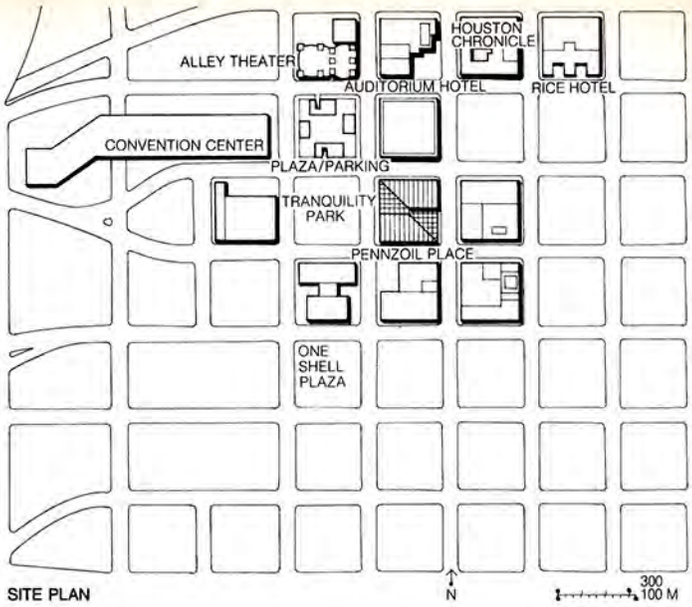
Pennzoil Place, Houston

Is "Wow!" enough?



SITE PLAN

The real client has finally moved into his own office and now we can look at Pennzoil Place beneath the skin and try to see it for what it is: a solution to the problem of "office building."

Discussion of Houston's Pennzoil Place has ranged, over the last year, from its being described as a well-managed real estate venture during a fairly soft building market to its being hailed as "Building of the Year" by Ada Louise Huxtable of *The New York Times.* It is only with the completion of the final office for Pennzoil Company, that of Board Chairman J. Hugh Liedtke, that the story of this remarkable project can properly be told. Liedtke's acceptance of his own office signals the beginning of the evaluation of Pennzoil Place in terms of its real purpose—headquarters for his company. While the pristine geometry has already been cited in the press, its real test, as container for the complex activities of both Pennzoil Company and other tenants, is just now beginning: did it accommodate the program, does it function reasonably as an example of the general type office building?' Is its artfulness meaningful in these terms? As such does it set standards of form that might point to new directions for the more general urban scene, dominated visually as it has been by this one type of building?

The selling of a precedent

Pennzoil Board Chairman Hugh Liedtke decided nearly seven years ago that the company—spread over five building locations in Houston, with its computers in Shreveport, Louisiana, Mining subsidiary President in Tucson and vice president in Houston—should consolidate. Accountants needed to be accessible to both executive and principal operating officers, and this meant access to the computers.

