floorings, is practically a *must* for Tavern "atmosphere." It is extremely durable and easily cleaned.

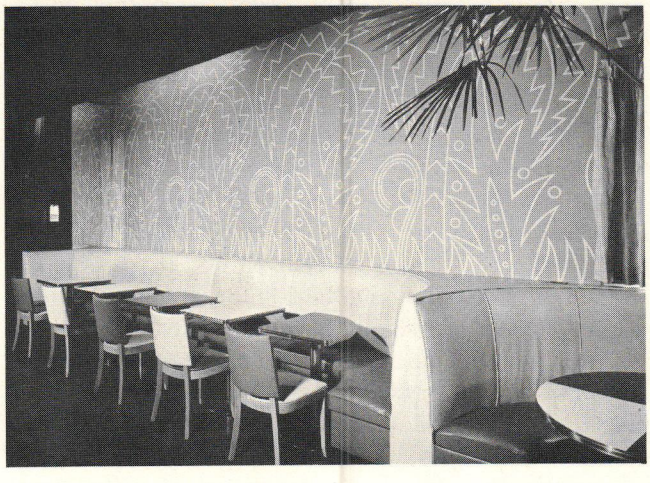
Terrazzo is probably the most durable and effortlessly maintained of all materials, withstanding wear almost like solid marble. In addition, the marble chips can be "composed" in patterns and color effects. Size of the pattern squares is important; the smaller they are with more division strips, the better chance of contraction and expansion without cracking.

Almost all the foregoing flooring types are benefitted by faithful waxing, which seals the surface and helps maintain the original colors.

Wall-Finish materials to substantial degree may be considered as extensions of floor coverings, since many of these, like terrazzo and the various tiles, natural and synthetic, are used effectively in such application, particularly in self-service and counter operations. Also varieties of the table-top plastics are available, in special wall color patterns and "realwood" textures, for counter fronts and wainscoting. All of these materials can

Top: ceiling in Field's is of stone-type acoustical tile, fissured surface; draperies are by Dan Cooper; Adler Construction Co., General Contractors. Below: decorations and murals in Tropical Gardens were designed by Winold Reiss, executed by Imperial Painting Co.; Karl Egger was the General Contractor. Note in photo, right, the "deuce" principle in Continental settee





"take it" and are easily maintained, absolutely indispensable qualities along with "attractiveness" in restaurant specification.

For the fancier operations, hardwood ply paneling, varnished or lacquered, still rates high in withstanding time and abuse, though requiring frequent refinishing. This material, where curved surfaces are a factor, can be very costly and, in this respect, the flexible veneers on canvas or metal effect great saving. A newcomer among these (on metal) has the further advantage of flexibility without wood filler.

Acoustical materials are conditioned by legal restrictions in certain metropolitan areas; for example, in Class I buildings, fire-resistant materials must be used throughout; in Class III, 50 per cent of materials may be combustible, but not to exceed 3000 sq. ft.

Acoustical tile of the stone type comes in both plain and fissured surfaces. Paint (other than water-base) causes appreciable loss in sound-absorbing efficiency.

Perforated acoustical tile comes in both fire-resistant and combustible forms, in two thicknesses for varying conditions; can be painted repeatedly.

Perforated cement asbestos board with "rock-wool" or glass-fiber filler pads also can be painted.

Offending restaurant noises center at a frequency of about 512; any material selected should have a high sound-absorbing coefficient at this cyclic rate.



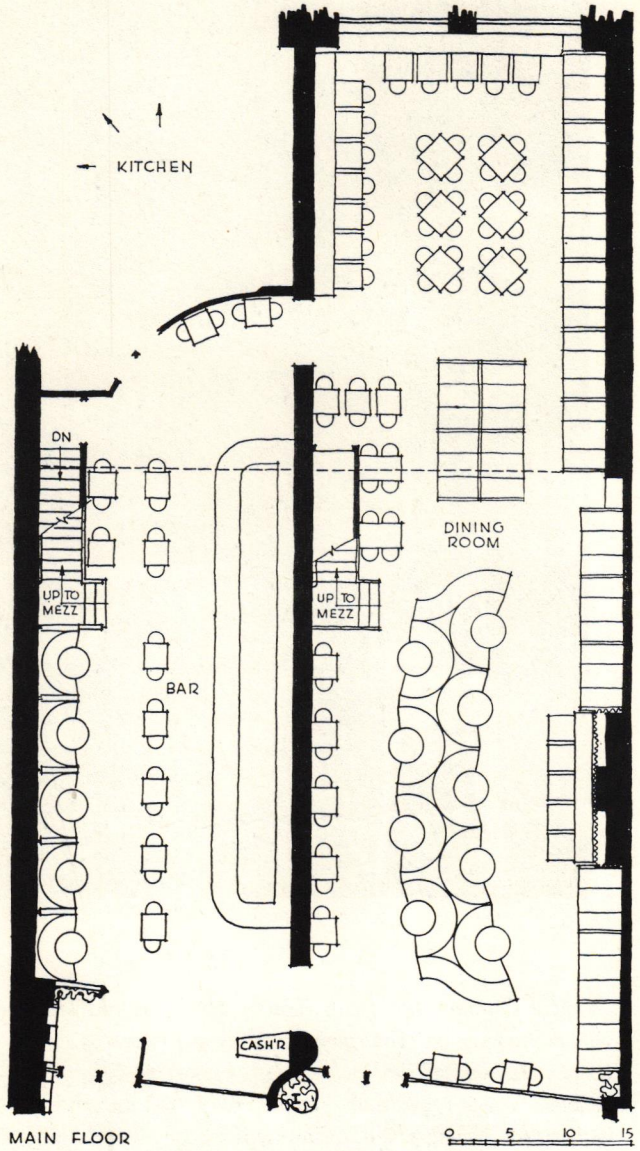
Above: front door of Tropical Gardens illustrates the principle in bar design of compulsive expression on the exterior, proclaiming but not disclosing the functions within. Below, Tropical Gardens, N. Y. City. Herman Siegel, Architect; Ernest D. Rapp, Designer.

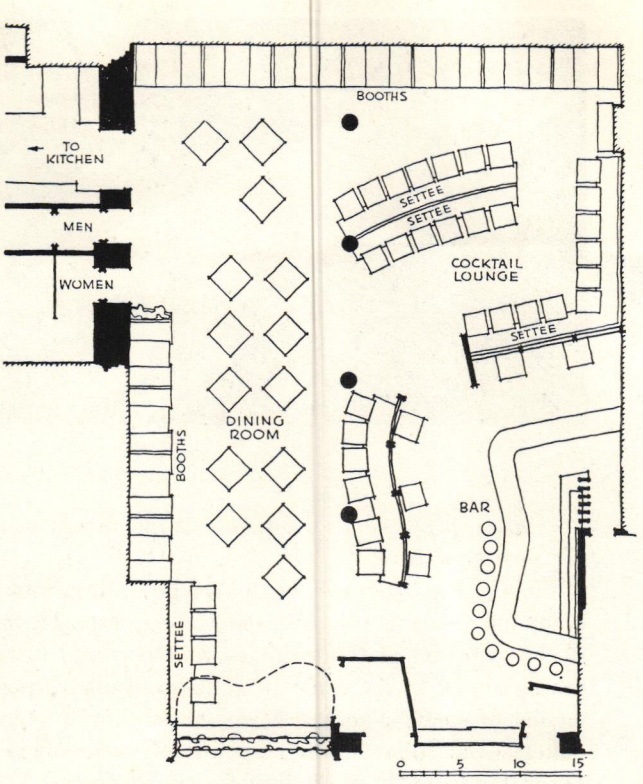


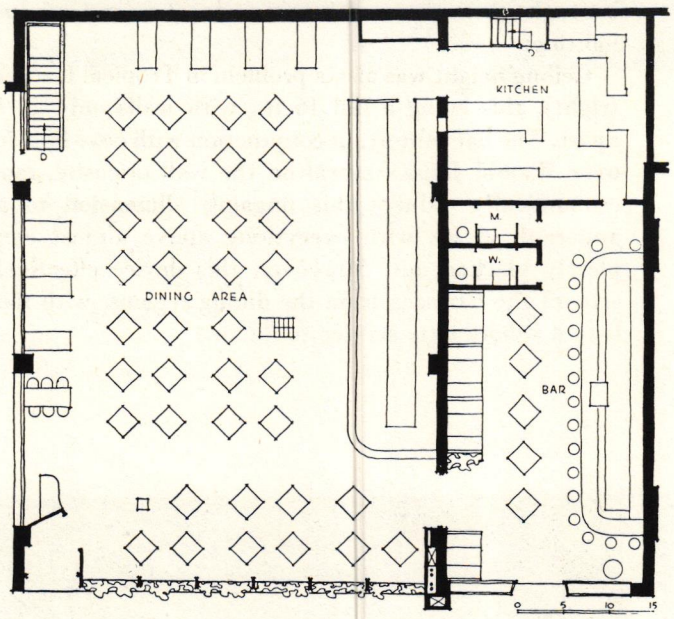
Schnall Photos

BARS

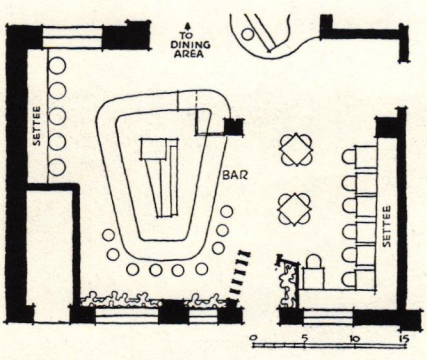
FORTHRIGHT disclosure in this department is definitely *not* in keeping, even where the service is offered in connection with a self-service restaurant such as Reed's (see page 233 and plan, page 240). Although prominent citizens may properly assert they "have nothing to hide" in occasional temperate indulgence, still they don't really like to do it on manifest exhibition. For this reason the exterior of Tropical Gardens (see left, and pages 235 and 236), though striving for attractiveness and compulsion in line with principles for the restaurant front, has much smaller window areas, with curtains as a rule nearly drawn, to reveal very little to the street of the activities and personages inside. Still the front should express, as Tropical Gardens attempts, particularly in the doorway, the essential nature and character of the

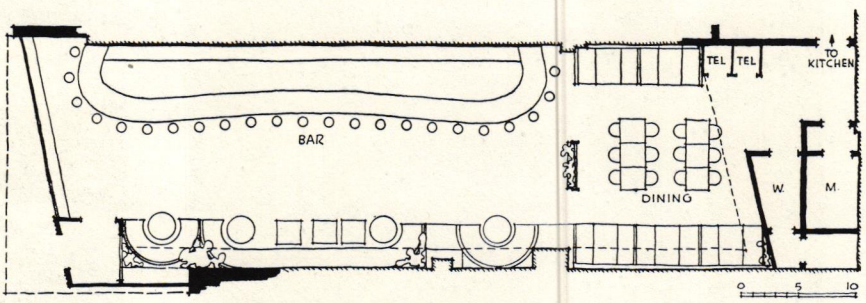






Plan of Sakele's, directly above, shows bar and dining areas demarked by existing wall. Dotted line indicates mezzanine with two dining areas especially adapted for private parties. Rear portion of main dining room can be screened off during lulls. Bar and dining areas in Field's, upper right, though more closely associated, are still distinct. Plan of Reed's Cafeteria, right, depends largely on relationship of counter to kitchen

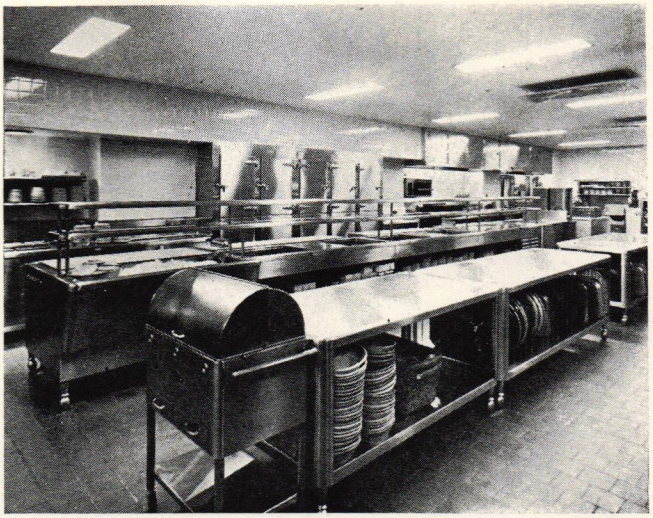




Left: awkward arrangement of existing columns had to be overcome in providing intimate bar with hung ceiling for Lottie's Dogwood Room. Above: plan of Tropical Gardens

RESTAURANT KITCHENS

Material for this section was supplied by Herman H. Siegel, Architect; Harry Greitzer, Viking Kitchen Equipment Co.; Samuel Greenspan, Nathan Straus-Duparquet, Inc., with all photographs from the latter. Data on ventilation and air conditioning is from Peter Frank, Armo Cooling & Ventilating Co.



Reni Photos

Photo at right shows Garde Manger section in kitchen of the Mayflower Hotel, Washington, D. C., executed by Straus-Duparquet. Foreground: bread warmer behind, sea food bar

IT has been said that the restaurant architect's job is to attract customers; after that it is up to the operator to hang on to them with good food and service. But the architect has a manifest responsibility here, too. Bad planning in this department results not only in loss of custom, but in excessive china breakage, loss of silverware, spoiled food, actions by the Board of Health, and numerous vexations to the help, with consequent loss of their efficiency and even hire.

Essentially every kitchen area, for all restaurant types, conforms to certain basic requirements, and to an ideal plan of layout and relationships among the indispensable functions: receipt and storage of food, preparation, cooking, service, and utensilry washing. It is difficult, however, to be statistical regarding proportions of total area required for these operations to total dining space. It should be obvious from the preceding pages (232-40) that requirements at Sakele's, offering full-course menus of wide selection, are vastly different from those in Tropical Gardens, where food is almost an incidental service to liquor. It is possible simply to say that kitchen and service areas, in currently successful operations, are occupying between 50 and 100 per cent the total area of dining spaces, with increasing tendency toward the top figure, to accommodate all the provisions recommended by experts for smooth efficiency.

First consideration, in establishing the layout and relationships of kitchen and service areas, must be unimpeded one-way traffic of all personnel. Waiters should enter the kitchen from dining areas, and leave by separate doors, ideally operating by "magic-eye" in the one necessary direction. A waiter entering from the dining room, presumably with a load of dirty dishes, should come immediately upon the washing section, where he deposits his tray, proceeding then to pick up new orders. Next in line should be the *Garde Manger*, or salad, sandwich, cold meat and sea food section. After this, the Hot Food Area, adjacent to ranges and cooking equipment, followed by the dessert, pastry and beverage section, the last before return to the dining room. Preparation, storage and receipt areas should be entirely distinct from all the above, with the latter adjacent to outside delivery entrances. However, all sections, distinct or integrated, must be closely related for convenience and efficiency, preferably contiguous or with adequate means of vertical communication.

Basic equipment for the Dishwashing Area includes: shelves or ledges on the soiled dish table to rest trays for unloading; preliminary soaking sinks; pre-flushing equipment to carry off the loosened swill, permitting longer operation of washing machines without change of water. Glass washing equipment should be of the brush type, with a series of gentle slides below table level to assist in

Below, left: Hot Food Area in Mayflower kitchen, with warming units in close-up. Right: Mayflower dish and glass washing section, showing exhaust hoods over washing machines; stacking baskets for glasses. Service tables contain trays beneath





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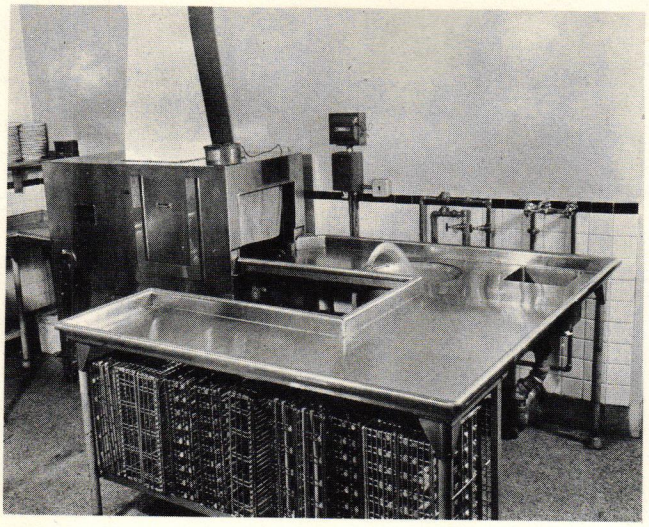
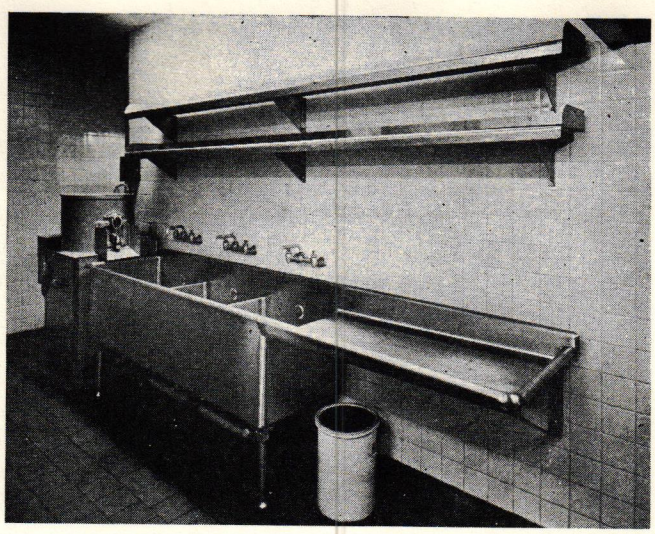




Reni Photo

Left: washing equipment in Restaurant of Namm's Dept. Store, Brooklyn; Morris Lapidus, Architect; kitchen, Straus-Duparquet: Note soaking sink and pre-flush for swill. Right: Mayflower preparation equipment; note vegetable parer at far end of sinks

basket-stacking of glasses as they emerge from the washer. A silver-washing machine is now available which cleans by means of a revolving barrel, filled with small metal pellets. In addition, this equipment sterilizes and burnishes, requiring no drying.

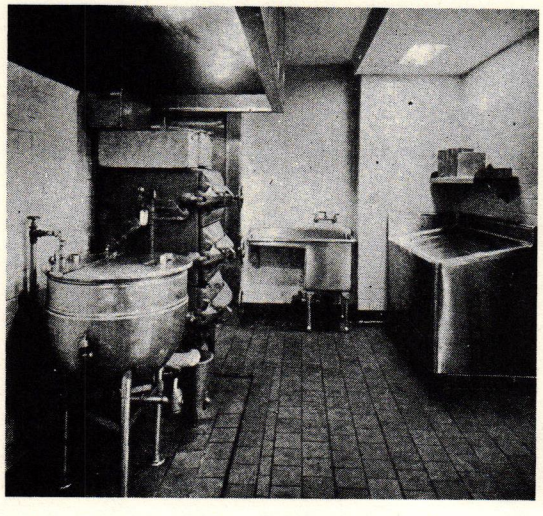
Efficient new equipment for the *Garde Manger* section includes mechanically refrigerated units for salad, cold meats and sea food, to be hooked in very economically with the main refrigeration system. Of great advantage here, as in other pick-up sections, are counter-weighted units permitting the stacking within of dishes and trays; only the top two or three protrude above table level, regardless of the many or few pushing up from beneath. These units can be cooled or heated, and insure minimum exposure of the dishes or trays contained.

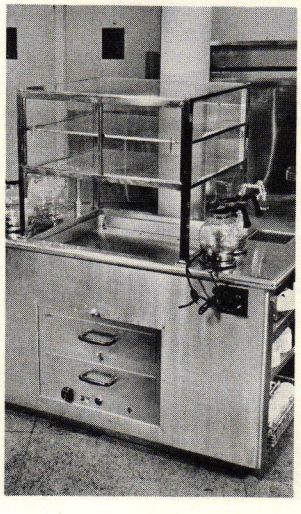
For the Hot Food Area, incessant refinements in pressure cookers and kettles, baking and roasting ovens are more and more obtainable. Units to keep food warm until serving are almost indispensable; one type of shelf unit, for installation above the cook's table, is designed to hold complete orders. Its upper tier has an insulated core and convex bottom, returning heat from the lower tier on which the food is placed. Removable grease filters in range hoods are a great convenience in this section.

General provisions for kitchen and service areas should include: rounded corners and cove bases; welded stainless-steel surfaces (nuts and bolts are great dirt collectors); ramps in place of steps, if changes in level cannot possibly be avoided; impervious floors, walls, and even ceilings (see discussion of materials, pages 232-237); floor drains for daily hosings; at least 20 f.c. of light at working levels; such conveniences, where possible, as walk-in boxes with electrical germ-killing devices and magic-eye operation; and, of course, such employee-morale maintainers as locker-toilet-restroom facilities and adequate ventilation in all regions.

Below, left: Mayflower cooking equipment; soup kettle in left foreground; behind, pressure vegetable cooker; at right is box for prepared fish, with small drawer for scallops, etc. Photo at right shows unit for booth-service utensils, coffee, water, etc. at Namm's

George W. Nuckols Photo

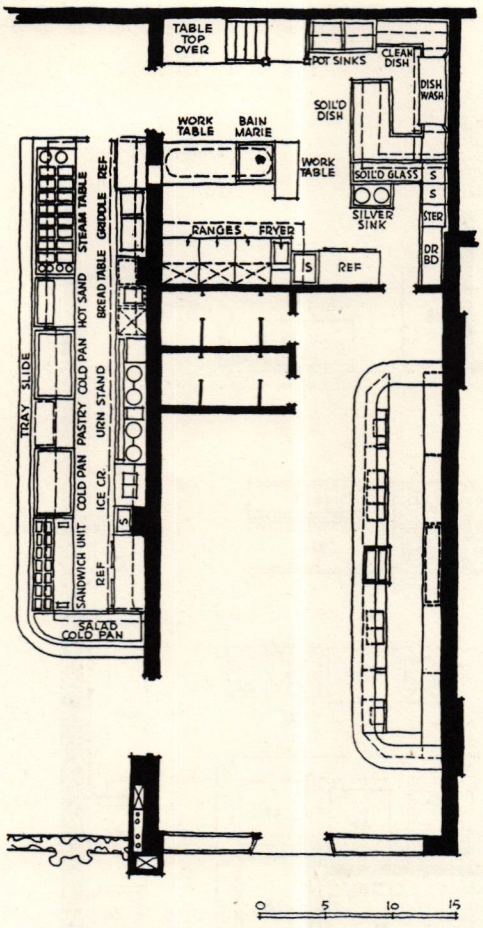


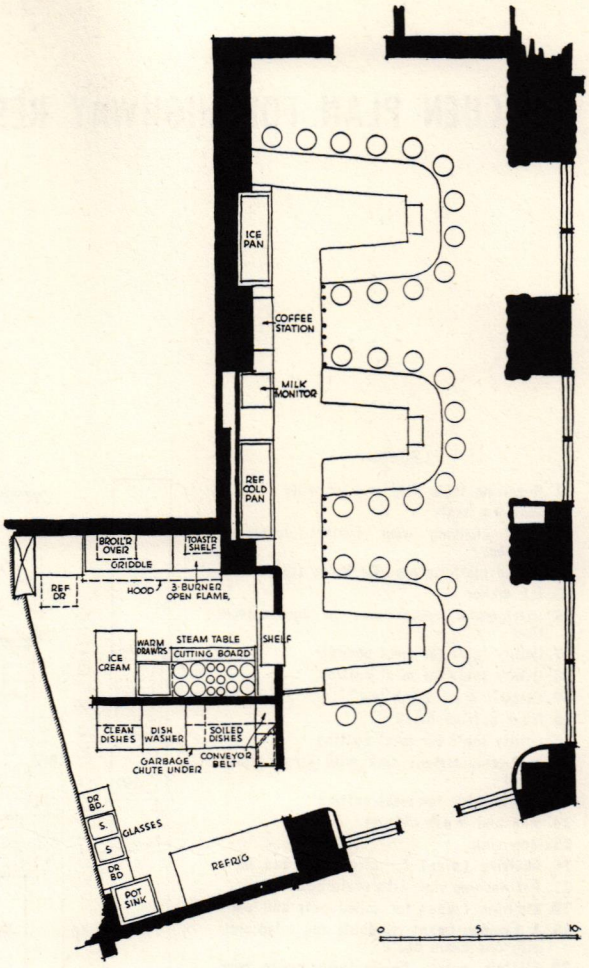


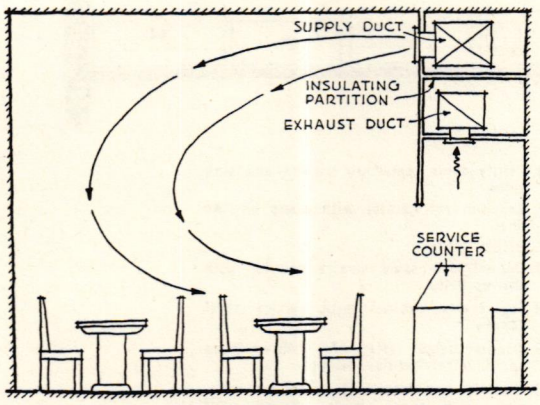
Ventilation and Air Conditioning

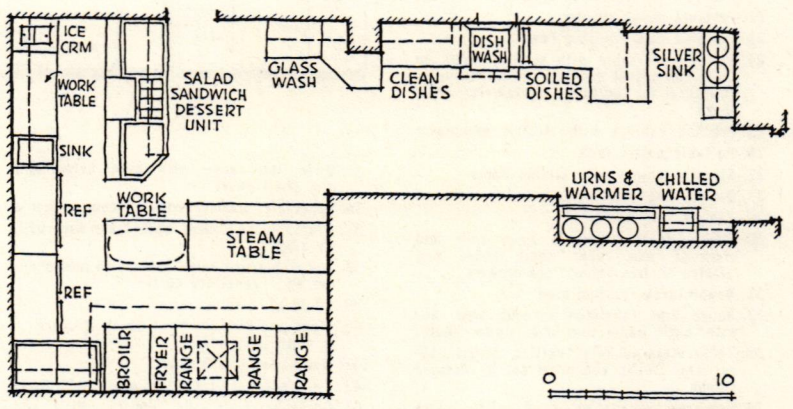
Prime purposes of a restaurant's ventilating system are the removal of foul air and heat from kitchen areas, and the prevention of these in dining spaces. Bad-air exhaustion should take place as close as possible to points of origin. Range hoods preferably should be no more than 6 ft. above the floor; dish-washing machines should have hoods over each opening. Construction of all hoods should be such that there is a narrow curtain of high velocity air around the exhaust perimeter.

With any extensive exhaust system, a positive supply of replacement air must be provided (relying for this, to any considerable degree, on haphazard filtration through doors and windows, makes many difficulties). A controlled-intake balance should provide a little more air supplied than exhausted in dining areas, with the reverse holding for kitchens. This maintains a slight flow of air from the dining areas, in one direction toward the kitchen to repel odors, and in the other toward the street, to prevent drafts. Also, this replacement air should be heated. One method is simply preheating to room temperature, for preventing cold drafts; another is to make it the principal heat carrier, eliminating radiators. Protective measures









Plan top, left, is kitchen and counter layout in Reed's Cafeteria (see also pages 233 and 240). Plan of Rikers, top right, illustrates intercommunication between counter and kitchen, essential to this type of operation. Drawing directly above, left, shows prevention of "short circuiting" in operating air conditioning with counter-hood exhaust. Plan at right, directly above, is kitchen of Field's Restaurant and bar (see also pages 232-240).

must be taken to prevent freezing of heating-coil condensate at below 32° F.

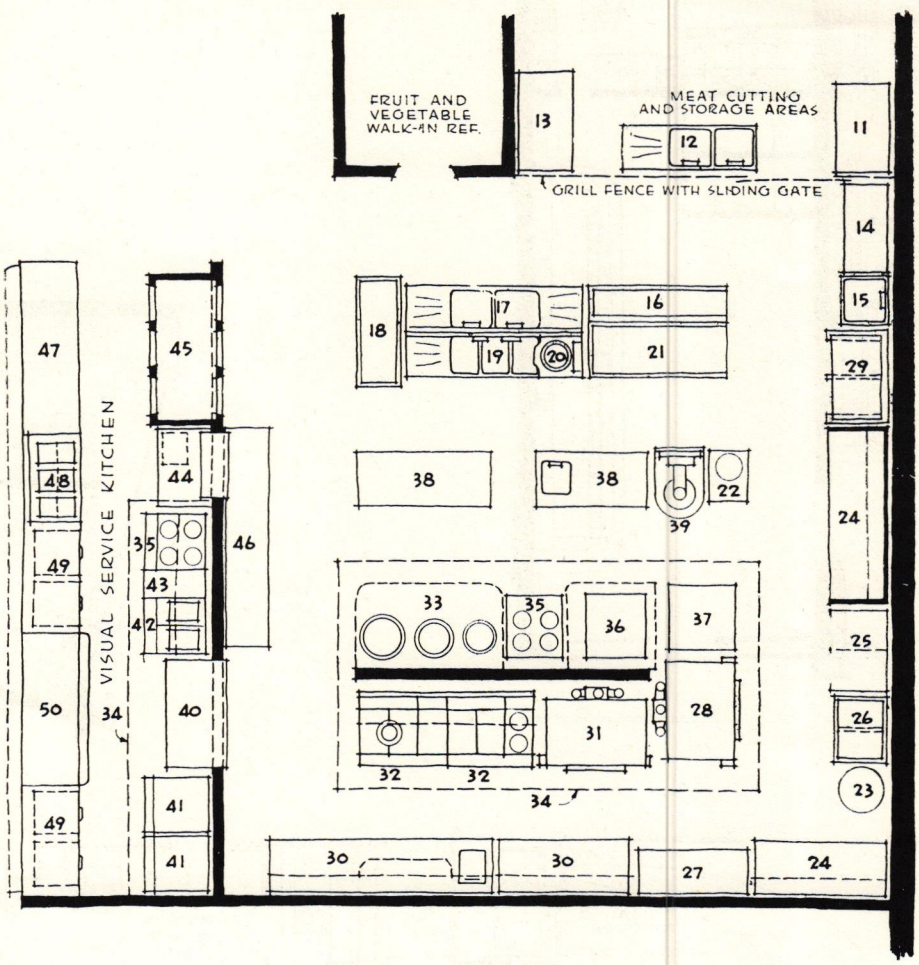
Air-conditioning factors vary according to restaurant types. It is possible that in self-service and counter operations, temperature and humidity will be kept at lower general levels of difference, between inside and outside, than in restaurants where patrons stay longer.

Automatic control is very important, particularly in cafeterias and luncheonettes, with their rapid changes of occupancy and short, heavy loads during peak periods. To meet these fluctuations, compressors are probably the type of refrigeration source most generally used.

It is usually good practice, when external conditions warrant, to use outside air *entirely* for conditioning systems. Otherwise, just enough outside air is introduced to maintain the balances described previously, with the main body recirculated. Replaceable-type filters are most practical for both air conditioning and ventilating purposes.

Inlets for air-conditioning and ventilation must be calculated carefully, not only to avoid drafts but to prevent short-circuiting of air-circulation to exhaust openings. Also general architectural schemes must be studied for harmony of outlets with room shapes and seating plans. A harmonious example, in this respect, is illustrated on page 235.

KITCHEN PLAN FOR HIGHWAY RESTAURANT



LEGEND

1. Receiving table with counter scale
2. Platform scale
3. Steel shelving with cabinet doors as needed.
4. Raised platform pipe for bulky stores
5. Ice maker
6. Refrigerator compressors in double-deck tiers
7. Utility table for meat chopper
8. Utility table for meat cutting
9. Electric meat & fish saw
10. Meat cutting block
11. Utility table for meat cutting
12. A 2-compartment sink with single drain board
13. Utility table for meat cutting
14. Mop and brush cabinet
15. Mop sink
16. Shelving (pipe) for clean pots and pans
17. Pot washing sink with drain boards
18. Shelving (pipe) for soiled pots and pans
19. A 3-compartment vegetable and salad sink with one drain board
20. Electric potato peeler with chute over sink compartment
21. Raised platform (pipe) for storage of potatoes in bags or bushel and service storage for vegetables awaiting cleaning
22. Portable dough divider
23. Portable pastry mixing bowl
24. Pastry work table with vertical risers on three sides, tool drawers and open understructure for portable containers; shelf above
25. Proofing cabinet with electric evaporator
26. Portable pastry rack
27. Storage cabinet with sliding doors
28. Double deck baking oven
29. Baker's refrigerator
30. Cook's tables; one to have sink and overhead pan rack; shelf above and slatted shelves below; tool drawers
31. Double deck roasting oven
32. Range tops (skeleton without oven, but with back panel and d.d. upper shelf)
33. Three steam-jacketed kettles, 30-gal., 15-gal. and 10-gal. capacities set in recessed trough
34. Overhead ventilating hood with grease filters
35. Open top range with oven below and d.d. shelf above
36. Vegetable steamer with 3 compartments
37. Vegetable and salad work table with utility sink
38. Vegetable and salad table with food chopper and French-fry cutter
39. 60-30 qt. electric mixer
40. Food and dish warmer with shelf doors on both long sides
41. Heavy duty gas broiler
42. Twin gas deep-fat fryer with shelf above
43. Spreader plate and shelves below and above
44. Utility table, pass-thru window and sink below
45. Reach-in refrigerator with doors on two sides
46. Utility table
47. Dessert and salad service counter with shelves below
48. Ice cream cabinet with service shelf above
49. Counter height refrigerator with work top and four refrigerator drawers
50. Electric hot food table with six interchangeable panel insets, service shelf above, cutting board

HAVING selected menu patterns and analyzed kitchen equipment requirements in terms of quantities of food (the kind of restaurant determines kitchen plans) the kitchen planner is ready to work out the most efficient system and layout. Here the receiving, storage and meat-cutting areas are separate from the kitchen itself (that's why the first 10 items of the legend are missing from the plan), for better control of costly merchandise, also here to serve the barbecue kitchen.

Vegetable preparation (Items 16-21) is simplified by having storage racks adjacent to the sink, and pot and pan storage near the pot-cleaning sink. High pressure vegetable cooking is facilitated by providing an open top range (35) and a utility sink (37) for cooling the cookers. Double-deck roasting ovens (31) separate from range tops (32) give good accessibility and convenient heights. Work space directly opposite is very important (30). The visual service kitchen includes: food and dish warming cabinets, gas broilers, deep fat fryers, open-top range for sauteing and frying, utility table and sink, and refrigerator. On the front counter are refrigerator drawers, electric hot food table, salad counter and ice cream cabinets.

