

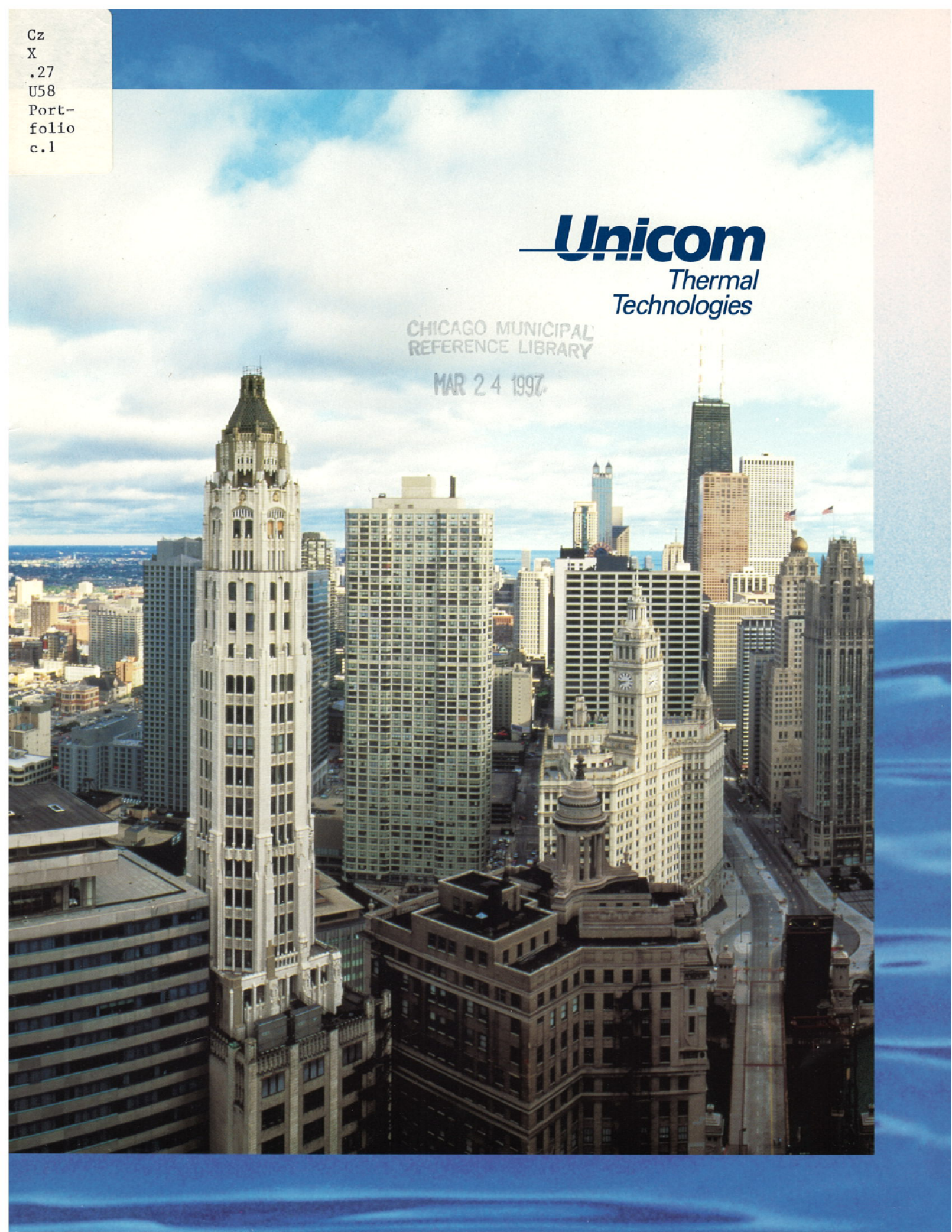
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*Thermal
Technologies*

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In a bold stroke, building ownership has made a dramatic turn for the better. Responding to the growing need to modernize your air conditioning facilities and to comply with CFC regulations, Unicom Thermal Technologies Inc. offers a single elegant solution to cool your building. Unicom's district cooling brings to Chicago a refreshingly new alternative for air conditioned comfort.



District Cooling from Unicom Thermal Technologies

A Subsidiary of Unicom Enterprises

Lowering operating costs...eliminating CFCs...improving tenant satisfaction... conserving energy...increasing reliability...avoiding capital investment... Merely a dream of tomorrow?

Unicom is your cooling choice today.

Unicom Thermal Technologies (Unicom) offers an exciting and innovative service to improve the profitability of your building. The service is called district cooling and is a proven approach to providing economical space air conditioning for commercial buildings. Every day, more of Chicago's important commercial buildings are committing to the benefits of district cooling from Unicom.

Focus On Your Business

Unicom offers you a choice... the choice of self-cooling (and the responsibility inherent in being in the air conditioning business) or the choice of having comfort delivered to you and your tenants, every hour, 365 days a year.

Day to day operations are simplified, freeing you and your operating staff to concentrate on increasing tenant satisfaction.

With Unicom as your energy provider, you are backed by a family of Unicom companies that have provided reliable energy service to Chicagoland for over 100 years.

Eliminate CFCs

Ever-changing environmental regulations is a growing concern. Unicom virtually eliminates the need for buildings to own and use refrigerants. By replacing CFC-laden equipment with service from Unicom, you are free of refrigerant compliance responsibilities. As CFCs are phased out of production by 1996, anyone still using CFCs faces cooling capacity loss, rising costs of replacement refrigerants, and increased handling regulations.