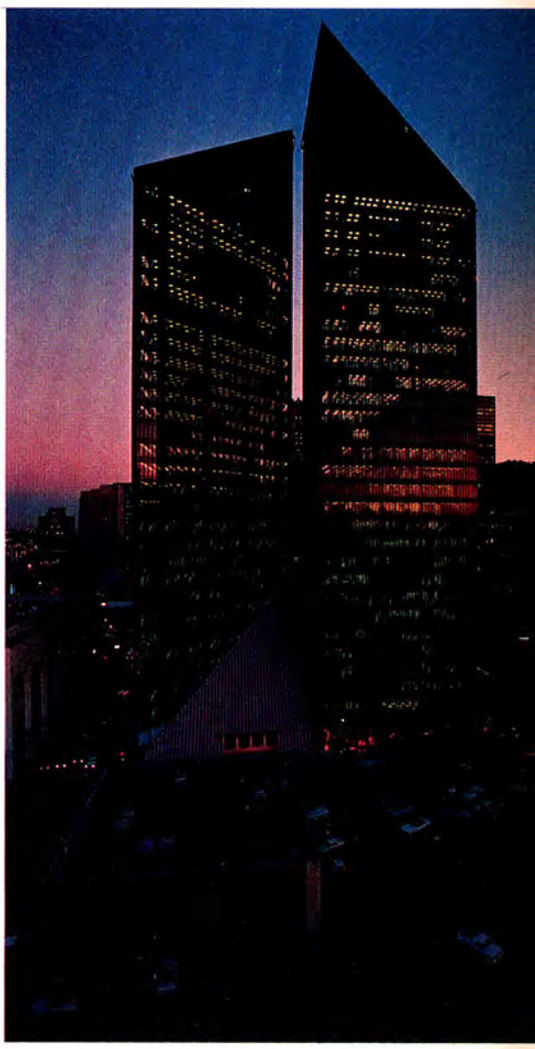
It was thought that a downtown location would be best, both for its proximity to related businesses and because of Houston's transportation system. Pennzoil decided as a matter of policy that it didn't want to be in real estate, for as Liedtke observed, "We don't know how to build an office building." Consequently, a search was begun for an investment builder with whom Pennzoil could negotiate a long-term lease and not take the risk of actually developing the project. This search led to Gerald Hines.

Pennzoil was impressed with its corporate neighbor, One Shell Plaza, built by Hines (and designed by SOM, Chicago) for Shell Oil. Additionally, his firm, Gerald D. Hines Interests, had recently completed the first phase of The Galleria, Houston's multi-use center and retail shopping mall. The architectural quality of certain of Hines's ventures was of interest in that the new project would be "the only thing we'll ever build . . . we didn't want 'just another building', particularly a modern wedding cake or a cigar box" as Liedtke saw it. "Since nearly two-thirds of time awake is spent in one's office, we had a commitment to a decent place to work," explains Liedtke, who also reasoned that such a move would be attractive to potential personnel.

In terms of the total project, nearly 50 percent was committed at the outset by Pennzoil Company. Gerald Hines then constructed his *pro forma* and began to search for other major tenants. Zapata Corporation became the second principal tenant. Its subsidiary, Zapata Warrior Constructors, was interested in building the project. In terms of the program, this wrinkle created a situation where a double identity would be needed.

After several architects proposed schemes, the design by Philip Johnson and John Burgee, consisting of a twin tower concept, was presented to Pennzoil. Hugh Liedtke recalls that the first model reviewed had the angles of the final building, as well as the sloping atrium connecting the two towers, but had a flat roof. Liedtke, however, wanted his project "to soar, to reach, and a flat-top doesn't reach." Philip Johnson then took one of the angled corner sections of the presentation model and set it on the roof, asking if that was what Liedtke was talking about. Gerald Hines considered the implications of the angled top and indicated it was feasible. On that basis the design proceeded. Liedtke, who had spent his early working days in the basement of a building in West Texas, was convinced that the project would provide the environment of natural light which he so much wanted.

Si Morris, of S.I. Morris Associates, the associated architects and principal liaison between Johnson/Burgee and Hines Interests, stated that "Philip's genius lay in providing one-third to one-half again the lot coverage" with a building that set out *not* to be the tallest in Houston. Since the



The two trapezoid-shaped 36-story towers (above) are placed at angles in a reflexive relationship to each other. Similarly the eight-story slope at the top of the towers is repeated in reverse at the base of the towers with the eight-story glass enclosed courtyards (left) through which one enters the building. Here the trusslike framework is painted white in contrast to the dark anodized aluminum mullions and steel framing of the towers above.

projected 1.8 million sq ft the concept allowed would make the project competitive it was nonetheless known that rents would be slightly (about a dollar per sq ft) greater than the going market rates. Consequently, Gerald Hines knew that he was essentially going after the cream of the market. Since most major projects by Hines Interests are preleased, the problem was one of getting other tenants willing to spring for the higher rents for an incomplete building that was somewhat startling in concept.