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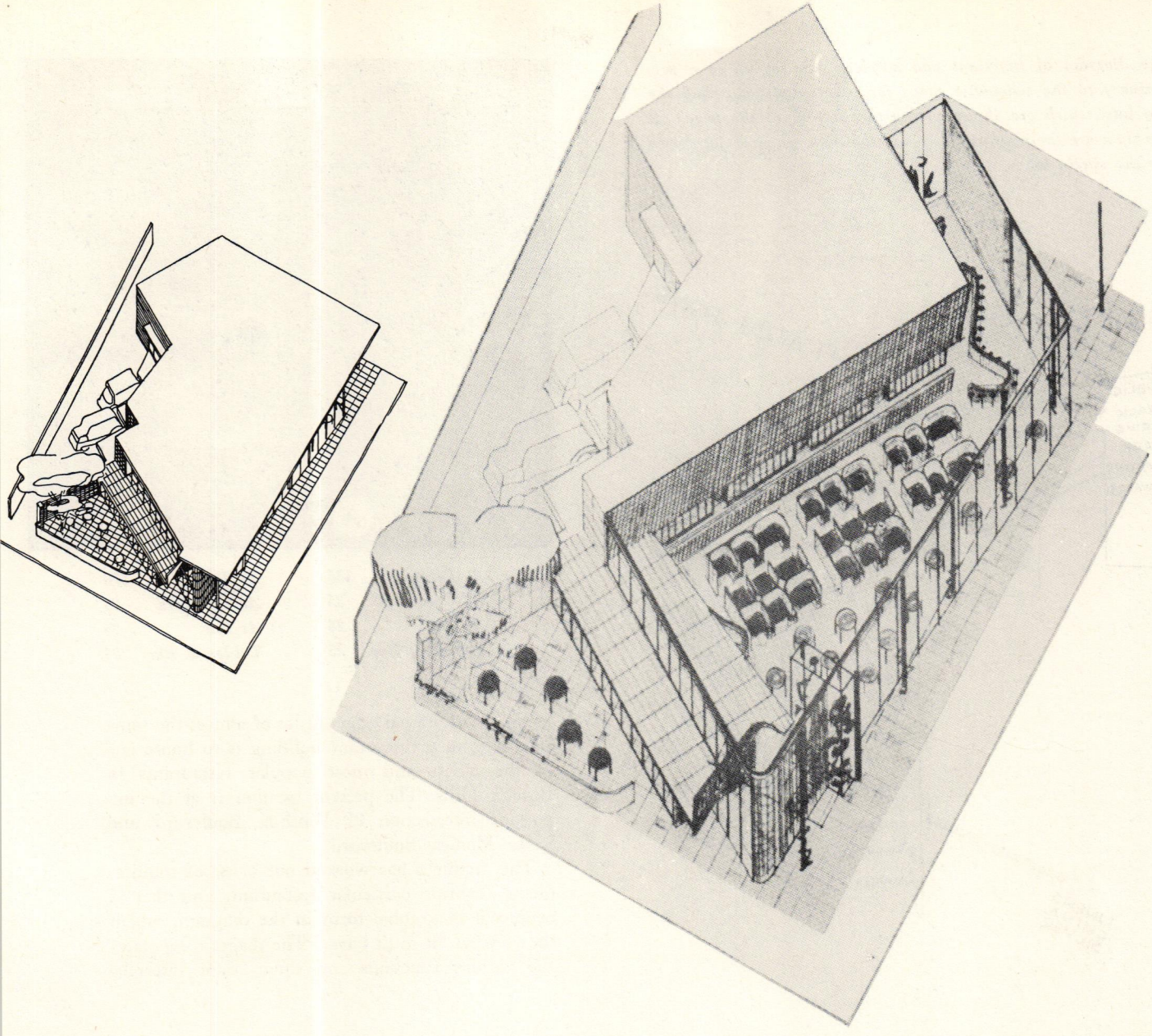
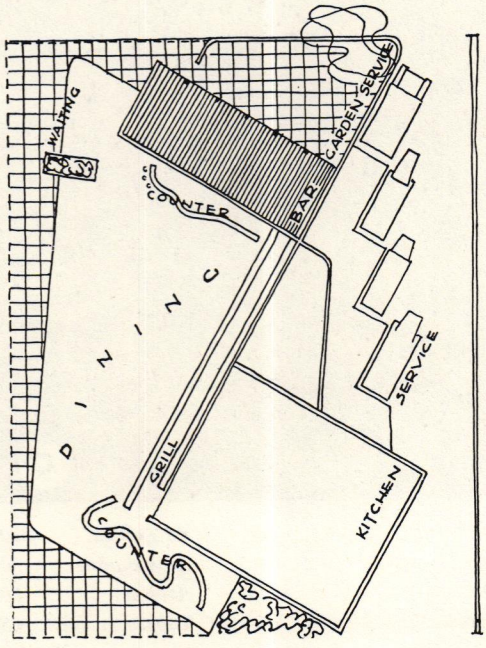


ANALYSIS OF RESTAURANT SPACE AND LAYOUT

Sumner Spaulding, Architect



ARCHITECTURAL design involves many factors, not the least of which is that of analyzing the client's problem and presenting a number of possible solutions, so that they can be compared on a practical, economic, and operating basis. The studies here shown are a portion of the analysis made by the architect in order to help the owner to come to a realistic decision as to the amount of space needed for the operation of his restaurant, and also the layout of that space in such a way as to provide both maximum attractiveness for his clients and maximum operating efficiency.

Two sets of studies were made: one, on a lot which measures 135 feet by 60 feet. The second scheme shows the possibility of

Cut-away aerial perspective and plan of scheme for "G" which helped the owner to visualize his projected building. Various schemes for single and double lot coverage are shown on the following pages

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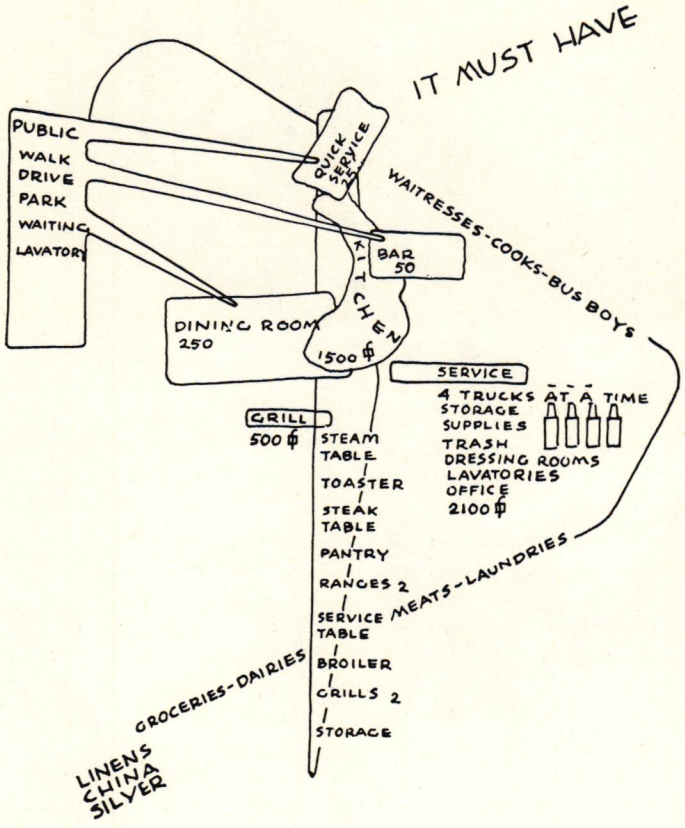
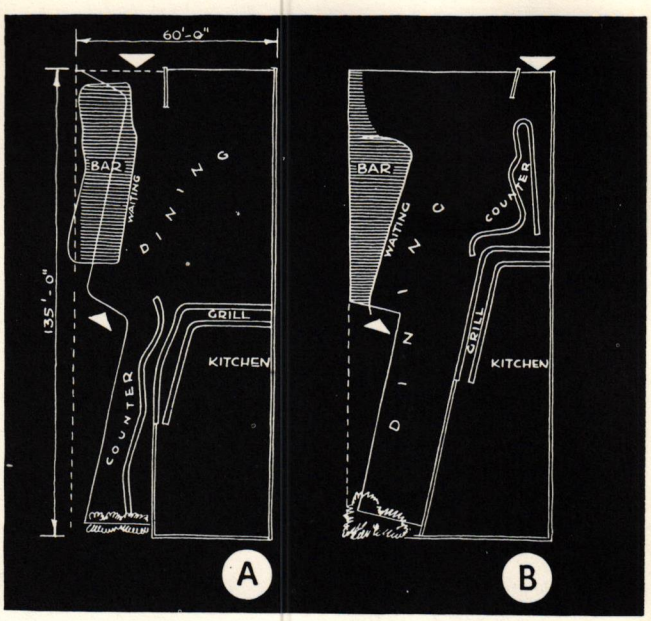
The diagram of functions and services was set up as a preliminary to the schematic plans for a restaurant covering the two lots, which are shown across the bottom of the page. At the right are the diagrams showing the plan schemes developed for the single lot.



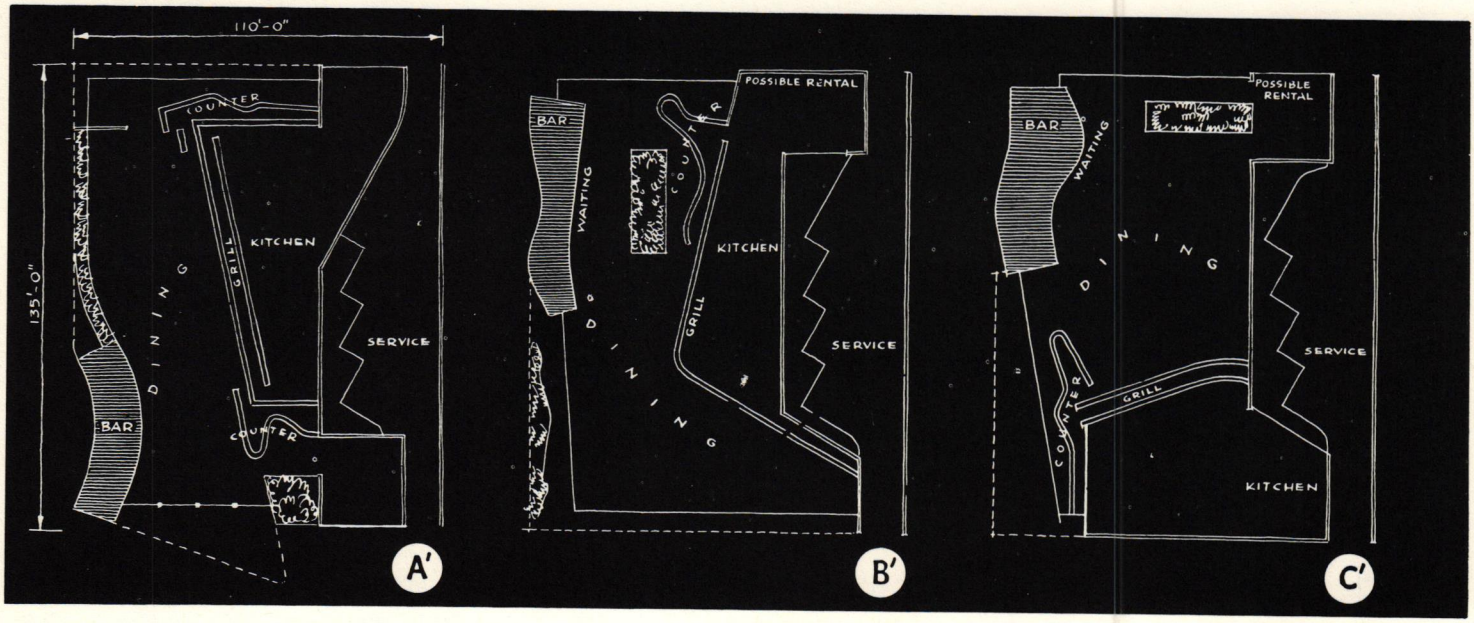


At Tables	*135*
At Counters	*35*
At Bar	*24*
Tables at Bar	*25*

At Tables	*170*
At Counters	*35*
At Bar	*24*
Tables at Bar	*25*

using an additional adjacent lot of almost the same size. The new restaurant building is to house one of the oldest and most popular restaurants in Beverly Hills. The present location is at the important intersection of Wilshire Boulevard and Santa Monica Boulevard.

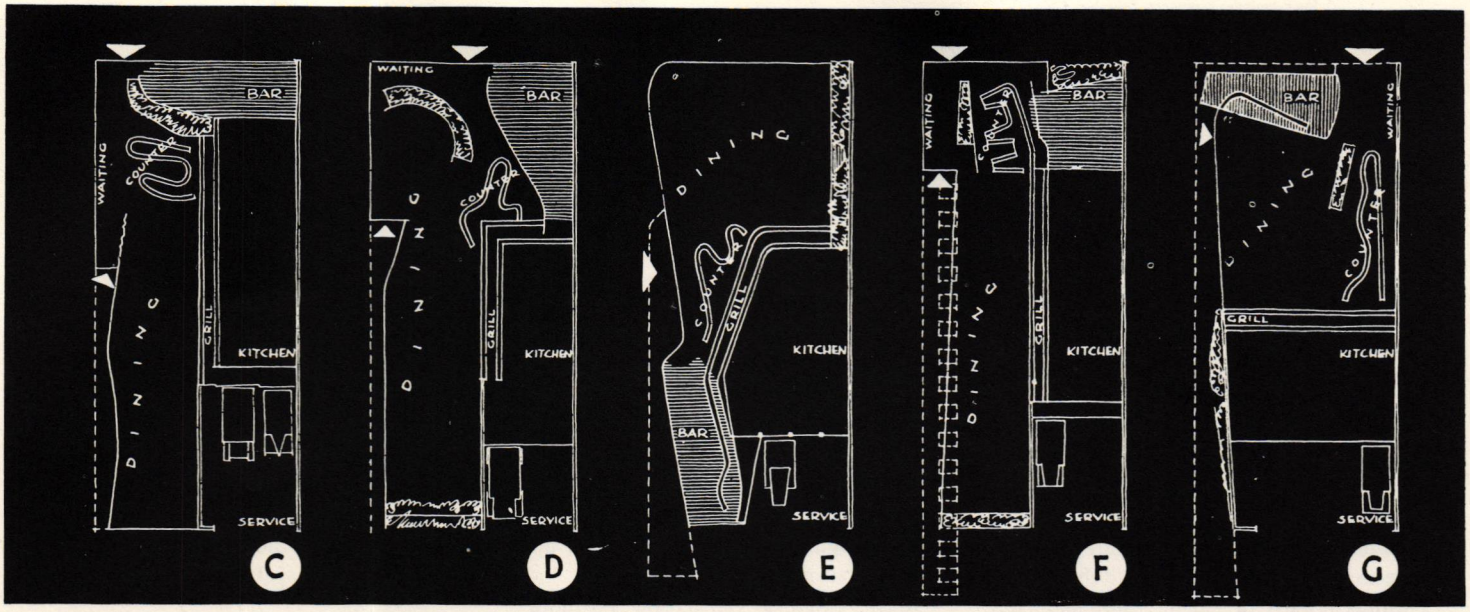
The architect has worked out a list of requirements for this particular restaurant, and that is expressed in graphic form in the diagram, which shows what "it must have." The diagram separates the various functions and shows their interrela-



At Tables	*276*
At Counter	*30*
At Bar	*24*
Tables at Bar	*25*

At Tables	*275*
At Counter	*30*
At Bar	*24*
Tables at Bar	*25*

At Tables	*270*
At Counter	*30*
At Bar	*30*
Tables at Bar	*25*

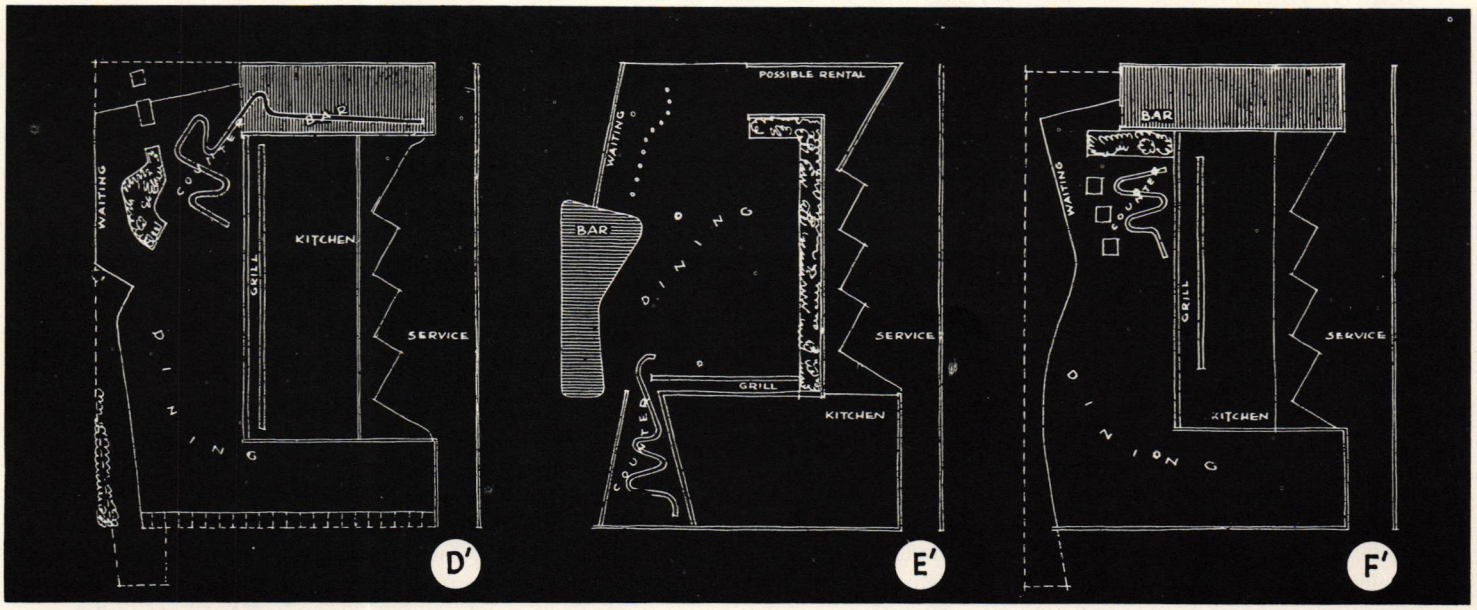


At Tables	*110*	*At Tables*	*110*	*At Tables*	*154*	*At Tables*	*160*	*At Tables*	*150*
At Counter	*30*	*At Counter*	*30*	*At Counter*	*30*	*At Counter*	*30*	*At Counters*	*40*
At Bar	*24*	*At Bar*	*24*	*At Bar*	*25*	*At Bar*	*20*	*At Bar*	*20*
Tables at Bar	*25*	*Tables at Bar*	*25*	*Tables at Bar*	*25*	*Tables at Bar*	*25*	*Tables at Bar*	*25*

tionships, based on the predetermined requirements of a restaurant seating 250 in the dining room, providing quick service for 25, and a bar serving 50. The grill, delivery, food preparation, and cooking services are all carefully considered.

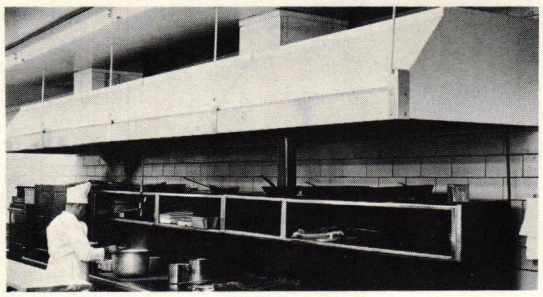
Within the limitations of the lots, many different arrangements of facilities and services are possible, and these have been tried out in schematic plan diagrams to show the possible maximum number of customers that can be accommodated at tables, counter, and bar. Such an analysis is extremely important to a restaurant owner, for maximum seating without crowding means maximum profit.

A preliminary diagrammatic analysis of this kind is a distinct contribution on the part of the architect to the success of the restaurant. For that matter, it would be equally desirable in connection with any other type of building, for it gives the owner an opportunity to analyze his operational problems and possible financial returns to choose the best scheme, and to proceed with confidence.



At Tables	*270*	*At Tables*	*264*	*At Tables*	*240*
At Counter	*30*	*At Counter*	*30*	*At Counter*	*35*
At Bar	*30*	*At Bar*	*25*	*At Bar*	*30*
Tables at Bar	*30*	*Tables at Bar*	*25*	*Tables at Bar*	*25*

The Everglades Restaurant, Columbus, Ohio



VENTILATING COMMERCIAL KITCHENS FOR EFFICIENCY AND ECONOMY

BY JACK A. WUNDERLE

Air Cleaning & Ventilation Engineer
Ohio Department of Health

GOOD VENTILATION is as integral and necessary a part of the kitchens and dining rooms of eating establishments as are the ranges, washers and even the walls and floors. It's the most important element to be considered in eliminating excessive heat, steam clouds, cooking odors, greasy vapors and even drastic temperature changes (particularly in winter if windows are used for ventilation). Without good ventilation, especially in kitchens, the resulting unfavorable working conditions decrease efficiency and increase irritability of employees, steam clouds hamper work in all departments and unpleasant cooking odors disseminated to the dining room promote customer dissatisfaction.

Ventilation may be defined as the process of supplying or removing air by natural or mechanical means to or from a space. There are two classes of ventilation: (1) general ventilation, which is the process of removing air from a general area, space, room or building; and (2) specific or local exhaust ventilation, by which a contaminant is captured at the source before it can be dispersed into the surrounding area.

General or dilution ventilation is customarily used for temperature, humidity, odor and comfort control. The standard for average conditions of ventilation has been commonly accepted as 10 to 30 cfm of outdoor air per person. ASHAE suggests that the minimum quantity of air required for spaces to be used for eating, recreation or manual work should not be less than 20 cfm per person. The Wisconsin Industrial Commission in their Heating and Ventilating Code, the Chicago Code and the Public Buildings Administration suggest 4 cfm per square foot of floor space as a minimum ventilation rate. Other sources base minimum rates on an air change basis; that is, the number of complete room volume changes per hour. Recommended figures vary from 15 to 40 air changes per hour.

Local exhaust ventilation is more effective than general ventilation. It requires less air movement and so results in less heat loss and lower power costs for the same degree of control. In addition to capturing the contaminants at their source, local exhaust acts also as a general ventilation system since the air to supply the exhaust hoods must come from the general room area. Usual practice is first to design the local exhaust system to control the contaminant sources and then to check the design volume against the general ventilation requirements. The exhaust requirements can be figured from the formula $Q = V_f \times A_h$, where Q is the exhaust volume required, V_f is the velocity of air at the face of the hood and A_h is the area of the hood opening. The proper fan size is selected on the basis of this Q value and the static pressure produced within the duct system (see discussion of Ductwork on page 250)—that is, unless a higher general ventilation rate than that produced by the exhaust volume is needed, in which case the higher rate should govern the fan size selected.

Unfortunately ventilating systems cannot be standardized, packaged and installed as a unit to do any and all jobs. The many variables — building dimensions, variety of kitchen equipment and equipment combinations, arrangement of equipment, building obstructions, local codes, etc. — dictate that the system be tailored for each application. Basically, a local exhaust system consists of hoods enclosing the source of contaminant generation, branch ducts connected to the hoods, one or more main ducts joining the branches, ductwork fittings, possibly a collector for contaminant removal in the exhaust air, and air-moving equipment to produce the necessary air flow through hoods and to overcome the resistance to the flow of air in the system.

Hoods

The purpose of all hoods is to capture contaminants in an air stream and to remove them from the working atmosphere. The hood exhaust volume must be sufficient to cause air flow into the receiving hood from all directions. It should produce an air current velocity which is adequate to control odors and vapors and which is unaffected by the cross-currents and drafts created by the opening and closing of doors and windows and by the operation of other mechanical ventilating equipment. Yet it should not itself produce unnecessary drafts. This air current or face velocity is the velocity of air as it enters the hood in the plane of the hood face. A number of factors enter into the selection of proper design face velocity, the most important of which are (1) the condition of contaminant release into the surrounding atmosphere and (2) the nature of the influencing zone of air surrounding the hood. If contaminants enter the surrounding air with high velocity, then the design face velocity will have to be high in order to trap them. As the contaminant velocity decreases to medium, low and zero, then the design velocity can also be lower. Likewise, if the body of air around the hood is relatively quiet, then the design velocity can be low. However, if it is in motion or composed of high-velocity cross-drafts, then the design velocity must be higher. Other factors which influence the selection of proper face velocities are the make-up air which is provided to the room and the use of side curtains along the hood parts not in use.

Most kitchen ventilation hoods are canopy hoods of two basic types: the freely suspended type and the shed type. The freely suspended hood is

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supported (usually from above) over the surface to be controlled. All four sides are open to provide working space around the entire perimeter of the operating surface. The shed type generally extends outward from a wall and thus has three operating sides. Whichever type of hood is used, the distance X between hood bottom and work surface should be kept to the minimum possible without interfering with operations and still consistent with good appearance. The amount of this open area greatly affects the exhaust volume required.

The hood size should be such that its edges extend beyond the outer edges of the range, broiler, fryer, etc., over which it is to be installed. In some localities this is regulated by ordinance. Where such is not the case, a minimum overhang or hood projection R of 12 in. is considered necessary, and greater overlap is desirable. A common method of determining overhang is to multiply the distance X from hood bottom to work surface by 0.4. Another method is to increase the hood dimension by 2 in. for every foot of distance X. Regardless of the method used a minimum overhang of 12 in. should be maintained.

Where sufficient headroom permits, it is desirable to provide a hood height H of 2 ft. This plenum or chamber acts as a reservoir and prevents spillover by retaining excessive momentary puffs of smoke and steam until the exhaust system can handle them.

Aprons or sides extending from hood bottom to surface are often provided on those sides of the cooking units which are not in use. Use of such elements increases the effectiveness of the hood, decreases air requirements (face velocity and exhaust volume Q) and restricts carryout by cross-drafts. Oftentimes they are hinged or sliding to provide flexibility.

Obtaining uniform distribution of air inflow across the entire hood face is a desired goal in any hood design. In smaller hoods (4 to 5 ft or less) there generally is no problem unless short-circuiting of inflow is caused by low headroom, duct take-offs at hood ends and/or low hood height. In larger hoods, which are more problematical, better flow distribution may be obtained by baffling, subdividing, including multiple take-offs or otherwise compounding the hood. All take-offs should be made at the top and rear of hoods. Where multiple take-offs are employed, they should be spaced on not more than 6-ft centers. Where space limitations do not allow take-offs vertically, and the main exhaust duct must extend horizontally from the hood end at hood level, the use of an adjustable baffle-manifold arrangement with multiple openings is often the solution. Grease filters also tend to promote uniform air distribution.

Slot Type Exhausts

Slot type exhausts, either of the straight lateral type or used in modified shed type designs, are not nearly so desirable as canopy type hoods. They increase cost of construction and cost of ventilation components, since the exhaust volumes required to control effectively a given operation are two to three times those necessary for the same operation with a canopy hood. They are not effective over distances of much more than 3 ft. In addition, slots are difficult to keep clean because of their inaccessibility. On those occasions when it may be necessary to use slot type exhausts (as in the case of overhead limitations), the slots should be made wide enough to permit access for cleaning. Grease filters should not be located near the slots if there is any danger of ignition, but should be placed at a safe distance along the exhaust duct yet still close enough so that the accumulated grease in the duct return preceding them cannot give trouble.

Deep Fat Fryers

Deep fat fryers, when not exhausted under the main range hood, may be exhausted locally by a branch duct from the main duct or by a separate system. Exhaust volumes can be determined, as in the case of range hoods, by using the formula $Q = V_f \times A_p$, where V_f is a recommended face velocity of 50 fpm and A_p is the peripheral area bounded by the forward corners of the exhaust hood and the fryer.

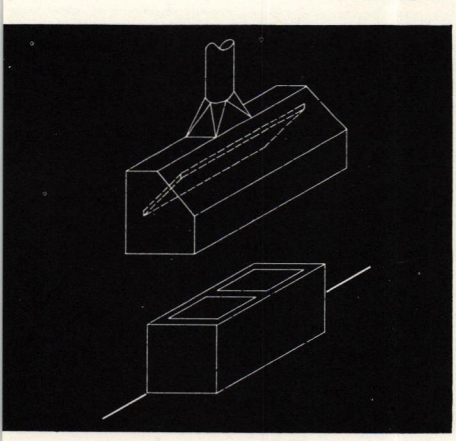
Steam Tables, Dishwashers

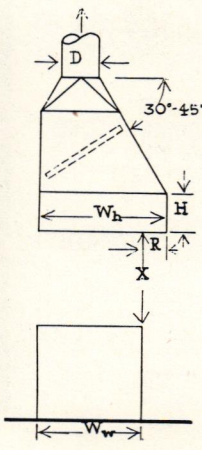
Hoods over steam tables and dishwashers do not require so calculated a design as those over ranges and other grease- and soot-producing appliances. They are provided to exhaust only steam and moisture, and so are not used in conjunction with such additional elements as grease filters.

Hoods over steam tables are generally of similar construction to range hoods. Exhaust volumes are calculated using the same formula: $Q = V_f \times A_h$. The recommended face velocity V_f is 60 to 70 fpm.

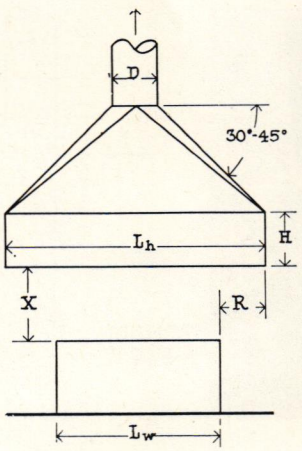
Separate and relatively small hoods and blowers are generally provided for mechanical dishwashers, with the air exhausted only at the ends of the washer, as shown in the drawing. These hoods exhaust steam and moisture which escape from the washer enclosure when dishes enter and leave. Exhaust volumes for dishwashers can be figured fairly generally, with no need for extended formula calculations. For a 9-ft dishwasher, exhaust volumes of approximately 1500 cfm are used; for 5-, 6- and 7-ft sizes, Q is about 1000 cfm; and for smaller washers, 750 cfm should be the volume used.

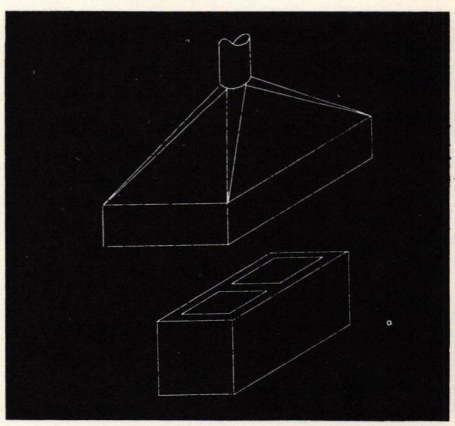
Shed type hood





Freely suspended hood





Grease Filters

Grease filters are desirable for large kitchen hoods for two reasons: (1) They remove oily vapors and droplets, thus preventing the accumulation of cooking greases in the ductwork, on exhaust fan blades, on building walls, etc. (2) They serve as diffusers and so tend to promote a uniform distribution of air over the hood opening. These filters must be changed or cleaned frequently, so they should be installed so that they can be removed easily. When they are heavily coated with grease, they not only drip excess grease, and increase measurably the system resistance, but they are also serious fire hazards. In some designs the filters are tilted slightly to permit drainage of excess grease and oil to drain channels and thence to a reservoir or container.

Where air exhaust volumes are so large that they cannot be handled by the filters, air noise can become a serious nuisance. To combat this, filters may be arranged in a V or W form, thus increasing the filter area and enabling larger air volumes to be handled.

Most grease filters are made to standard dimensions, varying from 1 to 3 in. in thickness, and are designed to handle from 150 to 250 fpm (low velocity type). There is also on the market a high velocity type which is said to work best at velocities of approximately 500 fpm. For good efficiency the velocity through any filter should be that recommended by the manufacturer. The grease filter area required (number of filters) is readily obtained by dividing the exhaust volume (cfm) by the filter manufacturer's velocity rating (fpm).

Ductwork

The correct design and competent installation of sheet steel ducts (and hoods) is of utmost importance for the proper functioning of any exhaust system. Improperly laid-out ductwork often results in inadequate distribution of ventilation. Ducts should be as straight as possible. Where direction changes are necessary, they should be gradual rather than abrupt. Interiors of all ducts should be smooth and free of all obstructions, with joints either welded or soldered air-tight.

Round ducts are preferred over square or rectangular ducts and should be used wherever possible because of their lower perimeter per unit area ratio (lower friction loss per unit length) and because of their more uniform cross-sectional flow pattern. Where rectangular ducts must be used, they should be made as nearly square as possible.

For kitchen ventilation systems, an approved fire damper with fusible link in the ducts adjacent to the hoods is recommended to reduce the possibility of a grease fire spreading through the system. Access doors should be provided at the fire dampers to provide easy access for inspection, cleaning and replacement of the fusible link. Exhaust piping should be provided with tight-fitting clean-out doors of a size to permit easy cleaning of the grease ducts.

All exhaust systems should be constructed of approved materials, sizes and types, and installed in a permanent and workmanlike manner. Copper bearing steel is suggested by the Public Buildings Administration for reduction of corrosion effects in ducts, hood and fan. Aluminum, black iron, stainless steel and galvanized sheet steel are also used.

Duct sizes are determined by the quantity of air to be moved and the transport or carrying velocity to be maintained in the duct. Generally, to minimize the condensation of cooking by-products in the system, it is advisable to maintain a transport velocity of 1500 to 2000 fpm.

Fans and Motors

An exhaust fan is expected to establish and maintain a prescribed rate of air flow through the various elements of the exhaust system. In order to select the proper fan for an exhaust system, it is necessary to determine the amount of work the fan must do. This work takes the form of resistance to flow and is composed of hood entrance losses; friction losses due to the ductwork and fittings; resistance of make-up air inlets and wind back-pressure; shutter resistance at exhaust outlet; and resistance to collectors and grease filters (when filters are dirty, filter resistance may increase two or three times that of clean filters, and note of this should be taken in calculating the maximum system resistance for fan selection). Manufacturers' catalogs list static pressure ratings of fans (inches of water) and fan capacities (cubic feet per minute). The pressure-volume charts or curves in these catalogs should be used in fan selection to ensure that the required exhaust volume will be delivered even with conditions of maximum over-all system resistance.

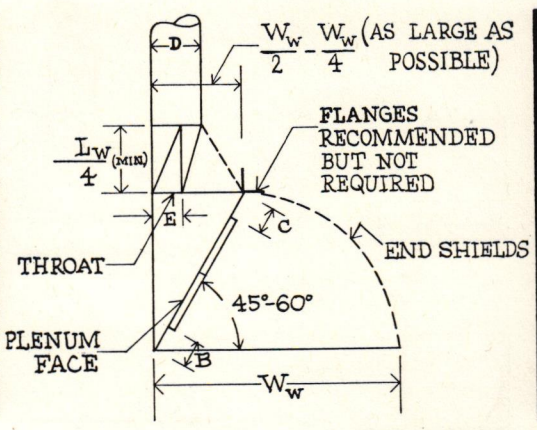
In general, centrifugal fan blowers rather than propeller-type fans should be used, because they are designed to operate efficiently against the static pressure of duct systems. Propeller fans are highly sensitive to any change in resistance pressure and hence may exhaust considerably less if any increase in system resistance develops. The centrifugal blower overcomes this disadvantage and has an additional advantage over the propeller fan in that the motor is not in the smoke- and grease-laden airstream. (Some local city ordinances prohibit the use of propeller fans whose motors are in the airstream.)

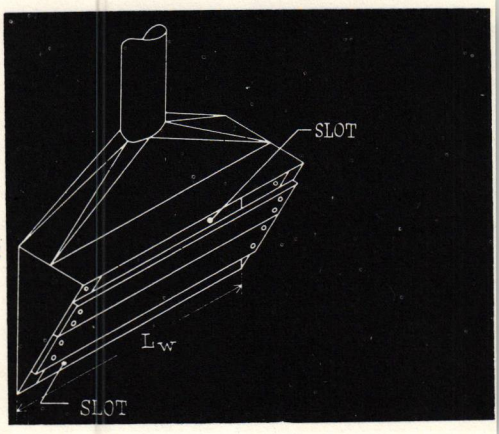
As a rule, it is better to have blowers and motors slightly oversize. If blowers are too small, the motors must operate at high speed and usually with consider-

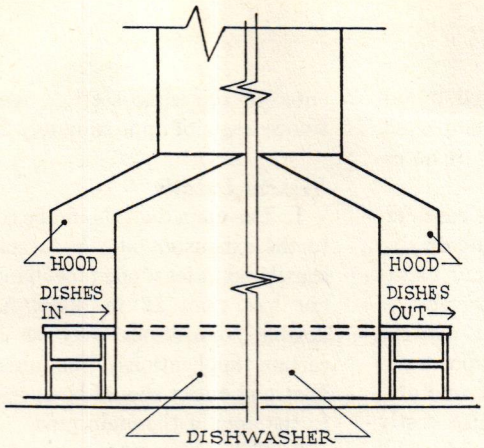
Biddles Restaurant, Columbus, Ohio



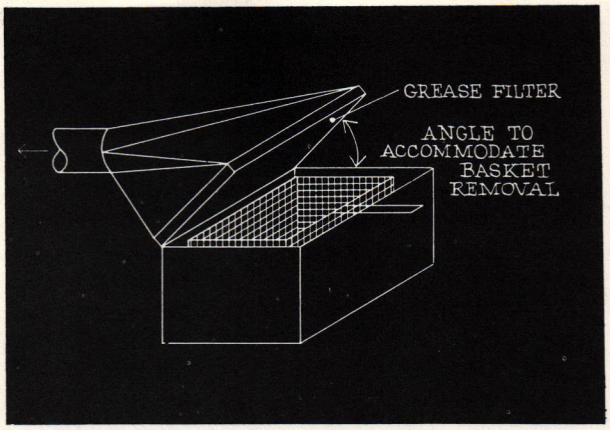
Lateral Exhaust (slant type hood)







Dishwasher hood



Deep fat fryer

able noise, and current consumption will in most cases exceed that of a larger blower running at a slower speed. Motor speed regulators are sometimes used where maximum ventilation is not required at all times. Their use saves electricity and reduces wear, tear and noise. Another desirable feature is the use of overload cut-outs to prevent overloading of drive motors should the system resistance be suddenly reduced (*e.g.*, removal of grease filters for cleaning during fan operation).