Preserve Our Environment

Unicom complies with code restrictions and satisfies environmental concerns more efficiently than individual buildings. With Unicom, you improve air quality while reducing global warming emissions.

Unicom uses up to a third less energy than alternate solutions to create equivalent tenant comfort. Again, another plus for the environment – and your wallet.

Avoid Capital Investment

Unicom Thermal Technologies is a sensible energy option, requiring little or no capital investment for "turnkey" connection to the district cooling network.

Unicom's 34° chilled water makes the most of undersized HVAC equipment, enabling you to meet increasing tenant loads for computer and office machinery. You avoid additional capital investment.

Lower Operating Costs

While reducing capital costs, Unicom produces cooling more efficiently, reduces repair and maintenance costs, and makes buildings easier to operate. You benefit from increased reliability and flexibility.

Lower Construction Costs

For buildings on the drawing board, initial costs are reduced because the building's own cooling equipment is eliminated, freeing rentable space. When you turn to Unicom district cooling, you enjoy savings that improve your project's financing potential. Unicom also makes it easier to finance modernization of older buildings and to operate them more profitably.

The Sensible Choice

Unicom frees you from the obligations of being in the cooling business... CFCs, equipment replacement, maintenance, and operation. Earn a superior return on your investments with service from Unicom.

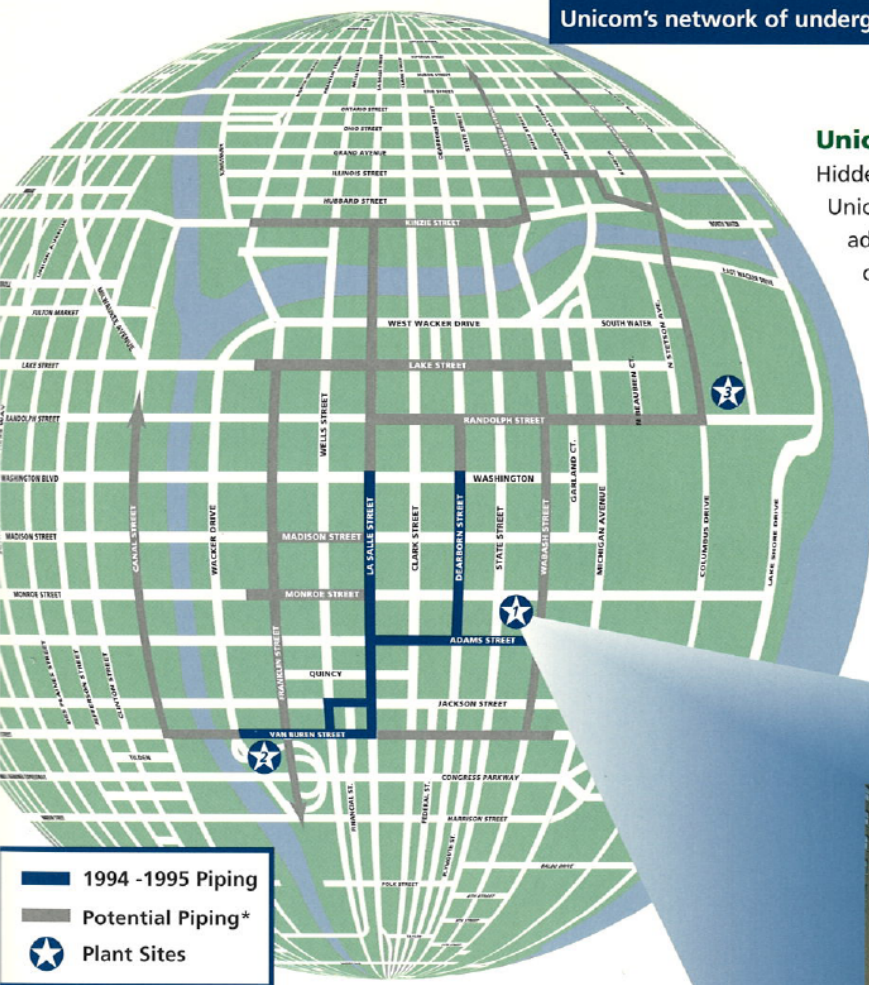


In the U.S., over 20 cities currently keep comfortable with district cooling.

Unicom's network of underground pipes.

Unicom's Cooling Network — The E NetSM

Hidden from view under the city's hustle and bustle, Unicom provides comfort to America's most prestigious addresses through an extensive underground network of pipes. From strategically located plants in Chicago, buildings are kept comfortable by Unicom chilled water delivered effortlessly to individual buildings. Isolated from the network, each building served by Unicom is continuously cooled via energy transfer stations using high-efficiency heat exchangers. Since every customer can be served from any plant at any time, Unicom provides a level of reliability and redundancy unmatched by self cooling systems.



A World Class System

Our designers had ambitious objectives when they sat down to create the world's most advanced district cooling system...efficiency, economy, reliability, and ecology. By using the off-hours capability of large chillers in central plants to efficiently store cooling for the next hour, day, or week, thermal (ice) storage is the technology that distinguishes Unicom from older, central cooling concepts and unconventional systems using gas or steam.

Ice storage works by producing air conditioning ahead of the moment of need. Chillers that chill water during the day are used at night to make ice when utility loads (and rates) are lowest. During peak cooling periods, chillers in combination with the ice stored in large tanks provide chilled water to our distribution network.

