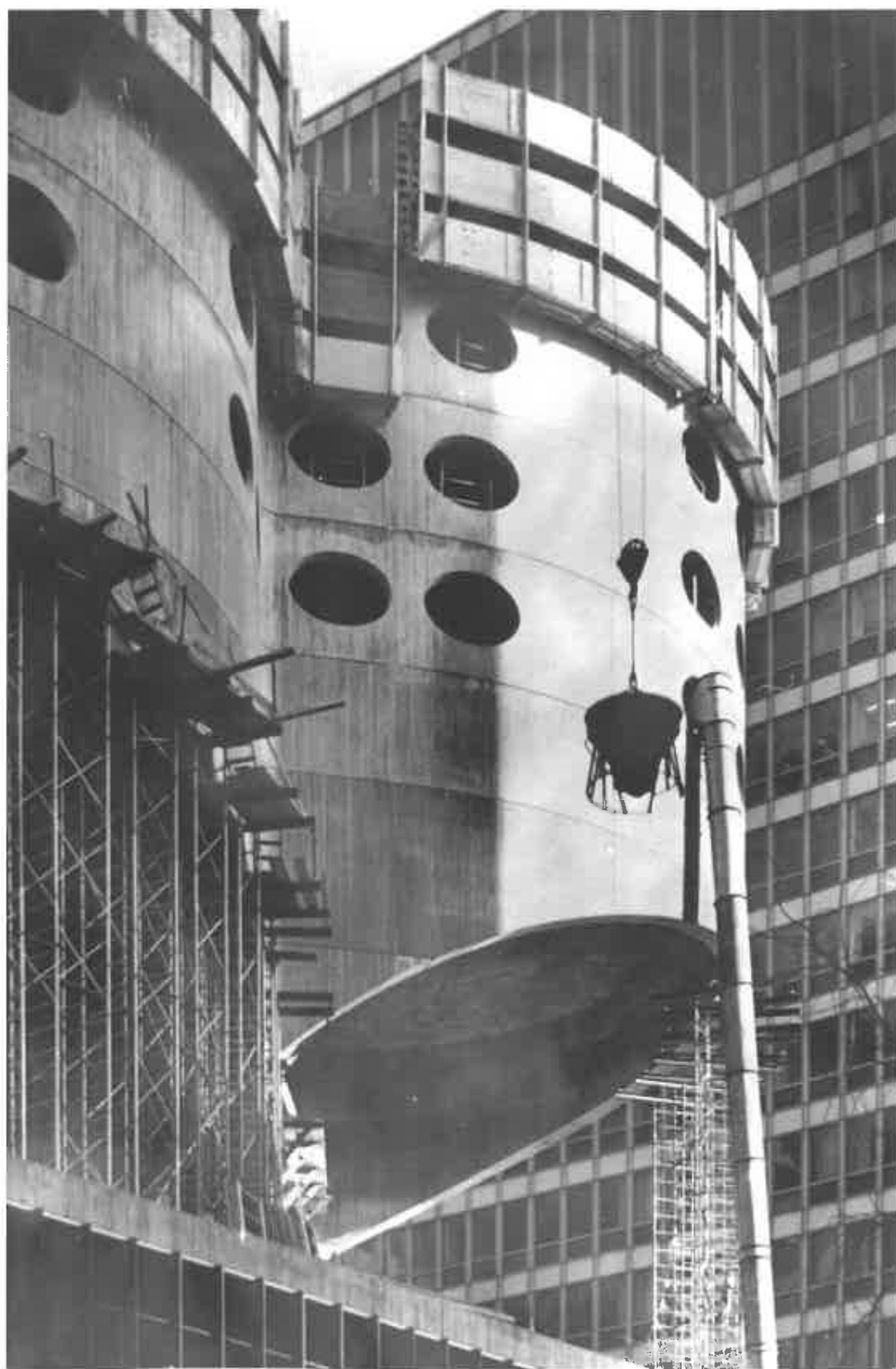


A NEW USE *for a* MODERN LANDMARK

*A Reuse Study for the Former
Prentice Women's Hospital
Chicago, Illinois*

LANDMARKS ILLINOIS
April 2011



Prentice Women's Hospital under construction, c. 1974

Cover: A rendering of Prentice Hospital depicting how it would look following renovation, including replacement of existing glass curtain wall and removal of a non-original fifth-floor addition to the base. For a current view, see page 15.

"It's deeply saddening, not to say ironic, that Prentice, one of Bertrand Goldberg's key buildings in his home city, would now be threatened with demolition, mainly because its design seems to have made the mistake of being smaller than what the zoning laws allow."

Paul Goldberger, architecture critic, *The New Yorker*

"For an institution like Northwestern...a commitment can be expected to adapt and preserve Prentice, as a legacy to a maverick architect and a contribution to Chicago's vitality and place of architectural excellence."

Helmut Jahn, FAIA

"...the design was an engineering tour de force...It would be a travesty to demolish old Prentice."

Blair Kamin, architecture critic, *Chicago Tribune*

(Goldberg was) "...an architect who literally thought outside the boxes that dominated his era... (Prentice) remains an inspiration to all who view it today."

Jeanne Gang, FAIA

"Prentice Hospital is an influential design of one of America's most original architects."

Zurich Esposito, Executive Vice-President, AIA Chicago

"Prentice is a striking, original building of a type...that was unique in the history of architecture."

David Fixler, FAIA, on behalf of the Society of Architectural Historians

"The forms at Prentice are in the same instant structural and sculptural. This is truly the unity of art and function."

Anthea Hartig, National Trust for Historic Preservation

"I would throw myself in front of a bulldozer for this one."

Ed Keegan, AIA, author of *Chicago Architecture: 1885 to Today*

"(Prentice)...really changed the face of Chicago... (and is) undeniably important in architectural history and the history of Chicago's built environment."

Bob Bruegmann, architectural historian, University of Illinois at Chicago

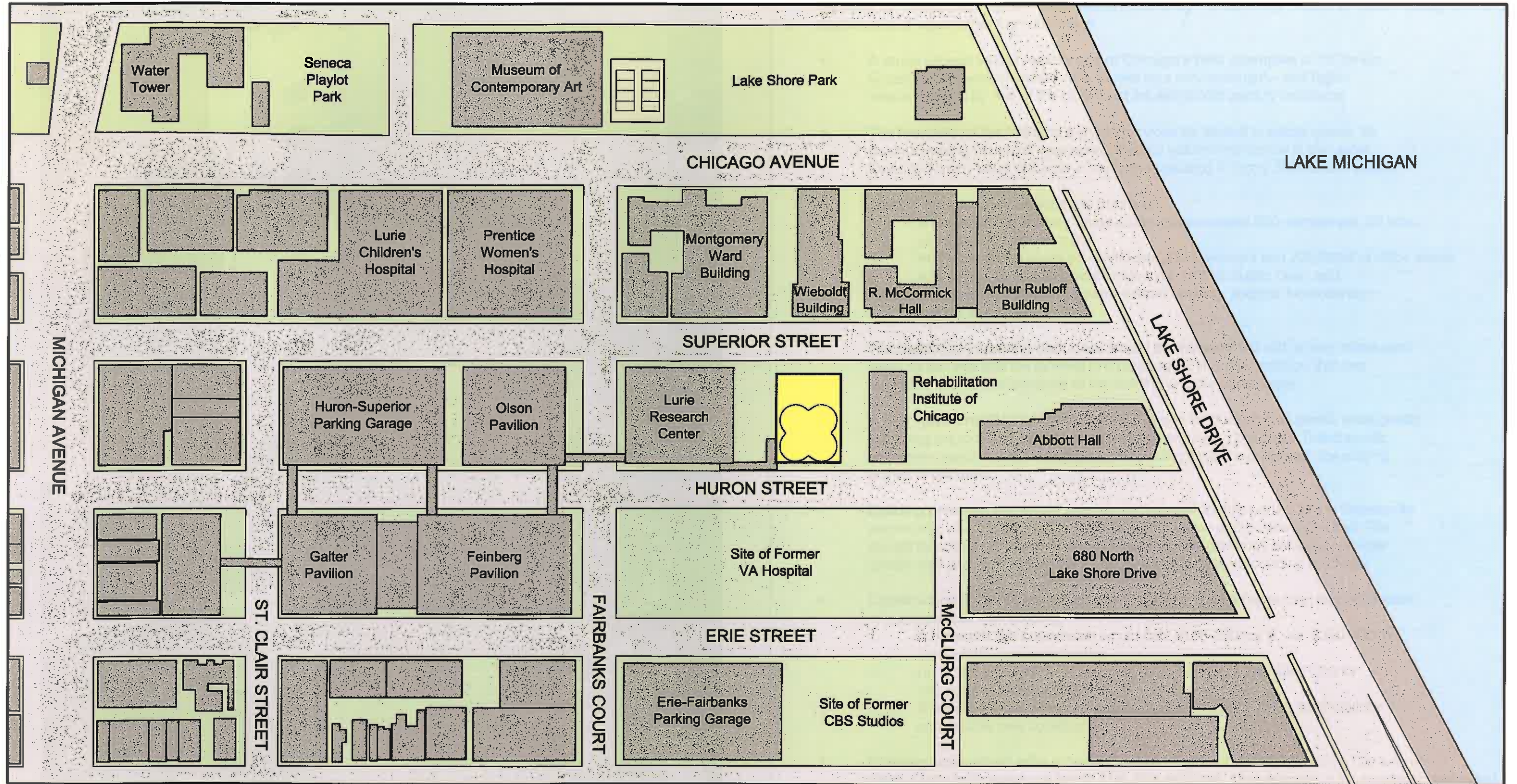
"An absolutely essential piece of Chicago architectural history."

Lynn Becker, *Architecture Plus*

"You will not find the structural solution to Prentice, which is an exterior shell cantilevered off a core, anywhere else in the world."

Geoffrey Goldberg, AIA (son of Bertrand Goldberg)

VICINITY MAP



The former Prentice Women's Hospital (center, in yellow) is located at 333 East Superior Street in Chicago's Streeterville Neighborhood, within the campuses of Northwestern Memorial Hospital and Northwestern University.