Where flexible connections are made to the fan inlet and outlet, they should be of asbestos cloth for fire resistance. Fly screens are inadvisable on the outlet side of the fan since dirt, dust, grease, etc., soon clog the openings and prevent air passage. Doors should not be used since they may be blown or accidentally left shut. Automatic shutters which will open or close with fan operation and which will close with an excessive temperature rise (duct fire) are suggested.

Make-up Air

In the ventilation of any space it is a cardinal rule that not only must the contaminants be removed but a like quantity of fresh air must be introduced to replace that exhausted. There are a number of reasons for the provision of make-up air: (1) to insure proper operation of exhaust hoods; (2) to eliminate high-velocity cross-drafts through doors, windows or cracks into the zone of influence of the hood, thus nullifying the control exercised by a properly designed exhaust hood; (3) to eliminate cross-drafts on workers; and (4) to ensure the proper operation of natural draft stacks on fuel-burning appliances, etc.

Make-up air should not be introduced in such a manner as to create an undesirable draft or to interfere with the effectiveness of hood operation. It is desirable to locate the air supply openings so that cross-ventilation of the workroom is obtained with no "pockets," "dead spaces" or short-circuiting. Properly located openings allow the air volume handled to be "used twice": first to supply general ventilation, and second to supply make-up air for the exhaust system.

In kitchens, replacement air is often brought from the dining area by placing registers or grilles in the partition separating the two areas. The slight static pressure thus developed in the dining room has the advantage of preventing kitchen odors from reaching the area, and in addition it helps to ventilate the dining area. Where such a method is used, there should always be two grilles of liberal proportions in the partition, preferably separated and located toward each side of the room.

The grille inlet velocities recommended by the American Standards Association are as follows:

Height of Inlet above Floor (ft)	Inlet Velocity (fpm)
Under 8	120
8–12	250
12–18	500
18 and over	1000

Knowing the permissible inlet velocity from the above table and the amount of air to be passed through the grilles (make-up volume), one can figure the necessary grille area ($A = Q/V$). The area so figured is the actual open area or "effective" area of the grille. One must add to this the area taken up by grille mesh in order to obtain the physical dimensions of the grille. In general, increasing the computed grille area by 50 per cent will approximate the proper over-all grille size.

Where dining spaces are air-conditioned, it may be desirable to reduce the amount of air taken from them in order to reduce the load placed on the refrigeration system and to provide the remaining air directly from the out-of-doors. This air may be supplied through properly located windows (summer only) or through sized ductwork with adequately spaced openings. Regardless of how it is supplied, the flow of air into the building and out through the exhaust system should be orderly, providing a blanket sweep of the room with fairly uniform air movement.

During the winter season, it is necessary to temper the air drawn from the outside. Tempered fresh air may be provided through the main heating system, if such is feasible, or through unit heaters. It is wise to arrange the make-up system so that fresh air may be drawn from the outside and either passed directly to the room (non-heating season) or passed through the heating element (winter season). In installations using steam or hot water elements, freeze-proof coils and automatic controls should be specified if there is a danger of heating coils being subjected to freezing temperatures.

The intake for the air supply should be located remote from any contamination sources (exhaust discharges, etc.). Where air drawn in from the outside may contain objectionable foreign matter, filters may be advisable at the inlets to remove dust, soot, etc. This additional resistance plus that due to any heating elements in the make-up air stream must be added to the over-all system resistance when determining exhaust fan sizes.

Finally, a note of warning concerning appliance flues. Caution must be exercised where fuel-burning equipment requiring flue venting (such as a gas-fired, booster water heater) is located near powerful exhaust equipment, since the exhaust equipment may pull air (back-draft) through the appliance flue. This illustrates another and most important point in favor of the balanced make-up exhaust system.

CONSTRUCTION CONSIDERATIONS AND SPECIFICATIONS FOR LOCAL EXHAUST HOODS*

Competent design and correct installation is essential to proper functioning and satisfactory operation of any exhaust system. The following specifications are given as a guide to good construction and installation practice.

Materials

1. All construction should be of new and approved materials. Black iron welded, galvanized sheet steel riveted and soldered, copper clad steel, aluminum and stainless steel are materials suited for construction unless the presence of corrosive gases, vapors, mists or other conditions makes the use of such materials impractical. Galvanized construction is not recommended for temperatures exceeding 400 F.

2. For pipes or ducts used in the average exhaust system on non-corrosive applications, the following metal thicknesses are recommended:

Diameter of Straight Ducts (in.)	U. S. Standard Gauge
8 and less	24
Over 8 to 18	22
Over 18 to 30	20
Over 30	18

3. Ductwork should be located so as to require the minimum length of pipe and a minimum number of elbows and so as to be accessible yet protected from external damage.

4. Elbows, bends and angles should be a minimum of two gauges heavier than straight lengths of the same diameter.

5. Hoods should be a minimum of two gauges heavier than the straight sections of connecting branches and free of all burrs and sharp edges. Large hoods should be reinforced for rigidity, particularly along the edges, to prevent warping and buckling. If stainless steel is used, gauges may be reduced.

6. Use of flexible piping should be kept to a minimum. Where used, a non-collapsible piping should be employed. Asbestos or fireproof materials are necessary on hot applications.

7. On corrosive applications consideration should be given to non-corrosive materials and corrosion-resistant paints or coatings. Even where corrosion is not considered a problem, it may be advisable to apply a corrosion-preventative coating to both the inside and outside of the system to minimize costly maintenance and repair work, since all ductwork and system components are not mass-produced but tailor-made for the job.

Construction

1. Duct joints should be smooth and free of obstructions or screens and of as near airtight construction as possible.

2. Longitudinal duct joints should be lapped and riveted or spot-welded on 3-in. centers or less.

3. For minimum resistance to flow and turbulence, the lap on girth joints should be made so that, in the direction of air flow, the downstream end of duct sections is inside the upstream end of the next section. A 1-in. lap is used for ducts 19 in. or less in diameter, and a 1¼-in. lap for larger ducts.

4. Slip joints should be reinforced and free of burrs, obstructions and sharp edges.

5. All bends should preferably have a centerline curvature radius of 2½ times the duct diameters and never less than 1½ duct diameters. Elbows (90-deg bends) of 6 in. diameter or less should be of at least five-piece construction; over 6 in. diameter, of at least seven-piece construction; other bends sectioned in proportion.

6. Transition pieces in mains and sub-mains should be tapered. Where possible, the taper should be approximately 5 in. long for each 1 in. change in diameter. In the design of ductwork, care should be exercised to make sure that in going from a small to a larger duct the conveying velocity is maintained in the larger duct.

7. Branch ducts should enter the main near the large end of transition pieces and at a maximum angle of 45 deg (30 deg or less is preferred) measured between the centerlines of the ducts. Connections to the mains should be on the top or sides, not on the bottom. Branch connections should be staggered, and the connection of two branches in the same section of the main should be avoided. If two or more branches must enter in the same section, use an entrance angle of approximately 20 deg.

System Details

1. The main duct should be connected to the exhauster inlet by a split-sleeve drawband at least one pipe diameter but not less than 12 in. long. Approved flexible connections may be used for certain applications. The area of fan inlet and outlet should be at least equal to the area of the main pipe.

2. The duct system should be supported so that no weight is transferred to the connected equipment. Sufficient support should be provided so that the system will not collapse even though completely plugged with contaminant material. Recommended maximum supporting interval is 12 ft for ducts 8 in. or smaller and 20 ft for larger ducts.

3. A minimum clearance of 6 in. between ducts and ceiling, walls or floor is recommended.

4. Clean-outs or access openings should be provided every 10 or 12 ft, near each elbow, angle or duct junction and at damper locations. Dead-end caps are recommended within 6 in. from the last branch of all mains and sub-mains.

5. Where blast gates are used, they should be of sturdy construction and preferably placed near the connection of branch to main. A positive means should be provided for locking, bolting or otherwise permanently fastening in place to prevent manipulation after the system has been balanced.

6. Round ducts should be used wherever possible. Where clearances prevent the use of round ducts, rectangular ducts as nearly square as possible are permissible. Metal gauge, lap and other construction details should be equal to those of round ducts the diameter of which equals that of the longest side of the rectangular duct.

7. Automatic fire dampers should be provided where pipes pass through firewalls.

8. Ducts passing through non-fireproof roof or walls should have an outer sleeve with at least 1 in. air space. The sleeve should be not less than 2 in. from a wooden member.

9. Fire dampers, explosion vents, etc., should be installed in accordance with National Fire Protection Association Codes and/or local fire ordinances.

10. Electrical equipment and wiring should be installed in accordance with the National Electrical Safety Code. Electric wiring should be enclosed in metal conduits.

* Reprinted from "Industrial Ventilation Manual," by the American Conference of Governmental Industrial Hygienists, 1954.

RESTAURANT LIGHTING WITH SLEIGHT-OF-HAND

By Thomas Smith Kelly, Chairman, N. Y. Section, I.E.S.

CURRENT implications are that the general practice of lighting tends more and more in the direction of an exactly quantitative science. Probably this is most true in cases of laboratories or libraries, where critical seeing tasks are the factors of first importance. However, in restaurants and bars, the rather unscientific factor of "atmosphere" is at least equally ponderable. Strict standards of visibility come closest to being all-important in kitchen areas, and in cafeterias and luncheonettes, where customers select food directly as "merchandise," rather than from a menu. But otherwise, restaurant lighting experts not only must be methodical technicians, but must know the techniques of theater and stage-set, and downright sleight-of-hand!

All practitioners do well, of course, to start within the framework of recommended lighting levels, such as those published by I.E.S., or by the larger manufacturers. Quoting a cross-sectional example: "for restaurants, lunchrooms, and cafeterias, it is recommended that corridors be provided with 5 f.c.; dining room areas, with 10 f.c.; kitchens, pantries and serving areas, with 20 f.c. Displays, 50 f.c."

But, first, on a particular job, the lighting expert must familiarize himself *absolutely* with every dimension, surface, material, color and other architectural specification involved in the areas to be lighted. In addition to the tool of light-source *intensity*, there is that of *color;* and in addition to both, there are many traps for the unwary in the way of their use. There are excessive brightness contrasts to be avoided between light and dark surfaces (anything over 10 to 1 is very questionable); and mirrors and other specular surfaces must be guarded to prevent reflected glare, inimical to customer mood and comfort.

Color, in this mood respect, is most important. Among the major reasons for fluorescent lighting's popularity is its efficiency of lumen output, and the most efficient of all fluorescent varieties is the so-called "daylight" lamp. But under this source alone, with its red spectrum deficiency, restaurant operators and customers find their coffee looking gray, their roast beef, anemic; and ladies' make-ups, de-glamorized.

Speaking generally, the incandescent lamp is the best source of light where food and facial complexions are concerned, since it provides the complete solar spectrum. Frequently it works well in this connection simply as a mixing element with fluorescent. For showcases, glass-faced refrigerators, etc., soft white fluorescent may be used, producing satisfactory color values, and at the same time less heat against the refrigerant than equal-wattage incandescent.

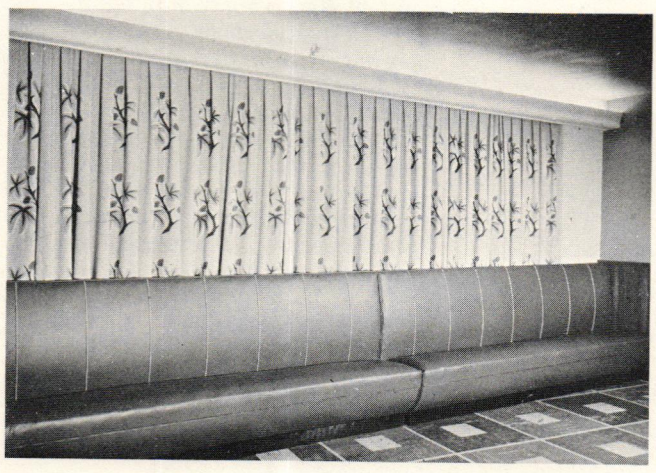
Whatever the means chosen for various uses and effects, modifications will surely be necessary in recommended area levels. For example, in a dining room where the atmosphere is to be strictly *intime*, tabular recommendations of 10 f.c. may be way out of line.

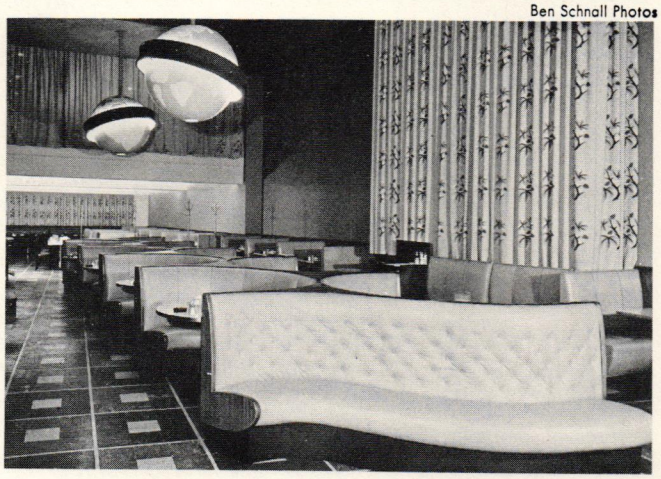
Regarding intensity calculations in general, it is usually wise, in early planning stages, to figure on *over*lighting, since intensities as a rule can more easily be reduced than increased, once a job is completed. Ultimately, of course, even in self-service operations where intimacy and relaxation are not of the first order, avoidance of *too much* light in any area is the one absolute rule to be laid down. But at the outset, lighting experts cannot really anticipate what owners will judge in the end to be the effects that *they* want, nor what refinements the architect or decorator will make in ceilings, walls, flooring, table tops, draperies, etc., adding to the final problems of light reflection and absorption.

In his overall approach to the possibilities of a particular assignment, the lighting expert will certainly prescribe nothing that does not harmoniously complement the architect's efforts and effects, nor those of the decorator. He will start with the exterior in prescribing

Lighting at far end of Sakele's main dining room is designed to supplement globes in drawing customer circulation into this area

Ben Schnall Photos





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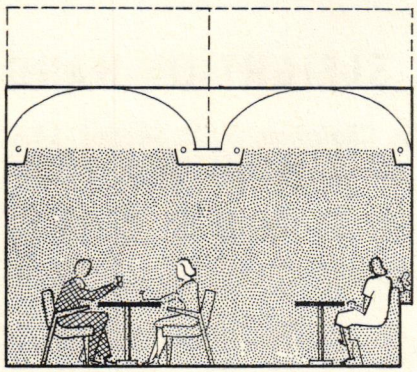
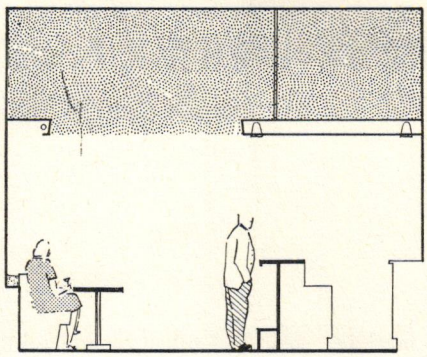
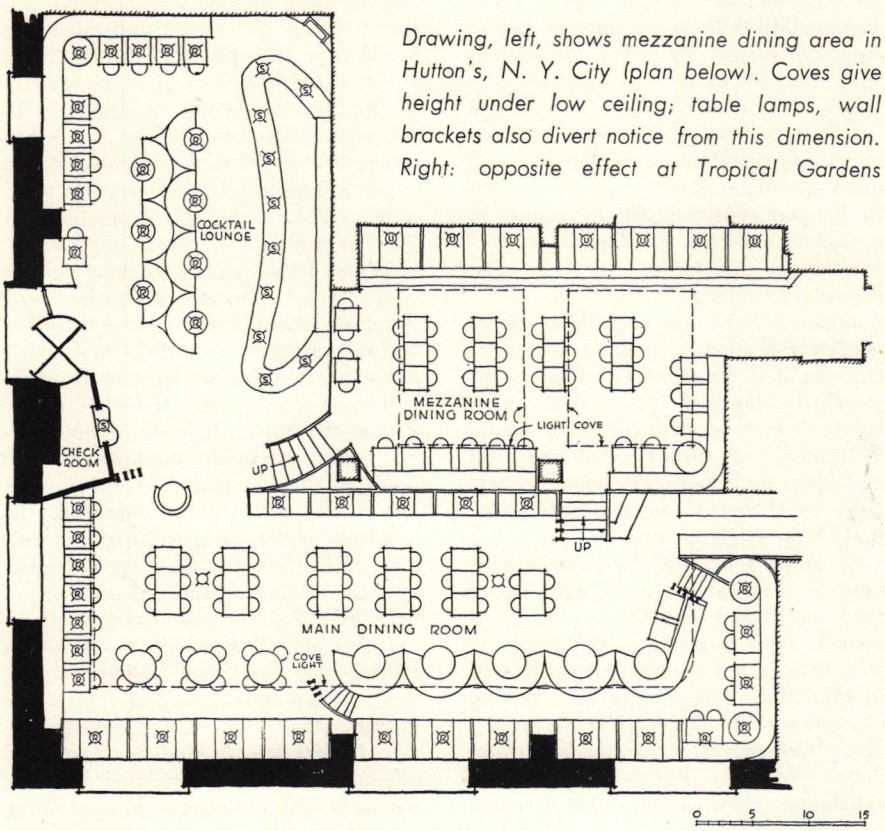
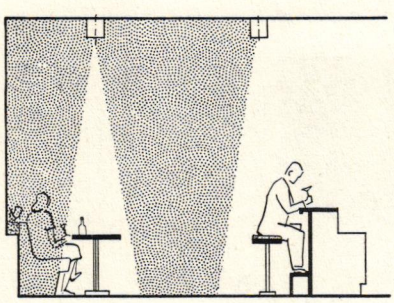
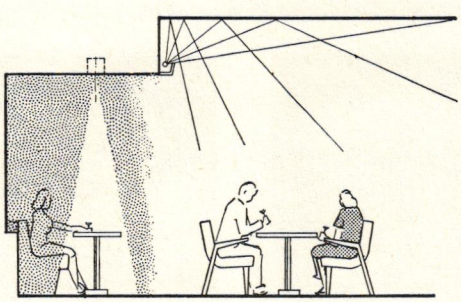






Drawing, left, shows mezzanine dining area in Hutton's, N. Y. City (plan below). Coves give height under low ceiling; table lamps, wall brackets also divert notice from this dimension. Right: opposite effect at Tropical Gardens





Above, left: in Hutton's bar "pin-hole" projectors, centered over table and bar tops, give areas of intimate "isolation." In main dining room, right, coves supply chief light, with two chandeliers for sparkle. Lowered area, under ducts, has "pin-hole" system. In plan, R represents pin-holes; S, surface mounted; U, indirect urns. H. H. Siegel, Architect; E. D. Rapp, Designer. Thomas Smith Kelly, Lighting Consultant

for architectural *attraction*, and for internal features of *compulsion*, possibly a chandelier or illuminated mural, magnetically visible to outside observers.

Sleight-of-hand makes its ultimate contribution in lighting for *concealment*, such as throwing displeasing but unavoidable structural features into obscurity, by accentuating attractive points of interest. An example is in Tropical Gardens (see also pages 235 and 237) where lighting effects are instrumental in reducing a disproportionate 16-ft. ceiling to an apparent 10.

But here also, the lighting expert must be wary. The principle of architecturally built-in lighting is generally sound, but mistakes, or devices that lose their charm, are expensive to correct. Coves particularly can be disappointing. Remember that even with a matte-finish ceiling it is difficult to get from coves an advantage much greater than three to one. That is, to get a smooth spread across a 5-ft. ceiling, the coves on either side must be at least a foot down from the ceiling line (allowing for necessary overlap).

The expert who bears in mind these admonitions, and calculates all his factors with precision and imagination, still cannot be confident of his results until tested against public reaction. Lighting, like architecture itself, can be correctly executed according to every technical and artistic canon and still fall resoundingly flat before popular judgment. Close to supreme achievement, I think, is in a job recently offered to a prominent lady decorator's appraisal. "It's perfectly *charming*," she said, "but where are your lights?" She was answered by the flipping of a switch, plunging the room into darkness.

My own favorite incandescent tools are the PAR 38, the R-40, and the T-10 reflector showcase lamps. "Slimline," among the fluorescents, gives longer tube lengths with smaller diameters, instant start, variety of intensities, and the substantial single contact base is a big improvement over the fragile bi-pin. "Circline" is a great help in bar and restaurant lighting where curves are a factor. Cold-cathode fluorescents are more useful in decorative and display applications than where visibility is a prime consideration (less lumen output per running foot). It also requires careful planning and installation for its high-voltage operation, but has the advantage of longer life, compared with hot cathodes. It is very satisfactory, in a variety of shapes, lengths and colors, for use in domes, coves, along curved partitions, and with dropped ceilings of various irregular shapes.

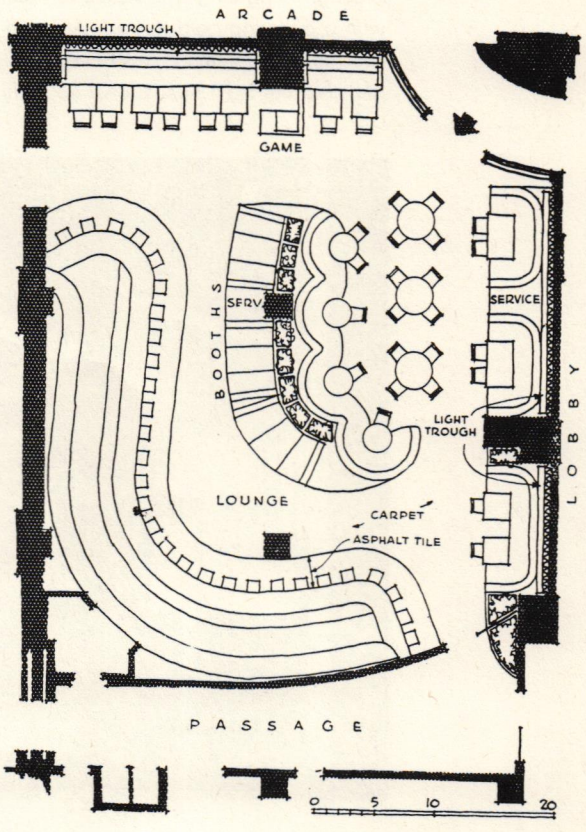


Hedrich-Blessing Photos

A LIGHTING EFFECT FOR EVERY MOOD

Henrici's Restaurant, Merchandise Mart, Chicago

James F. Eppenstein & Raymond Schwab, Architects



OFF THE ARCADE in Chicago's Merchandise Mart, Henrici's Restaurant presents an unexpected vision of glamour. Designed around a colorful mural by Felix Ruvalo and an intricate lighting system that changes in intensity for luncheon, cocktails and dinner, this elegant little retreat is said to wow the customers.

While there is nothing revolutionary about the plan (which has clearly been dictated by existing conditions), colors and lighting raise some interesting points. Throughout the restaurant various shades of green predominate. While the mural may seem aggressively restless, its color scheme has been recalled in the furnishings and thus subordinated to the overall architectural effect. The lighting system uses pin-hole spots, recessed ceiling fixtures and theater-type dimmers.

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Among the lighting tricks used in Henrici's is a trough that illuminates the rich wall draperies woven with a glittering gold thread. At lunch time the overall lighting will be of high intensity; for afternoon cocktails the intensity is reduced until, at dinner time, a dim, intimate lighting prevails. The plant island to the right has its own spot illumination



A view from the Arcade shows the large, clean frame of the doors, set into a curved glass wall that permits clear vision of the interior. The recessed box lighting in the ceiling seems to detract somewhat from the tranquil, overall effect. Exterior is of Italian travertine marble



Hedrich-Blessing Photos

Ruvalo's luminescent mural is stressed by "black light" to become the dominant feature of the restaurant. The lighting of the bartenders' work area is below customer eye-level to cut out unpleasant glare. In the rear, at the turn of the long curve, there is a service hatch for outside supplies

Roger Sturtevant photos

FOR INTERIOR ELEGANCE AND A VIEW



Ondine Restaurant and Lounge
Sausalito, California

Campbell and Wong, Architects
William B. Gilbert, Structural Engineer
Daniel Yanow, Mechanical Engineer
Ben Lezin, Electrical Engineer

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Ondine Restaurant

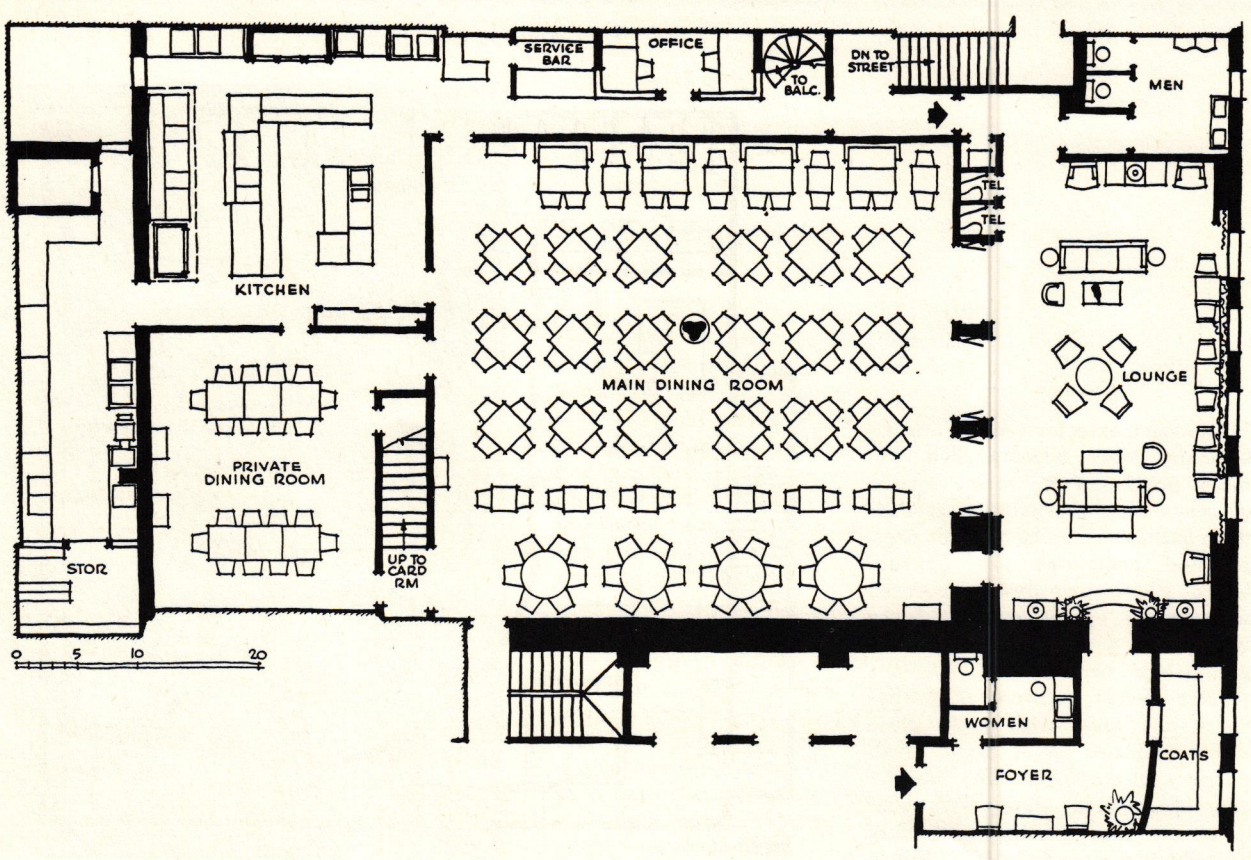
It requires only a little observation of this restaurant to note the skill with which space relationships have been manipulated. They range from the intimate, limited-range view from the bar and cocktail lounge to the almost limitless vistas revealed from the dining area. Throughout all of the spaces, the water's-edge feeling has been carefully and meticulously maintained. Working with the architects were interior designer Peter Rocchia, of Maurice Sands, and the graphic designers, Smith and Tepper.

Ondine (named for a water sprite) seats approximately 140 guests—90 in the restaurant proper, the remainder in the bar and the two levels of the lounge.

EFFICIENTLY PLANNED FOR SOCIABILITY



Downtown Club, Dallas, Texas *George Foster Harrell, Architect*



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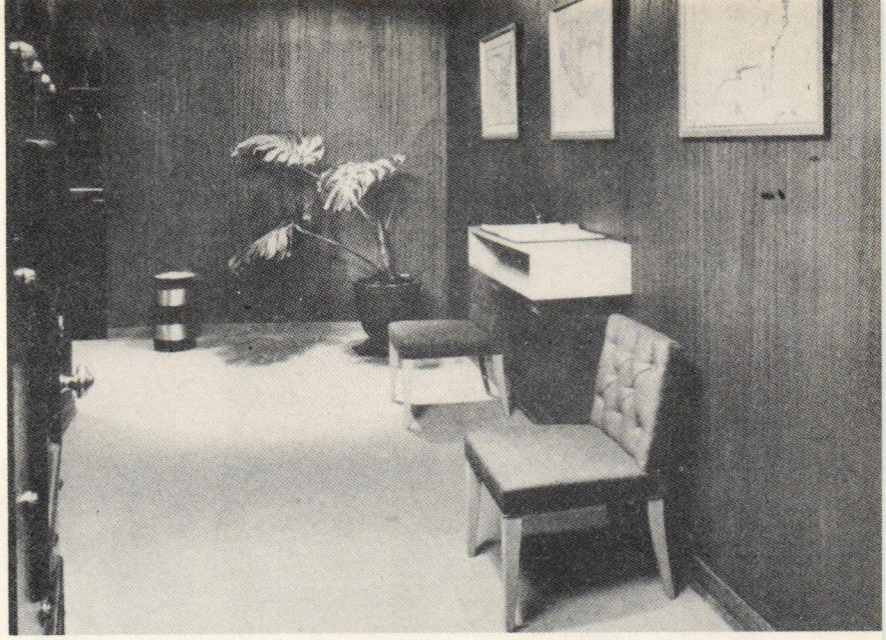

The Foyer (right) is entered from the Texas Bank Building. Direct access from the street is handled as of secondary importance. The Lounge (below) is cove-lighted



THE DOWNTOWN CLUB of Dallas adjoins the tall Texas Bank Building, from whose second floor lobby it can be entered. Designed as a private luncheon club, it was given a quiet, restful atmosphere through designer-control of such incidental details as the silverware and the china, as well as of the plan and the complete interior.

The central feature of the Downtown Club is its two-story Main Dining Room (opposite) with the five-pointed Texas star implacably in the ceiling. Grouped around the Main Dining Room are a Lounge, Private Dining Room, Card Room (on the mezzanine level) and the kitchen and work areas. The latter, especially, show careful attention to efficient planning. Staff facilities are on the mezzanine also, with spiral stair.



The Private Dining Room (right) can be sub-divided by a folding screen into two smaller areas for more intimate parties. It is within easy reach of the kitchen area. Note the air conditioning grilles at the ceiling — part of the year-round system designed for this Club



Gottscho-Schleisner Photos

NANTUCKET AT RADIO CITY

Gloucester House, West 51st Street, New York City

Francis Keally, Architect

ALTHOUGH New York City never, in our recollection, possessed a restaurant built in the shape of an oversized concrete hat, it does boast a seafood place designed to resemble an aquarium and another with swaying portholes intended, evidently, to test the seaworthiness of its customers at critical dietetic moments. Gloucester House, by comparison, is a staid and conservative Inn. While some architects might question the validity of constructing a Nantucket seafood place at the foot of the steel and glass towers of Radio City, there are probably good and sufficient business reasons for doing just that. The architect and the owner, at any rate, assured themselves of the validity of this approach after several weeks of detailed research, observation and investigation of the restaurant situation within a radius of ten city blocks of the proposed site. What they saw convinced them that their approach was right.

As an example of restaurant-design procedure, Gloucester House is extremely interesting. Not only was the architect called in to help decide the design, character and name of the restaurant, but he also controlled to a high degree such apparent incidentals as the layout of the menu cards and of the customers' checks, and helped style the waitresses' uniforms. Whether he helped select the waitresses as well we do not know. In any case, the result of such total architect-control is a very pleasing unity that pervades the entire design of this seafood restaurant.