Ice storage provides distinct performance advantages over any other technology due to the much cooler temperatures of ice-chilled water.

Our 34° water results in cooler air and means less air is required inside buildings to achieve the same cooling effect. Immediate advantages are improved tenant comfort, reduced pumping costs, reduced air-handling costs, and increased productivity.



Unicom's State & Adams plant started operation on May 1, 1995.

Make the Move

When you join the Unicom system, our Transfer TeamSM supports your every move. The Team, made up of operating engineers, thermal energy consulting engineers, contractors, and suppliers, is dedicated to optimizing your building's performance with Unicom. Every Unicom customer is backed by a team of operating specialists who monitor the system's operation 24 hours a day, 365 days a year.

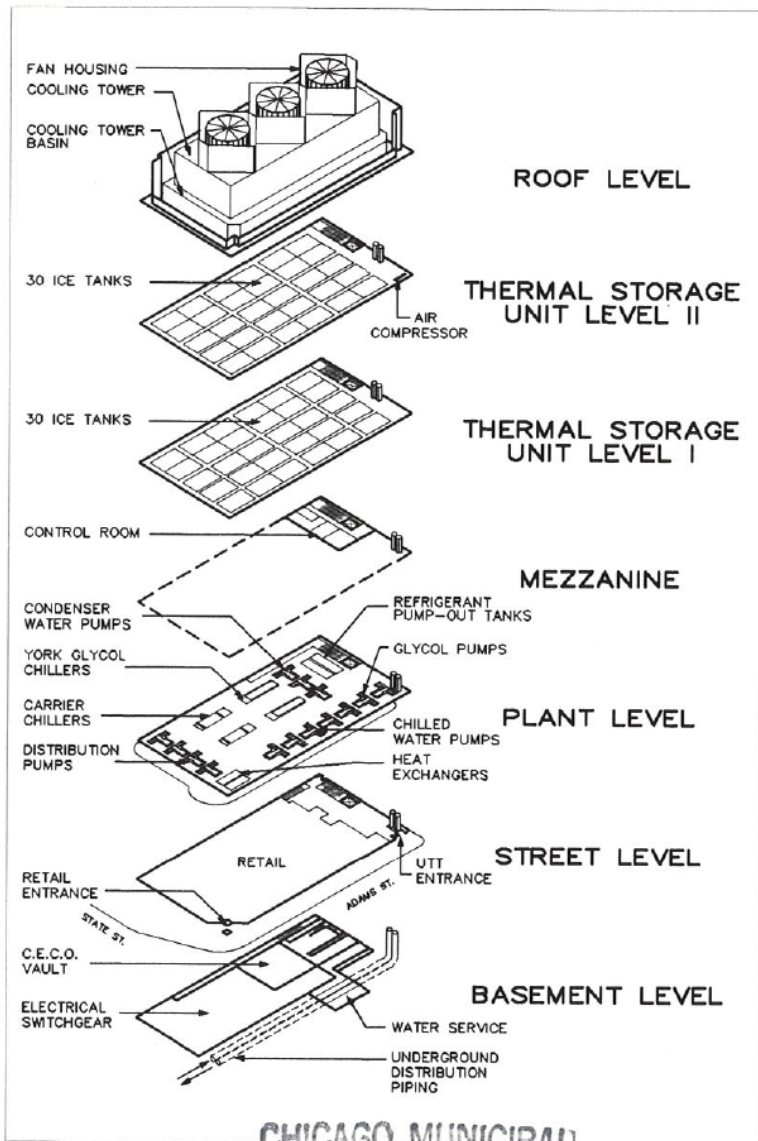
* Potential piping shown is part of Unicom's long term distribution plan, actual piping may vary as the system develops.

Unicom
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The State and Adams District Cooling Plant

The State and Adams District Cooling Plant owned and operated by Unicom Thermal Technologies, Inc. is the product of an aggressive venture to construct a facility to supply chilled water to downtown office buildings. The concept is driven by the need to comply with government regulations concerning the phasing out of CFC based refrigerants. The resulting plant houses sixty ice tanks together with chillers capable of producing 25,000 tons of cooling and the largest cooling tower in Central Chicago. It was necessary to design a building that would fit into the retail context of State Street and provide for 10,000 square feet of retail space on the first floor.