The answer was one of the most elaborate presentations of a building's concept ever assembled in a commercial context. The show, housed for over a year in the ground floor of One Shell Plaza, was organized to explain nearly every aspect of Pennzoil. The location was shown on a model of central Houston nearly 12 feet square, access illustrated by various illuminated maps. The experience of the atrium was communicated by two interior models at 1/12 scale, the building itself by a 5-ft-tall model. Even a full-size model office was included to indicate the quality of finishes. Its "view" was a full-size photograph from a proper vantage point.

All of this was in addition to a 15-screen slide presentation organized by Motiva of New York. While the show also sold the accomplishments of Hines Interests, unquestionably the star of the presentation was Philip Johnson himself, whose reputation as a designer was the intangible quality made tangible. Covering the period from the Seagram Building in New York to his more recent IDS in Minneapolis, Johnson's remarks on architecture, monumentality, procession, and aesthetics ran through the presentation. Practical considerations for the executive, such as convenience to various centers of commerce, culture, and shopping were outlined, but emphasis in the narrative was given to "not just the look of it as you approach; it's the feelings you experience as you are about to enter . . . a world of light, twinkling down through the glass. Suddenly uplifted by the refreshing change of atmosphere, it's hard to know what will catch the eye . . . and it becomes *your* corporate home." The narrative closes: "Philip Johnson was asked what comment he hoped to get on the experience of seeing and feeling Pennzoil Place." Johnson: "I think 'Wow' is enough."

Pennzoil Place was not only 97 percent preleased at the completion of construction, but two additional floors had been added to the project before it was half erected. As a friend remarked, "It's a good thing Philip's not a nut about proportions."

A new slant on architecture

Pennzoil Place's twin 36-story towers, trapezoidal in plan and placed as mirror images, take up nearly three-quarters of the 62,500-sq-ft city block site. The triangular plazas resulting from the configuration are covered by sloping 45-degree glass roofs formed by a Warren truss on the vertical and horizontal planes and straight diagonal elements connected at the site. The atrium rises for eight floors, where the slopes meet but are separated by a 10-ft slot running between the towers.

To meet a construction schedule of 24 months, a system

A 15-screen, multi-image slide show, created by Motiva, focused on the creative collaboration between Philip Johnson and developer Gerald Hines.

combining the speed of steel frame with the economy of concrete bracing elements was chosen by Ellisor Engineers, Inc. A reinforced concrete mat, independent for each tower and extending approximately 10 ft beyond the projected floor plan was 6′-3″ thick on the perimeter and 8′-6″ thick under the core area. The foundations were poured as excavation proceeded, beginning with a cap beam around the perimeter. Since the core of one tower would interfere with the reach of the crane's boom on the other, had conventional slip-forming techniques been used, the steel was erected first and the core was slipped inside the frame, a feature that demanded close tolerances.

The external skin was given wind-tunnel testing at Colorado State University, where wind-pressure distribution was also studied for the structure as a whole, with particular focus on the Venturi effect through the slot. At the 31st floor the skin becomes a roof in effect, as it cuts back at a 45-degree slope. Here, perimeter columns on one side become sloping rafters. Structurally, wind bracing was accomplished by treating the top section of seven stories as a rigid A-frame, combining this with welded exterior steel frame members, while developing the cores as shear walls. Because the center of rigidity did not coincide with applied wind forces, a complex series of adjustments were made to the size of the shear walls and A-frames as the towers rise.