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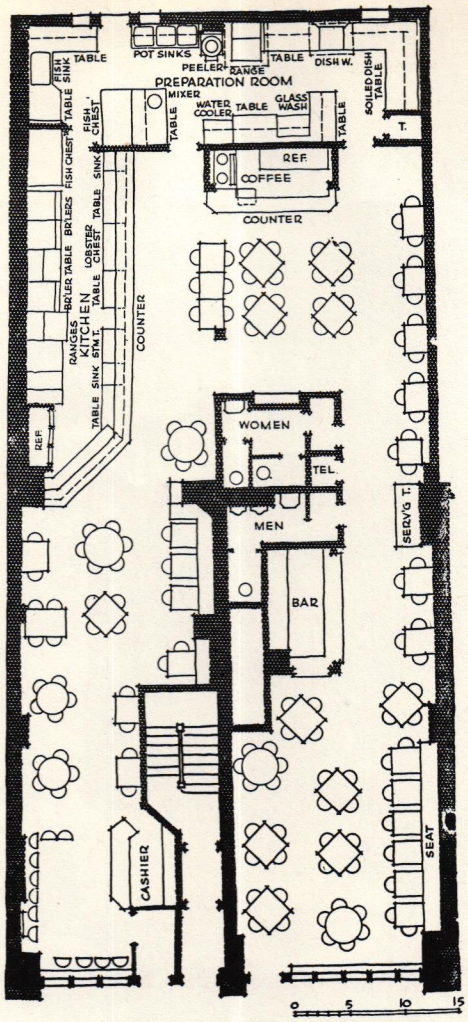
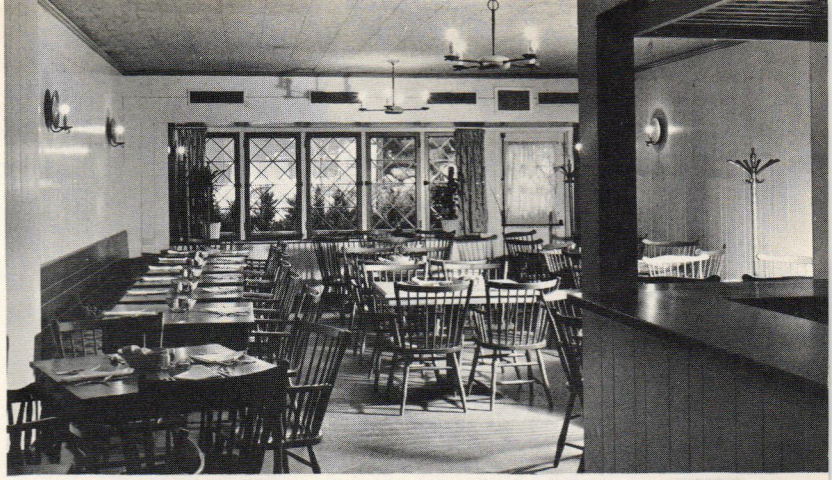


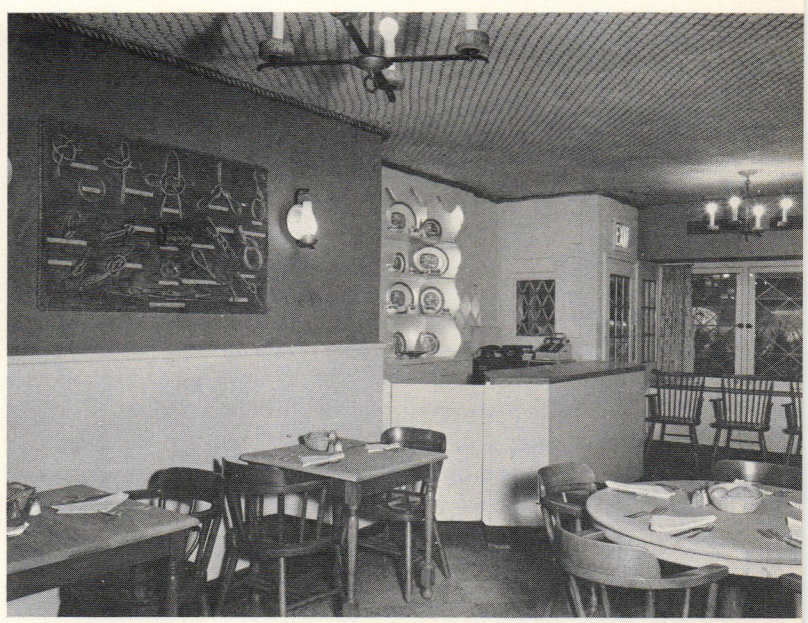


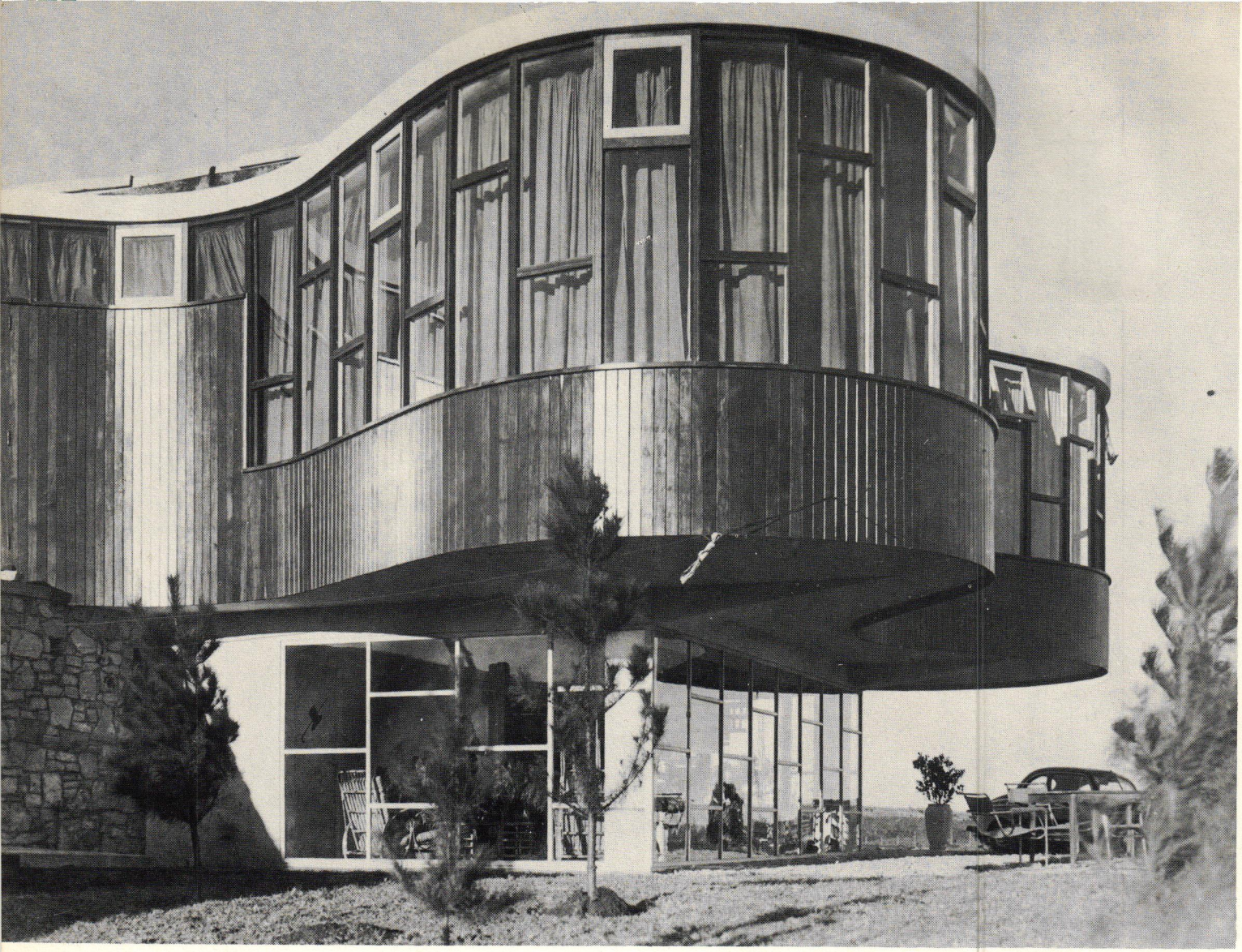


Existing conditions have helped to divide this restaurant into several intimate dining rooms. The efficient, handsomely tiled kitchen is visible to the customers. Lighting throughout uses filament lamps set into chandeliers constructed of cork floats (which should give a good account of themselves in a typhoon)

The white and blue of seascapes forms the basic color scheme. Leaded window-panes, neat Colonial trim, fish-net covered ceilings and recurring marine symbols (such as the lobster pattern) help create the desired atmosphere with economy and good taste







L. Souessia Photos

A BEACH CLUB TO SELL A VIEW

Ariston Restaurant, Mar del Plata, Argentina

Marcel Breuer, Carlos Coire and Eduardo F. Catalano, Architects

WHEN Marcel Breuer recently lectured at the University of Buenos Aires, two young Argentine architects, who had been instrumental in getting him invited to the University, asked him to associate on the design of a small drink-and-dance club to be constructed at the bathing resort of Mar del Plata for the purpose, primarily, of promoting the sale of plots in a nearby real estate development. This club was to be a small social center for that development — but for a start it was intended to serve as a kind of advertising booth as well, sufficiently attractive to bring in potential land buyers.

Located a little way inland from the bathing beach, the club was constructed in a setting of undulating dunes, just high enough to block the view of the ocean, unless one's eye-level were raised. Hence the stilts. The plan shows all of Mr. Breuer's clarity of organization and his painter-like appreciation of texture and form. Linked by a long field-stone wall, the two separate wings of the building contain, respectively, the staff

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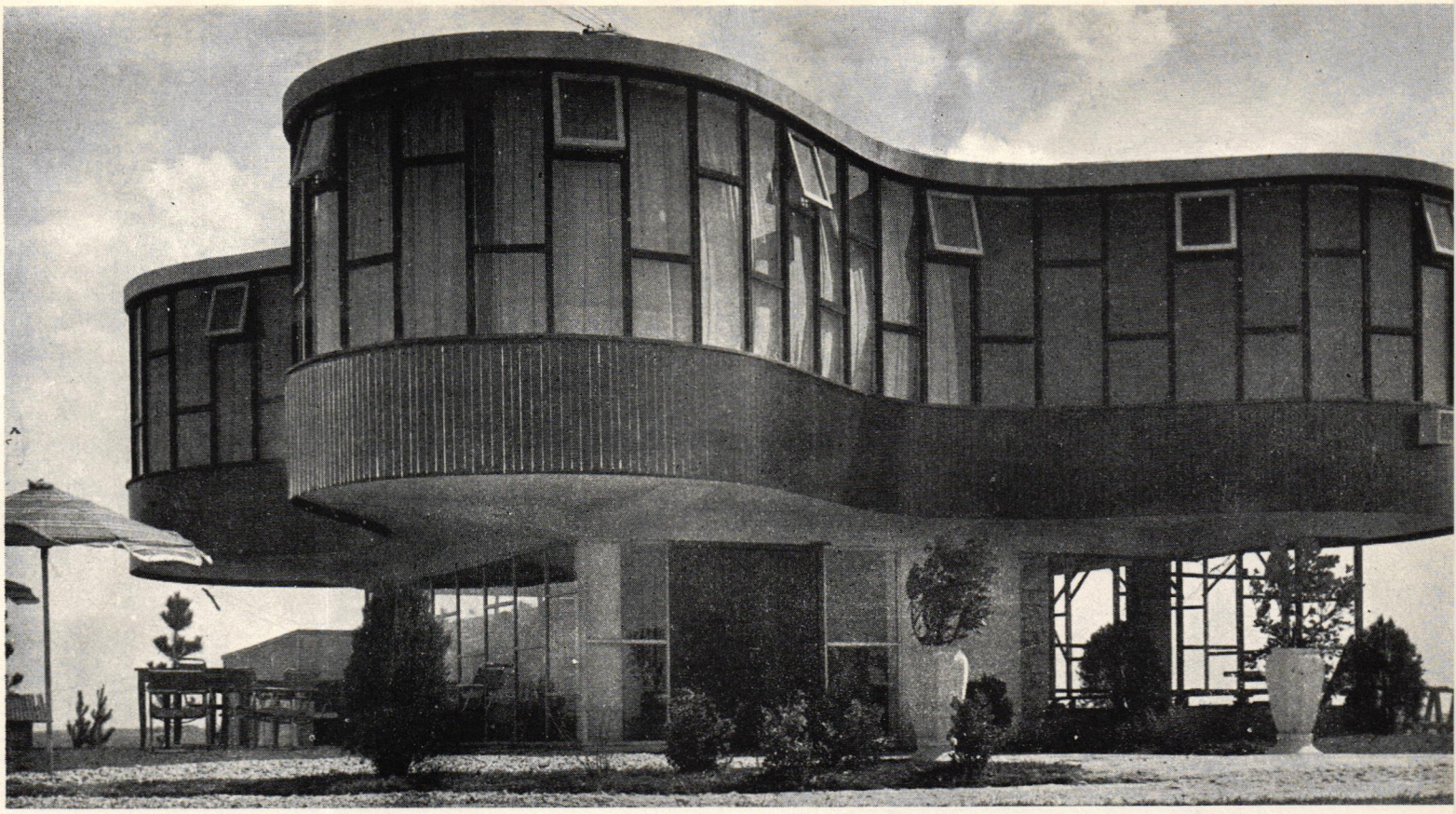

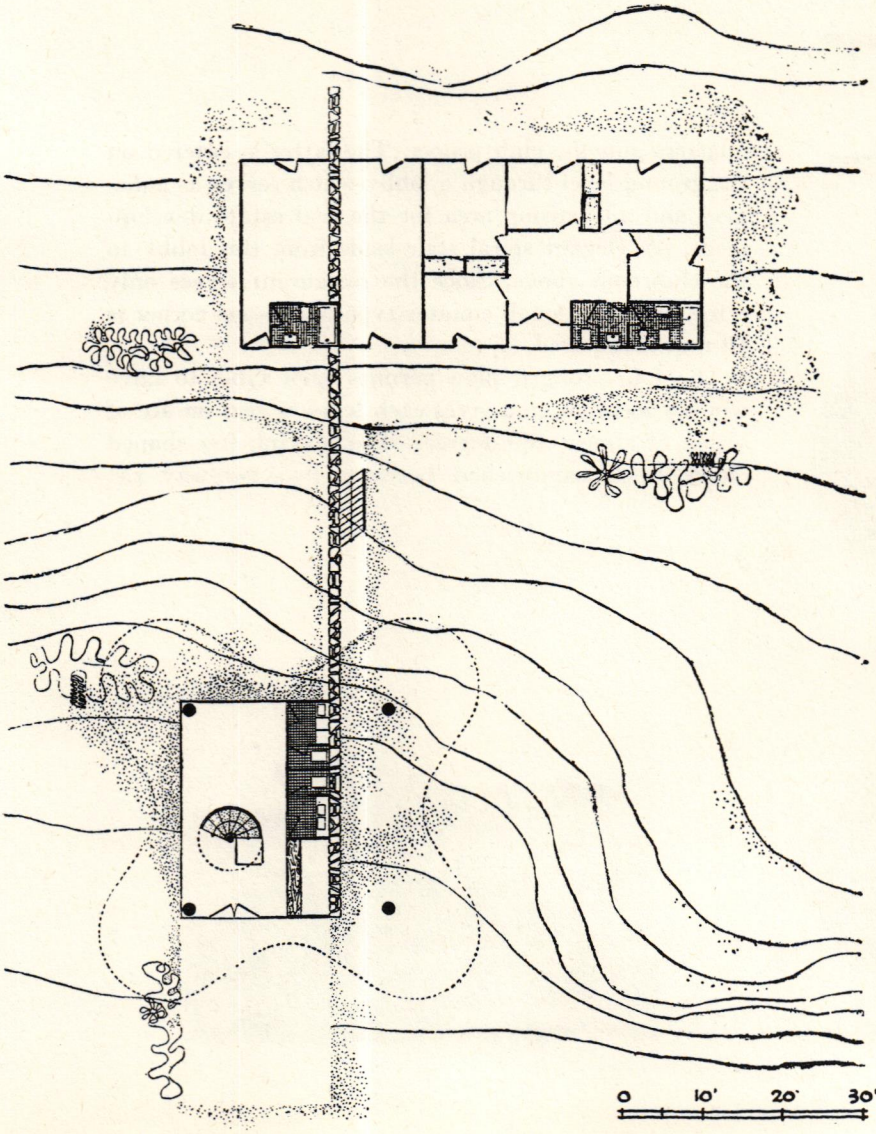
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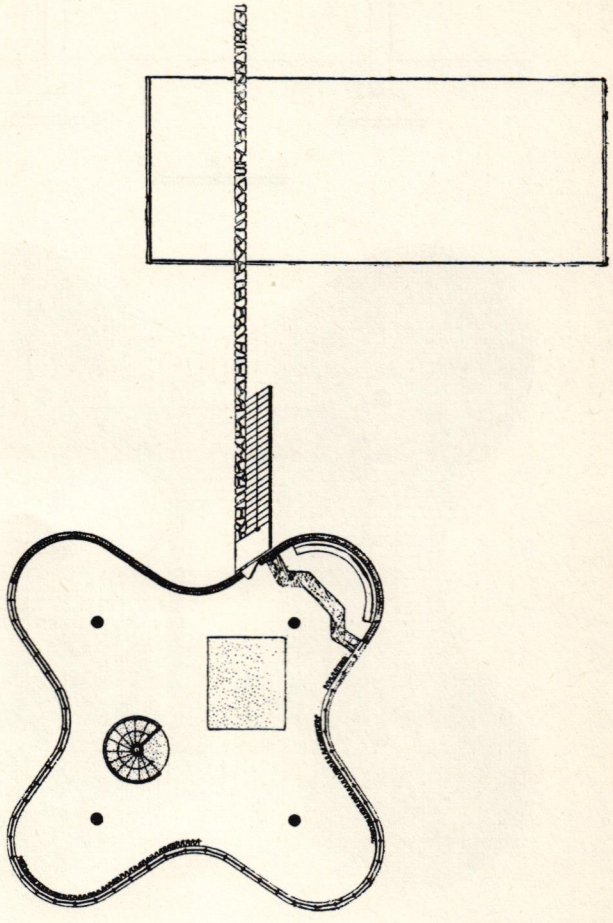
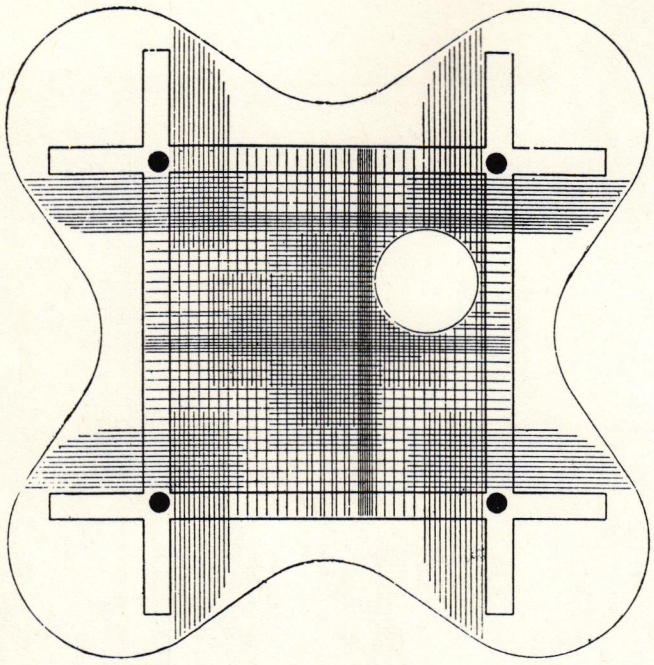
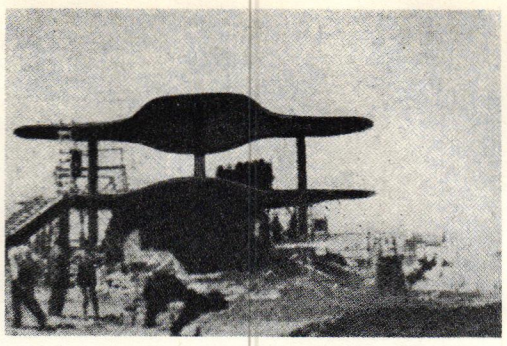
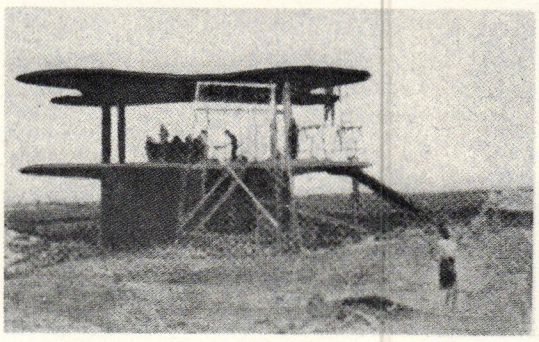
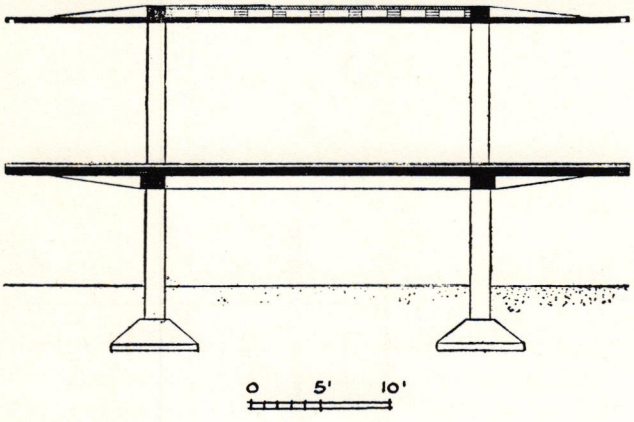






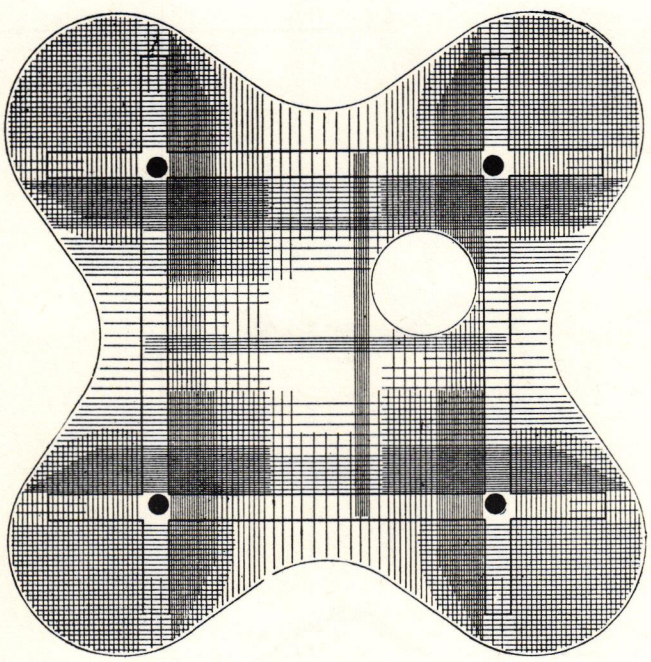
Architect's snapshots taken during construction

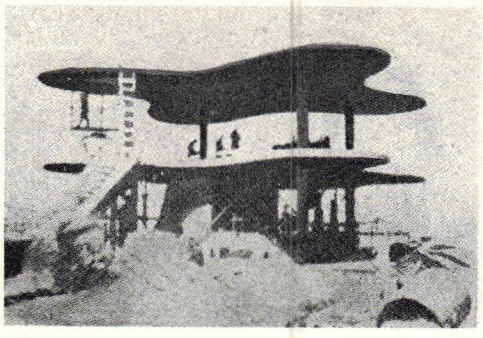


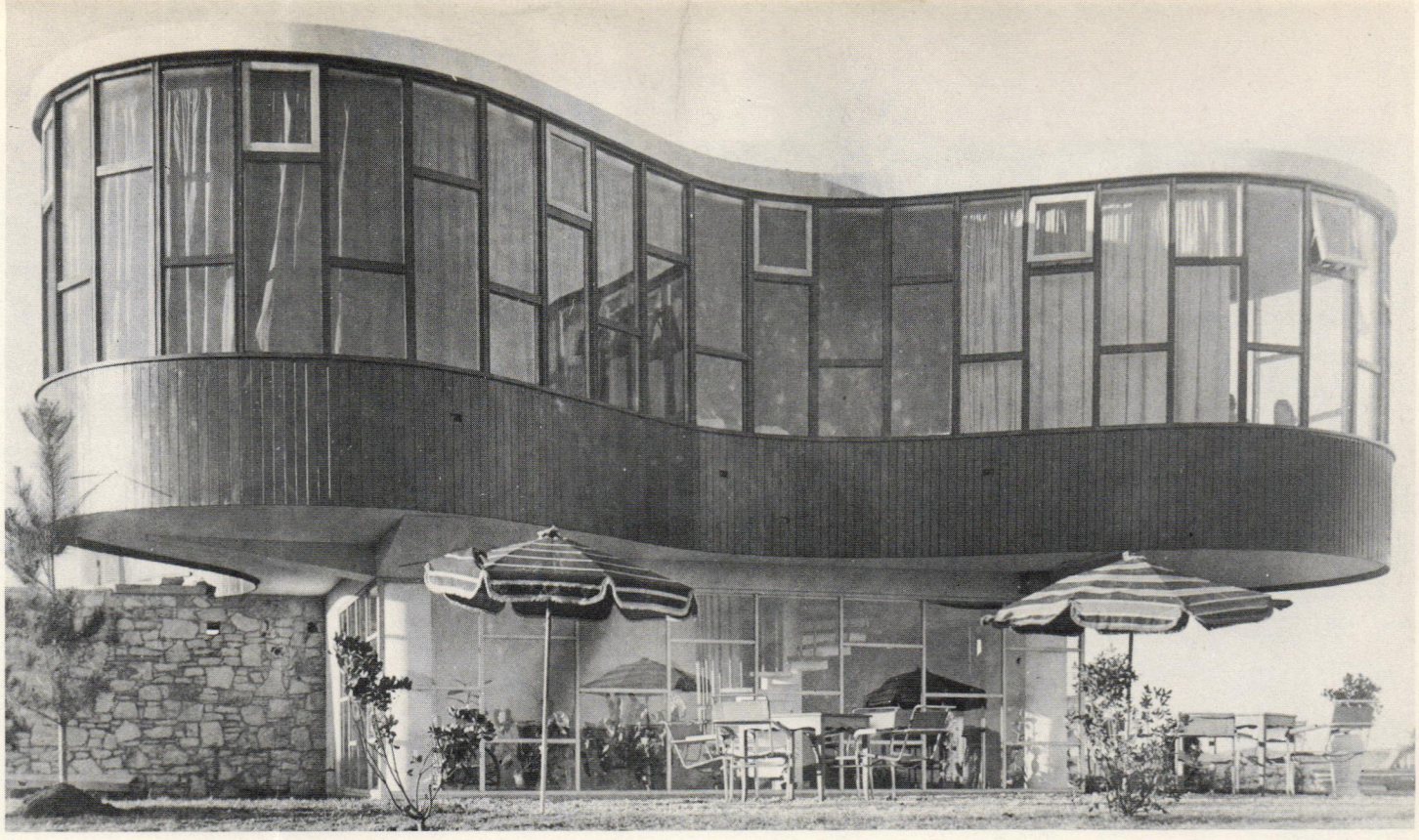


quarters and the club proper. The latter is entered on the ground level through a lobby which serves as a display and advertising area for the real estate development. An elegant spiral stair leads from this lobby to the clubroom above. Since the restaurant serves only refreshments, a small counter-type bar in one corner is all that is required.

The four-pronged plan permits each table to have window-location, and gives each window seat an arc of vision of almost 180 degrees. The playful, free-shaped clubroom is sandwiched between two two-way r.c.







L. Souessia Photo

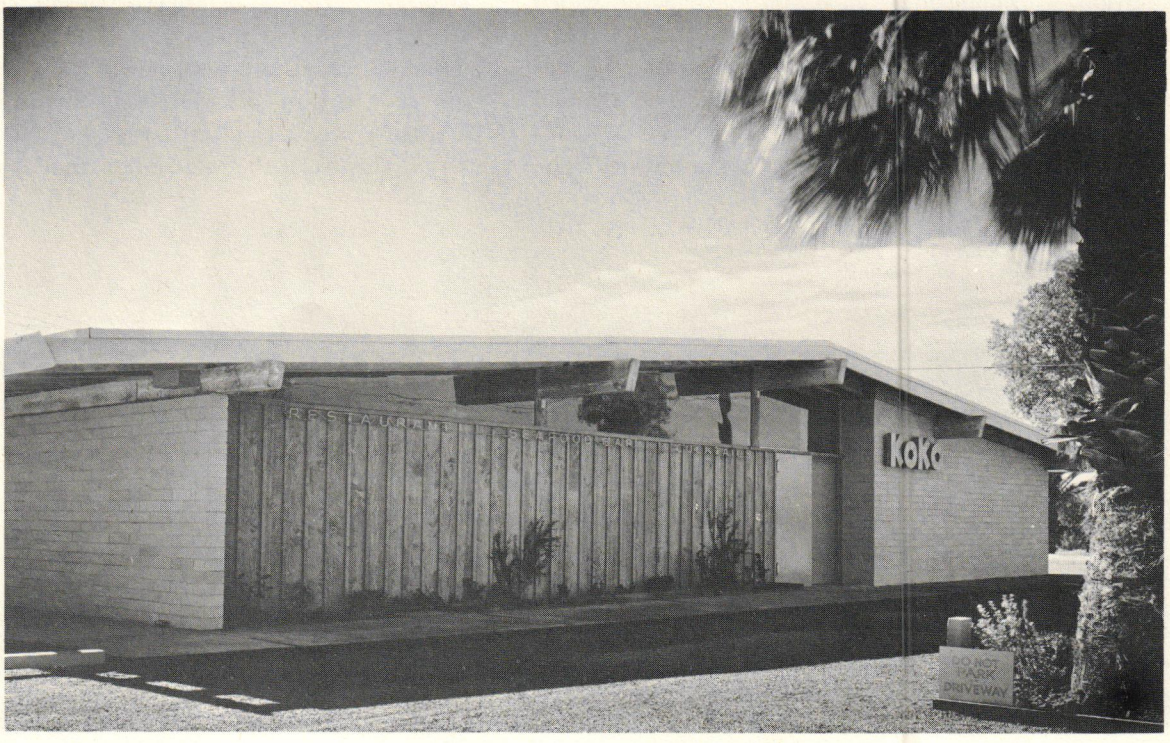
slabs, the roof slab having been reversed (with the girders projecting at the *top*) to produce a flat, uninterrupted ceiling surface inside. Since snow-loads need not be considered in Argentina, the roof slab can be thinner than U.S. building codes would permit. In addition, workmanship is good and inexpensive, which means that factors of safety need not be too high. The concrete employed contains basalt and mica aggregates that give it a gray, granite-like quality. The exposed underside of the ceiling slab has been given a hand-chiselled pattern, but was left otherwise unfinished. The rectangular dance floor has a parquet surface; the rest of the floor is of red tile.

The small-scale window pattern is indicative of the high cost of glass in Argentina. The exterior walls — which carry no weight and were, therefore, treated as separate entities — consist of simple stud frame partitions covered with narrow, vertical t. & g. siding. Window frames are also of wood. At certain intervals louver-type vents alternate with the window sash. With a healthy breeze from the ocean only a few hundred feet away, this is all the ventilation that is needed.





INFORMALITY KEYNOTES RESTAURANT ON



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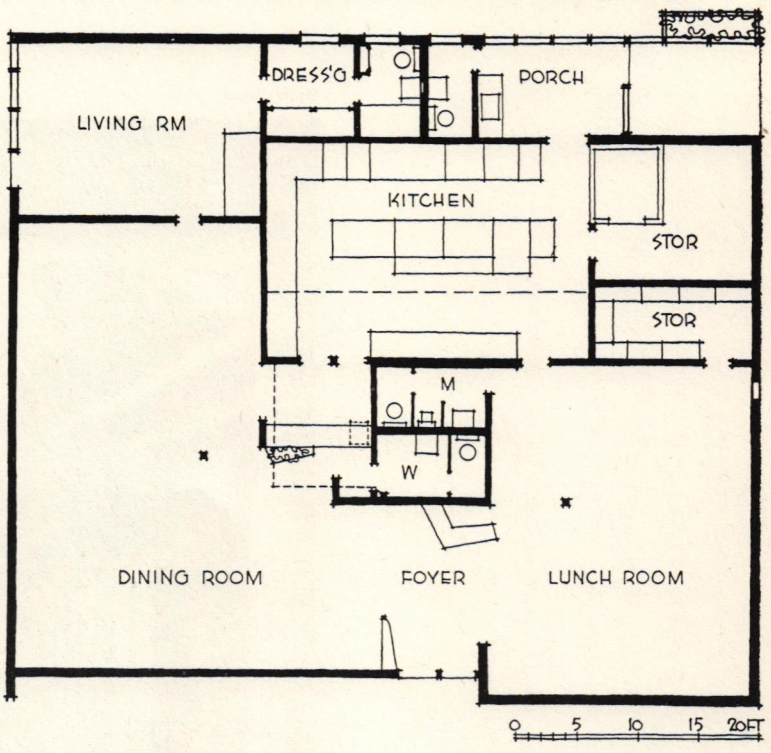
PHOENIX OUTSKIRTS

KoKo Restaurant, Phoenix, Arizona
Ralph Haver, Architect

THE SITE SELECTED for this small restaurant is on the northern edge of Phoenix, adjacent to the winter resort area. Since prospective patrons would therefore include vacationers as well as local residents, an informal atmosphere was an obvious must. Falling in nicely with this requirement was a limited budget coupled with a limit (self-imposed) on critical materials.

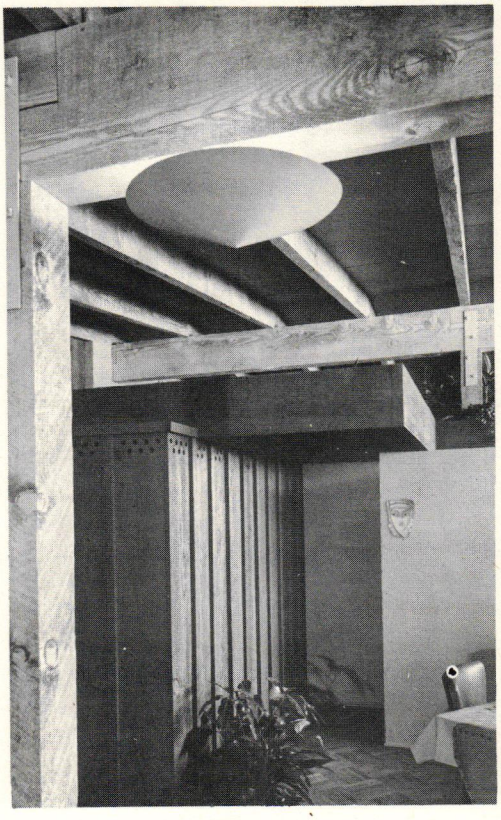
Both exterior and interior are in keeping with the informal ranch-type construction typical of the area. The building is an economical rectangle, with all utilities banked for further economy. Foundation is concrete, exterior walls are pumice block; interior walls are painted pumice block or random-width boards and battens. Ceilings in the two dining areas and the owners' apartment are rough wood beams with painted fiber insulation board between the beams.

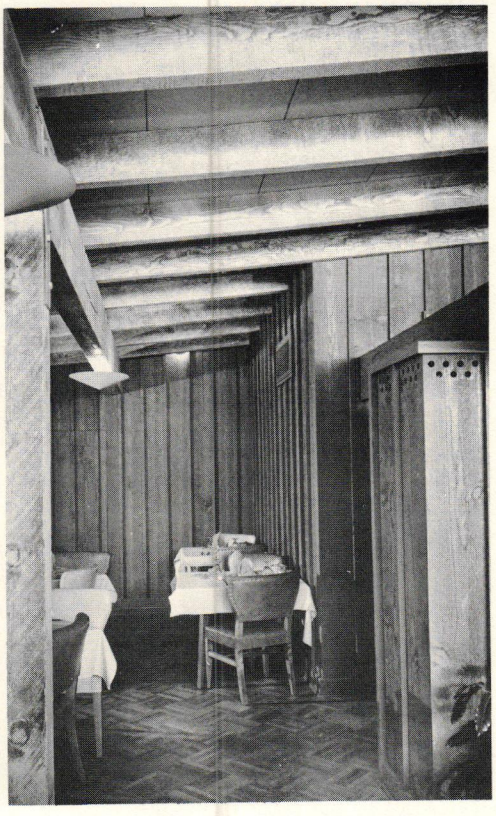


Simple rectangular plan, grouping of utilities and choice of materials not only kept costs low but also helped to achieve informal atmosphere



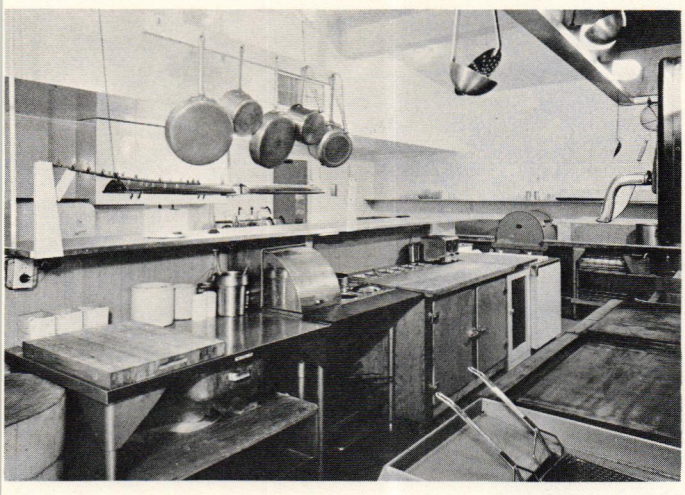
Stuart Weiner





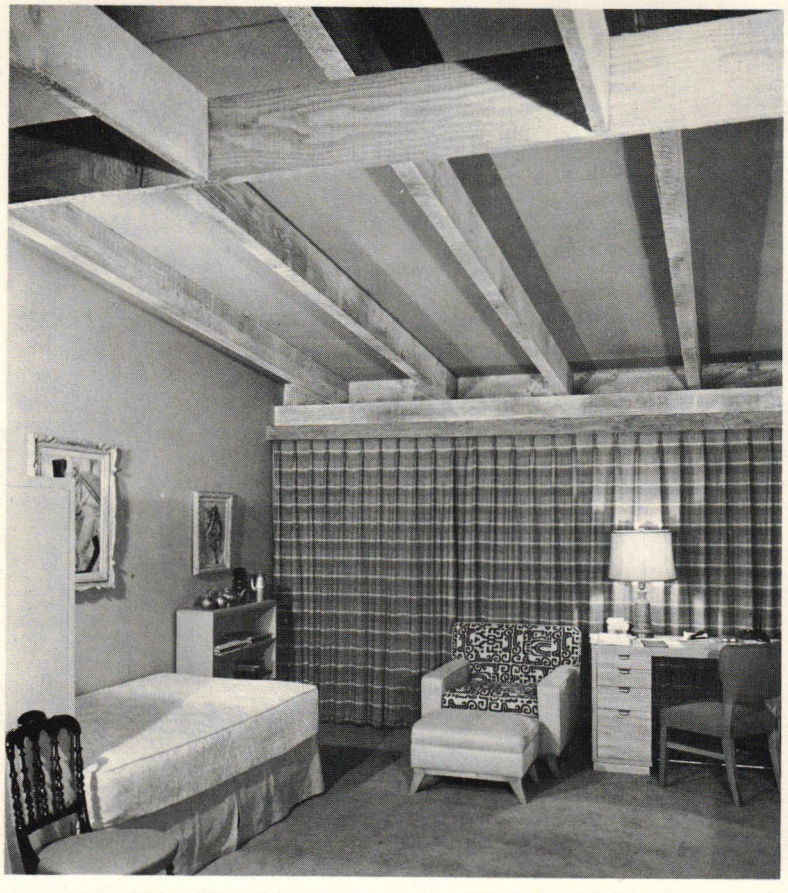


Murals add a gay note to both lunchroom-bar (left, above) and main dining room (above). Ceilings in both rooms are fiber insulation board between wood beams; lighting fixtures were architect-designed



Compact restaurant kitchen (above) serves both dining areas. Ceiling here is plastered, without wood beams

Below: at rear of restaurant is small one-room apartment for owners. Tiny kitchen (bottom of page) is built into one end of living room

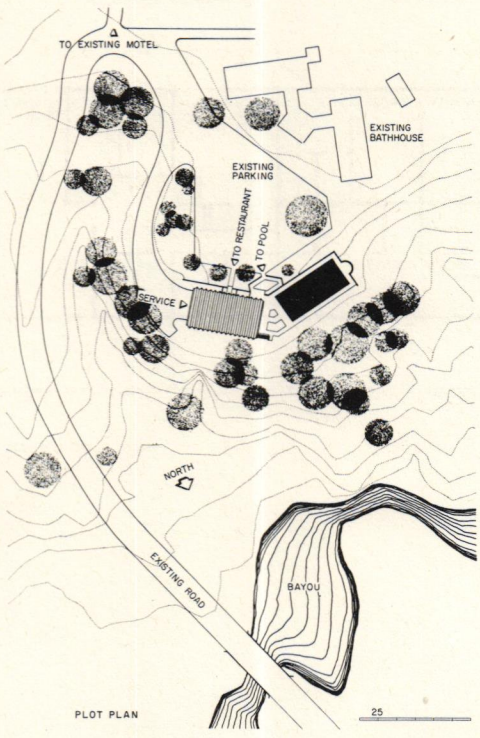




A RESTAURANT AND SWIMMING POOL MAKE GOOD USE OF SITE



Frank Lotz Miller



The architectural and engineering firm of Glankler and Broadwell have added a restaurant and swimming pool to a mineral water health spa in Louisiana. The site merited special consideration on the part of the architects for it occupies the brink of a wooded foothill bordering flat Mississippi Delta farmland, and overlooks a bayou and the small rural village of Hot Wells. The Louisiana State Department of Hospitals has for some time offered hydro-therapeutic treatments based on the curative effect of the hot mineral water welled on the site. The therapy takes place in a large bathhouse built in conjunction with a motel. It was decided to supplement these facilities with a hot water swimming pool, dressing rooms and a restaurant to serve the motel and passing tourists. The new building and pool are placed at a point lower down the slope below the bathhouse and motel to offer an unimpeded view. The restaurant is on the second floor above the dressing room facilities on the first floor at pool level. The pool and dressing room area are carved out of the slope below the parking space which because it is at the same elevation as the restaurant provides direct access for physically handicapped patrons. Stairs and a ramp for wheel chairs provide access to the pool.