EXECUTIVE SUMMARY

Landmarks Illinois has prepared this study to demonstrate several viable reuse options to the current proposal by the building's owner—Northwestern University—to demolish this iconic modern design. Among the benefits of reuse rather than demolition:

- **A reuse project would restore one of Chicago's best examples** of 1970s-era Sculptural Modernism architecture, as well as a very important—and highly unique - design by one of the city's most influential 20th century architects.
- **The flexibility of the building's layout** provides for several possible reuses. Its groundbreaking structural engineering created column-free space in the upper tower and many fewer columns in the base—resulting in highly flexible floor plates.
- **Three different reuse options are practical:**
 1. **A Research laboratory reuse** could accommodate 800 researchers, 50 labs, and 164,000sf of lab space.
 2. **An Office reuse** could accommodate 2,000 workers and 206,000sf of office space.
 3. **A Residential reuse** could provide a mix of 112 studio, one-, and two-bedroom units for medical-related housing, such as for students, nurses, or residents.
- **The building's imposing dark base would be transformed** with a new, translucent glass curtain wall and the removal of a non-original fifth-floor addition that has negatively altered the character of the building and the streetscape.
- **A new "green roof" would provide open space** for building occupants, while greatly improving the roof's appearance for those in surrounding buildings. This dramatic new green space would be built atop the building's base and beneath the soaring arches of the tower.
- **Building preservation would provide visual relief** for this portion of the Streeterville community, which is increasingly dominated by dense and boxlike high-rises. The curved facades of the existing building, as well as its generous setbacks, provide greater light and air—both at the street level and for the surrounding buildings.
- **Construction costs would be less** for a building reuse scheme than for construction of a comparable new building:
 1. **A research lab conversion** would cost \$185-250/sq. ft., vs. \$350-450 for comparable new construction.
 2. **An office conversion** would cost \$110-125/sq. ft., vs. \$200-230 for comparable new construction.
 3. **A residential conversion** would cost \$110-130/sq. ft., vs. \$200-250 for comparable new construction.
- **Building reuse would offer a "green" solution**, since it would prevent 23,700 tons of debris waste from entering a landfill (U.S. EPA estimate). Reinvestment in the building's "embodied energy" would be in keeping with Northwestern University's commitment to environmental sustainability.
- **A rehabilitation project would take less time** and result in fewer disruptions for the neighborhood than new construction.



Chicago History Museum Hedrich Blessing Collection

Prentice Women's Hospital, as seen in this photo taken shortly after its completion, is comprised of a seven-story, clover-leaf shaped, concrete tower set atop a four-story glass curtain-wall base.

BUILDING SIGNIFICANCE

Designed from 1972-74 by Bertrand Goldberg—designer of Chicago's Marina City—this hospital building is one of the architect's most iconic works. Located at 333 E. Superior St., the former hospital is extremely visible and distinctive amongst surrounding streetscapes of rectangular high-rise buildings in Chicago's downtown Streeterville neighborhood. With its round, concrete tower—distinguished by large, oval windows—the building is considered one of the city's best examples of Goldberg's "organic" architecture that distinguished him in his own category of Modern design.

Its design was groundbreaking employing the expressionistic form of four lobes on an abstract cube base, all constructed of concrete. The building is the best example of Goldberg's noted and highly personal use of circular forms. Architectural historians attribute these circular forms directly to Goldberg's education at the famed Bauhaus in Germany, which he attended in 1932–33. Heather Barrow, formerly of the Art Institute of Chicago, stated: "His work is meant to be seen in the round, from more than one direction." (Bertrand Goldberg Collection, the Art Institute of Chicago, 2007).

The engineering and construction of Prentice was only possible due to Goldberg's advanced use of new computer technology. A website dedicated to the work of Bertrand Goldberg describes in detail the building's advanced engineering:

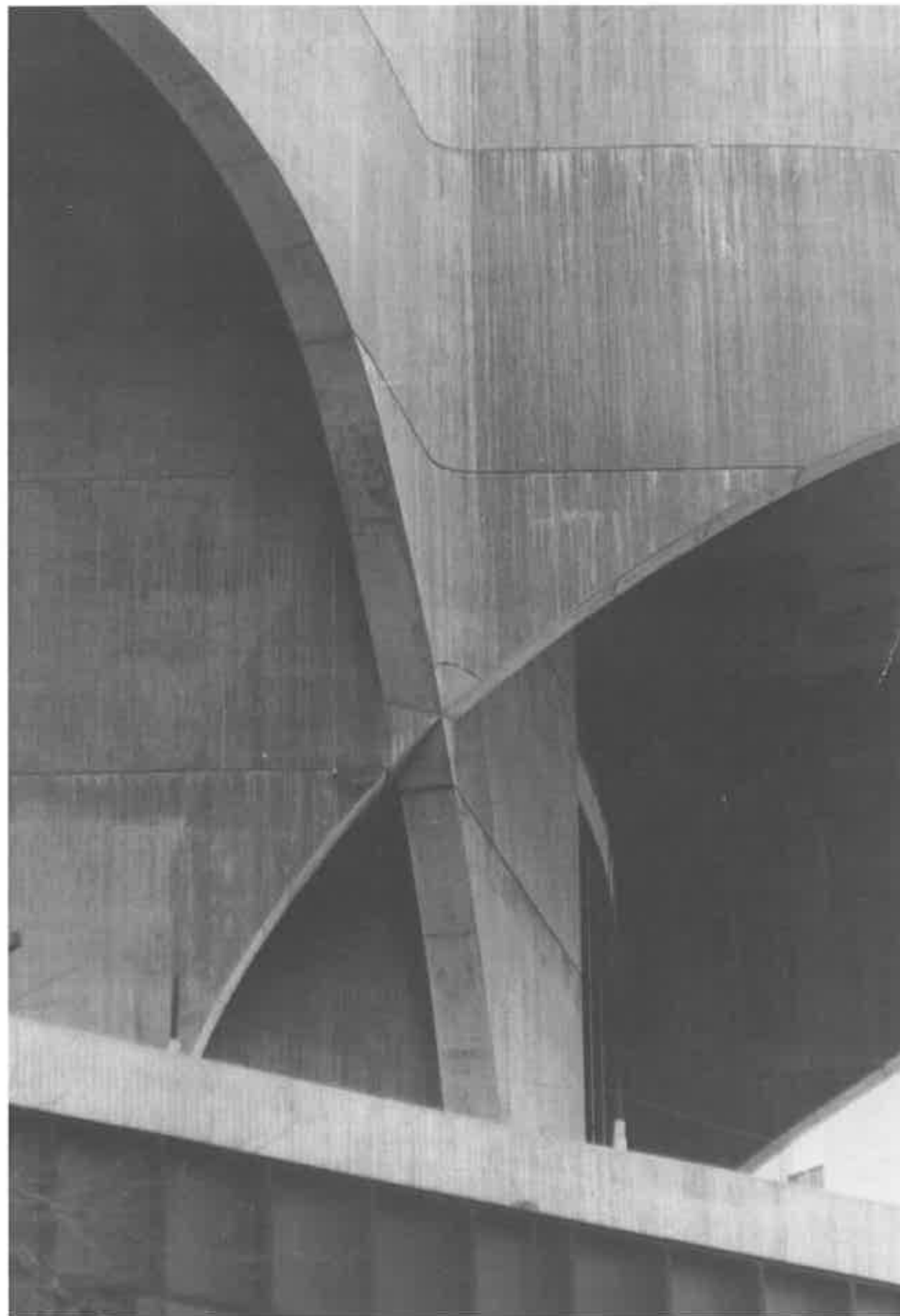
The hospital featured a rectilinear building of column and beam construction that served as the base for a quatrefoil bed tower of monolithic concrete shell construction. Unlike previous designs in which the exterior shell of the tower building was supported by columns, the shell at Prentice was completely sprung from the core, thus eliminating any supporting columns in the lower building and providing a column free space in the tower, allowing more planning flexibility. Because the supporting columns for the tower were clustered in a central core, it also made space planning for the base building much more efficient. (www.BertrandGoldberg.org)

After the completion of Prentice, the building received national and international press coverage and an award from *Engineering News Record* for its architectural and engineering innovations.

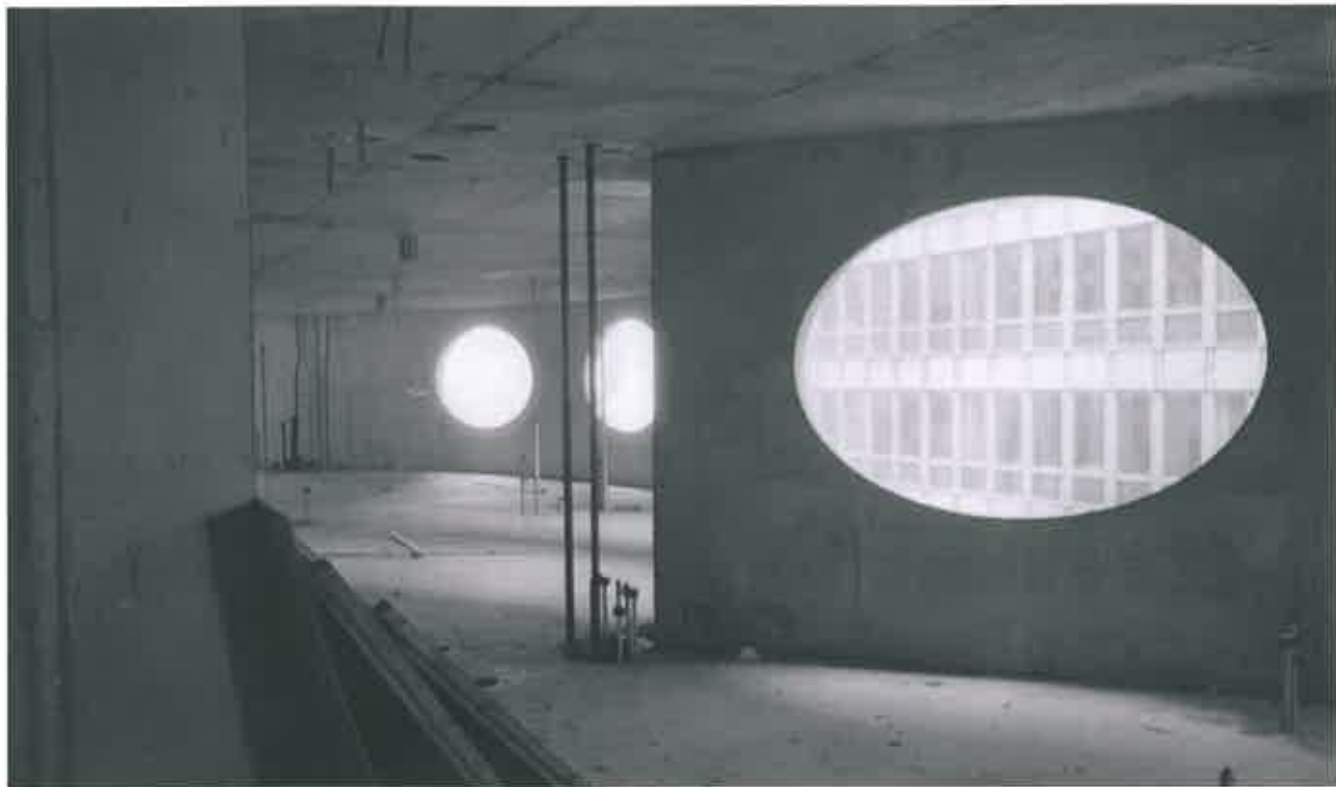
The Chicago area has other contemporary hospitals of progressive architectural designs, but Prentice stands out among them. Of all Goldberg's hospital designs nation-wide, Prentice is the best known. It is Goldberg's only hospital in the City of Chicago and it has been determined eligible for listing in the National Register of Historic Places by the Illinois Historic Preservation Agency.