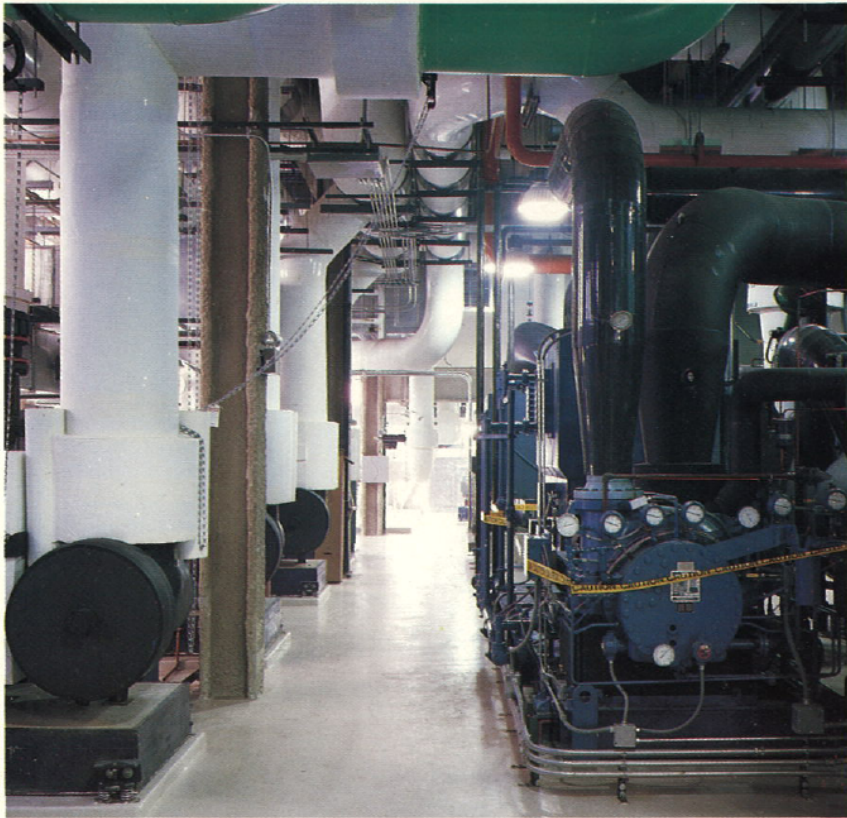
The purpose of the State and Adams Plant is to make over 6,000,000 pounds of ice overnight to take advantage of the lower electrical rates during off-peak hours using environmentally benign technology. The ice that melts during the day is used to chill water which in turn is pumped through a network of underground pipes to customers throughout the Loop for use in their respective air conditioning systems.

- The cooling plant is the largest operating ice storage system in the world.
- The plant is capable of producing six million pounds of ice.
- Because of the weight of the ice equipment, the caisson foundation would support a 57 story building.
- The total length of copper tubing used in the tanks totals 1,244,160 feet or 240 miles.
- The plant's 25,000 ton peak cooling capacity is capable of providing cooling for 9 million square feet of office space, comparable to the amount needed to cool 7,000 homes.
- The chillers are powered by four 5,000 hp 12470V water cooled motors.
- The plant is capable of pumping 3,000 gallons of chilled water per minute for use by customers.
- The plant is serviced by the largest cooling tower in the Loop capable of cooling 36,000 gallons per minute with fan blades over thirty feet in length.
- The plant is connected to its client buildings by over 2000 feet of pipe (some as large as 24 inches in diameter) buried beneath downtown streets.
- The electrical service to the plant is 22 megawatts, which equates to 5,400 watts per square foot of plant area.
- The plant is serviced by seven 12KV lines from four separate substations, making it possible for the plant to continue operating with the loss of any two lines.
- In addition to its primary industrial function, the building also provides 10,000 square feet of ground floor retail space.
- Construction was completed in ten months.

<i>Developer</i>	JPS Interests
<i>Architect</i>	Eckenhoff Saunders Architects
<i>Electrical/Mechanical</i>	Environmental Systems Design
<i>Structural</i>	Thornton - Tomasetti/Cohen-Baretto-Marchertas
<i>General Contractor</i>	Pepper Construction Company