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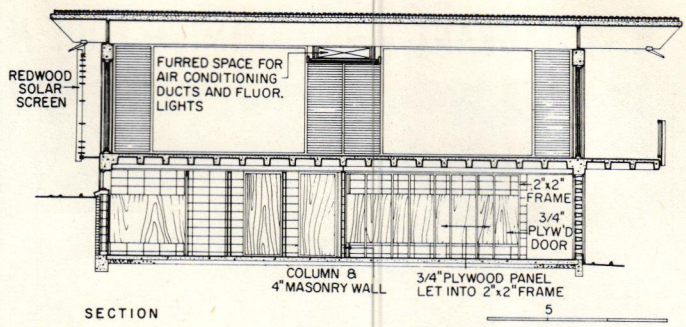
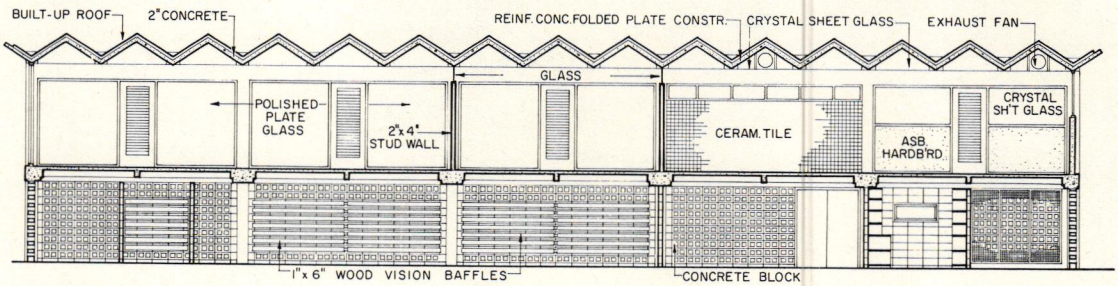
OWNER: *Louisiana State Department of Hospitals*
ARCHITECTS: *Glankler and Broadwell*
CONTRACTOR: *Gravier and Harper*
MECHANICAL AND ELECTRICAL ENGINEERS: *DeLaureal and Moses*
STRUCTURAL ENGINEER: *Leroy Staples*
MECHANICAL AND STRUCTURAL ENGINEERS FOR POOL: *Pan American Engineers*

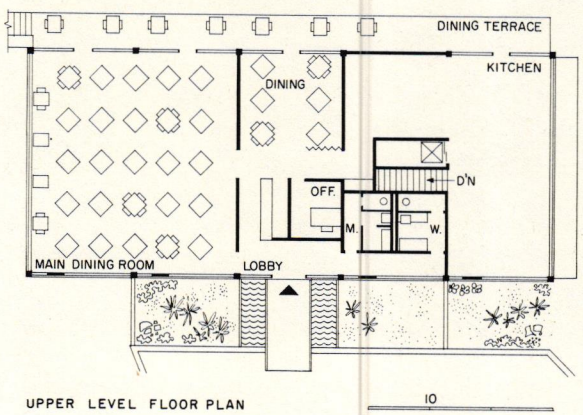


SECTION

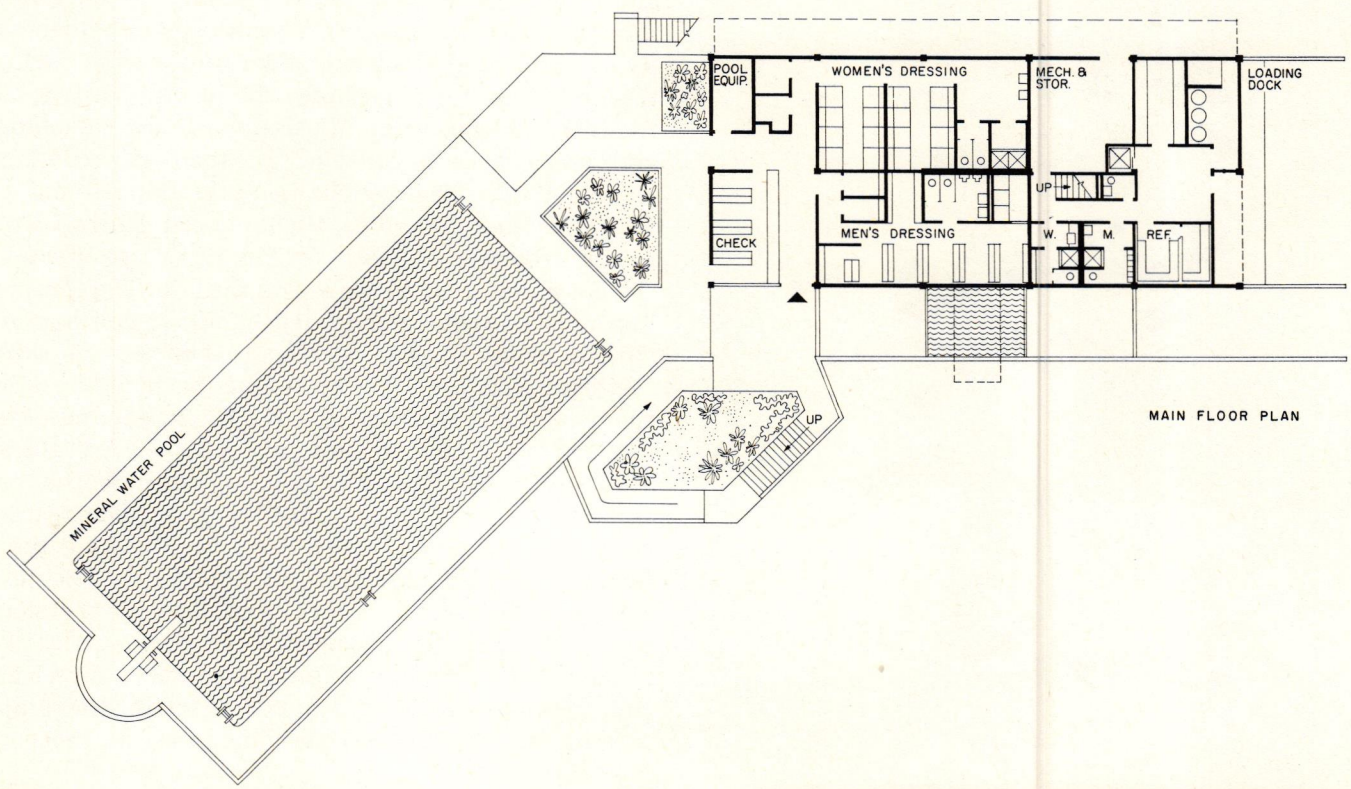


SECTION

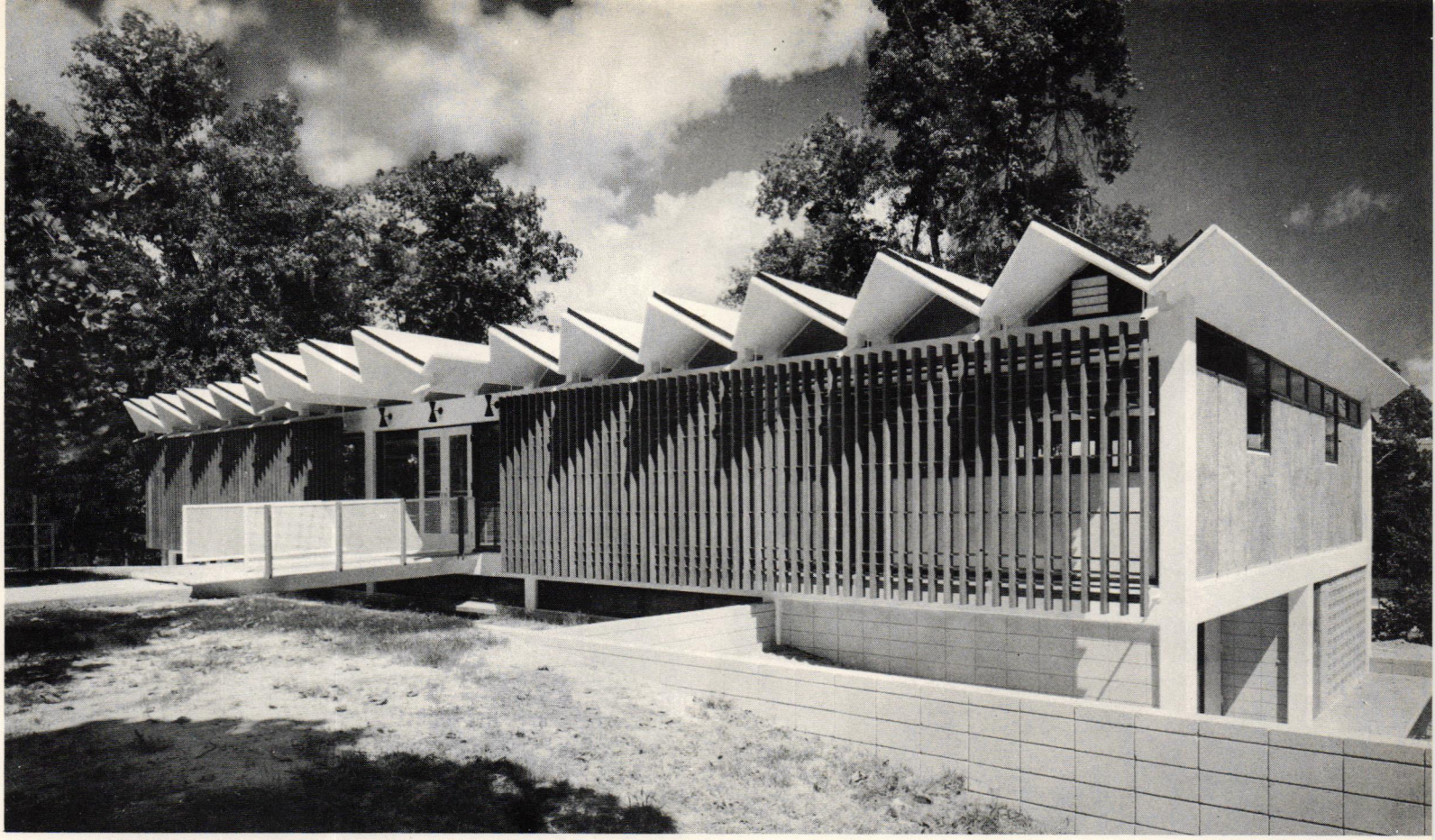
Building is of reinforced concrete frame construction. The folded plate concrete roof affords a structurally unobstructed dining space and provides a many faceted silhouette when viewed from above or below. The plates are 52 ft long at their extremity and have a clear span of 40 ft. Redwood solar screens protect the southwest wall and offer a sense of visual privacy from the parking area while maintaining the transparent quality of the structure. Glass jalousie windows and doors interrupt the plate glass window surfaces of the restaurant. Precast concrete panels between steel T beams are used at the restaurant level and lightweight concrete blocks below in the dressing room area. A year-round forced air mechanical system conditions the restaurant



UPPER LEVEL FLOOR PLAN

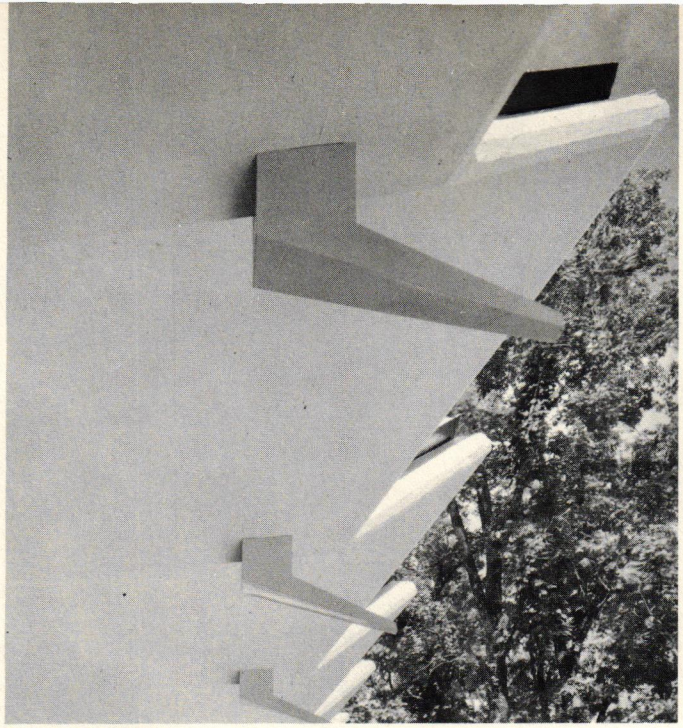


MAIN FLOOR PLAN



Frank Lotz Miller





Frank Lotz Miller

Left: valleys formed by folded plate slope in both directions from mid-span. Water drains through 1½-in. diameter copper pipe into 20-gauge galvanized iron roof scuppers

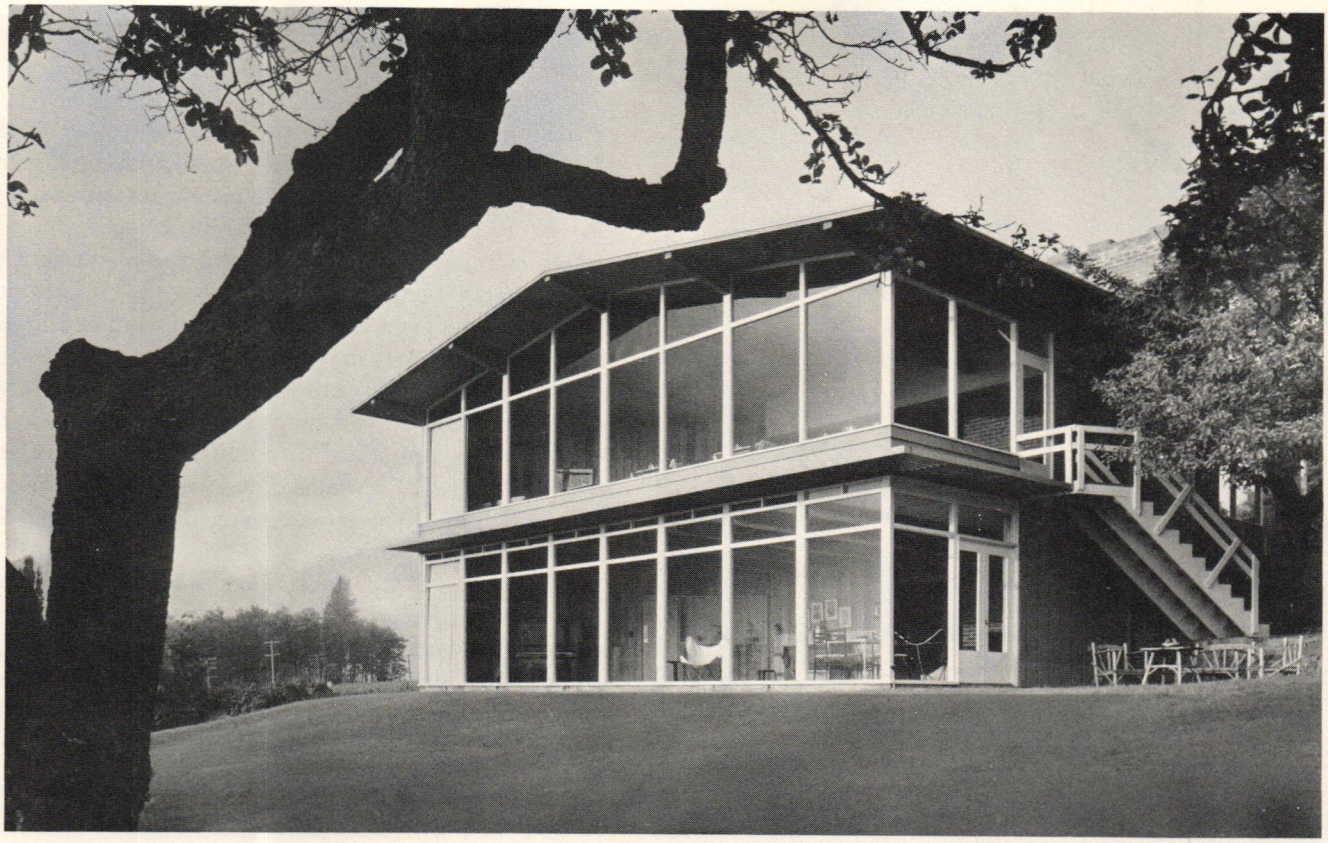


Right: restaurant overlooks pool in one direction, bayou and farmland in other.
Below: fluorescent general illumination is tempered with dimmer controlled incandescent accent lighting. Photograph shows entrance from parking lot



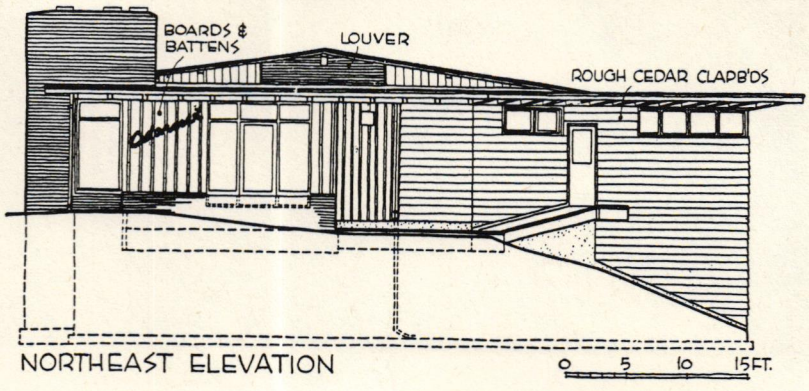
GOLF CLUB RESTAURANT BRAVES SUN FOR VIEW

Cedarcrest Restaurant, Marysville, Washington





Charles R. Pearson



Harold W. Hall, Architect

Arthur A. Graves
David W. Dykeman, Jr.
Associate Architects

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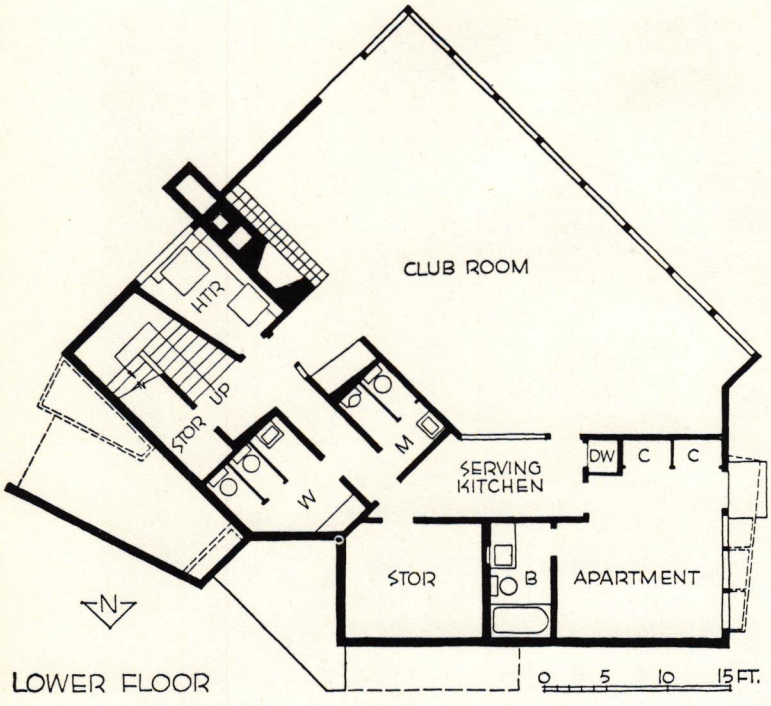


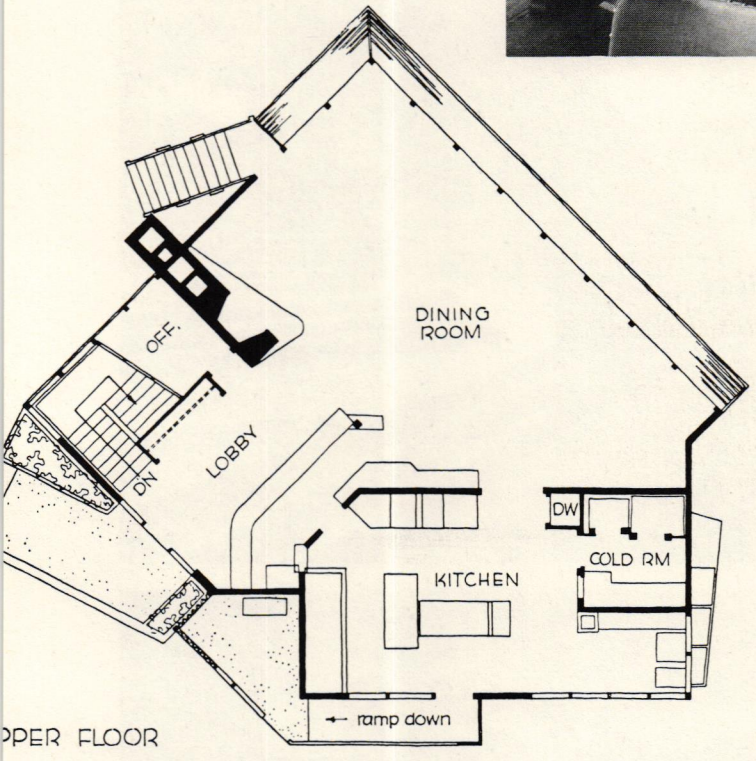
THIS RESTAURANT BUILDING is situated close to the club house of the Cedarcrest (municipal) Golf Club. It was planned not only as a public restaurant, but also as headquarters for group "field days."

Two major problems complicated the planning. One was a limited budget. The other was the unfortunate location of the best view at the southwest end of the site. Despite the fact that the budget would not permit air conditioning, the entire southwest side was, after much discussion, thrown open to the view, with floor-to-ceiling drapes providing the only sun control except for a shallow roof overhang. The owners and architects hope eventually to install mechanical ventilation in the dining and club rooms.

Construction is wood frame on concrete foundation. Only common lumber was used except for trim, which is kiln dried finish material. Exterior walls are rough cedar siding, painted. Club room ceiling is cement bound wood fiber board which acts as a two-way sound barrier between the club and dining rooms.

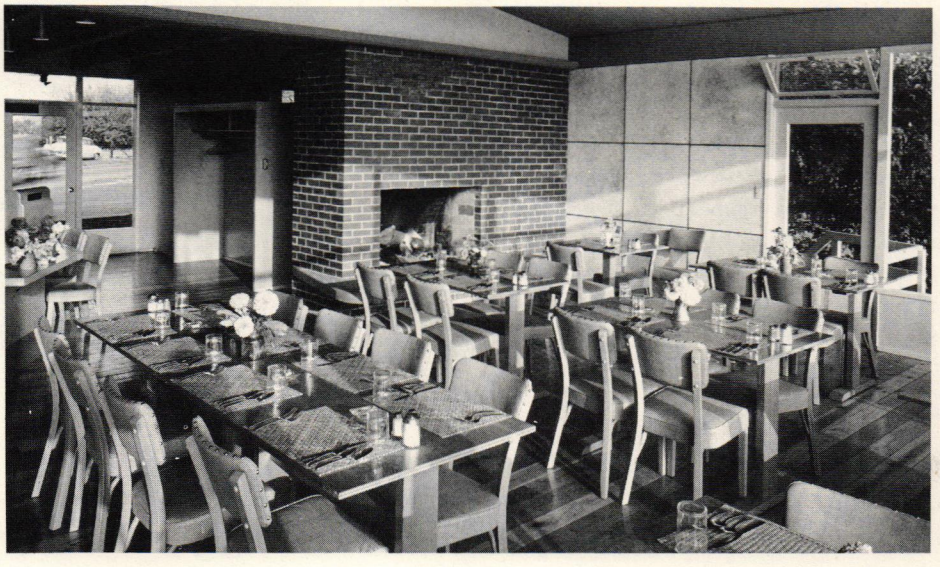






PPER FLOOR

Budget limitations forced compromises such as use of fir planking for dining room floor; owners hope to lay either cork or carpet in near future to help cut down noise transfer from this area to club room below. Building, complete with fixture work, cost $32,000, or slightly over $8 a square foot



Charles R. Pearson

REDEVELOPED WITH A FLAIR

First Step in Scheme for Palm Springs Corp., Palm Springs, Calif.

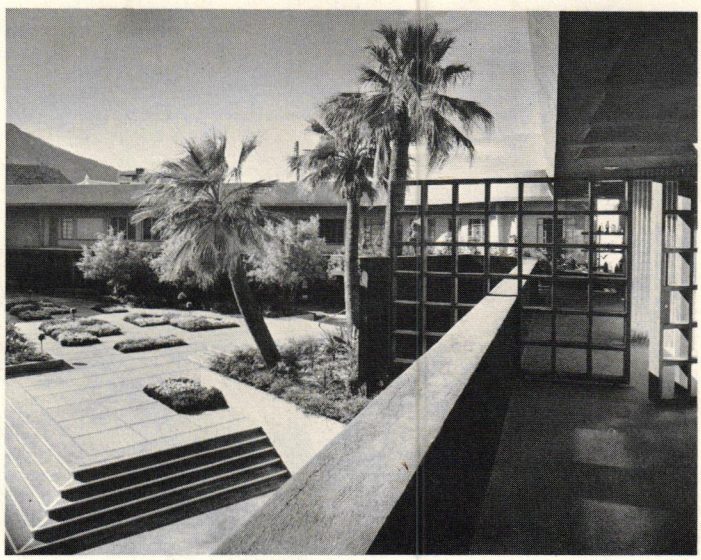
A. Quincy Jones, Jr., Architect;
Paul R. Williams, Associate

In this restaurant's first season, customers were so successfully drawn into the interior court and surrounding shops that the owners of the property are now trying to speed up the remodeling of the entire block. As the photographs on these four pages show, considerable flair and flavor were used to good effect as a customer lure.

The new restaurant building was the first step in the remodeling project. Its design was complicated by the fact that the existing foundation and basement had to be used, and also by the leases already signed with four different types of tenant. The building houses the Town and Country Restaurant, the offices of "The Desert Sun," Palm Springs' newspaper, and three shops, plus the offices of the Palm Springs Corporation, owners of the property, and four small apartments. Exterior walls are cement plaster and redwood; interior walls are plaster, redwood and Roman brick; ceilings are acoustically treated. Framing is steel.

Completion of the entire project originally was expected to take two or three years and called for a careful construction schedule. To avoid even brief interruption of business, as one section is finished, a tenant from an untouched section is moved into it to make way for further remodeling or rebuilding.





Julius Shulman Photos

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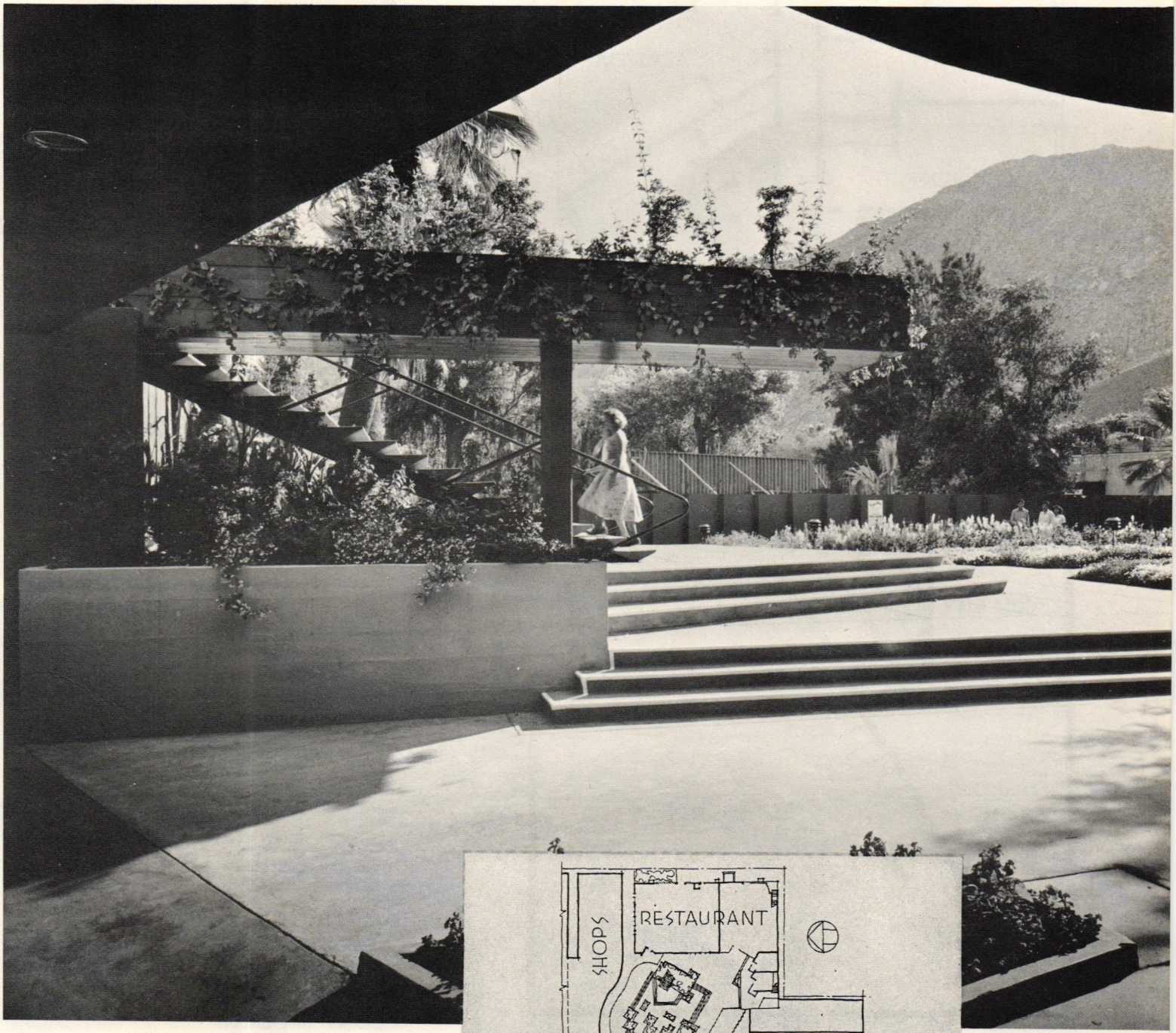
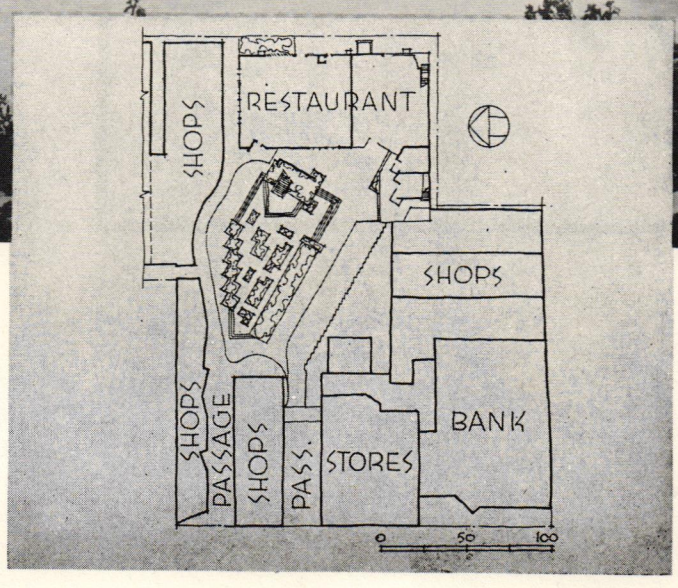
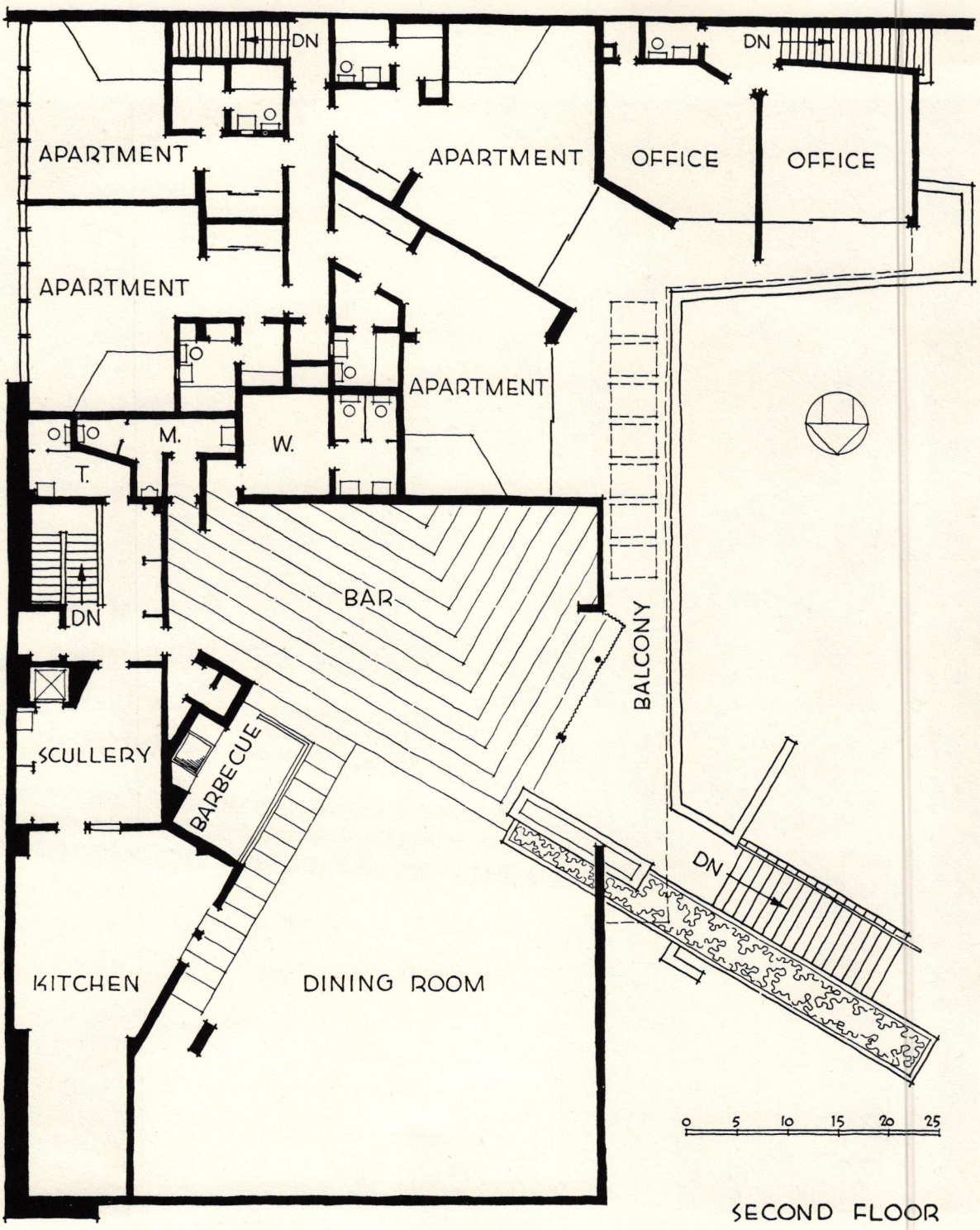
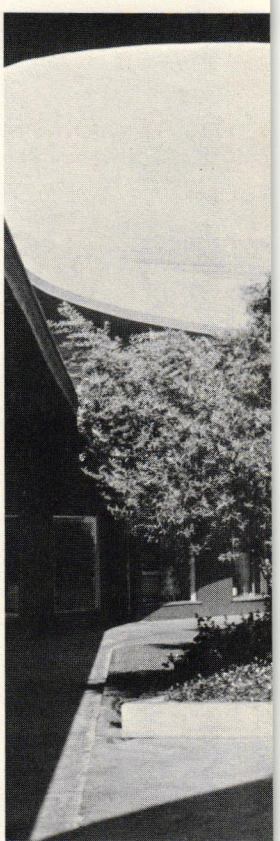
Spark of the redevelopment scheme is the atmosphere-packed patio leading to the Town & Country Restaurant. The restaurant building, first one completed under the plan, houses also offices and shops, and has four small apartments on second floor (see plan, next page)