A sample of published articles that featured Prentice Hospital during its construction and after its completion:

- "Bertrand Goldberg's New Work," and "Cantilevering the Shell, a Breakthrough," *Inland Architect*, January 1974
- "Towers' cores implanted idea for cantilevered, high-rise shell," *Engineering News-Record*, July 18, 1974
- "Special Feature: Bertrand Goldberg" and "An Architecture for Humanism," *Architecture and Urbanism* (Japan), July, 1975
- "Hopital Prentice pour femmes et Institut psychiatrique," *Architecture d'aujourd'hui* (France), January-February, 1976
- "Hospitals" and "The Goldberg Effect: The architect of Marina City casts a spell on concrete to enclose health-care concepts." *Architectural Record*, July 1976



A detail of the intersection of two of the cantilevered arches that structurally support the seven-story concrete tower above the building's base.

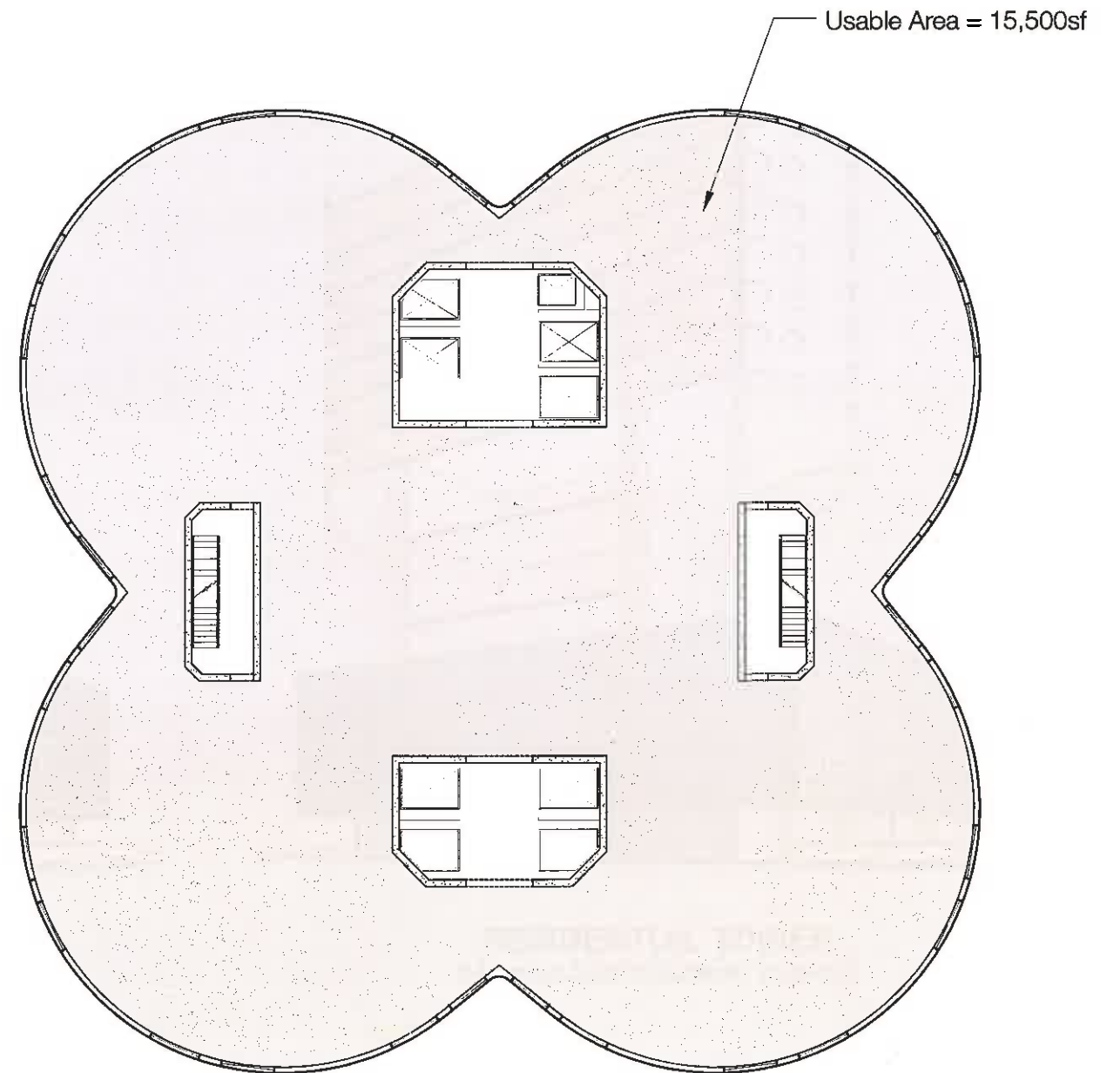
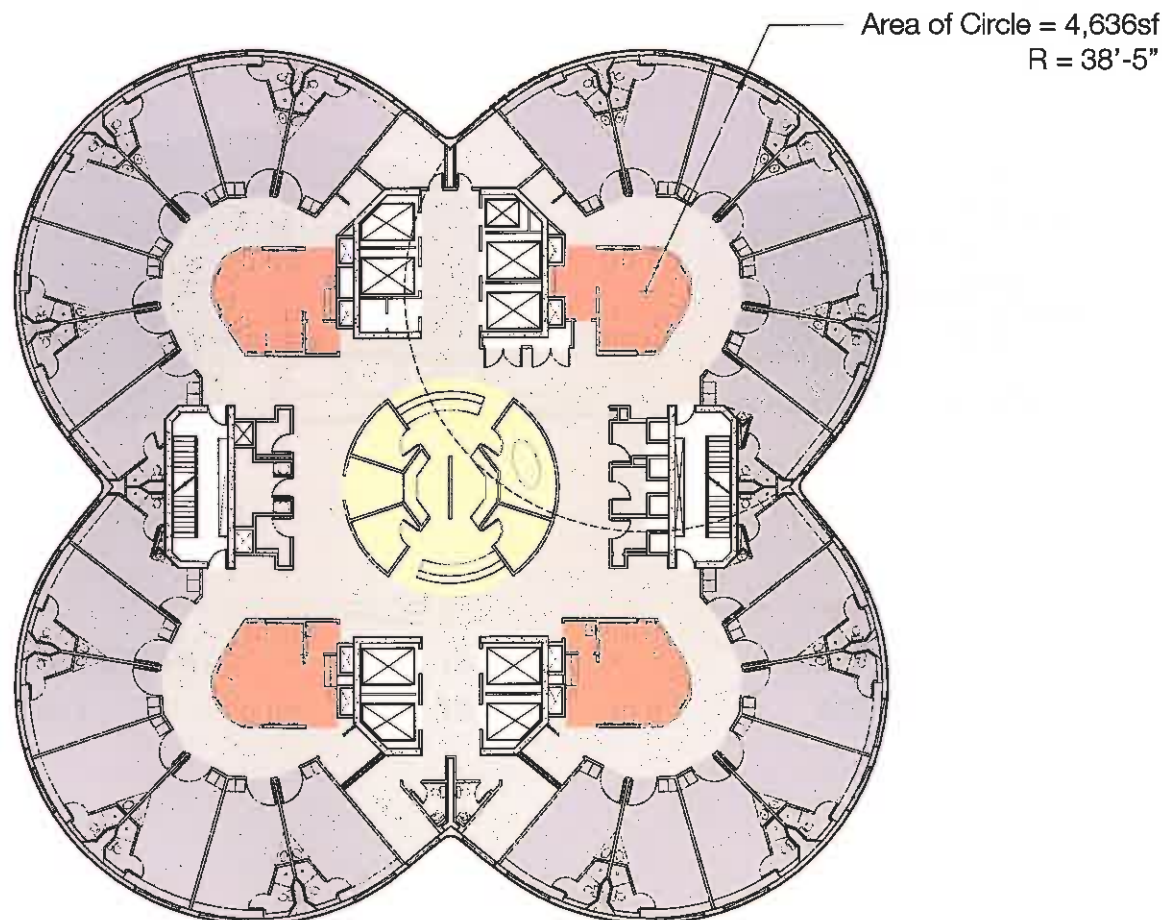


EXISTING CONDITIONS

Below: The column-free floors in the clover-leaf shaped tower provide great flexibility for potential reuses. They are interrupted only by elevator shafts and staircases, which also serve as the building's structural core.

Upper Left: A photo of the interior during construction.

Lower Left: A floor plan of the tower as it was originally used for maternity wards, with patient rooms and nurseries surrounding a central nursing station.