JPS Interests

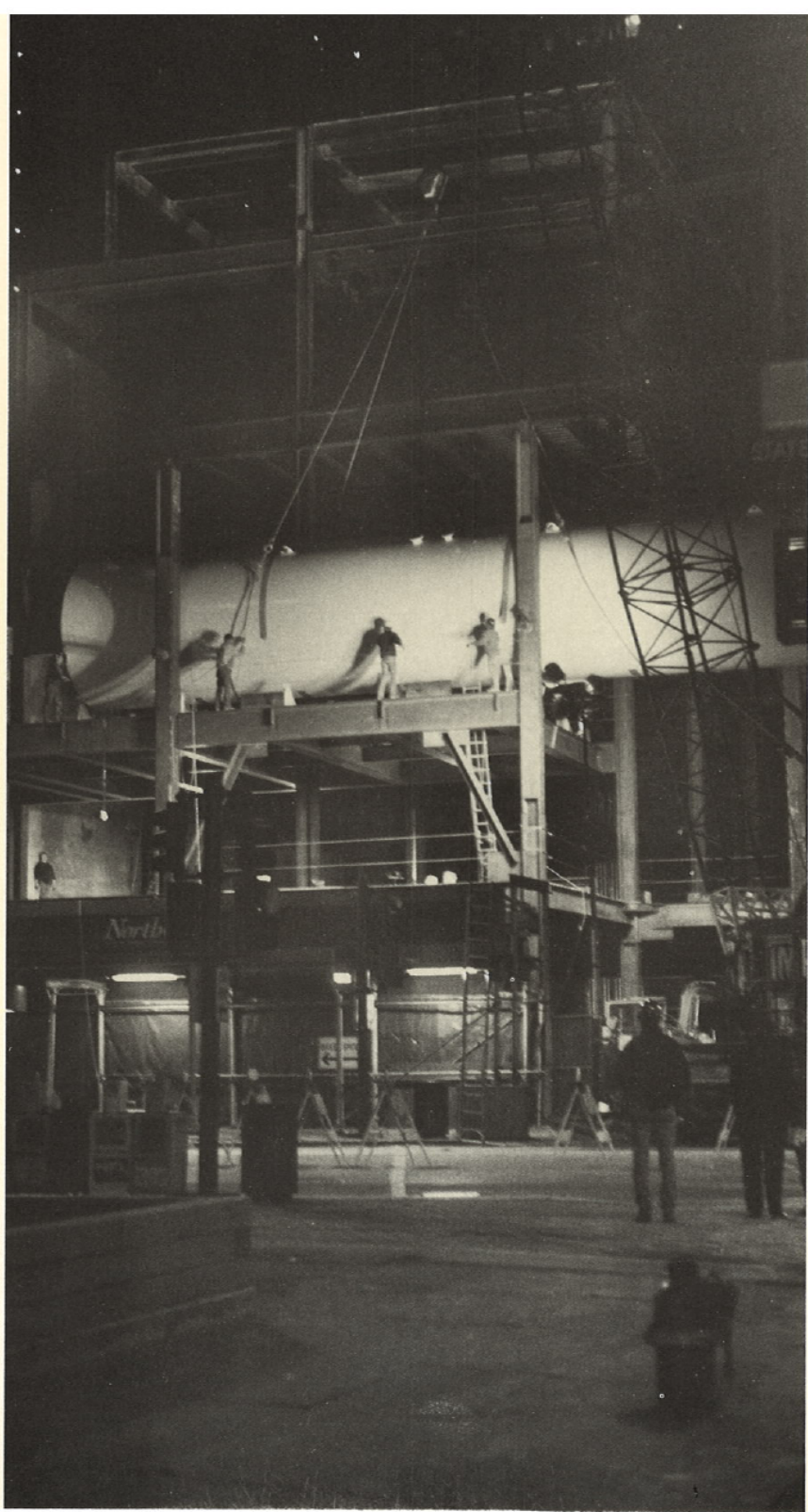


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Unicom ready to help more of Loop chill out

Wall Street may be warming up to cold projects

By RICHARD RINGER

Unicom Corp., parent of Commonwealth Edison Co., is poised to build a third Loop "chiller." And it's talking with partners about taking the alternative cooling technology to other U.S. cities and overseas.

The expansion by subsidiary Unicom Thermal Technologies comes as building managers are seeking alternatives to conventional air conditioning units, which rely on chlorofluorocarbons, or CFCs. The ozone-depleting chemicals are being phased out under federal environmental law.

Unicom Thermal Technologies, the company's first unregulated subsidiary, is being watched by Wall Street as a clue to where Unicom, which has posted uneven earnings in recent years, will diversify.

The third cooling facility in Chicago will be constructed as part of the Blue Cross/Blue Shield of Illinois headquarters under development at Columbus Drive and Randolph Street. In addition to cooling the 28-story headquarters, the plant also will serve buildings in the vicinity of Illinois Center beginning in 1997.

A second plant at Franklin and Van Buren streets, scheduled to be completed next year, will provide summertime cooling to as many as six buildings.

Unicom's first chiller, at State and Adams streets, went on line last month. It cools the Dirksen and Kluczynski federal buildings, the Chicago Board of Trade and LaSalle National Bank headquarters at 135 S. La Salle St.

With the first plant, "Unicom Thermal Technologies has done something that no other utility or district cooling operation has ever done," Unicom President Samuel K. Skinner told shareholders at the company's recent annual meeting. "That is, design, engineer and build a system while simultaneously selling all of its capacity, well before the system was operational."

The facilities make ice at night using Commonwealth Edison's off-peak rates, melt the ice during the day and distribute the chilled water through an underground pipe network. The 34-degree water circulates throughout the buildings' cooling systems before returning to the plant, where the process is repeated the next day.

Unicom Chairman and Chief Executive Officer James J. O'Connor said Unicom is negotiating with an East Coast company about acting as a consultant for constructing a chiller system. And he said the subsidiary is considering joint ventures to take the technology to Europe. He refused to identify the East Coast company or its location or to identify European markets.

Unicom Thermal is Unicom's

first venture into the unregulated energy field. Although the subsidiary is not expected to generate a positive cash flow until 1997 or 1998, Mr. Skinner said the subsidiary is projected to have revenues of \$25 million by 2000. Budgeted capital expenditures exceed \$100 million.

The chiller technology "is a natural for Unicom," said Dan Rudak, an analyst at Kemper Securities Inc. in Chicago. "They know the energy market. It's the kind of diversification investors like to see."

Craw's Chicago
Business
6-5-95

Building Design
& Construction
March 1995

ENVIRONMENTALLY CORRECT

Chicago gets two district chiller plants and is poised for more

Energy peddlers find a market for district cooling and relieve owners of CFC environmental burdens

5/16/94

The nation's third-largest city last year had no operational district cooling plants. In 1994, two were under construction with more on the way.

More than 20 U.S. cities have these "environmentally correct" systems in place to provide chilled water for air conditioning in their buildings. The Environmental Protection Agency's mandate to eliminate ozone-depleting chlorofluorocarbons (CFCs) has prompted one utility and another energy company to venture into district cooling in the Chicago area.

Unicom Thermal Technologies Inc., an unregulated for-profit subsidiary of Unicom (the former Commonwealth Edison Co.), is constructing a district cooling plant to serve downtown Chicago buildings. Energy for the \$30 million facility will be supplied by Commonwealth Edison, a regulated subsidiary of Unicom that supplies electricity to most of northern Illinois.