SECOND FLOOR



The second-floor apartments have their own entrance from Indian Avenue along the south side of the block, but shops and restaurant face the court (opposite page). Commercial tenants are varied, including the local newspaper, and three different types of store





Julius Shulman Photos





BAR AND RESTAURANT FOR HOTEL MC ALPIN

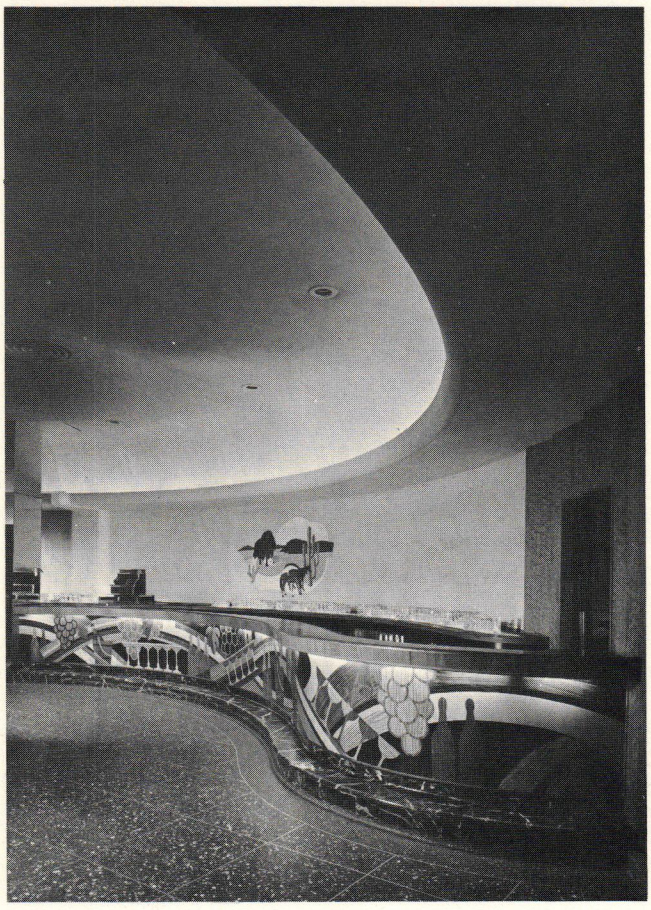
New York City

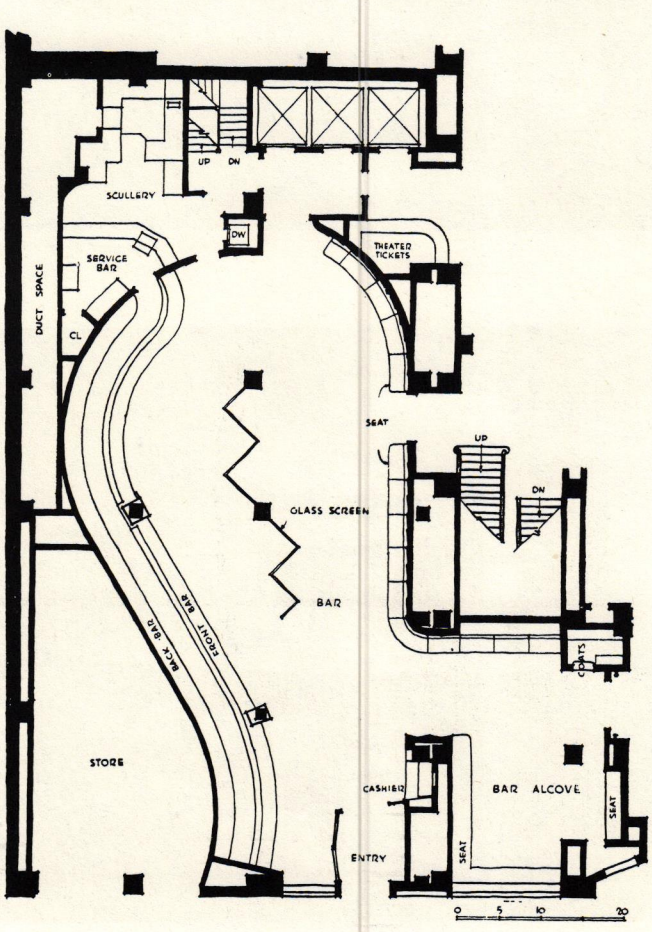
Kahn and Jacobs, Architects

PLANNED and carried out as part of the major overhauling given to the McAlpin's entire first floor — to receive the Crawford Clothing chain's headquarters store and arcade which was to be built shortly—this bar and restaurant has given immense lift to the hotel business. Major feature is a 90-ft. serpentine bar, with a front of wood intarsia by Hildreth Meiere. Back-bar murals of glass-and-marble mosaic, representing the nation's four principal geographical regions, are also by Meiere. Michael L. Radoslovich, architect in the office of Kahn and Jacobs, coordinated all the McAlpin renovations.

Bar entrance is off 34th Street; marquee at top of photograph is that of Hotel's main entrance. In photo below, ceiling cove lighting is cold-cathode; bar cove has regular fluorescent tubes

Ben Schnall Photos





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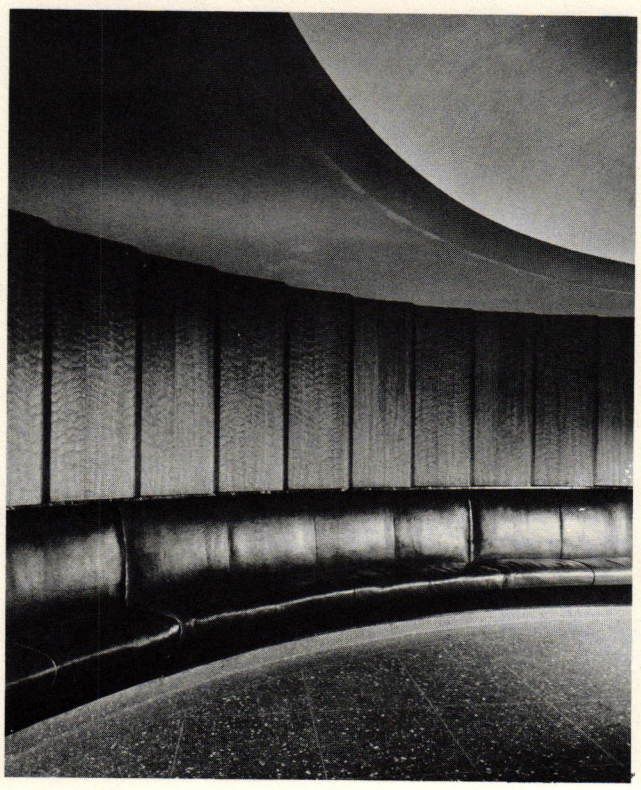
Ben Schnall Photos

Paneling in bar alcove (left) and main area (below, left) is flexible plywood on metal, mahogany finish. Floor is black and white terrazzo with stainless-steel dividers. Entrance off hotel lobby (below, right) is faced with Colorado Colorosa marble





MADISON ROOM

FOR DAY AND EVENING SERVICE IN A DEPARTMENT STORE



H. S. Manchester, Inc., Madison, Wis.

Skidmore, Owings & Merrill, Architects

THIS double operation is unusual for a department store — by day serving store customers, for the most part, and in the evening, general outside patronage. Opening at 10:00 every morning and closing at 9:00 p.m., it offers four basic services: luncheon, afternoon tea, pre-

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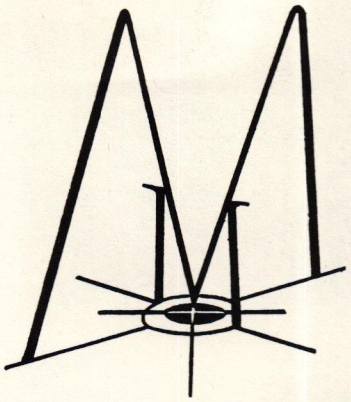
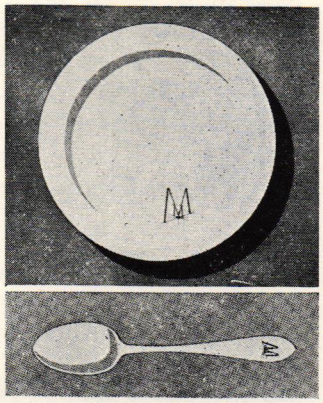
Smith-Wollin Photos

Photos front and below show views of State Capitol and grounds afforded by the Manchester Madison Room, "unequalled by any other restaurant on Capitol Square, and particularly impressive at night." Draperies are by Angelo Testa; furniture is natural-finish birch; light-brown grospoint carpet covers dining area. View above shows street-entrance vestibule, with checkroom, left, and settees for waiting patrons. Note "Running Men" wallpaper at right; background wall is deep brown





Symbol, left, designed by Rainey Bennett, appears on the menu covers, china, flatware, place mats, match-folders, Petri-dish ash trays, and as a free-standing wall fixture





Smith-Wollin Photos

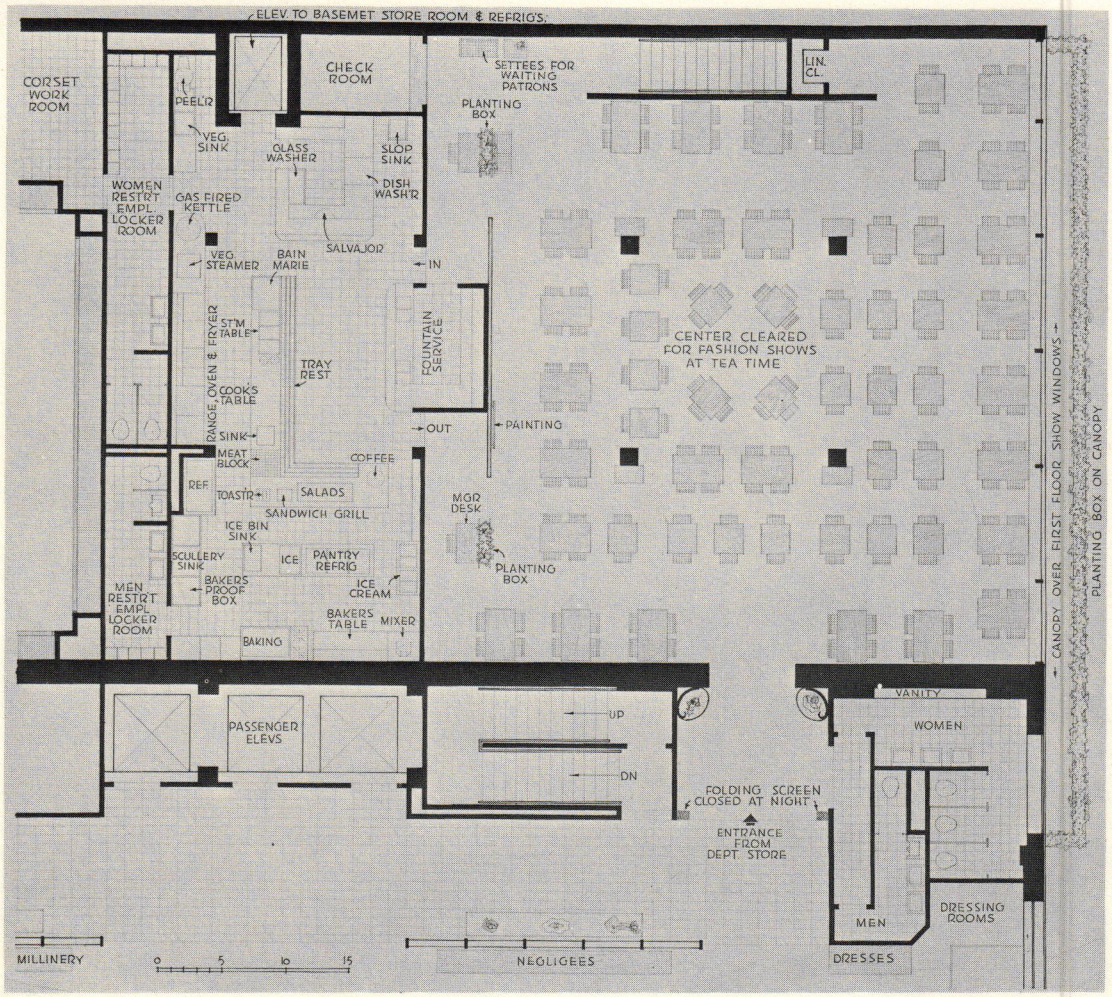
theater suppers, and full dinners. It is one of the first phases to reach completion in Manchester's considerable building-and-alterations program.

Located on the second floor of the store's new addition, the restaurant has one entrance directly from selling areas, and another by stairs from the street. During shopping hours, only the store entrance is open, to draw traffic through the selling departments; in the evening, access is from the street alone. The consequence is a daytime patronage predominantly of women, with a much greater representation of men at night, requiring the general design to have appeal in both directions, with avoidance of an atmosphere too "tea-roomy." Another design requirement was that decor be keyed to Madison's out-of-door and sports way of living.

In this spirit, the stairwell slab wall is covered with "Running Men" wall paper, a Danish import designed by Kirby; the same motif appears on the menu covers, by Chicago artist Rainey Bennett (see top page 291). The slab wall of natural-finish white ash, before the kitchen entrance, features depiction of a major regional sport, and in the street-entrance vestibule, casein paintings, also by Mr. Bennett, show scenes around Madison: the lake, State Capitol building, and other features of historical and sporting interest.

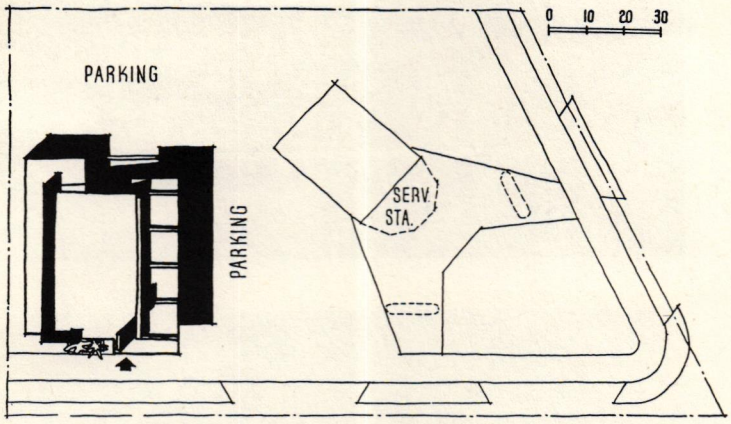
Photos on this page show stair entrance from street, right, and entrance from department store selling areas, below, with folding screen closed for night operation. Table lamps (right, see also page 291) were both designed and executed by Isamu Noguchi; gooseneck fixtures (below) by Kurt Versen. Store-entrance and kitchen walls are gray; ceilings, oyster-white acoustical plaster





In the plan above, seating is provided for 160. Restroom facilities for men and women are convenient at store entrance; checkroom, used mostly at night, is directly opposite street entrance. The kitchen and service areas show many features certified by experts (see pages 241-3), with distinct "In" and "Out" doorways, efficient fixture layout and convenient employee facilities





DRIVE-IN RESTAURANTS

Biff's Restaurant, Hollywood, Calif.; Douglas Honnald, Architect. Extensive glass areas and well studied lighting are used to attract customers to this compact restaurant. Solid brick mass of service areas provides visual, as well as actual, anchorage for lean-to steel framing members of lunch room structure



George R. Szanik Photo

***This study was prepared in joint collaboration of* Architectural Record *and* Restaurant Management**

DRIVE-IN restaurants include a vast range of establishments, from hamburger stands to elaborate coffee shops, dining and banquet rooms and cocktail lounges. Some cater solely to motorists, with no interior seating, others provide large parking areas for interior service. The success of all can be fostered by careful planning. Apart from good food, success factors include: adequate parking, attractive surroundings, service efficiency, and employee welfare.

Surroundings and menu should be determined by the type of clientele to be served. Tastes of business people vary from those of families with children, shoppers or plant workers. Some locations will attract different people at different hours. A full menu requires large kitchens for preparation, large parking areas because of time required for consumption. Areas can be minimized by limiting choice of foods. Profit requires frequent customer turnover: convenient layouts and time-saving devices can speed food preparation and service. Labor costs can be cut if areas can be closed in slack periods.

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Van de Kamp's Restaurant (right), Los Angeles, Calif.; Wayne McAllister, Architect. Service speed and capacity of the drive-in are doubled by use of twin facilities: two service areas, two short order kitchens, two dishwashing rooms and a two-way walk-in refrigerator.

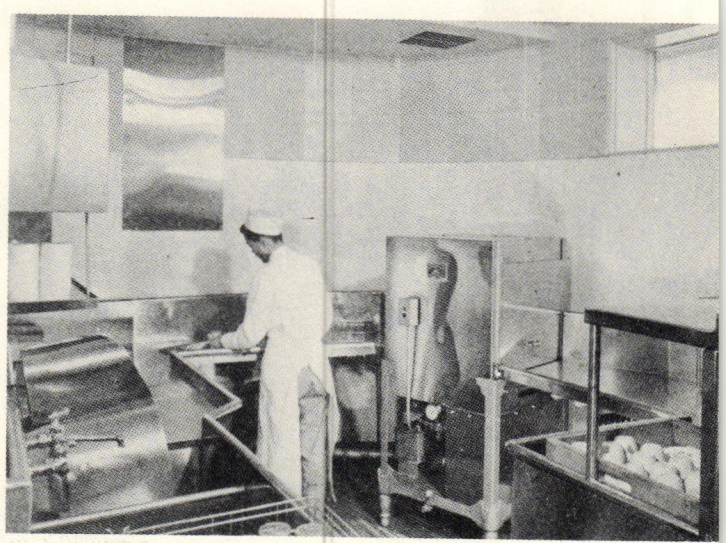


SIZE AND LOCATION OF SITE

Size of plot depends on type and extent of facilities provided: minimum is probably 150 by 150 ft, preferably on a corner. A wide frontage is best for visibility and ease of access. Inadequate parking can create ill will. Inclusion of dining rooms, bars, etc., requires proportionately larger space.

Relationship to neighborhood: Select site which will have stable year-round patronage from near-by business, shopping or industrial centers. A low cost area toward which business is moving, or the outskirts of a dense residential area, is often advantageous. Zoning ordinances should be checked for possible changes. Check availability of such services as: sewage disposal, rubbish removal, electricity, city phones, laundry, equipment repair, food and ice supplies.

Relationship to highways: Site should be on a major traffic artery, plainly visible from a distance, and so situated that traffic can easily stop and approach property from both directions. Check for highway changes.



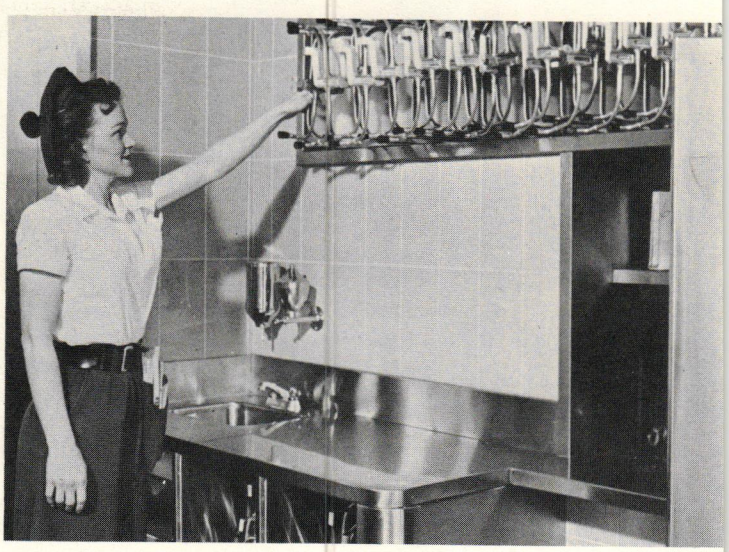
PLOT LAYOUT

Parking areas: Entrances, exits, and parking spaces should be clearly marked to assure maximum capacity and prevent road block. Use easily maintained surfacing; a dark color will cut down glare. The area should slope only enough for drainage; say, ¼ in. to the ft. Separate drive-in parking from that of dining areas. Set apart areas for deliveries, and for trucks and busses, if such patronage is expected.

Service walks: Allow for car bumper overhang on walks adjacent to buildings; raise about 6 in. Radiant heat is sometimes used for snow melting and for comfort of car-hops on chill evenings.

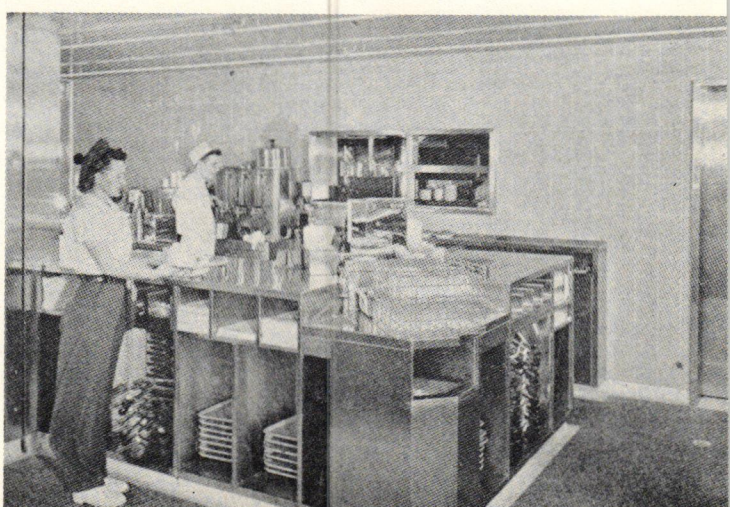
Weather protection: Canopies shelter car-hops from rain and glare. An overhang 18 ft wide will protect service to all car doors. Other methods: fixed or sliding awnings on metal frames; column-supported roofs.

Terraces and landscaping: Take full advantage of any pleasant view. Outdoor terraces or gardens with tables can be attractive and profitable; many motorists like to get out and "stretch their legs." Trees used for shade should not hamper traffic.



GENERAL PLANNING

Plans: All elements should radiate from central kitchens. Each should have separate service-ports into



Tile Council of America

kitchen, an exterior entrance, plainly marked on outside, and interior intercommunication.

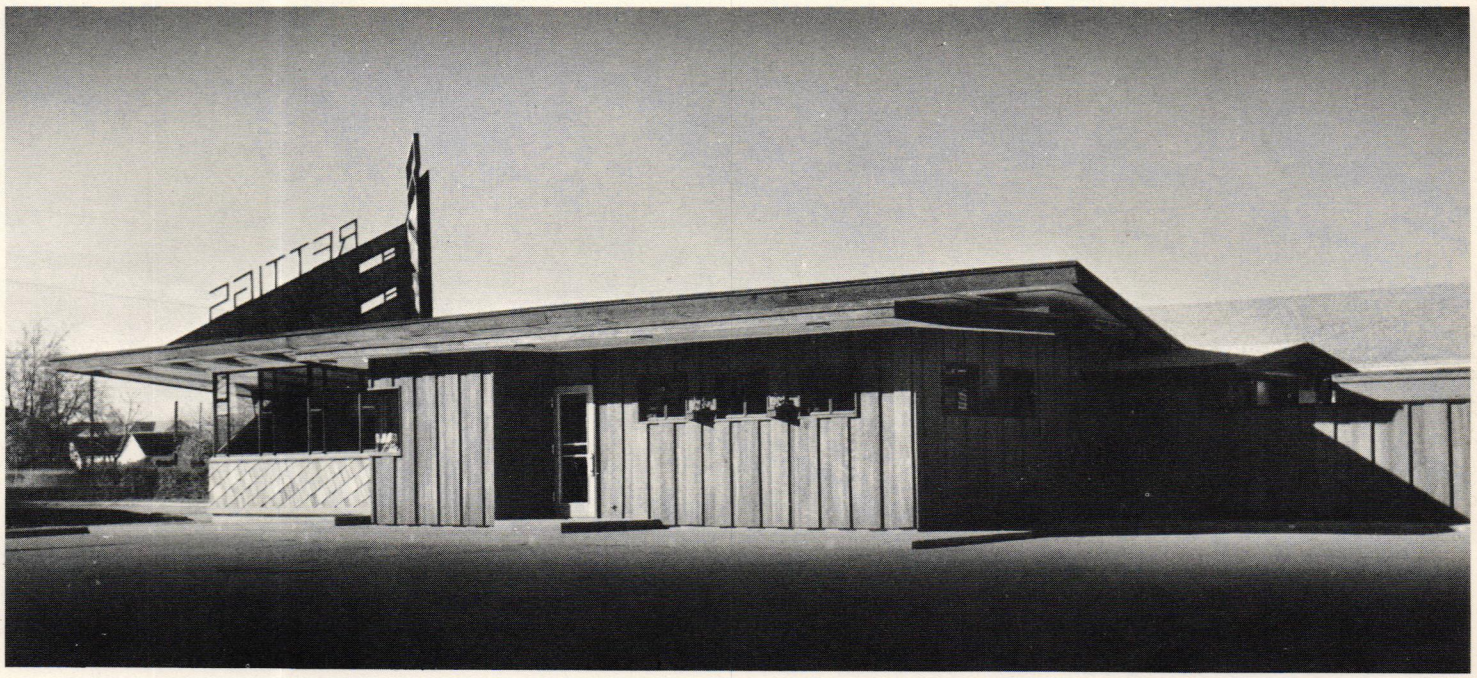
Kitchens: Group together all equipment for each operation. Allow aisles wide enough for easy passage with loaded trays. "In" and "out" doors will speed service. A rear entry should be included for deliveries and garbage removal. Labor costs can be cut if layout permits one cook to handle kitchen during quiet hours.

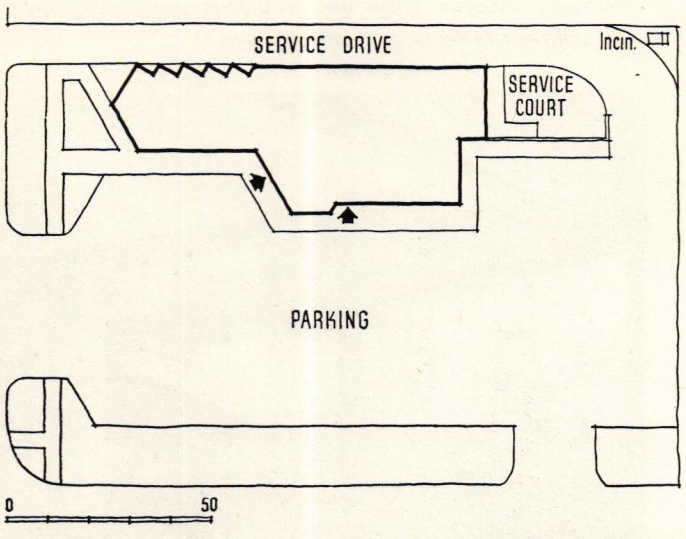
Dishwashing area: Locate area convenient to car-hops, counter, dining areas and kitchen; conceal from the public. Pass doors for depositing soiled dishes, and for picking up clean ones will speed service.

Pick-up counter: Allow pick-up space for 50 per cent of car-hops at one time; the average car-hop can handle 6 cars. Automatic doors ease service. Wings at each side

Rettig's Restaurant, Houston, Texas; MacKie & Kamrath, Architects. An interplay of wood forms and textures produce an arresting, easily identified building. Setbacks in plan permit window for each booth. Service drive is adjacent to kitchen, routes delivery trucks away from customer parking. Location of entrances permits close supervision of all areas

Mears Studio Photos





of counter should contain service set-ups, trays and water. Counter men should be able to reach kitchen passport, coffee urns, malt mixers, fountain and refrigerated bottle box.

Cashier's desk: If checking is done as food is delivered to car-hops, cash register should be located in pick-up space. With one cashier and both interior and car-hop service, the desk should be convenient to each and near entry for control and supervision. In small drive-ins, records might be kept here; in large concerns, a separate office is needed.

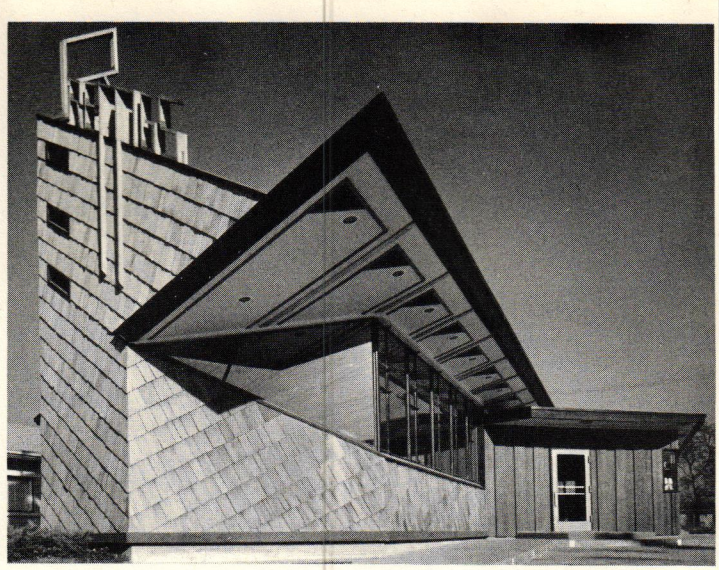
Counter service: A minimum of 30 to 36 in. clear aisle must be left behind counters. Turnover is faster and cost of operation less with counter seats than with tables. When combined with dining rooms, counters should be nearest entrance. Counter-high pass windows and a

central entrance to kitchen from behind counter are desirable. Part of counter might be devoted to dining room service.

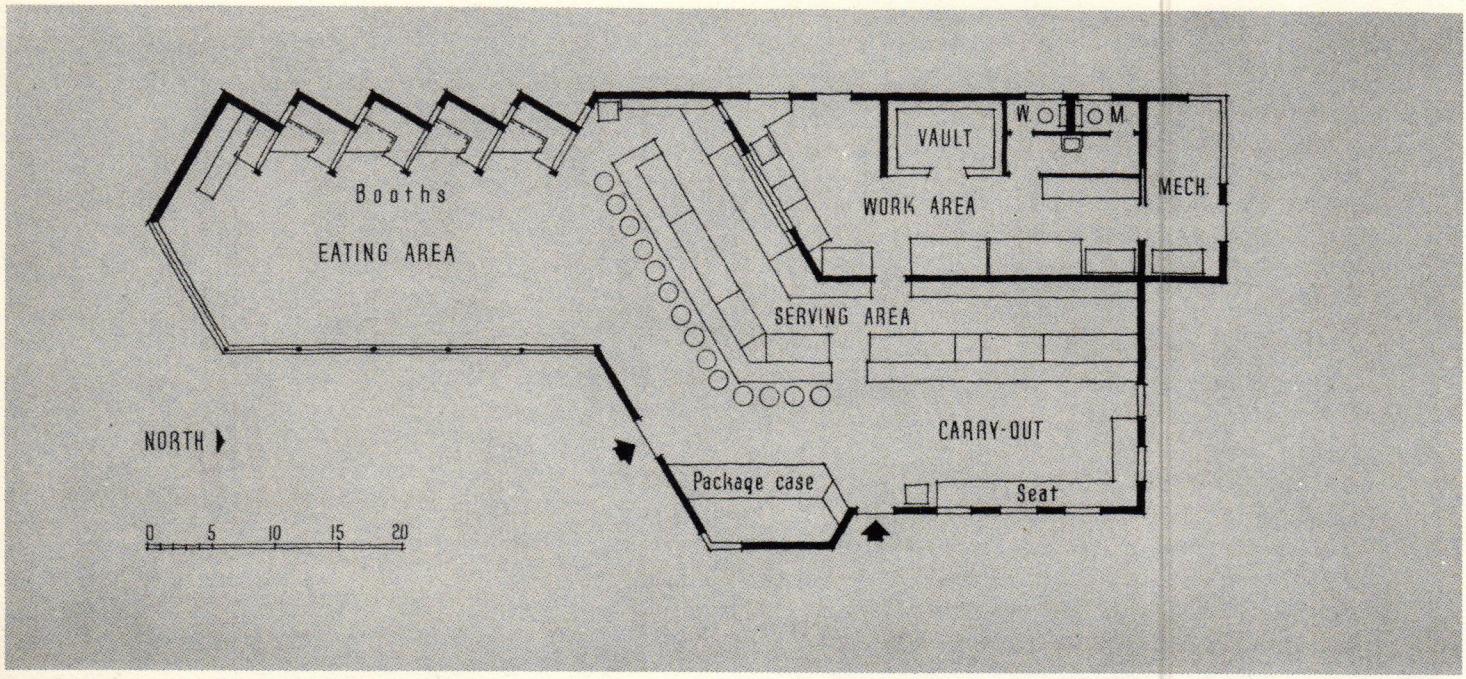
Dining rooms: Side tables should be provided with equipment for all set-ups, and with soiled linen hoppers. The most flexible table layout uses 2-seat tables, combined for groups. Booths use more space, but are preferred by some customers. Extensive dining areas require extra pantries and equipment. Protect diners against heat, moisture and sounds from kitchen.

Storage rooms: Provide for food, supply and equipment storage of all types, near delivery entrances. Protect overhead waste and water lines against drip. Cleaning equipment should be apart from food processes.

Wash rooms: Toilets should open from inside and outside where there is drive-in service. Large concerns need separate rooms for employees, with lockers for coats and changes of uniform located near by.