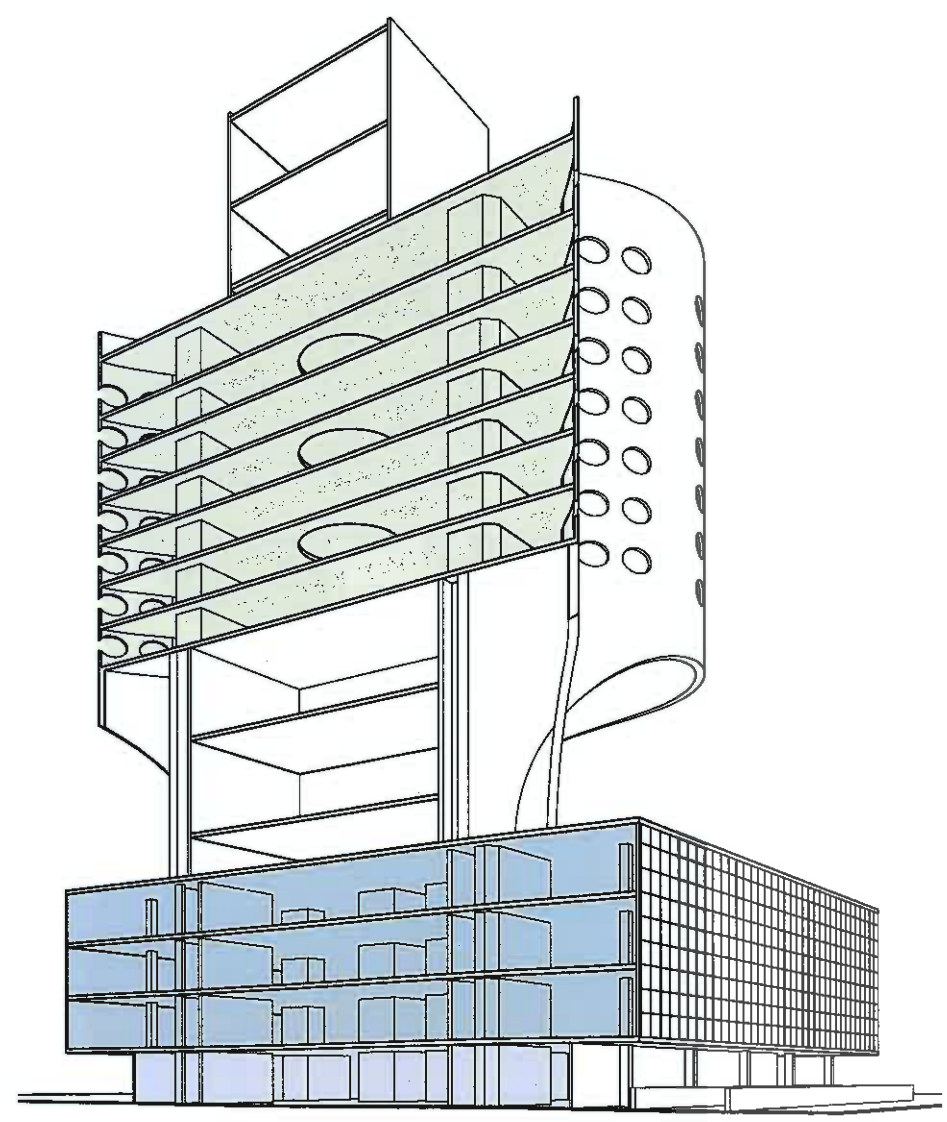


LEGEND

- PATIENT ROOMS
- CENTRAL NURSES STATION
- NURSERY
- NURSE SUPPORT AREA | CIRCULATION

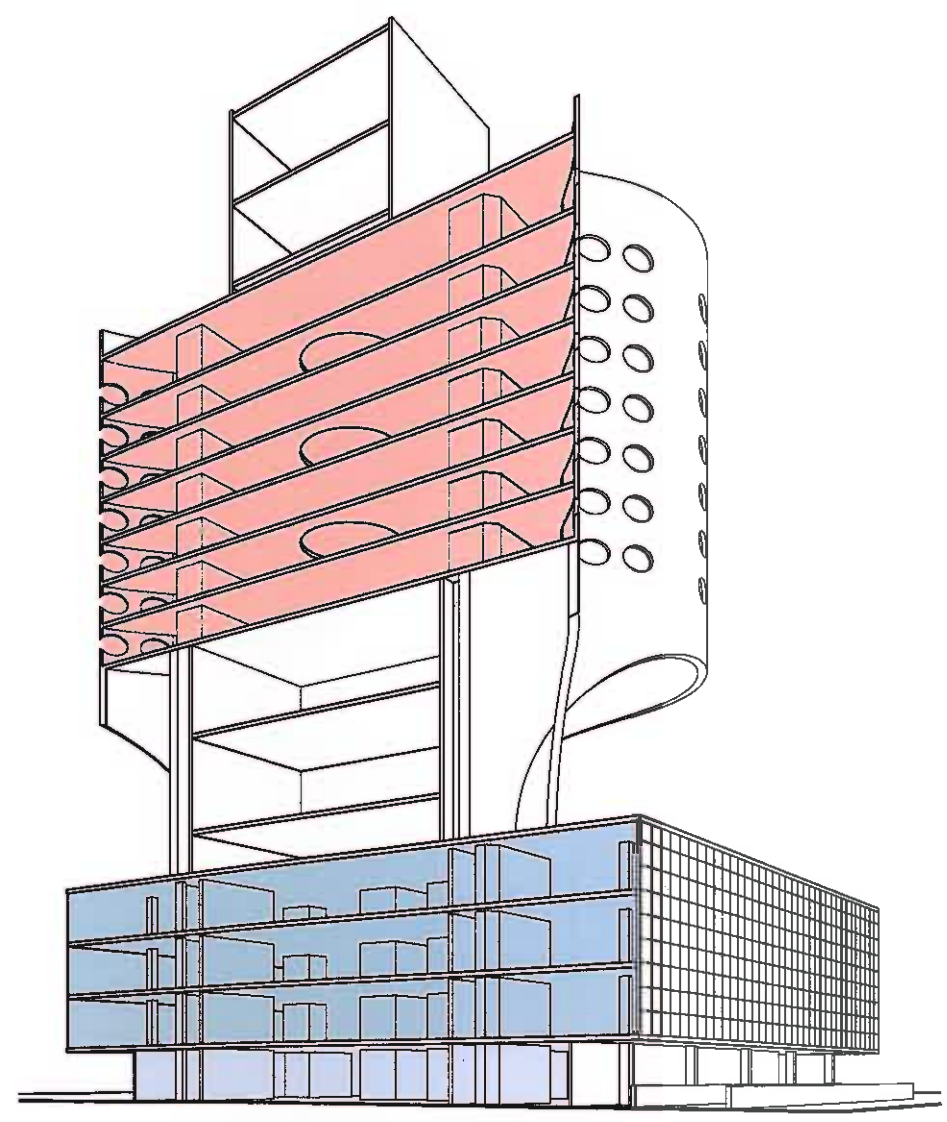
SUMMARY OF REUSE SCHEMES

Three reuse scenarios were investigated for this study: Research lab (left), office (center), and residential/mixed-use (right).
Details of these scenarios are shown on the following pages.