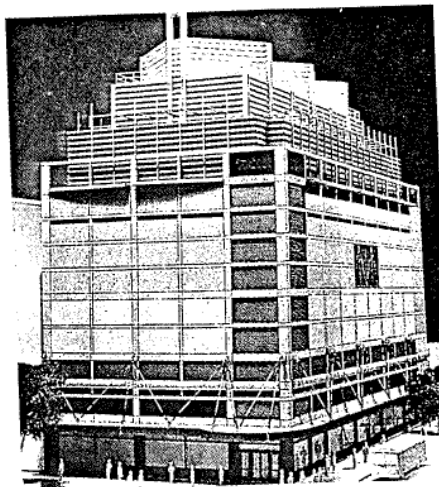
Under the Federal Clean Air Act,

production of CFCs — used as a refrigerant in many buildings — will be prohibited in 1996. Unicom Thermal's new plant will provide building owners with an alternative to cooling systems presently using CFCs.

The Unicom district cooling system works by storing large quantities of ice chilled in a central plant at night when power costs are lowest. The ice is then melted and piped to surrounding buildings during the day. New piping is being installed under city streets during construction of the plant to transport the chilled water. When the new system is in place, buildings will pay for the chilled water much like any other utility cost. Unicom Thermal's studies show that 50 to 80 million square feet of commercial space in Chicago could need alternative cooling systems in the next five years.

The building itself, being constructed amidst densely packed downtown office buildings, was designed by Chicago's Eckenhoff Saunders Architects to fit in with the surrounding architecture. At street level, retail space will be available, with electrical equipment in the basement and four stories of chilling and storage space above. A 50-ft. cooling tower located on the roof will be sheathed in a metal architectural screen.

The 50,000-sq.-ft. cooling plant will have a storage capacity of 60,000 tons of ice, and will be capable of providing cooling to buildings within a half-mile radius. Seven buildings, whose cooling



Unicom Thermal Technologies' new cooling plant will provide chilled water to cool buildings in downtown Chicago. Several new district cooling plants are to be constructed in the city by two local energy companies.

loads represent approximately 70 percent of the plant's capacity, have signed on for the service, which is targeted for startup in May.

Unicom Thermal has plans for at least four more cooling plants in Chicago. Another cooling plant, constructed to serve the McCormick Place convention center's expansion, was built by Trigen-Peoples in Chicago. While the facility was built to serve McCormick, it will have the capacity to provide its services to other surrounding buildings. □

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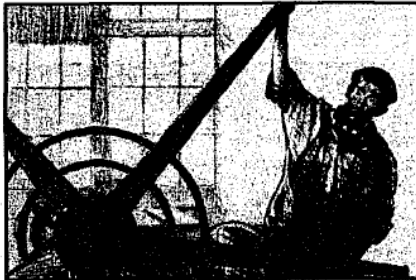
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Architecture



Photo by Anthony May, courtesy of Eckenhoff Saunders

At night, as the cooling process gears up, the glass block becomes a lyrical, shimmering tower.

The big chill

Loop cooling plant fits in fine with State St. neighbors

By Blair Kamin

TRIBUNE ARCHITECTURE CRITIC

Something cool is happening on State Street. At the northeast corner of State and Adams, what could have been an eyesore—and a pain in the ears—has turned out to be a positive addition to the cityscape. And that's reason to celebrate, given a site that's practically next door to the stately Palmer House.

The building in question is a machine for chilling, a \$30 million cooling plant that sup-

plies icy water for office building air-conditioning systems through a network of underground pipes. It's a new twist on the old-fashioned custom of storing ice blocks in deep cellars, then doling them out for use in home iceboxes. And it raises a novel design problem: How do you make an ice factory blend into a downtown full of office towers and shops?

The problem is not entirely unique. Architects regularly transform other potential blights—such as parking

garages—into civilized presences with street-level shops and facades that screen out the ugliness within. But the cooling plant, the first of three being built in downtown Chicago by a corporate relative of Commonwealth Edison Co., is another matter.

Its guts consist of boxy steel tanks, cone-like cooling towers and barrel-shaped chillers that emit a deafening roar. That's not exactly what Chicagoans expect to see or hear on the same street as retail palaces Carson Pirie Scott and Marshall Field's, though Field's has a candy factory for its famous Frango mints on the 13th floor.

The easy move for architects Eckenhoff Saunders would have been to camouflage the plant, suppressing its mighty machinery within a pretty envelope. To their credit, the Chicago designers took a tougher route, symbolically representing what goes on inside the building while making it fit comfortably with what's outside.

The plant's immediate surroundings are about big-city shopping, Chicago-style. This means powerfully scaled urban blocs with facades based on the division of a classical column into base, shaft and capital. Field's and the old Goldblatt's, now part of DePaul University's downtown campus, are classics of the genre.

The plant feels at home on State Street because its facade is split into three parts and because it has ground-floor retail space. A wraparound

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Alfred Hitchcock would have found a perfect setting for chilling drama in the spiral staircase leading to the plant's rooftop cooling towers.

canopy shelters pedestrians and people waiting at a bus stop. The retail space, when it's occupied, will add vitality to the street.

The arrangement seems effortless until one realizes what made it possible: Extra-beefy steel beams enabled the architects to reserve the first floor for shops, in effect raising the plant's weighty machinery a level. That's no small feat because the structural loads are roughly equivalent to those created by a 300-foot-tall office building. The plant rises 129 feet above the sidewalk.

In brief, the building's "district cooling" concept works like this: The plant's owner, Unicom Thermal Technologies, contracts with Loop office buildings to provide cool water for their air-conditioning systems. (Five buildings are now on line.) At night, when electric rates are low, the plant's chillers and steel tanks use chemical refrigerants to extract heat from water and to form ice. When electric rates go up in the morning, the machines shut off and water leaves the plant at 33 or 34 degrees. It circulates through equipment in the basements of downtown office buildings, then returns at 54 degrees to begin the process anew.