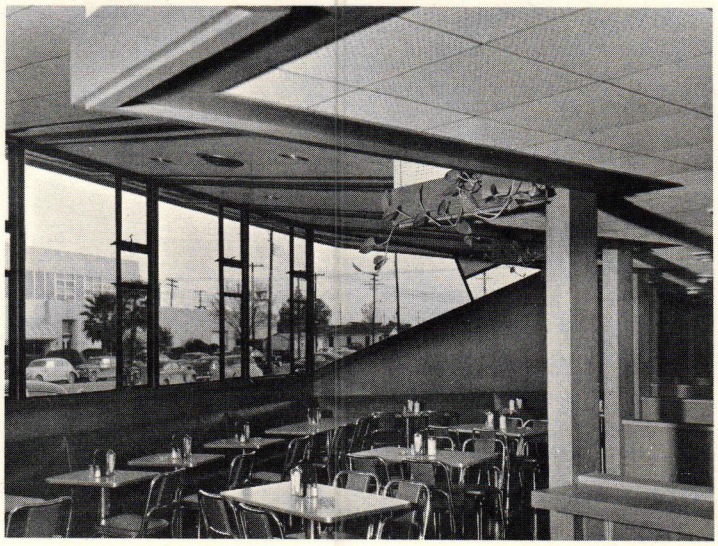


End wall extends at angles above building to provide unified base for restaurant signs



Plan of Rettig's Restaurant, Houston, Texas

Waist-high windows allow use of built-in seats along outer wall, still permit interior and exterior views



CONSTRUCTION AND FINISHES

Construction: Climate and fire hazards are important in establishing type of construction. Many cities require fireproof materials.

Finishes should be durable and easy to keep up. Sanitation is one of the most serious problems; state and local regulations must be followed.

Periodic modernization of building may be necessary; construction should be adaptable.

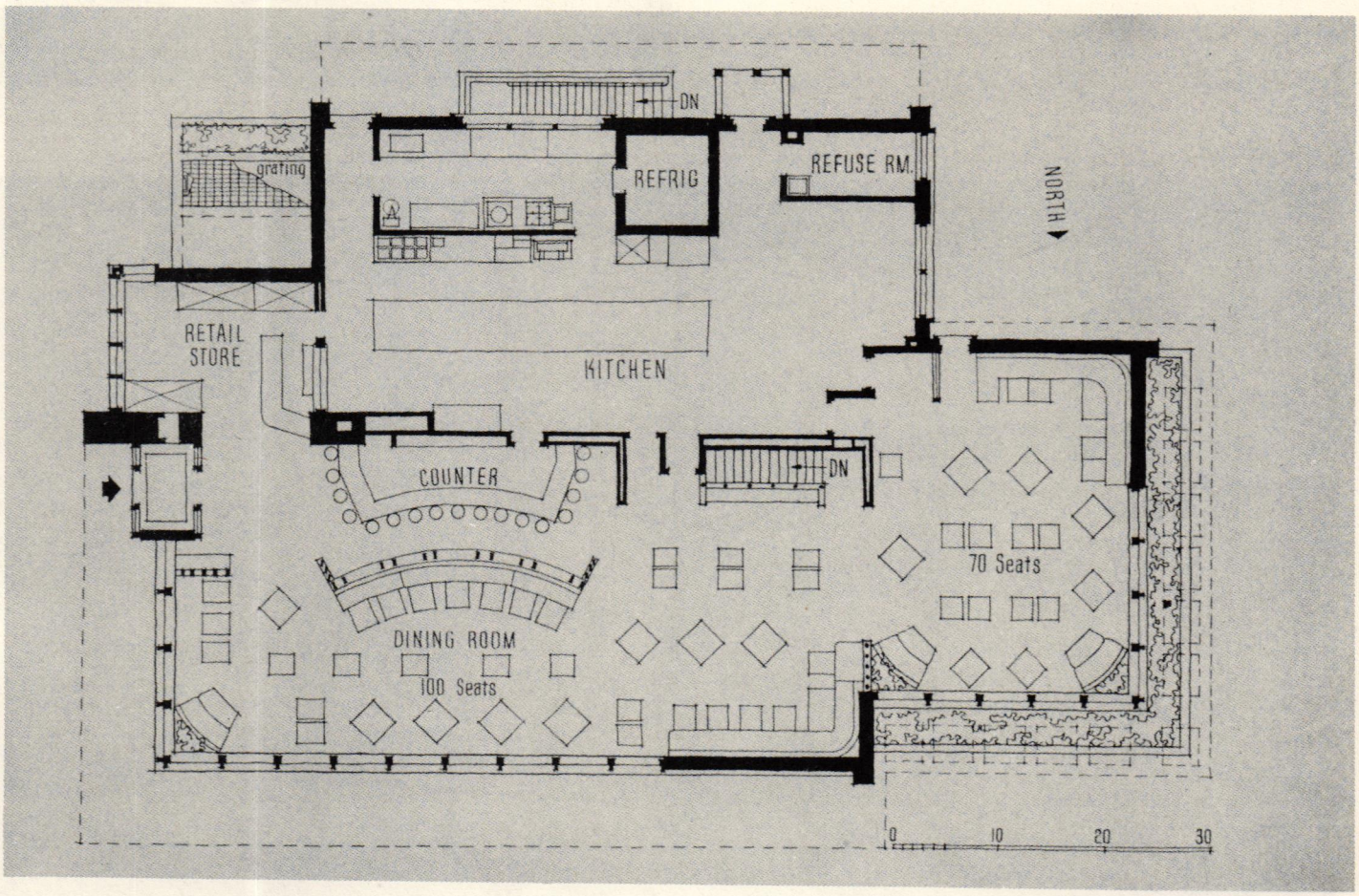
Floors: Tile, Terazzo, concrete or composition make good floors. Avoid surfaces which are slippery when



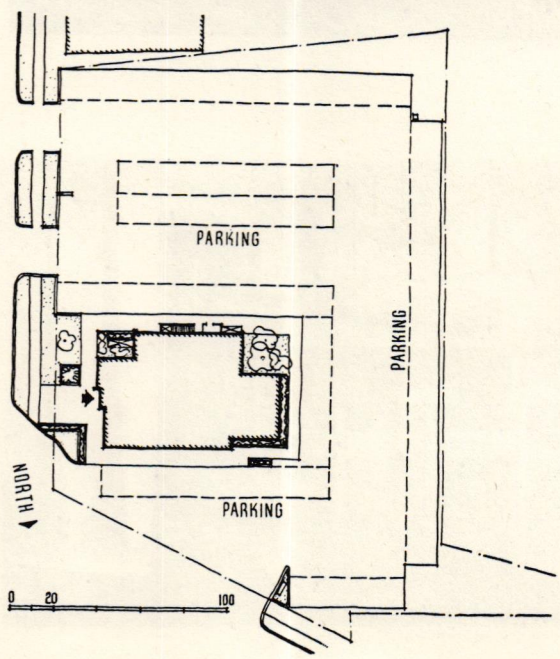
wet. Wooden slat floors in service areas should be recessed flush with floor, removable for scrubbing.

Walls: Surfaces of walls should be washable. Simple decoration is usually preferred. Plants, lighting, mirrors and color provide accent.

Counter and table tops: Materials should not discolor, scratch or chip easily. They should stand up under heavy usage and be easy to clean. Plastics, tile, linoleum and wood make good surfaces.



Plan of Hot Shoppes Restaurant, Philadelphia, Pa.



DESIGN AND PROMOTIONAL FEATURES

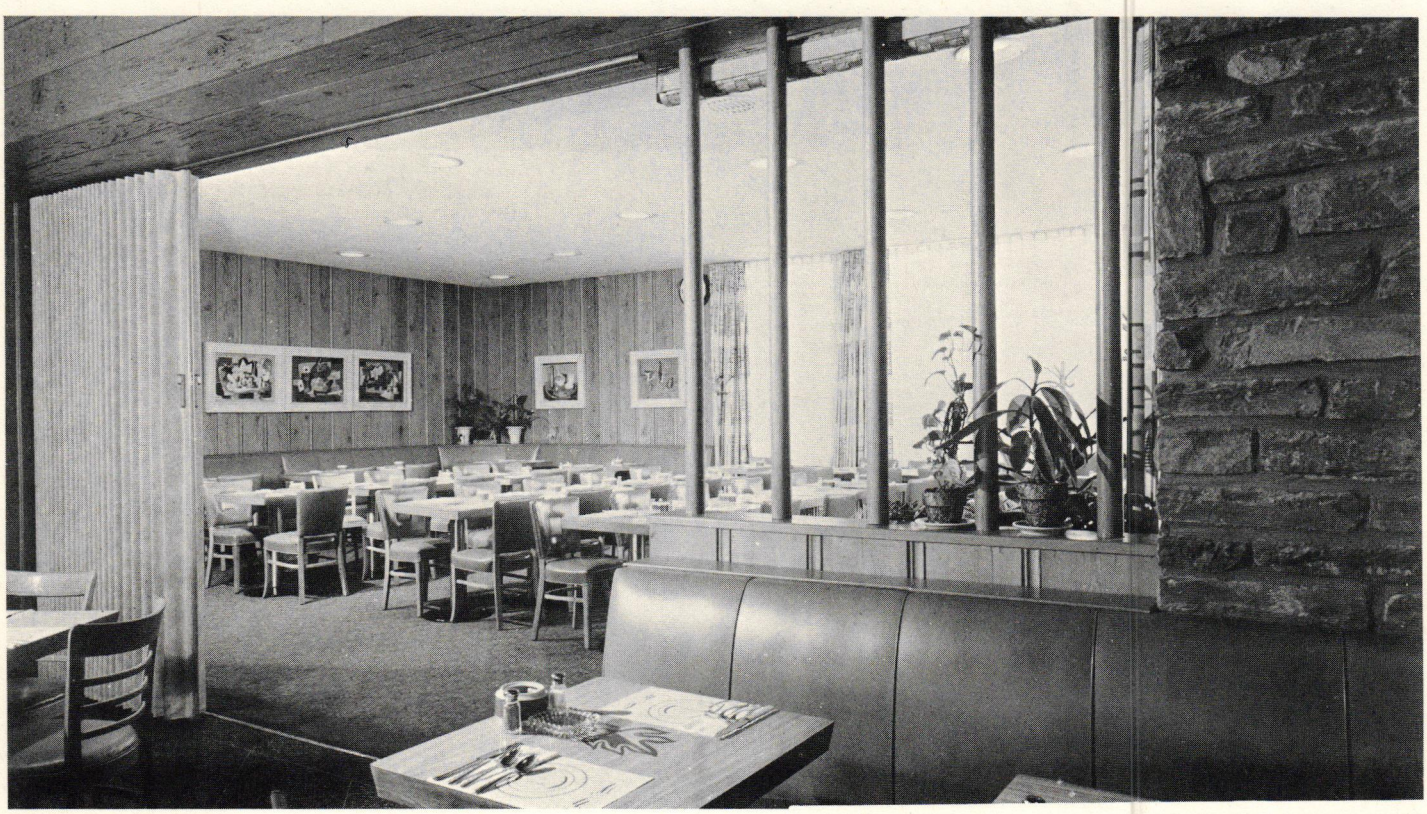
Visibility: A successful restaurant must attract motorists from a distance by signs, colors and illumination. A tower serves as a commanding billboard. Dining areas should be made visible from exterior by use of glass and illumination. Lights should never shine directly into the eyes of patrons.

Architectural treatment: It is best to avoid a superficial treatment; frank expression of structure can often make an arresting design. Standardized treatments are useful for identification of a chain.

Advertising features: Dishes, trays, uniforms, windshield cards, menus and sales books can be good advertising if well designed. Many drive-ins feature entertain-

Hot Shoppes Restaurant, Philadelphia, Pa.; Joseph Morgan, Architect. Design, both interior and exterior, expresses quiet, comfortable dining. Sense of privacy is given to interior spaces by screen partition enclosing lunch counter and folding wall between dining areas (below). Glare is controlled by overhangs, trees and thin curtains at windows. Retail shop sells food specialties to take out. Curb service is offered to motorists at rear of building





Cortlandt V. D. Hubbard Photos

ment, sometimes staged on the roof, as added customer inducement.

EQUIPMENT

Food preparation equipment should be of sanitary construction, easily taken apart for cleaning, and with no lead or cadmium plated parts. Electrical machines should be of same voltage. Depending on menu, kitchens should include: preparation table, broiler, fryer, range, griddle, work table, sink, refrigerator, sandwich unit, range hood and exhaust fan, food warmer, service pick-up table with refrigerator below, ice cream cabinet.

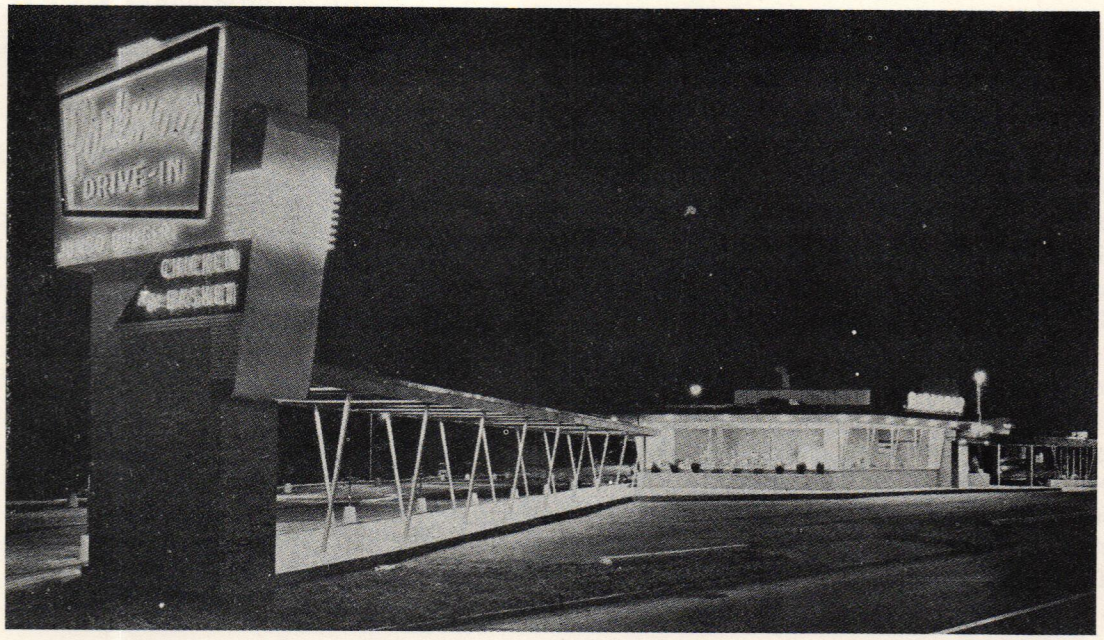
To facilitate car service, a microphone might be used to place orders; a light panel with waitresses' numbers signals when orders are ready.

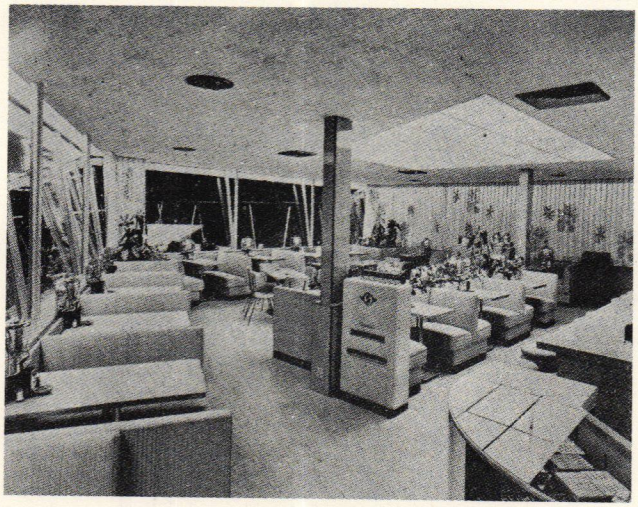


A BUSY URBAN INTERSECTION

Parkmoor Drive-in,
Dayton, Ohio

Rollin L. Rosser,
Architect & Engineer

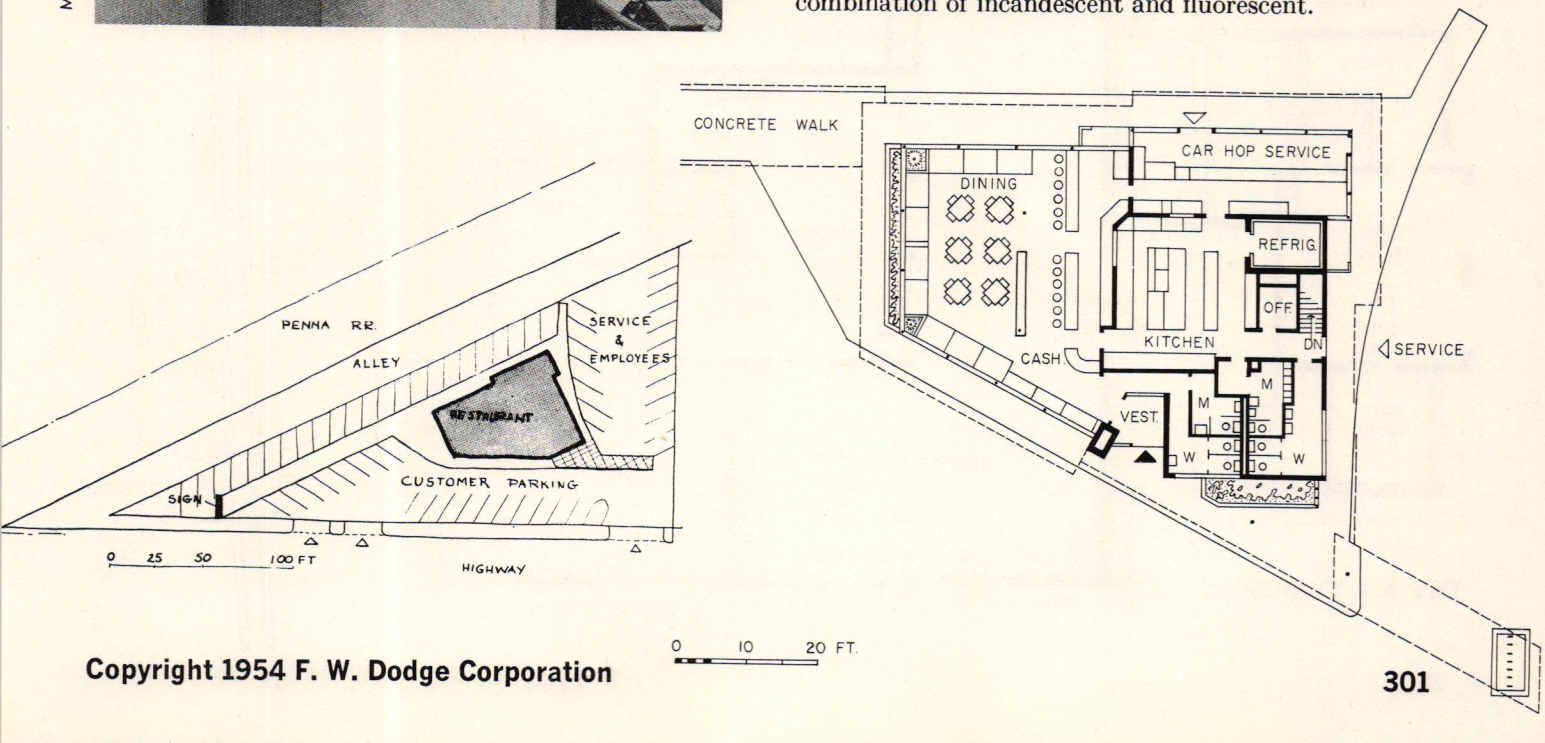




Mayfield Photos

THIS AIR-CONDITIONED drive-in, located on one of Dayton's busiest thoroughfares, extends a beckoning finger to motorists by means of a covered, lighted walkway reaching out to a sign pylon near the road. Customers may park and be served by carhops after phoning in their orders via a Tel-e-tray system, or may stroll into the building and sit in a booth or at a counter.

The plot plan below shows how service deliveries and employee's cars have been carefully separated from customer parking. For the building itself, doors and sash are aluminum; floors are asphalt tile; ceiling is acoustic tile; lighting is a combination of incandescent and fluorescent.



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SUPERHIGHWAY SITES

New York State Thruway

Restaurants and Service Stations

Eggers & Higgins, Consultants

Weiskopf & Pickworth, Structural Engineers

A. Carl Stelling, Site Planner

Jaros, Baum & Bolles, Mechanical Engineers

Smith & Silverman, Electrical Engineers

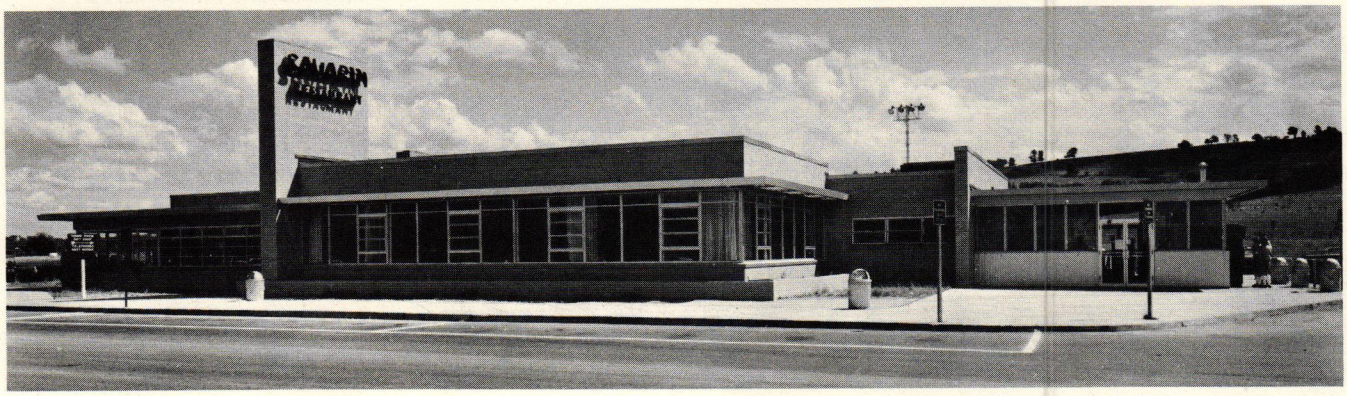
Howard Post, Food Service Consultant

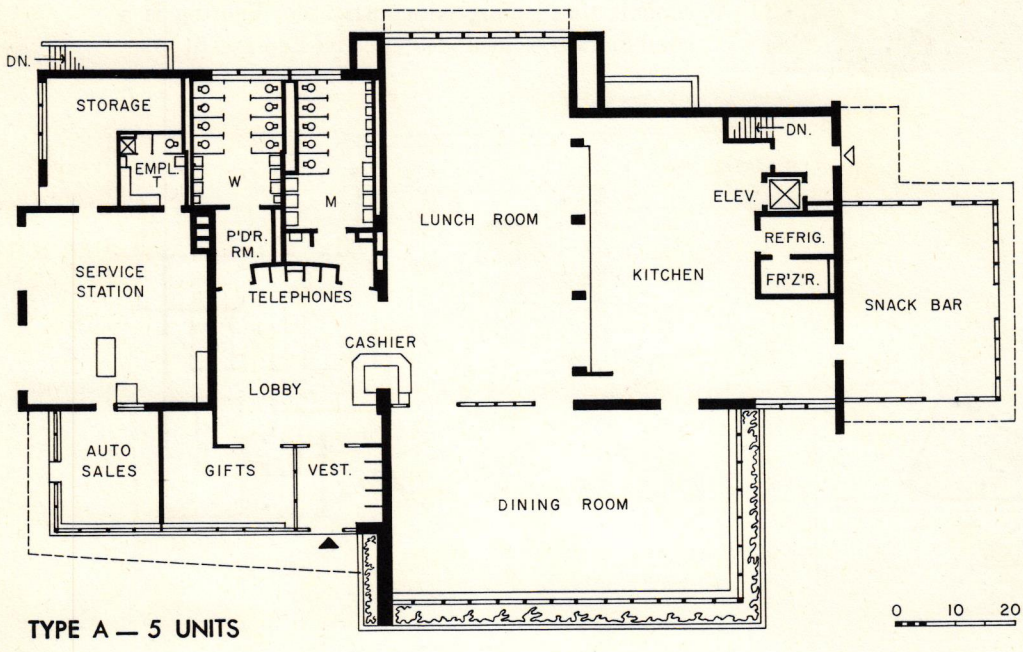
SEVENTEEN AND ONE-HALF MILLION MEALS a year will be served on the 427 mile Thruway from Buffalo to New York — that is the forecast. To build the necessary 27 buildings of 4 types, 20 million was budgeted, thus creating the largest restaurant construction program on record. The first unit will open in December.

The buildings have been designed for 24-hour operation and their materials have been selected for minimum maintenance cost. The smaller "B" and "C" units are readily expansible into larger types, if needed.

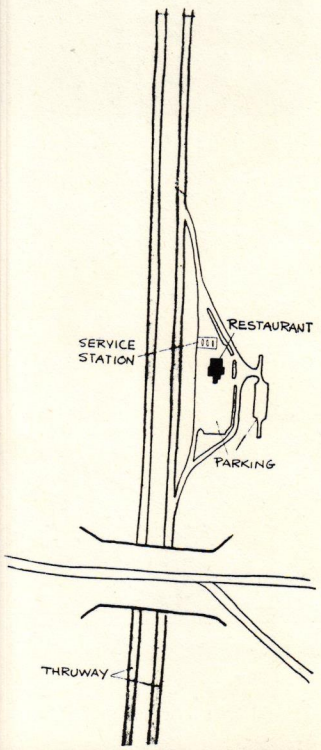
Resolving the needs of the three operating concessionaires into a scheme satisfactory to all required only four meetings and concerned such items as conveyor systems, size of utensils, type of equipment, etc. Each operator will be able to retain his commercial identity by controlling interior decoration.

After general location was determined, site selection involved many considerations, enumeration of which resembles a designer's checklist: an attractive locale to provide a pleasant environment; a site affording the oncoming motorist a long-range view to avoid surprise in driving; a supply of 100 gallons of drinkable water a minute; electric power; proximity of access roads to keep trucks off the Thruway; avoidance of locations too near swamps, quarries, industrial plants, etc.; nearness to a flowing stream to receive the treated sewage; ground configuration to provide a floor about 4 ft above the road without excessive cut and fill.





TYPE A — 5 UNITS



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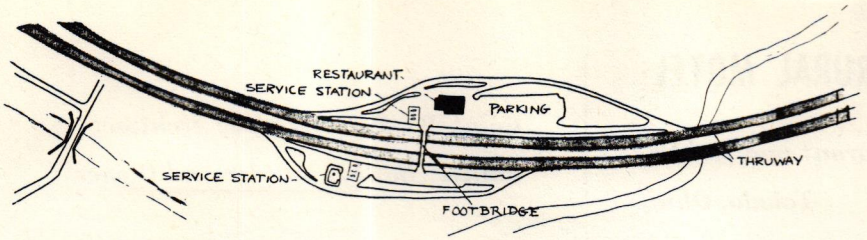
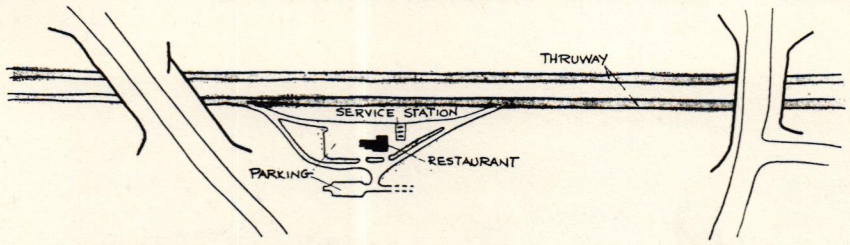
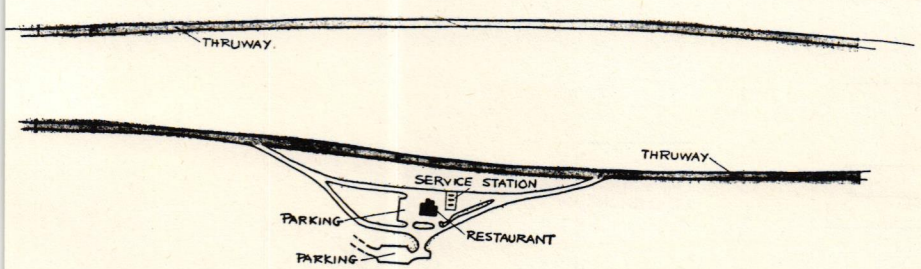
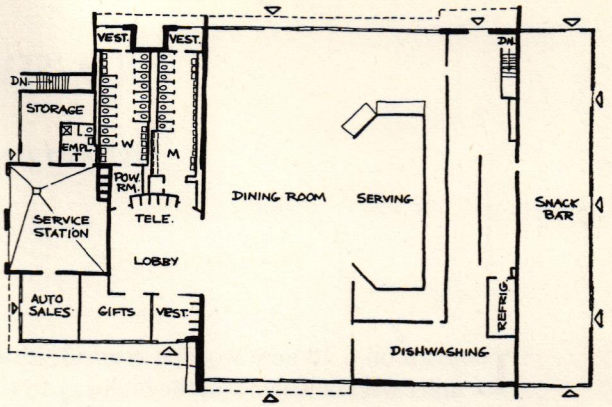


At two locations a footbridge will be constructed to connect an "A" unit to a gas station across the road so that the restaurant can thus safely serve motorists traveling in both directions

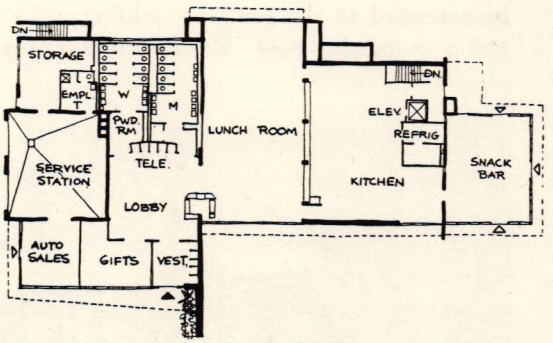


Plans for "B" and "C" units reveal how these types can be expanded to become similar to the "A" type. Toilets and auto service are similar in all units

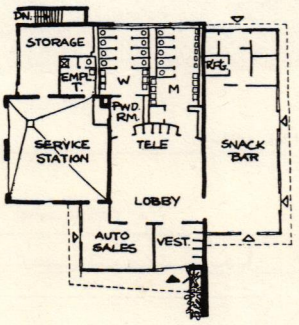




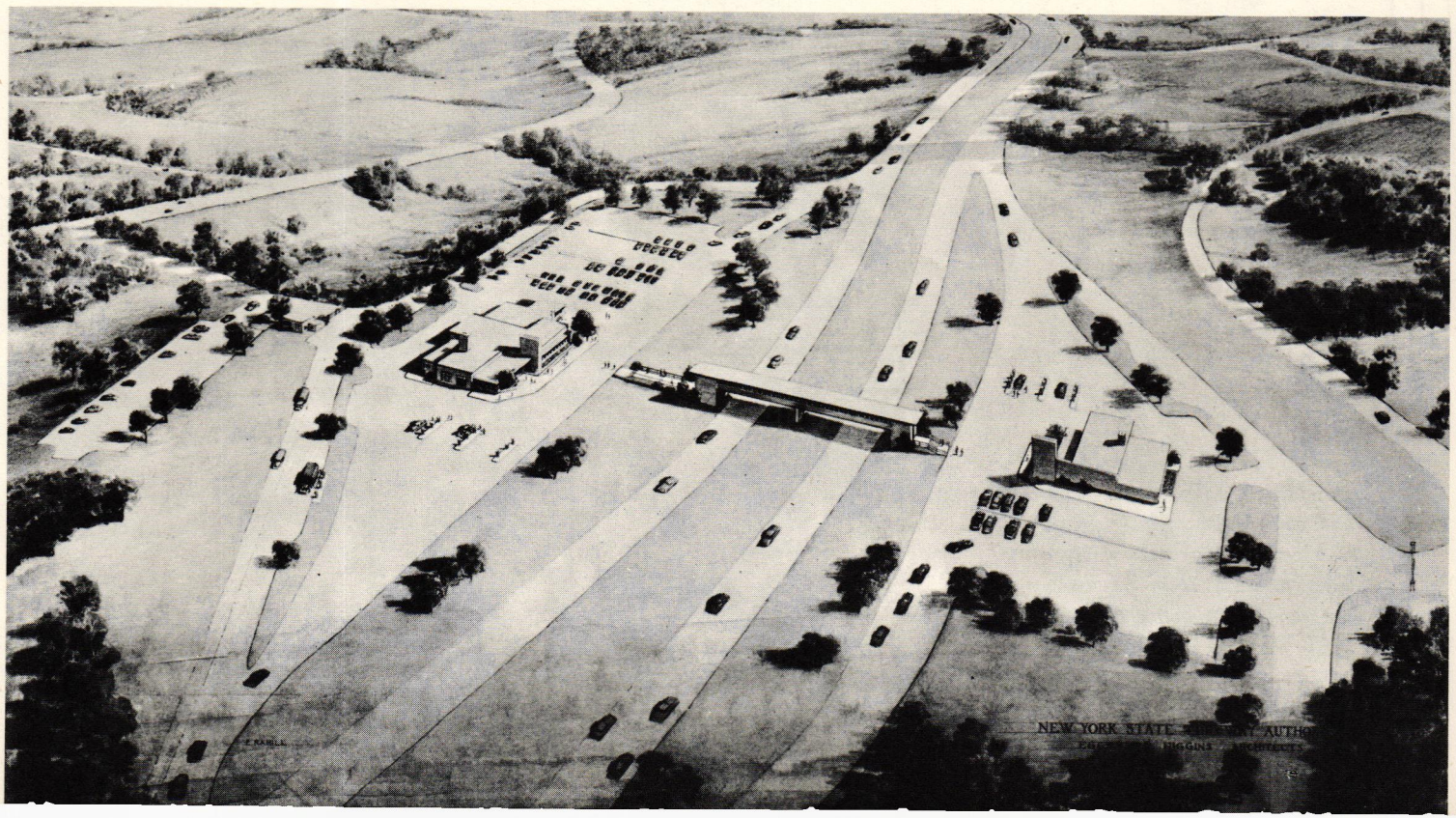
TYPE SUPER A — 2 UNITS



TYPE B — 11 UNITS



TYPE C — 7 UNITS



IN A SEMI-RURAL MOTEL

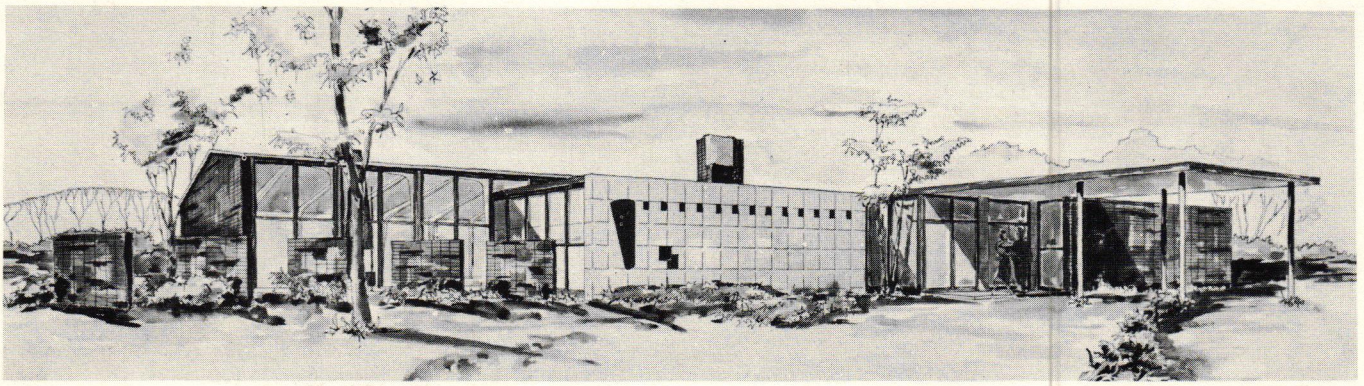
Proposed Restaurant and Motel, Toledo, Ohio

Ralph W. Zimmerman, Architect

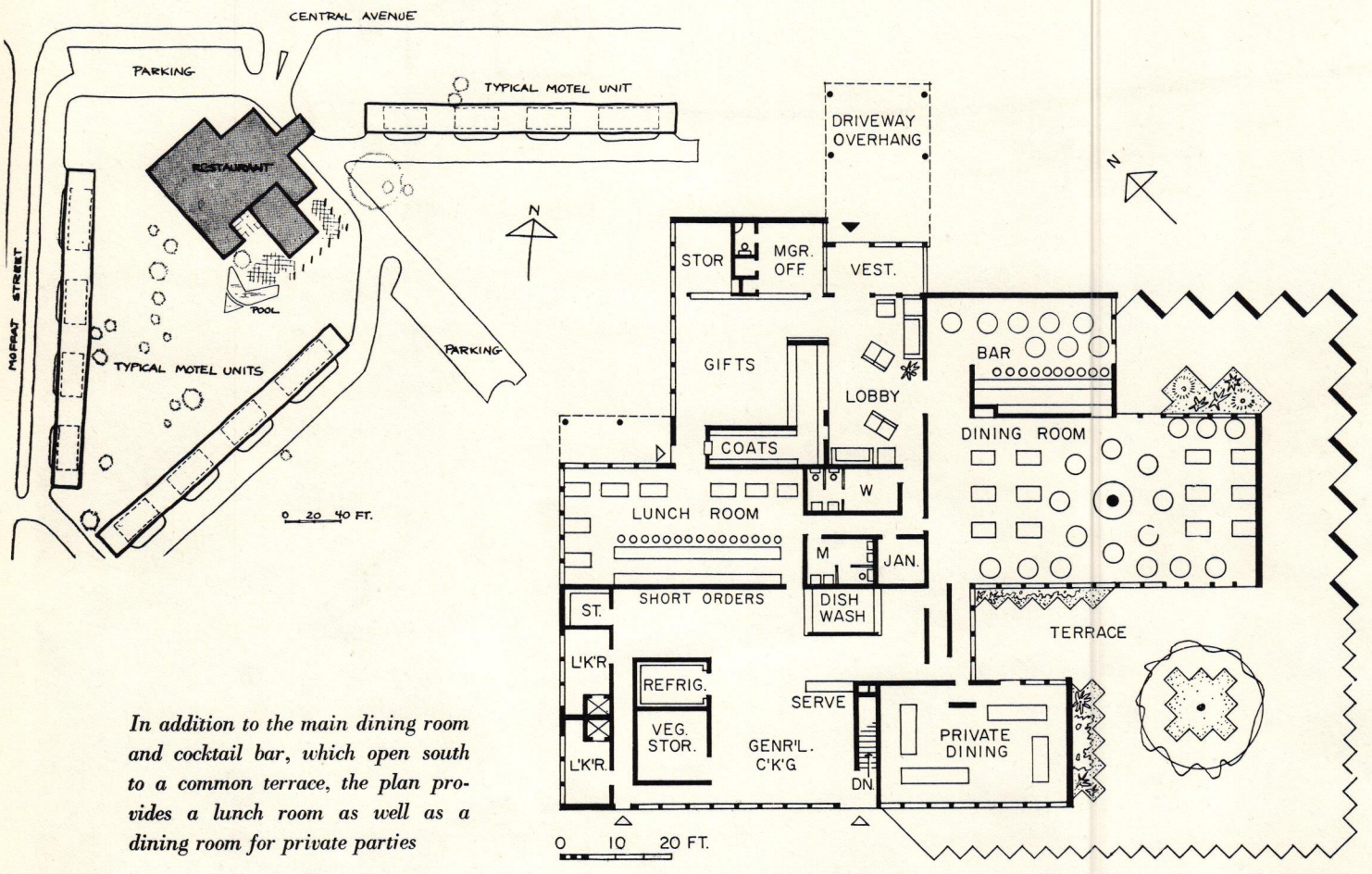
Paul T. Bailey, Builder and Owner

LOCATED on a 12-acre wooded roadside site about five miles west of Toledo on the highway to Chicago, this restaurant will be part of a projected motel group of better than average design. The project will eventually be extended to the south by adding more motel units and a swimming pool. The restaurant proper is calculated to attract a volume of both tourist and local trade in addition to the overnight guests of the motel.