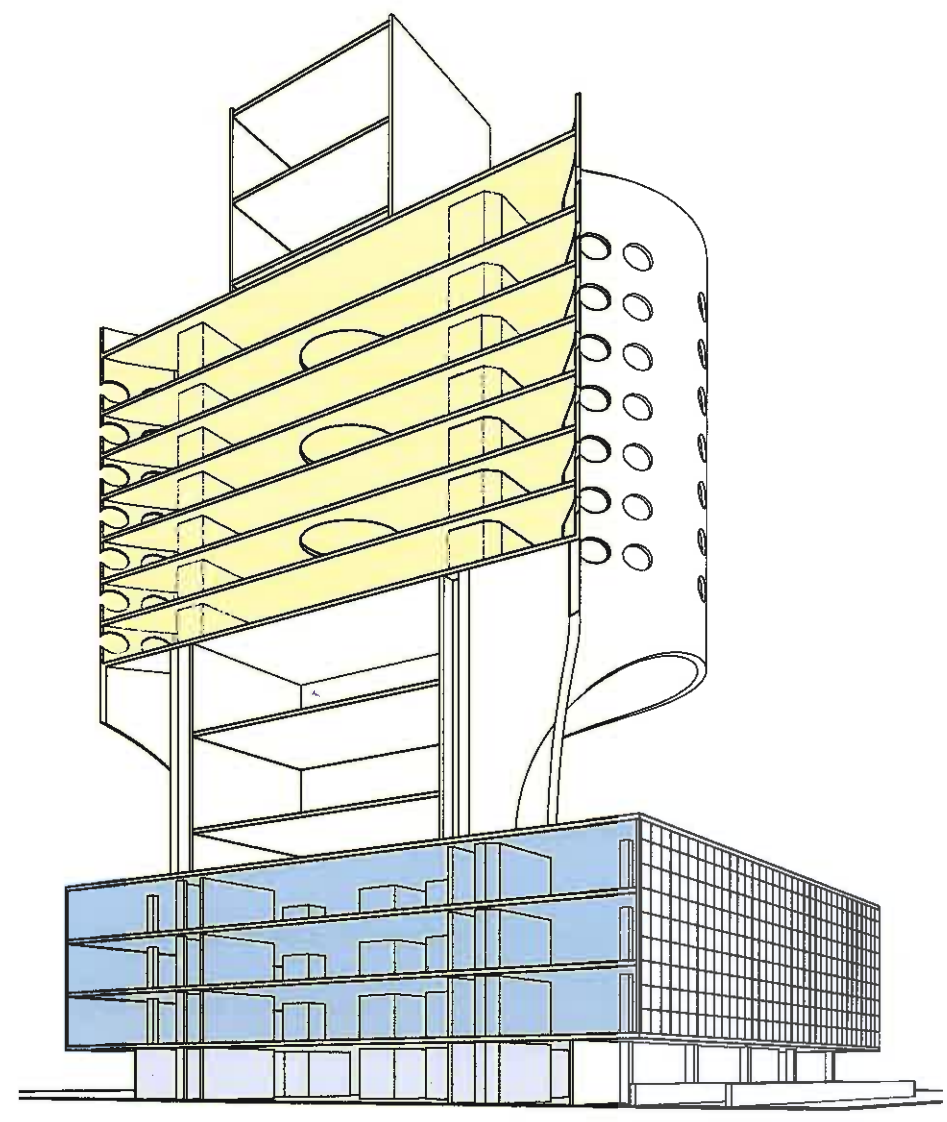
LAB TOWER

- LAB PAGE 8
- BASE FLOORS 2 THRU 4 PAGE 13
- BASE FLOOR 1 PAGE 12



OFFICE TOWER

- OFFICE PAGE 9
- BASE FLOORS 2 THRU 4 PAGE 13
- BASE FLOOR 1 PAGE 12



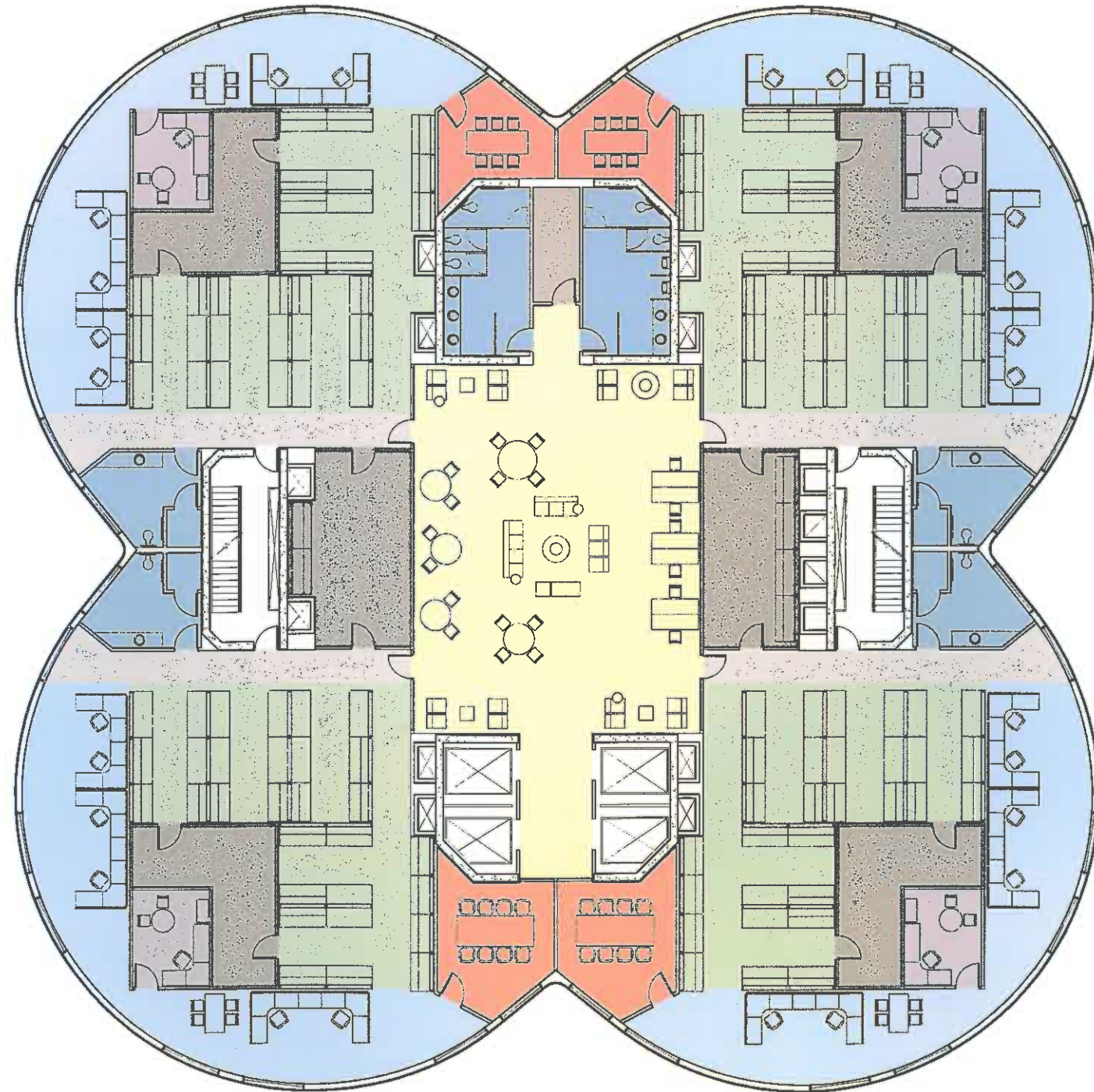
RESIDENTIAL TOWER
(Medical Staff/Student Housing)

- RESIDENTIAL PAGE 10
- BASE FLOORS 2 THRU 4 PAGE 13
- BASE FLOOR 1 PAGE 12

RESEARCH LAB REUSE

Highlights:

- **The structural flat slab floor system and floor to floor height (10'-6")** is conducive to an exposed utility system, a popular trend in contemporary lab design.
- **A Typical Lab quadrant** size is 3,145 USF and can support up to 16 principal researchers, or 64 researchers per floor.
- **Total Lab Researchers** for the tower would be 448 (an additional 384 researchers could be accommodated in the building base).
- **The proposed floor plan** would foster discrete securable research team zones, ranging from a full floor team to four separate teams, without compromising access and egress. Individual closed labs can directly access a larger, shared, open lab.
- **A shared central "Collaboration Space"** provides for interactive breakout space that fosters communication and a sense of lab community.
- **An open lab design** allows for multiple researchers and collaborative support areas (conference rooms, modular offices, lab support) both along the exterior and internally (atrium to floors below/above).
- **Lab module is** designed for flexibility, convertibility, and energy efficiency. The modules are able to change with the needs of the researchers. Floor plate dimensions allow for functional relationships among lab work areas and service, support spaces, and office areas.
- **The existing structural core** elements and chases allow for flexible access options and potential riser space for lab specific utilities.
- **The open lab floor design** allows sight lines to the exterior windows.
- **Labs could either** be designed as wet or dry labs.



TYPICAL RESEARCH LAB PLAN | FLOORS 7 THRU 13

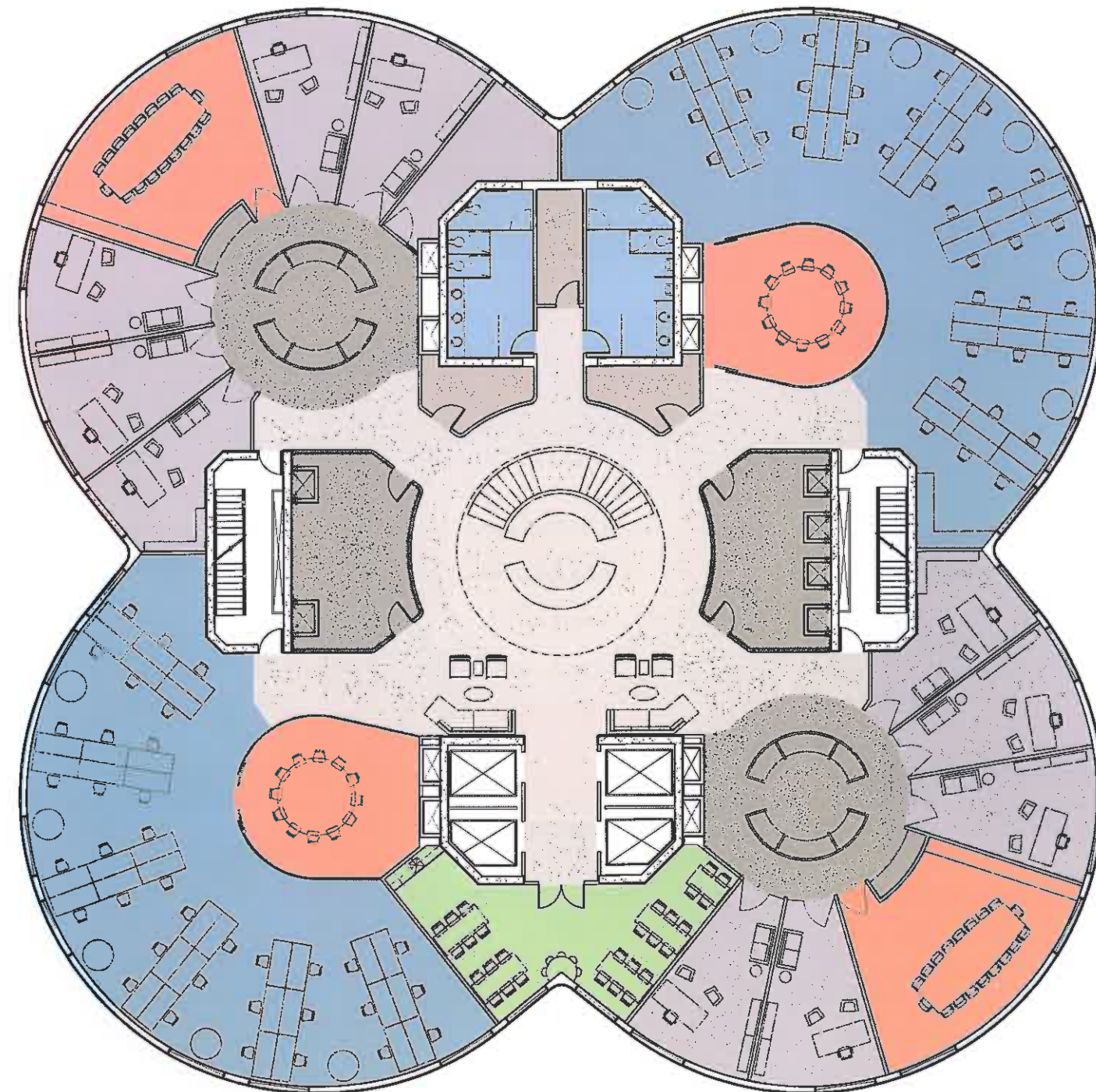
The open-floor plan of the tower makes it highly flexible for conversion to research labs, which are organized around a shared central space. The floor's perimeter, which is lined by windows, would be open office space.



north

LEGEND

- LAB
- COLLABORATIVE SPACE
- PRIVATE OFFICE
- CONFERENCE ROOM
- OPEN OFFICE
- SUPPORT
- WASHROOM
- STORAGE | JANITORIAL
- COMMON AREA | CIRCULATION



TYPICAL OFFICE PLAN | FLOORS 7 THRU 13

The open-floor plan of the tower could be converted either to private (gray) or open office layouts. All offices would receive natural light from perimeter windows.



OFFICE REUSE

Highlights:

- **Each floor provides** 15,500 USF of net rentable office space, divisible up to four units. An additional floor can be combined for a 31,000 SF office.
- **A Typical Office floor** can have up to 155 occupants.
- **Total Office Occupants** for the tower would be 1,085 (an additional 980 office workers could be accommodated in the building base).
- **The column-free floor plan** offers maximum flexibility in office layout. Examples of both a pure 'open office' and 'private offices' are shown
- **The centralized administration/reception area** works similar to the original building concept of a centralized nursing station that monitors the floor.
- **Multi-level offices can be accessed with internal stairs.** An example is shown with an ornamental stair coordinated with reception.
- **Individual executive 'nodes'** can have a centralized support staff
- **Open office 'nodes'** can have a centralized conference area.
- **Office reception/support** works well in the center of the floor plan.
- **Open office allows for unobstructed views** around the floor and out the large elliptical windows.
- **One elevator core** serves the tower, the other works well for stacked toilet rooms.
- **The mixed-use base** will have its own office lobby with amenity retail to the office tenants.