The process, unlike the water, is green. The plant's construction has been spurred in part by an international deadline for ending the making of chlorofluorocarbons, or CFCs, by Jan. 1, 1996. CFCs have been blamed for the thinning of the stratospheric ozone layer, which shields the Earth from the sun's ultraviolet rays. Until recently, they were commonly employed as refrigerants in air conditioners and refrigerators. In contrast, the plant's refrigerants pose little or no threat to the ozone layer.

Its machines can be staggeringly loud; plant workers must wear protective ear guards. To prevent the noise from seeping outdoors or into the first-floor retail space, the architects specified 3/16 in. lead panels that seal off openings in the plant's floors and walls. Heavy-duty steel springs set beneath the machines absorb most of their vibrations. The result: Loop pedestrians don't hear a peep, even when the machines run during the day because of high demand.

Alfred Hitchcock would have found a perfect setting for chilling drama in the spiral staircase leading to the plant's rooftop cooling towers. Chilled water rains below the towers into a foot-deep pool, from which it is dispatched to pipes below. On very cold or humid days, condensed vapor rises from the towers, like steam belching from an ocean liner's smokestack.

One feels tempted to dub the cooling plant the S.S. Unicom.

given that its west-facing cornice slices into space like a ship's prow and the presence of porthole-like air intake and exhaust vents. But the building is no one-liner. The chief designer, Walter Eckenhoff, clearly has walked State Street, learned its lessons, and incorporated them into a building to which one can return many times over and discern something new.

The plant's tower-like walls of glass block, which fold around its corner, owe a debt to Louis Sullivan's bowing glass corner tower at Carson Pirie Scott. So does the frank expression of its structural steel frame. The lower-level attached columns, or pilasters, recall the subdued classicism of the Field's store. The lower roofline parallels the elevation at the Palmer House where that building's limestone base changes to upper-level brick.

Eckenhoff's original design, in fact, called for a mostly brick facade—a move that city planners and the Greater State Street Council warned would make the plant look leaden. It's better off with its light-colored precast concrete, even if that material lacks the sense of permanence of State Street's older structures.

The architect compensated with textured ground-floor slate walls and by sharply articulating his precast concrete facade. One seemingly fanciful refinement: Incised dots within the borders of the concrete panels. They refer to Sullivan's ornamentation at Carson Pirie Scott and represent the rivets on the surface of the plant's steel tanks.

Contoured Fiberglass walls form diamonds around the cylindrical cooling towers and improve the building's appearance to those looking down on it. At the corner, Eckenhoff arranged opaque and clear glass blocks in patterns that poetically suggest condensed vapor rising into the sky.

At night, the building comes alive in both form and function. As the cooling process gears up, the glass block—lit from within—becomes a lyrical, shimmering tower. Thin blue lights ringing the upper roofline suggest that the chillers and tanks are at work, giving the plant a distinctly modern cast.

There is one relatively minor problem: Eckenhoff has been such a good neighbor that his design occasionally lapses into pastiche—a little Field's here, a little Carson's there, and the twain (one classical, the other modern) don't convincingly meet. Though the parts are appealing in and of themselves, they fail to add up to a coherent whole.

But that's asking a lot, especially in this sensitive location, where the city is more important than the building. At

another site where he faces far less pressure to fit in, Eckenhoff has designed a more resolutely modern cooling plant.

Now under construction, and visible from the Eisenhower Expressway at the southwest corner of Van Buren and Franklin streets, that plant will have a dramatically curving glass wall and a structurally expressive rooftop. Its modernist sense of invention is poised to fully realize the promise of this new building type—a powerful work of architecture as well as a civilized urban presence.



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High-tech facility relies on old idea to cool Loop offices

By Stevenson Swanson

TRIBUNE ENVIRONMENT WRITER

If Moses had come down from Mt. Sinai with 10 environmental commandments, one of the first would have been "Thou shalt not air condition."

Gluttonous in its appetite for energy and dangerous in its use of chemicals that destroy the ozone layer, air conditioning is the atmospheric equivalent of a steak and cheese fries.

But now, even air conditioning is going green.

The ground floor of the new building at State and Adams Streets in Chicago is like almost every other storefront on the city's longtime shopping strip. But above the first-floor retail space is a multistoried ice-maker, the key component of a new way for Loop office buildings to beat summer heat.

Officially, it is called a district cooling plant, and with the recent hot spell, the 5.5 million pounds of ice it makes every night came in handy for the first time since it went into operation last month. The \$30 million plant, owned by Unicom Thermal Technologies, supplies icy water for office building air-conditioning systems through a network of underground pipes.

It is an updated form of an old-fashioned

SEE COOLING, PAGE 12



Tribune photo by Ovie Carter

The district cooling plant's retro air-conditioning method **cools** buildings without using chlorofluorocarbons, which harm the ozone and no longer will be made in the United States beginning next year.

Cool

CONTINUED FROM PAGE 1

way of staying **cool**. Until the advent of cheap electricity and reliable refrigeration in mid-century, the ice business was big in Chicago.

In the winter, crews would cut large blocks of ice out of Lake Michigan and other bodies of water as far afield as northern Wisconsin.