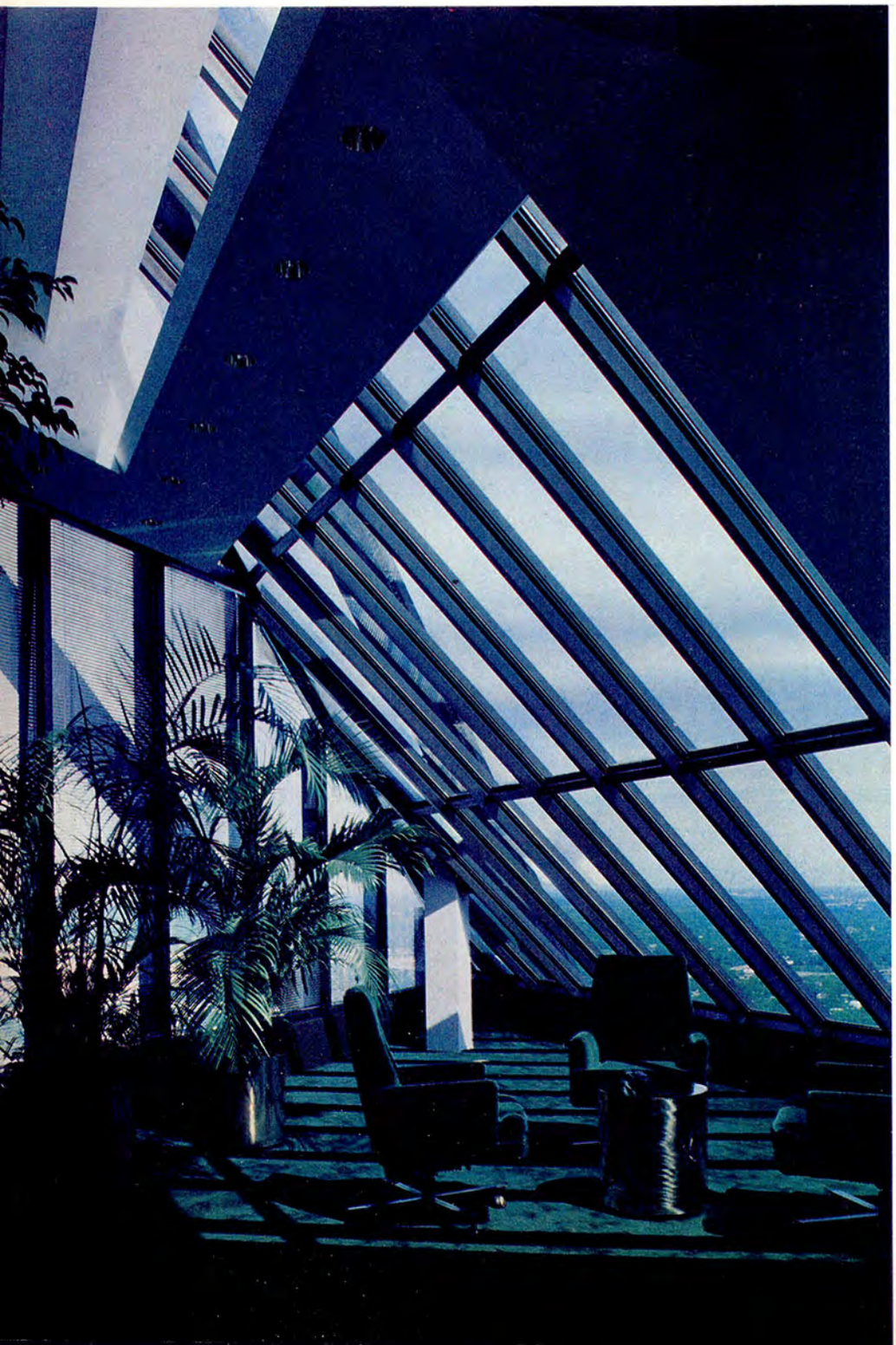
For floor framing of the 20,500 sq ft leasable office space, a "stub-girder" system was developed. This Vierendeel-truss-like concept uses the concrete slab to form the top compression chord, a high-strength steel section to form the bottom tension chord, with vertical stub pieces shop-welded to the bottom chord. This system enabled mechanical runs to be carried without web penetrations, while saving 2.5 lbs of steel per sq ft.