LEGEND

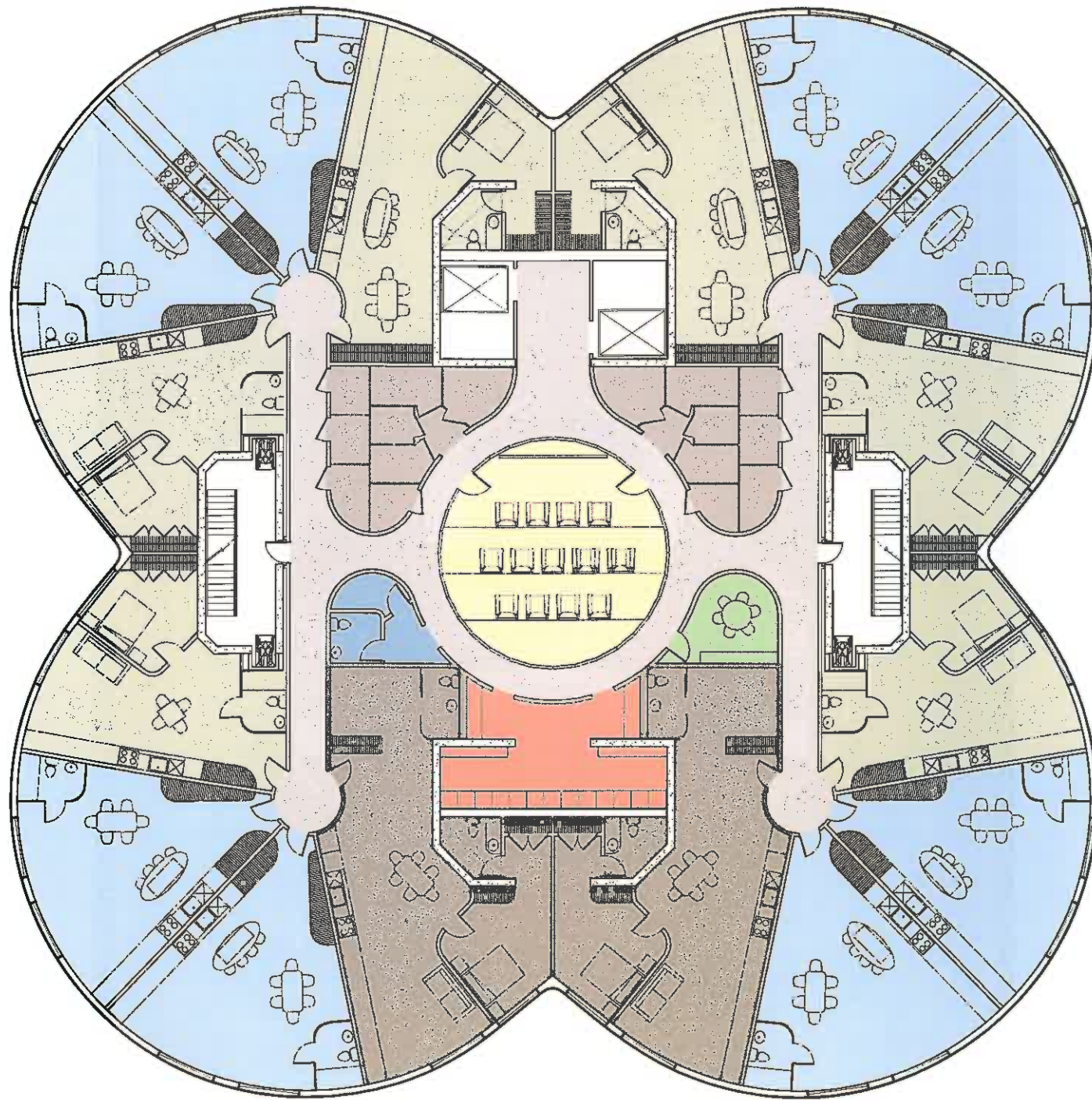
- OPEN OFFICE
- PRIVATE OFFICE
- CONFERENCE ROOM
- ADMINISTRATIVE SUPPORT
- CAFETERIA
- WASHROOM
- STORAGE | JANITORIAL
- COMMON AREA | CIRCULATION

RESIDENTIAL REUSE

Medical Staff/Student Housing

Highlights:

- There are 16 residential units per floor, with four in each quadrant.
- There are a total of 112 units on seven residential tower floors.
- Because of the varied shapes of the existing building's cores, each floor features several different unit sizes and configurations.
- Each unit includes two oversized elliptical windows, and the column-free interiors allow uninterrupted views through the spaces. Like other Goldberg-designed curvilinear buildings, the residential units get wider toward the exterior walls.
- Each floor contain common amenities, including storage rooms and a shared laundry facility.
- Each floor also features a large common amenity in the middle. Several possible uses are shown, including fitness, media, and a party/event room.
- The existing covered vehicular drop off on the north side of the building works well for a residential entry.
- Each unit features a prefabricated millwork element containing mechanical equipment, the kitchen, storage, and a fold-down bed in the studios.
- A residential use requires fewer elevators in the tower. The elevators in the south core can be eliminated and the space can be reused as shafts, chases, and resident services.



TYPICAL RESIDENTIAL PLAN | FLOORS 7 THRU 13

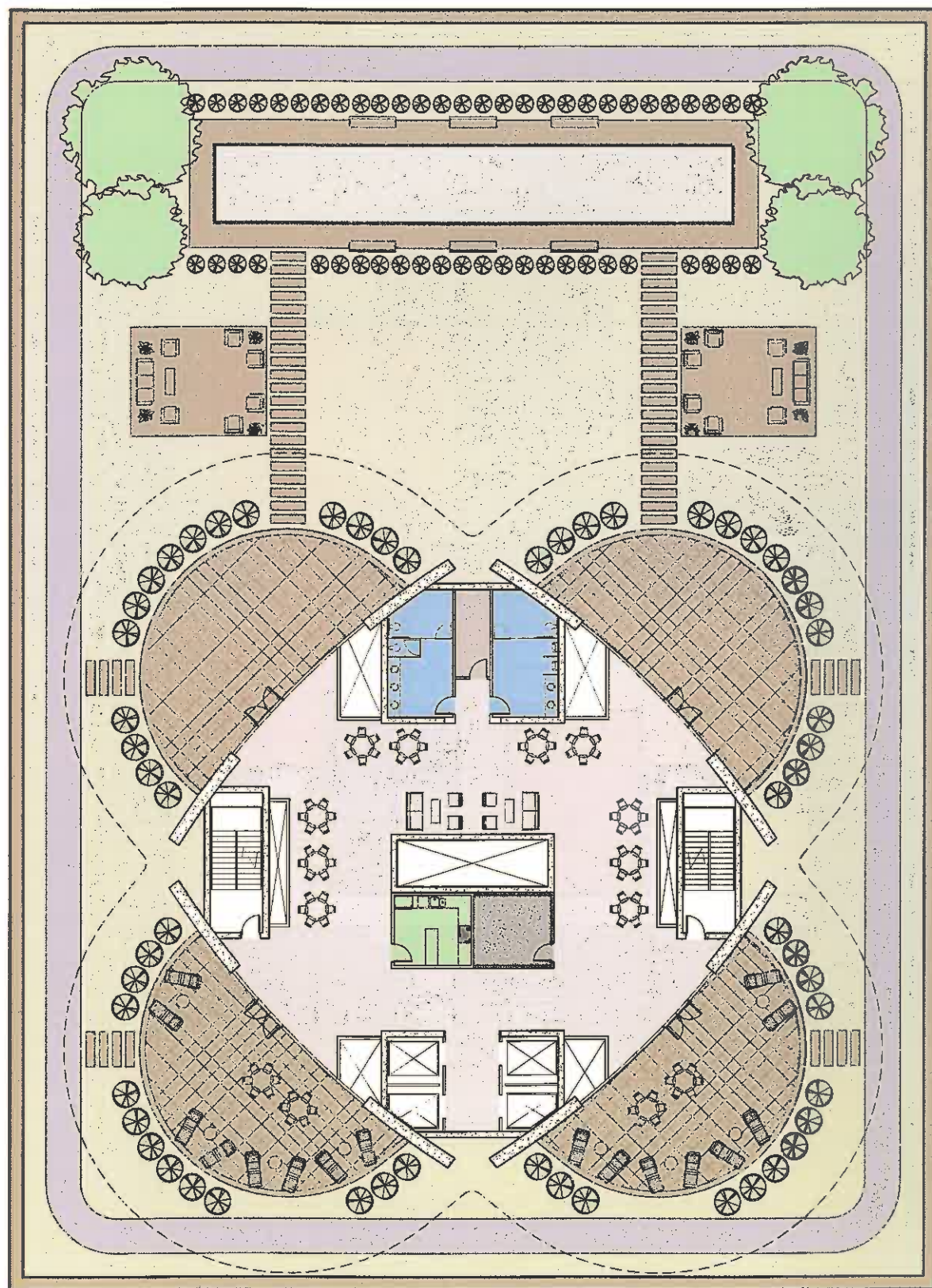
As with Marina City, the circular forms of the tower create interesting "pie-shaped" residential uses – which lend themselves well for a variety of studio, one-and-two-bedroom unites that could serve as medical-related, staff or student housing.



north

LEGEND

- ONE BEDROOM UNIT
- ONE BEDROOM PLUS DEN UNIT
- STUDIO UNIT
- MEDIA ROOM - USE CHANGES FROM FLOOR TO FLOOR
- MEETING ROOM
- LAUNDRY ROOM
- COMMON WASHROOM
- STORAGE ROOM
- COMMON AREA | CIRCULATION



ROOF GARDEN PLAN

One of the dramatic amenities of this proposed reuse study, for both building users and occupants of surrounding buildings, would be a new private open space atop the building's base – and beneath the soaring concrete supports of the tower.

Right: A photo of the existing rooftop condition.



BUILDING BASE GREEN ROOF

- A new 32,000 USF green roof will be added to the base.
- An additional floor was added in the 1980s. The proportions of the base were extremely compromised. Also the elegant arches of the tower were mostly buried in this unsightly floor. This study proposes to remove the floor thereby returning the base to the original Goldberg design intent.
- A new, contemporary engineered curtain wall is planned for the base to enhance the pedestrian/neighborhood view of the building.