Preliminary plans contemplate a group of wooden post-and-beam structures with exteriors of brick and natural wood, double-glazed fixed sash, and interior finishes of painted plaster, brick and wood.



Rendering by Robert Sullan



In addition to the main dining room and cocktail bar, which open south to a common terrace, the plan provides a lunch room as well as a dining room for private parties

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EYE-CATCHER FOR NARROW FRONTAGE

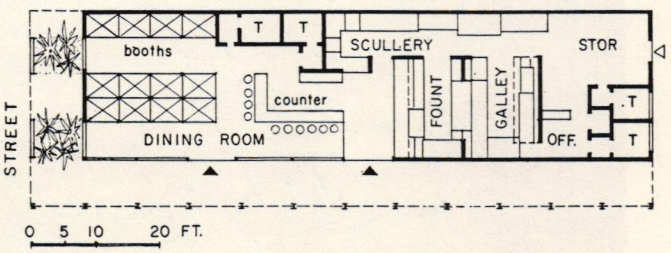
Oscar's Drive-in,
San Diego, Calif.

Russell Forester, Designer
John S. M. Daniels, Structural Engineer
A. Schrieber, Jr., Builder
Western Pioneer Sales, Kitchen Equipment

THE OWNER didn't care for the design of this drive-in when it was first presented to him, but changed his mind when business flourished. A second building of the same design — to replace an existing establishment — increased sales there by 40 per cent.

Gay colors catch the eye and help to offset the disadvantage of a rather narrow frontage. The regular steel frame is painted white, while the vertical pressed wood panels facing the street are bright red. Inside, the color combination includes aquamarine, pink and black. The ceiling is acoustical plaster, the floor is terrazzo, the partitions plaster, and the lighting is a combination of flush fluorescent troffers and incandescent downlights.

The disproportionately large plan area devoted to the kitchen and service areas is due to the large percentage of business that comes from parked cars.



For economical construction, the plan elements have been organized within the 4 ft. module of the structural steel frame. Carhops' access is at center of plan where fountain and scullery are located



Morley Baer





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FOR "QUICKIES" OR THE CARRIAGE TRADE

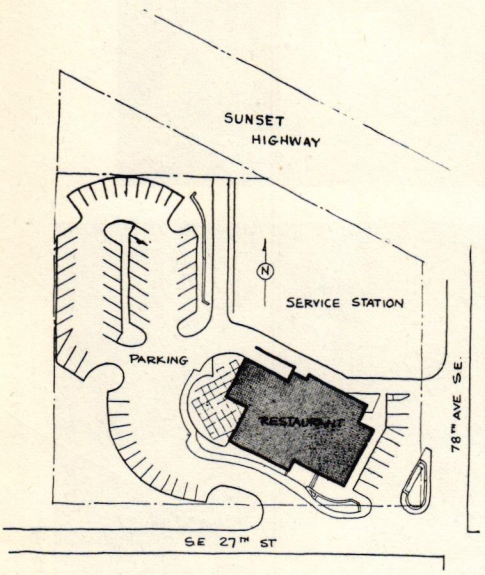
Harold's on Mercer Island, Seattle, Wash.

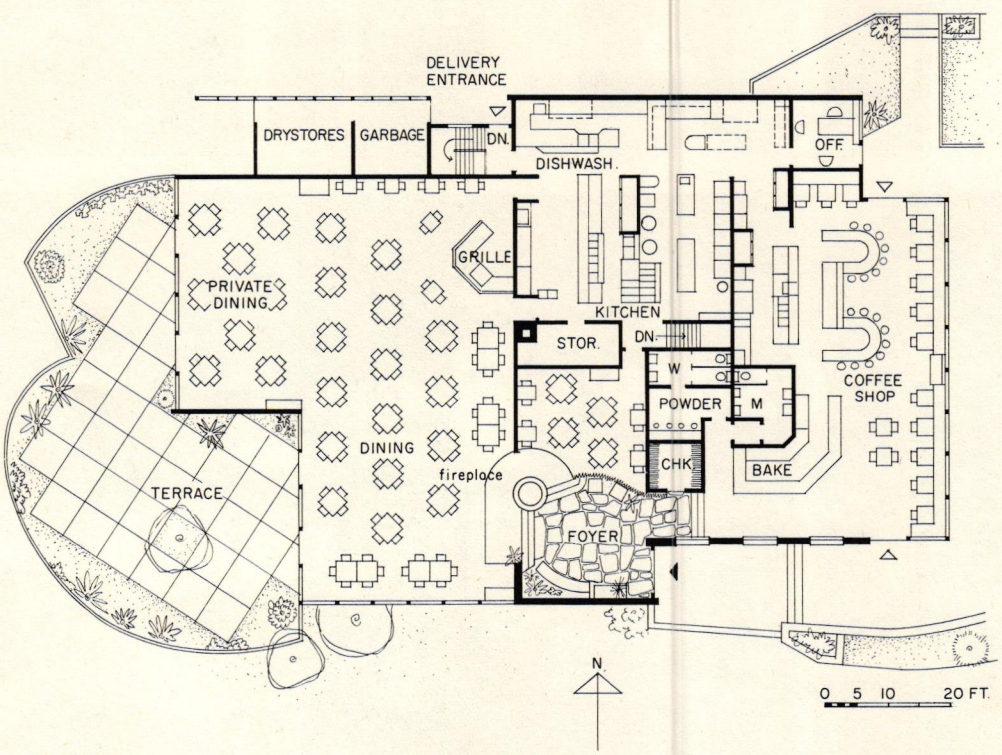
FEATURING innovations in dining not formerly available in Seattle and catering to the carriage and expense account trade, this restaurant also shrewdly eyes nearby Sunset Highway and provides a coffee shop for the faster moving tourist potential. The two-part plan extends out into the parking area, likewise dual. The highway trade has proved profitable enough that the retail pastry counter shown in the plan has recently been converted into more coffee shop seating space.

Architecturally, the design follows the Northwest tradition, using materials and methods indigenous to the region. The regularly spaced beams are stained very dark with ceilings and walls of natural boards — cedar or fir. Certain interior walls are brick.



Charles R. Pearson





Plot plan above shows the two-part arrangement for customer parking, and also locates the building vis-à-vis the highway

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Decker & Christenson, Architects

C. W. May, Mechanical Engineer

B. A. Travis, Electrical Engineer

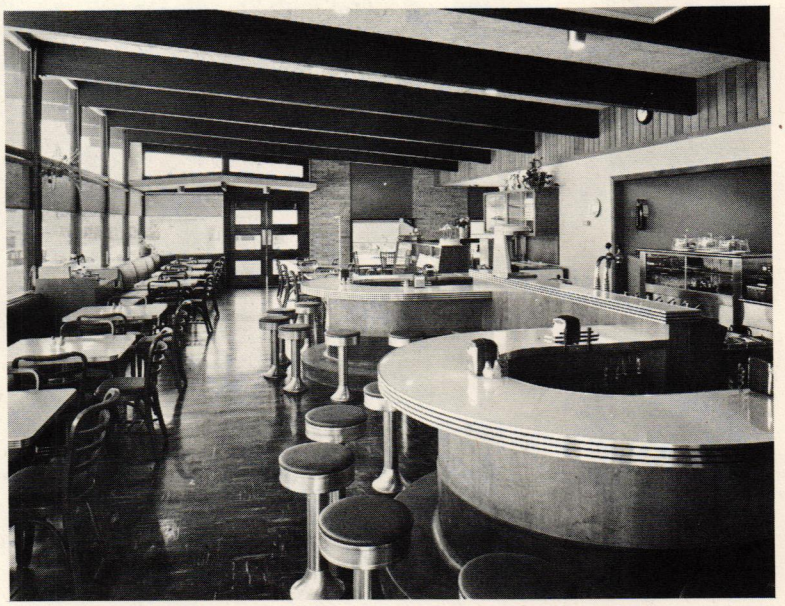
Cash Beardsley, Landscape Architect

Fenton & May Co., Builders

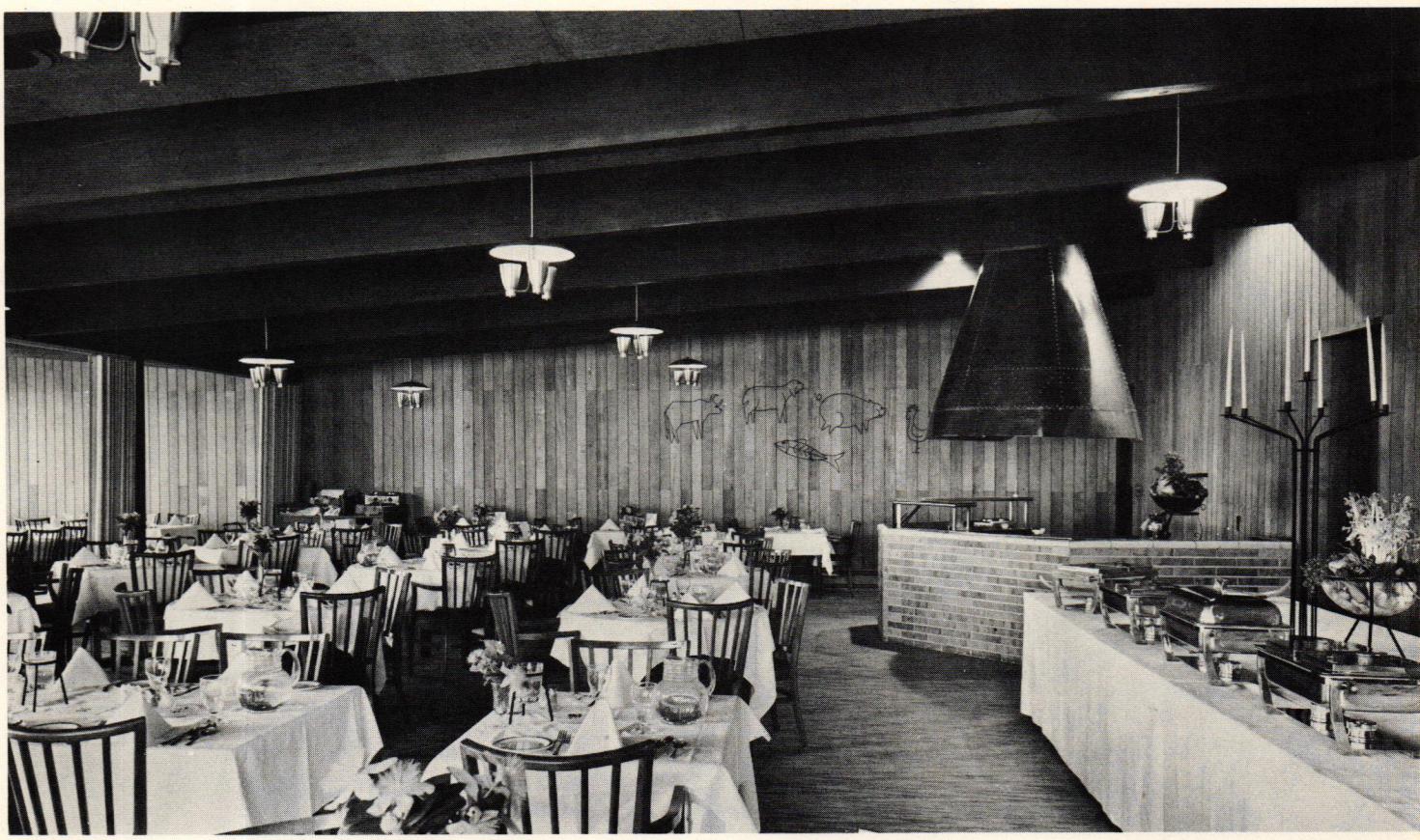
John Byers, Equipment Consultant





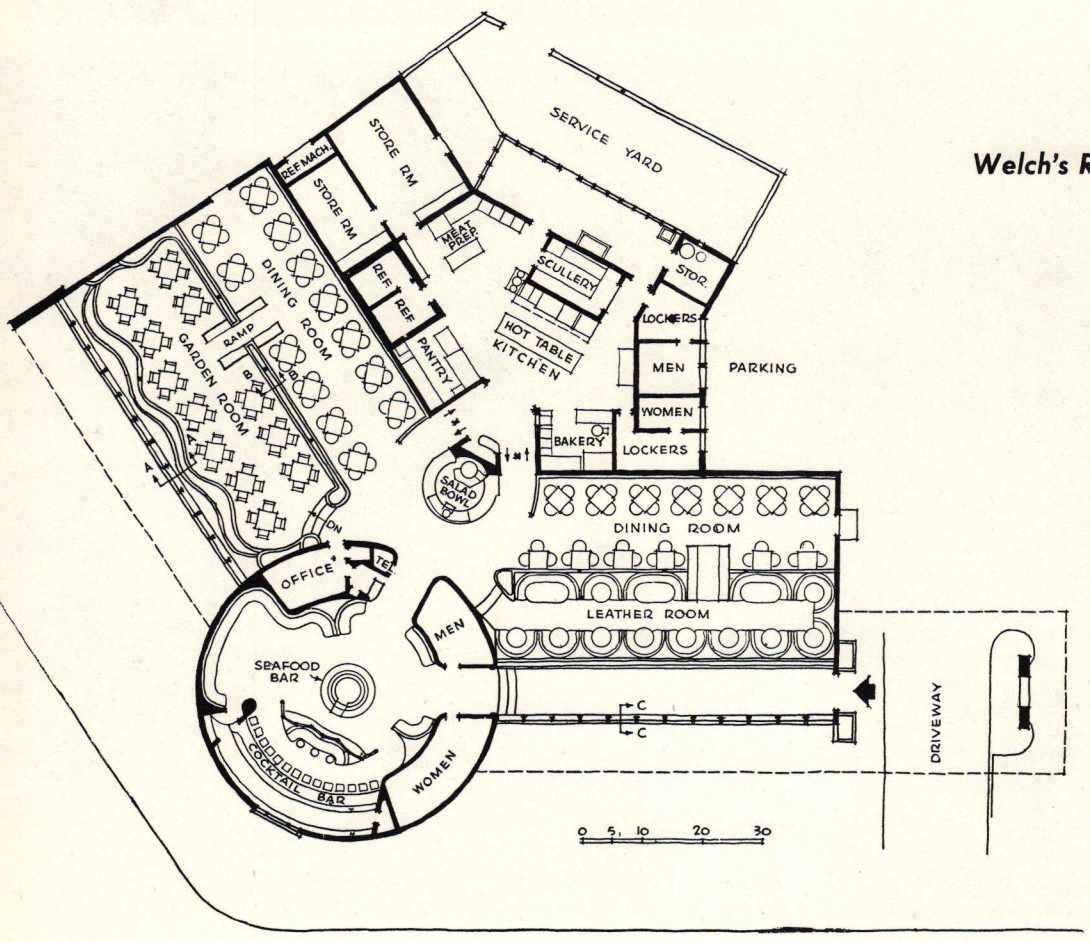


Interior features include the open fireplace with polished copper hood and chain link screen, top, and the open charcoal grille, similarly hooded, bottom. The incandescent fixtures are of special design



AN EATING PLACE FOR MOTORIZED DINERS





Welch's Restaurant, Long Beach, Calif.

L. M. Saunders, Designer

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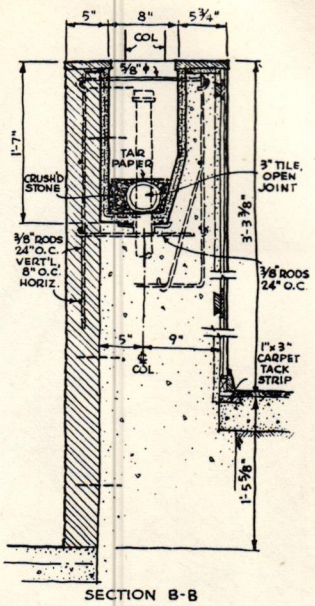
Maynard L. Parker Photos

In some parts of the country, where eating out has become almost impossible without a car, restaurants must do two things they don't necessarily have to do elsewhere: they must attract the attention of relatively fast-moving motorists, and they must provide parking space for at least as many cars as they have tables.

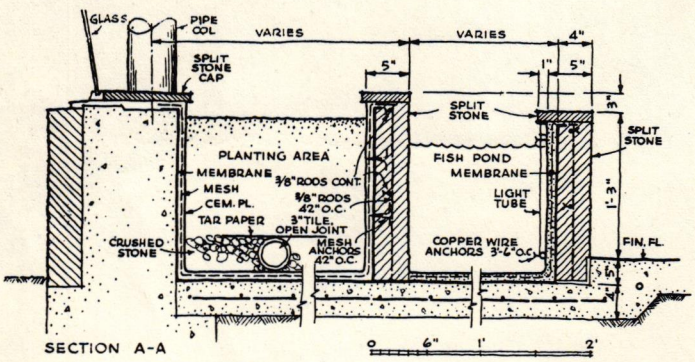
Welch's in Long Beach does both of these things well. Few motorists could avoid spotting the fluted, cactus-green rotunda at the corner of San Antonio Drive and Atlantic Avenue. And once they have turned into the wide driveway they will find ample parking space.

It is interesting to note that even with a somewhat inflexible plan can go a rather free and elegant exterior, replete with long roof overhang, floor-to-ceiling windows of a single sheet of glass, free-standing lally column supports, and a pleasant integration of out- and indoor planting. The fact that the acceptance of such details is sometimes only skin-deep (as in this case) does not detract from the pleasing notion that practical businessmen — such as restaurant owners — seem to have discovered that good design pays. It may not be long before they discover that it pays in the plan too.





SECTION B-B



SECTION A-A

The Garden Room, perhaps the most successful part of this restaurant, has a spacious informality. Serpentine walls, originally used in America by Jefferson, have recently become popular again since Richard Neutra used them effectively in his Nesbit House.

The planning of the kitchen-dining relationship is generally sound, but the distance from the kitchen to the customer could have been shortened if the designer had been willing to give up the axial and symmetrical patterns underlying his plan. The overall architectural effect achieved in this room is nevertheless pleasant

Maynard L. Parker Photos





The kitchen is carefully planned. To the left, close to the waiters' return door, is the dishwashing area. Opposite it is the pick-up counter for orders prepared on the range at the extreme right. Refrigerator and meat-preparation are in the rear



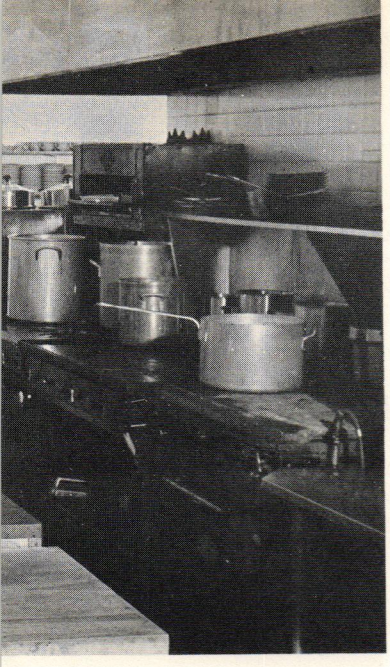
Kramer Photo

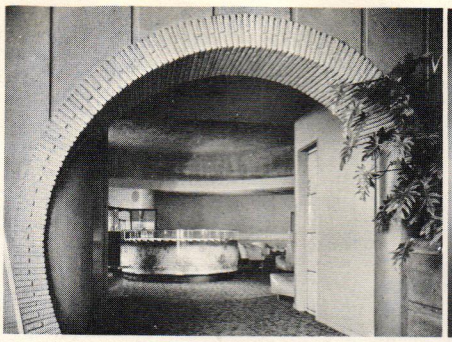


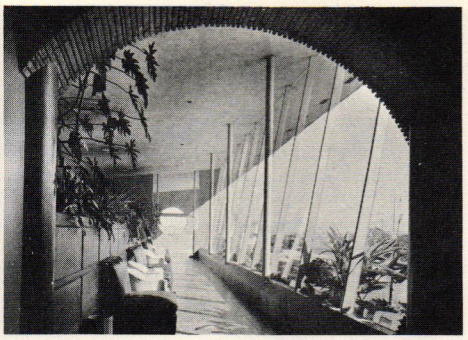
The restaurant is jointly owned by a group of Navy officers who, presumably being fluent in Chinese, have inscribed the cocktail bar (left) with the rather gloomy motto: "Enjoy yourself, for it is later than you think!" The Dining Room (below) immediately adjoins the Garden Room. To the right is a large, terra-cotta colored "Salad Bowl"

Photos by Maynard L. Parker except where noted. Mural by Ernest Neuman



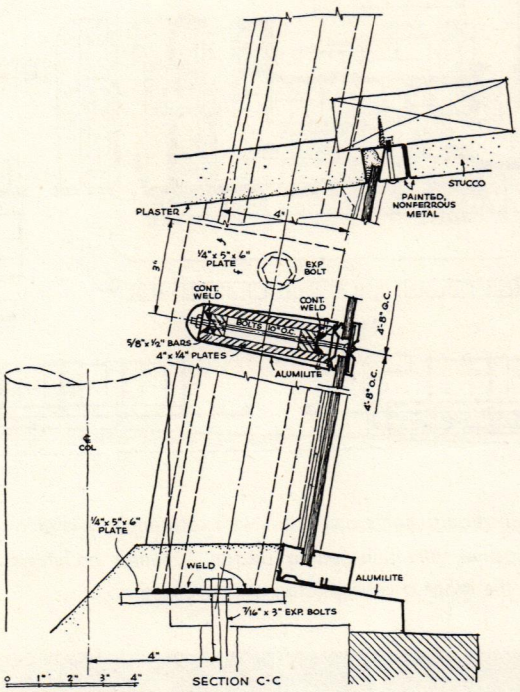






A long ramp serves as a pleasant waiting area and leads up from the main entrance at the driveway. The circular archway (allegedly Chinese) frames the aquarium-like seafood bar at the center of the building

The North Dining Room (below) reaches out from the central "Salad Bowl." It adjoins the Leather Room (lower right), which is more subdued in character than the opposite Garden Room. Its long tables are ingeniously designed to pivot on a fixed pedestal and swing out, so that diners can walk around to their seats rather than slide in sideways. The Leather Room overlooks the entrance ramp



WINDOW DETAIL



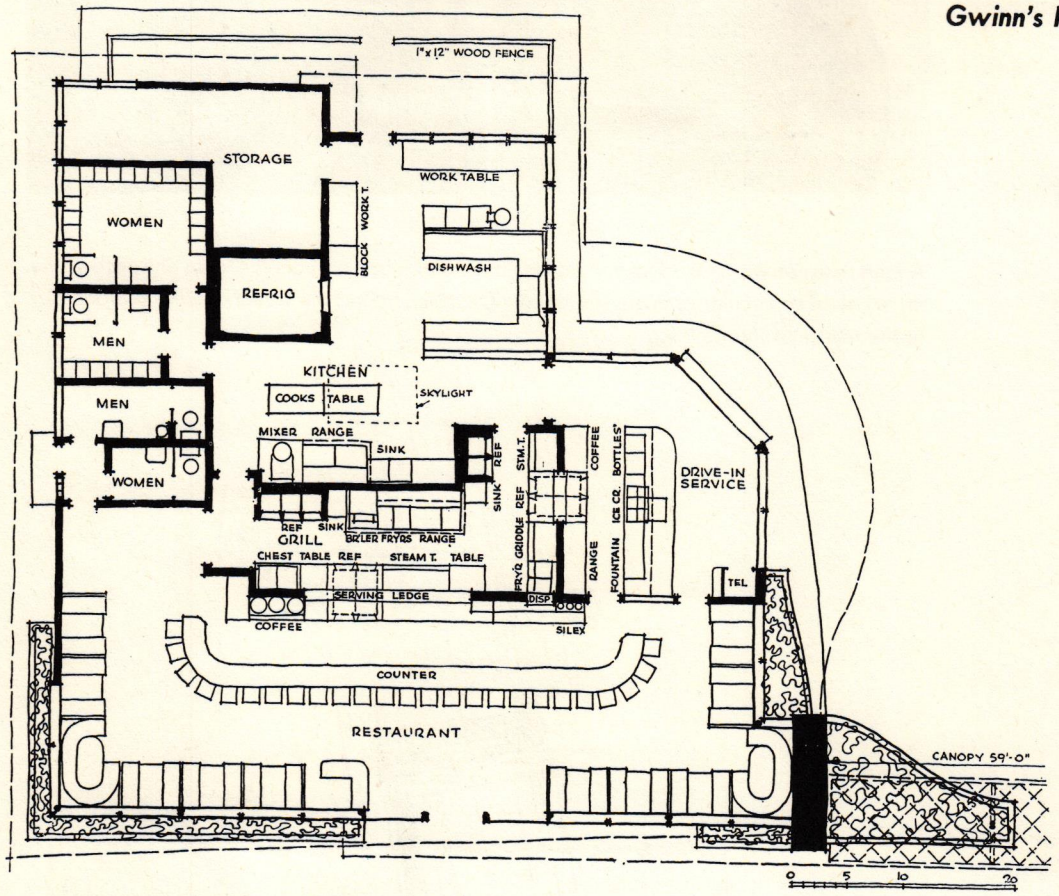


TWO RESTAURANTS IN ONE

Gwinn's Restaurant, Pasadena, Calif.

Harold J. Bissner, Architect

Harold B. Zook, Architect



Some of the special requirements discussed with reference to Welch's Restaurant (p. 308) apply to this case as well. But in addition to providing an attractive, attention-getting design, Gwinn's architects have succeeded in creating a dual-function restaurant: one part of it is a drive-in, the other a conventional eating place.

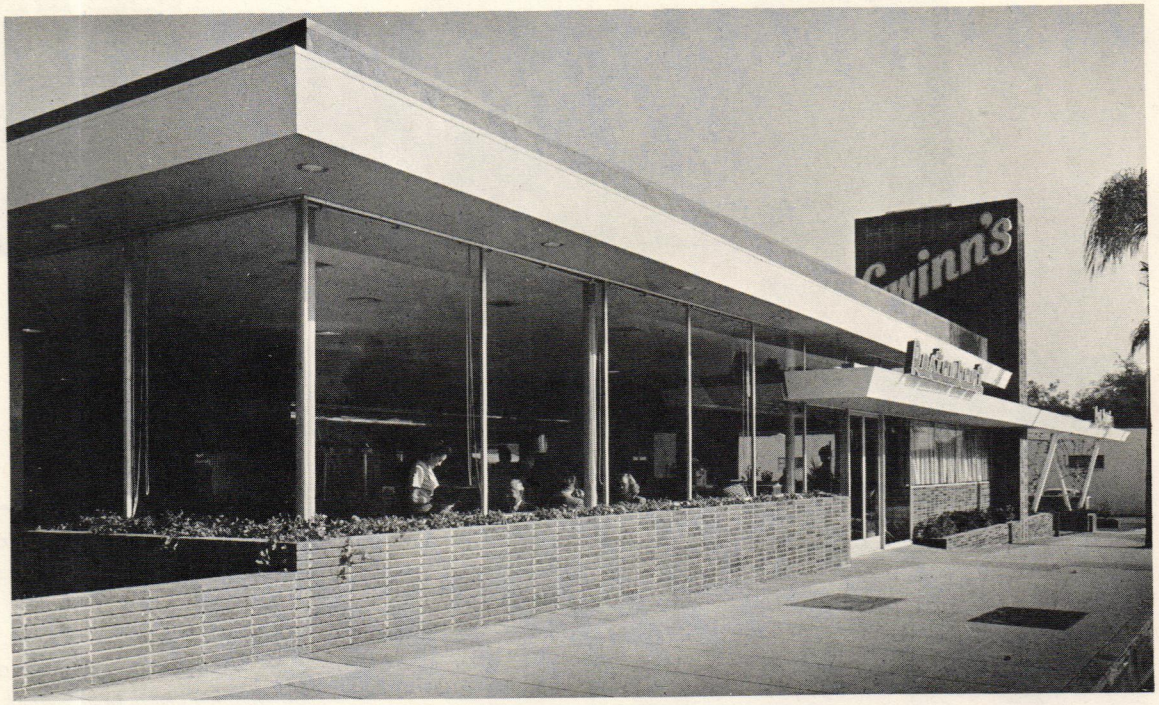


Copyright 1948 F. W. Dodge Corporation

THE PLAN of the kitchen shows excellent organization. Its various areas are carefully segregated and yet related in a very apparent flow-pattern. Food storage, food cleaning and refrigeration are grouped around the service entrance. The dishwashing area is located within easy access from either the drive-in or the restaurant proper. Food preparation is carried on centrally, so that both the restaurant counter and the drive-in counter can be supplied. And the ample employee facilities show understanding of the importance of a good staff.

To architects and laymen alike the success of the exterior treatment of Gwinn's will be obvious. The horizontal *motif* of overlapping roof planes, the finely detailed expanse of glass, and the restrained but effective "billboard" all produce in this restaurant an admirably high standard.

Julius Shulman Photos

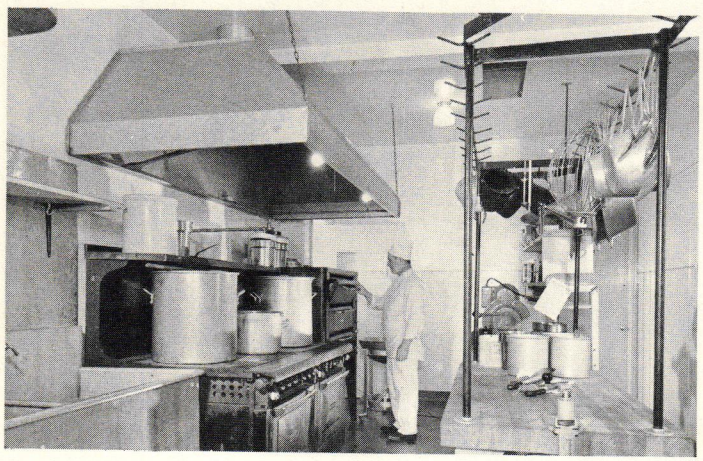


The drive-in service opens out to the rear of the building, where there are also ample parking facilities. A small soda-fountain type of counter is used to cater especially to drive-in patrons. A weakness of the plan seems to lie in the unnecessarily complicated access from the parking lot to the main restaurant

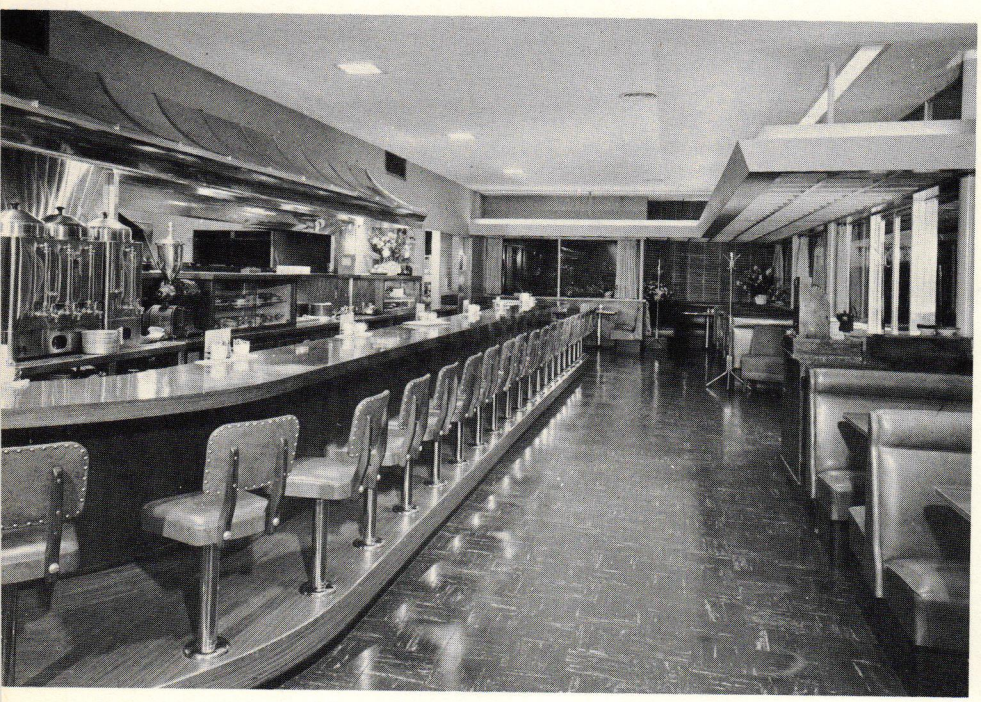




Julius Shulman Photos



The egg-crate pattern of the free-standing canopy — obviously a device dear to the architects' hearts — extends clear back into the main restaurant. Its chief function seems to be to create a decorative accent, and as such it may, or may not, appeal to the onlooker. A further questionable detail is the alignment of the Roman brick, which, like the canopy, primarily contributes a decorative feature. Food preparation center (left) shows only a small portion of the elaborate kitchen



It is a little disappointing to find, behind so elegant and successful an exterior, an interior treatment that shows a lack of sensitive detailing. However, since most restaurant equipment is standard (and not always of the best design), the expense incurred in designing special fixtures might not be justified by the economics of restaurant operation

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