The cores contain three banks of elevators each, six moving between the 2nd and 13th floors, five between the 14th and 23rd floors, five between the 23rd and 31st floors, from which shuttles, offset in plan due to the sloped section, serve the upper executive floors.

Below grade, a concourse is accessible by escalator and by three special, drum-shaped elevators which also plug into the 500-car garage on three levels. The concourse ties in to Houston's existing tunnel system by means of 12-ft-wide, 8-ft-high "tubes." The eastern portion already links

View up from lounge on 35th floor reveals glimpse of North tower's highest point (left); meeting area on boardroom floor (left, bottom) occupies ridge line of sloped glass roof on 35th floor; open planned offices are lit by glazing of sloped rafters (below); executive corner office shows diagonal strut used as window-washing gantry (below, middle); cantilevered stair connects two-story lounge between floors (bottom).

PENNZOIL COMPANY 16TH FLOOR PLAN 30' 9 M



with nine downtown blocks and the western portion can accommodate future connections.

As urban design

One may regard the configuration of Pennzoil's twin towers as a contextual deformation, inasmuch as this theme is carried through to form a pedestrian precinct. Implicit in the development of this route through the atrium is the idea that this route is more "important" than the existing sidewalk system. Also because of its directionality, the route suggests the notion of connection. That is, as in Nolli's maps of Rome, public space has been implicitly extended into the tissue of Pennzoil Place. As such the building could function as a piece of the urban context itself.

However, the public places and interior spaces of Nolli's Rome are generally accessible, establishing a continuous urban fabric. Reflecting the realities of modern life, some internal security measures were required. Thus when the lobby atrium is closed the pedestrian is relegated once again to that old standby, the sidewalk.

As a space for people, the atrium has become in fact quite businesslike. In terms of its scale, related to size, the atrium is at once too small for pure monumentality (as at IDS) and too large for intimacy. It is a bit uneasy, a quality underscored by the presence of principally financial institutions adjacent to it. The promised restaurant has yet to appear, and in fact at this writing a branch of the Texas Commerce Bank has mysteriously sealed itself from view.

The diagonal thrust of the plaza extends from the traditional center of activity on Main Street through to the Oscar Holcombe Civic Center, but the terminus of this thrust, a raised park over the Civic Center Garage, is one of Houston's more unfortunate urban events, an anti-agora. Consequently, one wishes that the gesture were flipped, tying in with the more hopeful Tranquility Park. Then the active spaces would open onto City Hall and the new Public Library by S.I. Morris Associates, in front of which sits Claes Oldenberg's red *Geometric Mouse.* Rather than attempt to make the best of an acknowledged bad deal, the architects should have linked its southwest corner to the positive interplay of public spaces. At the same time that orientation would have suggested a direction for development to the block on its northeast corner, on the east side of Jones Hall, and immediately south of the newly reopened Rice-Rittenhouse Hotel.

To the point

As an aesthetic image, however, Pennzoil Place is generally without precedent in recent office construction. Its kinship with monumental sculpture is not only evident, but also totally consistent with Philip Johnson's personal patronage role in the arts. The strength, in part, lies in the duality of the twin towers, a lesson perhaps from "Op" art of the 1960s; the onlooker finds as his focus the negative space of the 10-ft slot, truly the greatest urban "tease" of the century. Also, it evokes comparison with the work of an artist such as Tony Smith, from whose training as an architect one begins to see the trend come full circle.

We can also see the realization, at last, of the images

Pennzoil silhouette (above); Hugh Ferris rendering (left) on evolution of a setback building; Tony Smith sculpture "Spitball" 1961, (below).

proposed by the delineator Hugh Ferriss in his evocative book *The Metropolis of Tomorrow* (1929). Here Ferriss projected ideas implicit in the set-back building and referred to this new high-density urban space, where both space and object interact as positive and negative, as "crude clay for architects."