LEGEND

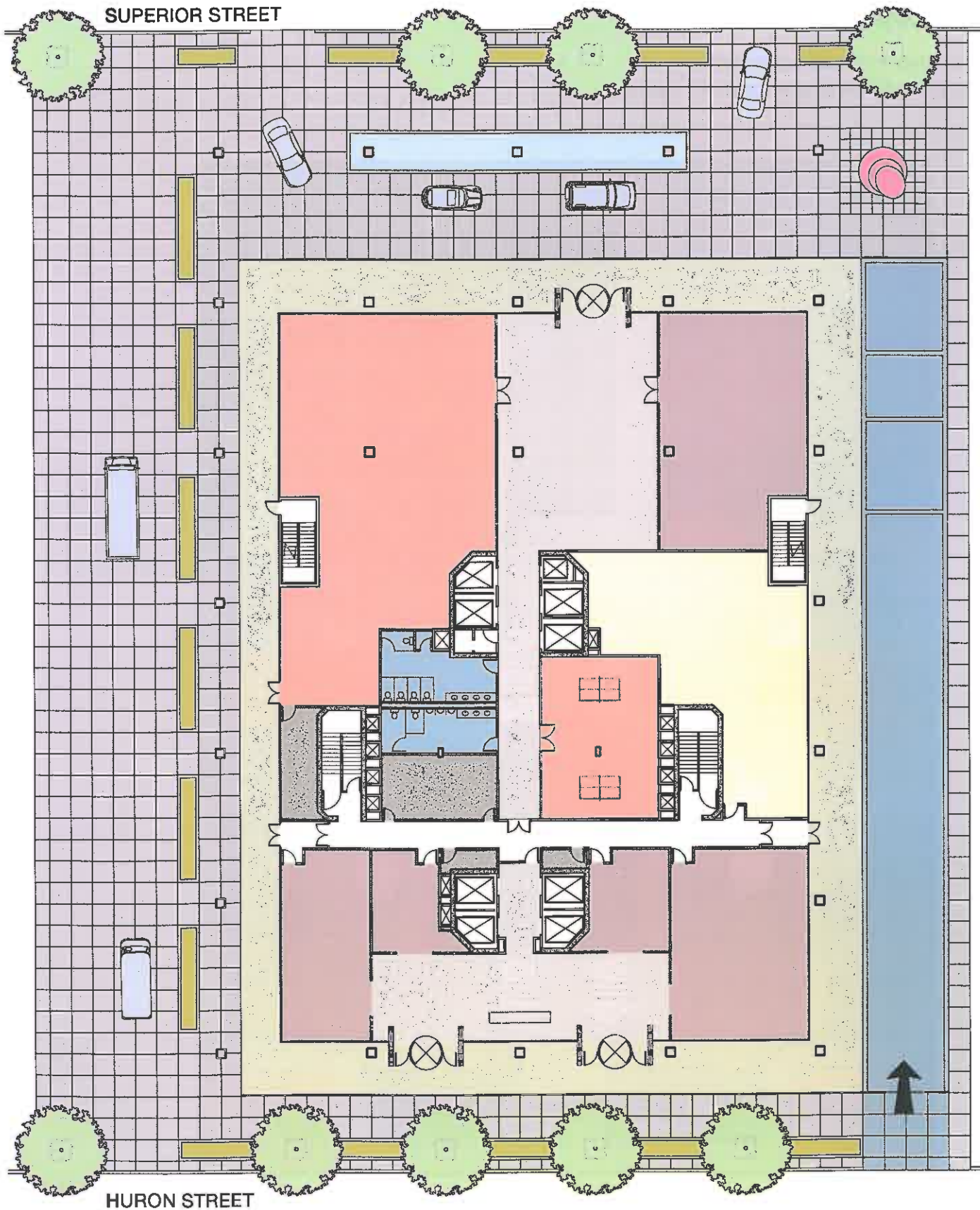
- PLANTED AREA
- TERRACE
- BOCCE BALL COURT
- RUNNING TRACK
- EVENT SPACE
- KITCHEN
- SUPPORT
- WASHROOM
- STORAGE | JANITORIAL



BUILDING BASE FLOOR PLANS

Highlights:

- **The Base of the building allows** for 130,704 USF of mixed-use space.
- **Since there are no perimeter tower columns** there isn't a conflict between the tower and base structural column grid. This was the only hospital that Bertrand Goldberg was able to successfully design in this manner. The flat slab structure and uniform 34'x34' column grid allows for an extremely flexible plan.
- Because there is **no need for both elevator cores** to access the tower the base can use one core exclusively. This works well to separate the semi-public base from the private tower uses.
- **The cafeteria and conference center** on the second floor and classrooms on the third and fourth floors can be amenities for the local community as well as Northwestern.
- **The southern half of the base plan** is envisioned as a mix of administrative offices and lab space. Ultimately because of the flexibility of the base many uses can be used.



GROUND FLOOR PLAN

The building's ground floor is substantially set back on two sides, providing a vehicular drop-off on the north (top) and a pedestrian walkway on the west (left). A secondary entrance is to the south (bottom), and a vehicular ramp to the east (right). Proposed uses include separate lobbies for the floors of the tower and the base, as well as building-related amenities, including retail and a cafeteria / student gathering space.

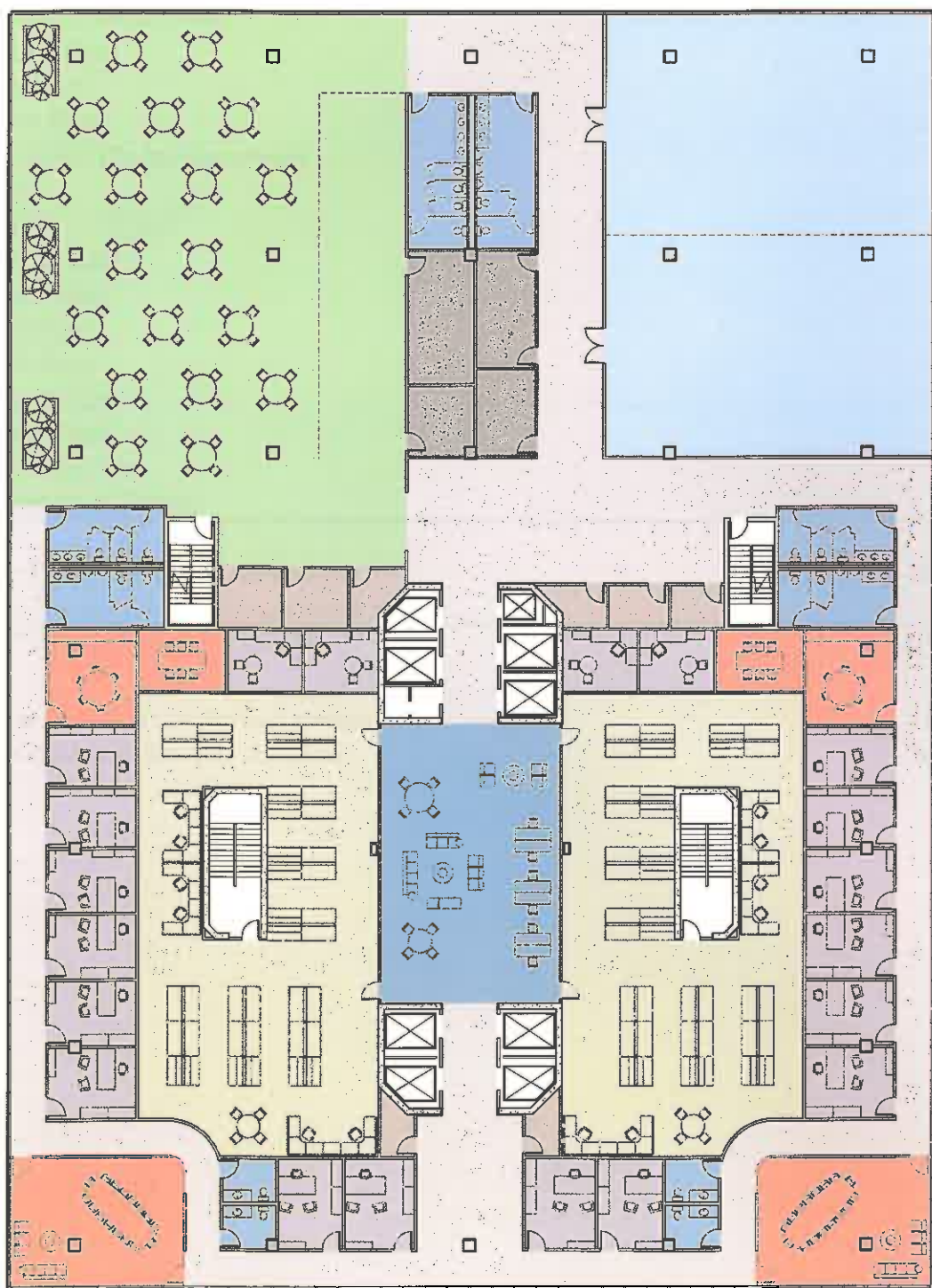


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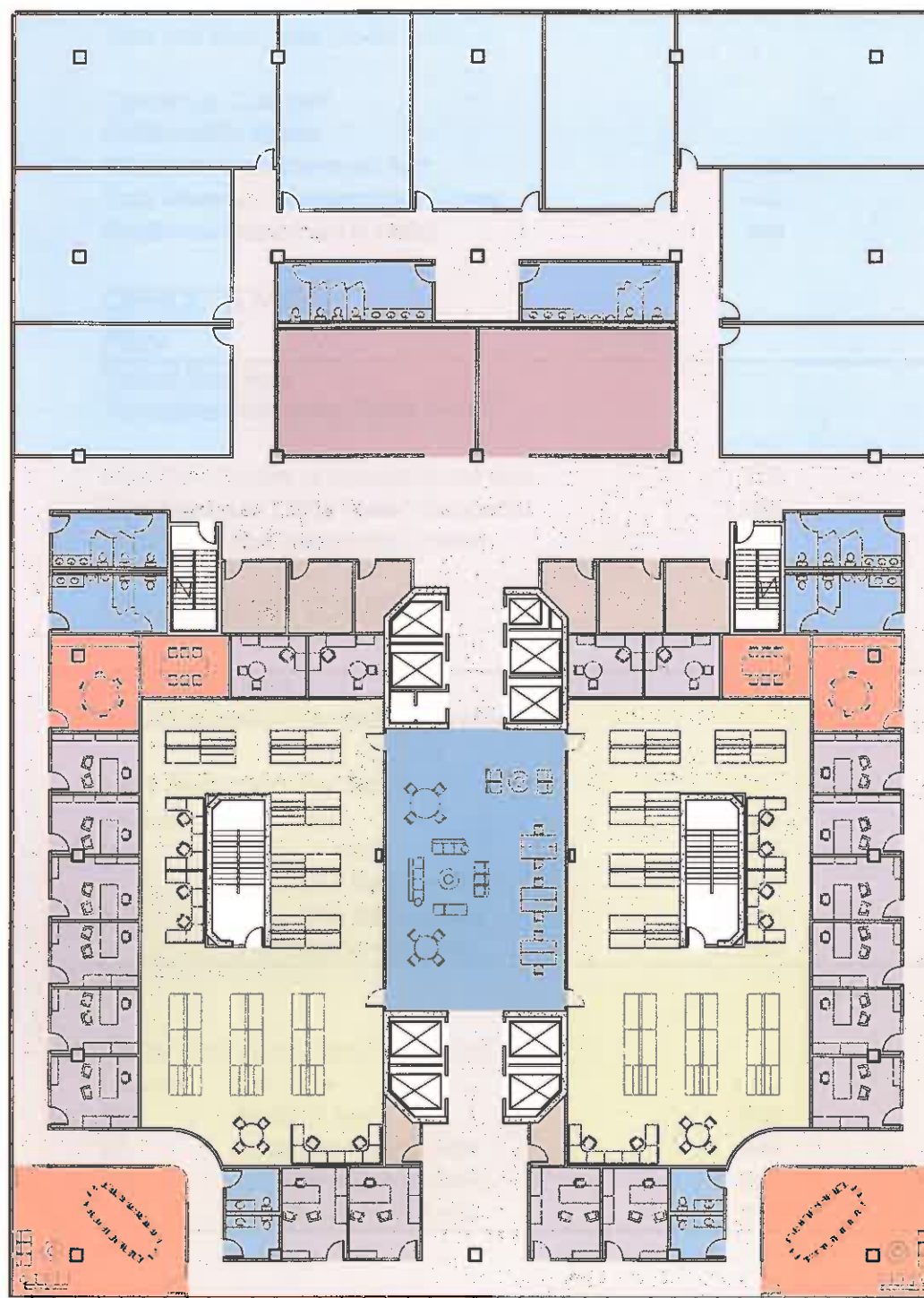
- AMENITY RETAIL
- LOBBY | COMMON AREA
- LOUNGE | RECREATION ROOM
- BUILDING MANAGEMENT OFFICE
- WASHROOM
- SUPPORT | STORAGE
- PLAZA | DRIVE & DELIVERY LANES
- EXTERIOR CIRCULATION
- DRIVEWAY RAMP | MECHANICAL