With its visual success assured, it has become clear that Pennzoil Place is now a formal prototype. A visionary rendering of Houston from recent vintage suggesting 'the shape of things to come" may well use the biased geometry generated by Johnson/Burgee. With its own formal limitations, nevertheless, Pennzoil Place evokes relationships which one hopes will be as thoughtful in the imitations as in the original.

Making it work: interiors

It is finally at the level of the individual work space, as the users are accommodated in this building form, that we may answer the basic question: can it work? For the greater portion of the building, this is largely a two-dimensional problem: one of planning. But in the upper stories, particularly in the North Tower housing the executive facilities of the Pennzoil Company, this becomes a problem of three dimensions, as the envelope slips back along a 22.5-degree ridge line formed by the 45-degree angle in plan intersecting with a 45-degree angle in section.

Since Gerald Hines has generally had as tenants the cream of the market, the actual quality of finish was still controlled by dollars expended, according to Si Morris,

Pennzoil executive office at point of tower and diagonal sloping roof.

whose firm produced much of the construction documents as well as the South Tower lease finish documents.

Few, if any, floors have been subdivided, a factor of some significance since planning around and resolving the intersection of two geometries turned out to require both imagination and a simple commitment to making things work.

Offices for Arthur Young & Company, designed by James M. Sink Associates, Houston, show evidence of severe constraints. Building standard walls, ceilings, and lighting were used, as well as many of the clients's existing furnishings. The particular requirements of privacy and numerous small specialized spaces placed this program at variance with the more open planning considerations on the part of Pennzoil Company. Jack McClelland of Sink Associates comments, "The unique configuration did not particularly facilitate the solution nor did it hinder it greatly. Since the program required individual offices, little use could be made of vistas at the diagonal window wall except for the offices adjacent to it." McClelland also felt that a 4- or 6-ft module, rather than the building's 5-ft unit, would have suited his client's needs better.

It becomes readily evident that the greater fit between a tenant's needs and the context of Pennzoil, the more possible it is to capitalize upon the building's unique features. For instance, the offices of Bracewell & Patterson, attorneys-at-law, by Caudill Rowlett Scott, Houston, took advantage of it neatly. The building's 30-ft module was retained in organizing the spaces, and the design is enhanced by use of open-office areas for support staff and the admission of natural light at the end of all corridors. Reception areas on all three floors are located at the "break" in the geometry as one steps from the elevator.

Since the principal client was Pennzoil Company itself, it is not surprising that the best fit should occur in the North Tower, exclusively for Pennzoil and its spin-off, United Energy Resources. For these, the Houston office of Gensler & Associates was retained very early in the building design phases. Design development by Johnson/Burgee was done in consultation with Gensler and related consultants, including Cushman & Wakefield, who analyzed circulation and vertical adjacencies. Pennzoil was interested in open planning to accommodate future change without major demolition or reconstruction expenses.

Typical floors were evolved through the design of appropriate work stations: because of the high percentage of middle management, space needs were different from the usual clerical staff areas. After working on concepts for design variety, the designers decided to no color combinations more than twice throughout the entire facility, the general color tones of which were matched to photomurals at each lobby entrance.

Challenges were plenty on the upper floors 31 through 36. As project designer Margo Grant of Gensler observed, "Problems were endless: particularly the many structural and engineering surprises that emerged as the design

Pennzoil Place

Light and space of the enclosed courtyard lobby for the two towers creates a strong urban place in downtown Houston, a testament to the continuing interest of architect Philip Johnson (along with partner John Burgee) in the architectural potential of enclosed piazzas.

within the truncated pyramid space progressed." Variations of structure, discussed earlier, were patiently resolved and accommodated by project architect Yee Leung. Offices under the rafter pitch demonstrate how usable space under the sloped glass wall is usable up to a point within 3 ft of the edge.

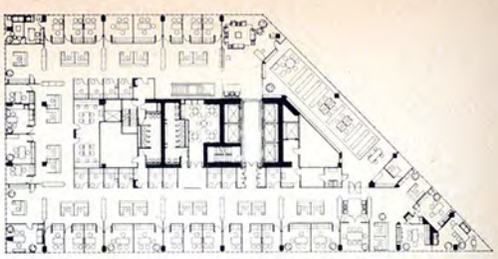
Certain sections of the floor slab were eliminated, creating dramatic spaces such as Liedtke's own office, the Board Room on the 36th floor, a gallery between floors 35 and 36, and a cantilevered stair between 33 and 34. The very top peak of the North Tower is visible from a meeting area adjacent to the Board Room, located under the building's ridge line.

Hugh Liedtke noted that everybody *wanted* the concept to work, and that this commitment carried through from initial concept to final detail. From Johnson/Burgee and S.I. Morris, the engineers and builders, the interior designers, and all their consultants, and most definitely to the wisdom of Gerald Hines's personal belief that good design can cut it in the marketplace, a unique and memorable environment has been created which, in the end, still comes down to one word: Wow! [Peter Papademetriou]

Data

Project: Pennzoil Place, Houston, TX.
Architects: Johnson/Burgee, Architects; S. I. Morris, Associates.
Program: headquarters for Pennzoil Co., plus speculative lease space in two 36-story towers totalling 1,800,000 sq ft.
Site: 62,500 sq ft in block between cultural center and business area of downtown Houston.
Structural system: steel structure in combination with concrete sheer wall; built-up stub-girder system for floor allowed passage of building's ductwork beneath composite steel deck and concrete floor slab.
Mechanical system: multi-zone air conditioning with two air handling units per floor, outside air preheated for heating and a/c. Cooling tower on roof under glass shed south tower. Boiler heating with specially designed forced draft boiler fans discharged through stainless steel cylinder on plaza.
Major materials: steel, aluminum (mullions 2'-6" on center); bronze tinted glass and concrete. (See building materials, p. 106.)
Consultants: I.A. Namen, mechanical; Ellisor Engineers, structural.
General contractor: Zapata Warrior Constructors.
Costs: $28 per sq ft (construction only).
Client: Gerald D. Hines Interests.
Photography: Richard Payne except Ron Scott p. 67 and Jaime Ardile-Arco p. 69 right bottom, and p. 71.

Interiors designed by CRS for Bracewell & Patterson, attorneys.



BRACEWELL & PATTERSON 29TH FLOOR PLAN

BRACEWELL & PATTERSON 28TH FLOOR PLAN 20' 6M

Corridor of Bracewell & Patterson emphasizes triangular configuration of the towers.

Internal stair (above) connects two floors. Corner office (below).

Data

Project: (p. 69 and 71): Pennzoil Company Offices, Pennzoil Place.
Interior designer: Gensler & Associates, Margo Grant, interior designer; Yee Leung, architect.
Program: total interior programming, space planning, interior architecture, and furnishings for 1250 people, 410,000 sq ft.
Major materials: linen wallcovering, acoustical fabric wall installation, vinyl wallcovering, wool cut and uncut pile carpeting, oak furniture. (See building materials, p. 106.)
Consultants: I.A. Namen & Company, mechanical and electrical; Mel Cammisa, lighting; Ellisor Engineers, structural; Joiner-Pelton-Rose, Inc., acoustical.
Cost: withheld.

Project (this page): Offices of Bracewell & Patterson, Pennzoil Place.
Interior designer: Caudill, Rowlett, Scott; Linda Pinto; project manager Jeffry Corbin.
Program: office space for 80 attorneys and 70 staff members for three floors (app. 7000 sq ft) with planned expansion to two extra floors.
Major materials: linen and carpet wall covering, oak floors, wool carpeting, acoustical tile, rosewood, oak, and ash furniture. (See building materials, p. 106.)
Consultants: Joiner-Pelton-Rose, acoustical.
Costs: withheld.