BUILDING BASE FLOOR PLANS

As with the tower, the floor plan of the building's base provides great flexibility for reuse. Shown here, a variety of potential options, including research lab, office and



FLOOR 2



FLOORS 3 and 4

LEGEND

LAB	CONFERENCE ROOM	AMENITY RETAIL	STORAGE JANITORIAL
COLLABORATIVE SPACE	CLASSROOM	SUPPORT	COMMON AREA CIRCULATION
PRIVATE OFFICE	CAFETERIA	WASHROOM	



EXISTING BUILDING AREA

<i>Floor</i>	<i>GSF</i>
Basement	45,000
First Floor (Plaza Level)	19,800
Second Floor	34,900
Third Floor	34,900
Fourth Floor	34,900
Fifth Floor (To be Removed)	34,900
Six-A	5,500
Six-B	5,500
Seventh Floor	17,250
Eighth Floor	17,250
Ninth Floor	17,250
Tenth Floor	17,250
Eleventh Floor	17,250
Twelfth Floor	17,250
Thirteenth Floor	17,250
Penthouse (2 Floors)	4,000
Total Base Area (With basement)	204,400
Total Tower Area (Including mechanical)	135,750
TOTAL BUILDING AREA	340,150 GSF
Tower Area less mechanical spaces	120,750 GSF
Total Area with fifth floor removed	305,250 GSF

REUSE SCHEMES AREAS

RESEARCH LAB TOWER

<i>Floor</i>	<i>USF</i>
Typical Floor Area	15,500
Total Lab Floor Area, Floors 7-13	108,500
Typical Lab Quadrant	3,145
Collaboration Space	1,778
Maximum researchers per floor	64
Total Maximum Researchers in Tower	448
(Additional researchers in base)	384

OFFICE TOWER

<i>Floor</i>	<i>USF</i>
Typical Floor Area	15,500
Total Office Floor Area, Floors 7-13	108,500
Maximum number of occupants per floor	155
Total Maximum Office Tower Occupants	1,085
(Additional office occupants in base)	980

RESIDENTIAL TOWER

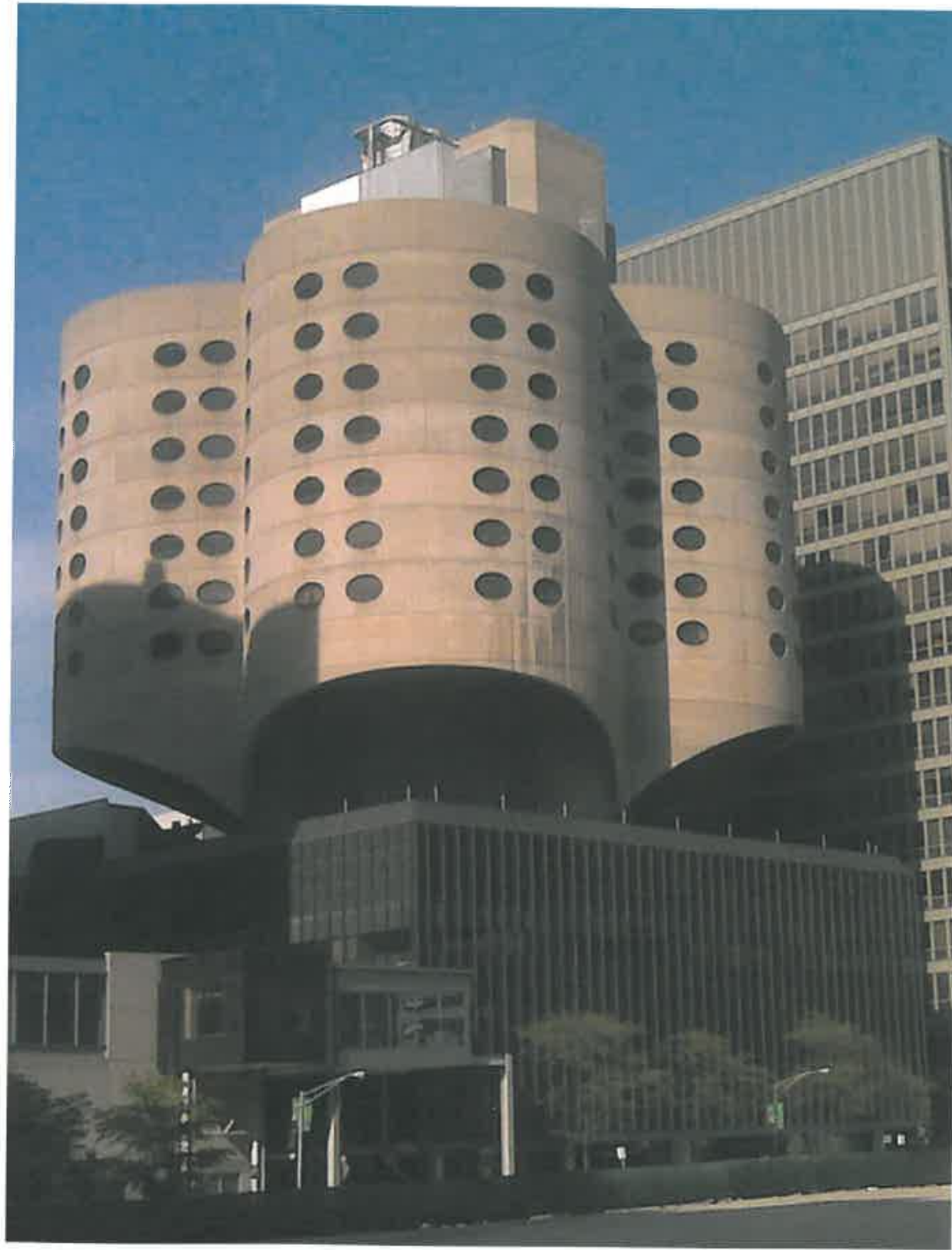
<i>Floor</i>	<i>USF</i>
Typical Floor Area	15,500
Total Residential Floor Area, Floors 7-13	108,500

Unit Summary by Floor

<i>Quantity</i>	<i>Unit Type</i>	<i>Size</i>	<i>Total Area</i>
8	Studio (1 bath)	655	5,240
4	Small One Bed (1 bath)	655	2,620
2	Large One Bed (1 Bath)	825	1,650
2	Two Bedroom (2 Bath)	1,065	2,130
16			11,640

Total Unit Summary(7 Floors)

<i>Quantity</i>	<i>Unit Type</i>	<i>Size</i>	<i>Total Area</i>
56	Studio (1 bath)	655	36,680
28	Small One Bed (1 bath)	655	18,340
14	Large One Bed (1 Bath)	825	11,550
14	Two Bedroom (2 Bath)	1,065	14,910
112			81,480



Prentice Women's Hospital as seen today.

REUSE SCHEMES AREAS Continued

MIXED-USE BASE

<i>Floor</i>	<i>USF</i>
First Floor (Plaza Floor)	17,857
Typical Floor Area (Flrs 2-4)*	32,676
Total Base Floor Area, Floors 1-4*	130,704

*Fifth floor is removed as part of the reuse study

<i>First Floor (Plaza) Area Detail</i>	<i>USF</i>
<i>Highlighted Use</i>	
Amenity Retail	2,176
Lounge-Recreation	4,539
Public Bathrooms	650

<i>Floor 2 Detail</i>	<i>USF</i>
<i>Highlighted Use</i>	
Offices including conference rooms (30 Offices shown)	11,192
Lab (60 Researchers)	11,908
Collaboration Space	3,014

<i>Floors 3-4 Detail**</i>	<i>USF</i>
<i>Highlighted Use</i>	
Classrooms	16,682
Amenity Retail	3,044
Offices including office conference rooms (40 Offices)	11,192
Lab (60 Researchers)	11,908
Collaboration Space	3,014
Public Bathrooms	3,666

**Areas shown are for the total for both floors

<i>Other Scenerios for Floors 2-4</i>	
Total Floor Area, Floors 2-4	98,028

Maximum Occupants if Floors 2-4 are only Office	980
Maximum Researchers if Floors 2-4 are only Lab	384

CREDITS

Report Preparation

This study was produced by Landmarks Illinois, a nonprofit advocacy organization—founded in 1971—that is committed to preserving the architectural heritage of Chicago and Illinois.

Geoff Koss, Chair (2009-11)
 Jim Peters, President
 Lisa DiChiera, Director of Advocacy

Design Assistance

We received substantial assistance from three professional architecture firms and a general contractor that have specific expertise in research laboratory, office, and residential designs. The four firms, each of which provided its time free of charge to Landmarks Illinois, have requested anonymity due to potential client conflicts.

Editing Assistance

We are grateful to those members of our Board of Directors' Executive Committee—past and present—who reviewed this document to ensure accuracy and redevelopment practicality.

Funding Assistance

We thank the National Trust for Historic Preservation for its financial support toward the production and publication of this study.

Previous Landmarks Illinois Reuse Studies

Among the previous reports we have prepared, with pro bono assistance, for threatened historic structures, are:

A Reuse Plan for Cook County Hospital, Chicago (2003)
Hostess House, Great Lakes Naval Station, North Chicago (2006)
A Reuse Plan for Julia Lathrop Homes, Chicago (2007)
An Alternative Site Plan for the Michael Reese Hospital Campus (2009)

For more details on these studies, see the "Preservation Resources" (Reports and Surveys) section of our web site: www.Landmarks.org.



The "Save Prentice" effort is being led by a coalition of organizations that includes DoCoMoMo, Landmarks Illinois, the National Trust for Historic Preservation, and Preservation Chicago. Visit "Save Prentice" on Facebook.

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A photograph of Bertrand Goldberg in his studio taken the year Prentice Hospital's construction was finished, c. 1974.