Ice blocks were stored in deep cellars and were doled out through the hot months for use in home iceboxes and early air-conditioning systems. The Auditorium Theater, for example, used **to** be cooled by air that circulated over blocks of ice.

Ice is making a comeback in part because of an international deadline for ending the manufacture of chlorofluorocarbons, or CFCs, which commonly were used as the refrigerant in air conditioners and refrigerators. CFCs have been blamed for the thinning of the stratospheric ozone layer, which shields the Earth from the sun's ultraviolet rays.

CFCs no longer will be manufactured in the United States starting next year, and strict regulations are being phased in that require mechanics and technicians **to** use specialized costly equipment when working **on** auto and building air conditioners **to** keep the chemicals from escaping into the atmosphere.

The Unicom plant, the first of three that the company is building downtown, can **cool** 10 large Loop buildings and eliminate the use of 50,000 pounds of CFCs, according **to** Unicom business development director John Mitola.

And by running at night, when electric rates are lower, the icehouse **on** State helps use the region's electrical capacity more efficiently.

"The business is in tune with conservation thinking, the business is in tune with environmental thinking," said Unicom general manager Robert Fredricksen.

So far, the company, a corporate relative of Commonwealth Edison Co., is supplying chilled water **to** three buildings—the Commonwealth Edison building, the Inland Steel building, and the Marquette building. By midsummer, eight buildings should be **on** line, including the Chicago Board of Trade and the federal building complex.

Over the years, as energy prices have fluctuated, several Chicago-area buildings have installed ice-making or water-chilling equipment for air conditioning, but

those units were for one building. The best known is the system at the Thompson Center, which was plagued with breakdowns in the mid-1980s when the building opened as the State of Illinois Center. Fixing the problems cost \$11 million.

Despite that well-publicized case, ice-making systems, for one building or many, can make sense, according **to** energy consultant Helen Kessler, of Chicago's Sieben Energy Associates Inc. The equipment may be expensive, but current chillers using CFCs will have **to** be replaced eventually. And a district cooling system could save a building maintenance costs in the long run by eliminating unnecessary chillers.

"I think it's safe **to** say it's fairly benign, environmentally," said Kessler, who noted that companies also can save money **on** air conditioning by switching **to** **cooler** lighting and looking for other ways **to** reduce heat buildup.

Although Unicom is a corporate relative of Edison, it has **to** buy its electricity from Edison like any other customer. Like other industrial users, it takes advantage of the fact that rates are lower at night, when demand is low.

"We buy electricity at the standard published rate," said Fredricksen. "We don't get any special deal."

Every night at 9, two large chillers kick **on** and begin lowering the temperature in the plant's 60 giant ice-cube trays, steel tanks that each hold 18,000 gallons of water.

It may seem like a fine point, but the process of chilling anything is a matter not of making it cold but of making it less hot. Cold is the absence of heat. So the chillers, like any refrigeration equipment, use chemicals that have the right properties for extracting heat.

The refrigerants, chemicals that resemble CFCs but pose little or no threat **to** the ozone layer, run through coils in each tank. Ice forms around the coils and gradually expands until a tank is frozen almost solid.

At 6 a.m., when the electric rates go up, the chillers are shut off. Now water in the pipe begins **to** flow over the ice, dropping the temperature of the water **to** 33 or 34 degrees. The water circulates through equipment in the basements of buildings that have contracted with Unicom and then returns **to** the plant at 54 degrees **to** start the process again.

District cooling is not a new **idea**. Several cities across the country have large, centralized cooling plants, including Hartford,

Minneapolis, Indianapolis and Omaha.

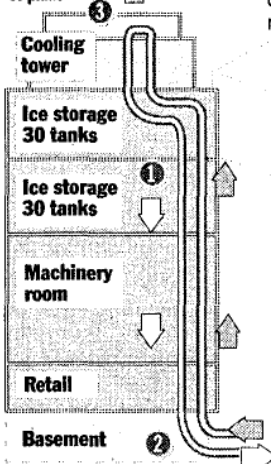
But if Chicago is not the first city **to** use district cooling, its system does have a couple of twists. For one thing, Unicom's plant makes ice instead of cold water, as do systems elsewhere. That means the circulating water is colder than that of other systems. Because the water packs more

A four-story icebox and air conditioner

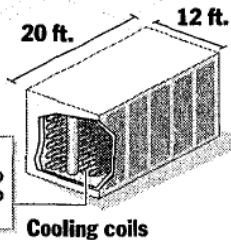
Providing businesses in the Loop with ice-based air conditioning is the mission of Unicom Thermal Technologies, which opened the first of three downtown cooling plants last month on State Street.

How it works

Side view of plant



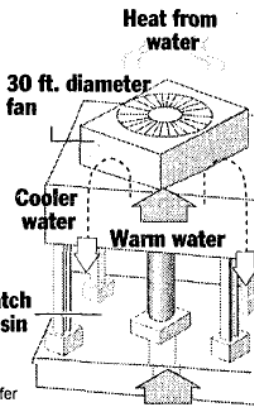
1 Ice-making Water in sixty 18,000-gallon tanks is frozen by coils containing glycol, a refrigerant, making 5.5 million pounds of ice.



2 Icy water 34-degree water is then run over the ice and sent out to buildings, where it is circulated through cooling equipment and returned to the plant at 54 degrees.

Recycling

Heat in the water is removed by three fans in the plant's cooling tower. The water is then sent back to the tanks to start the process over.



Source: Unicom Thermal Technologies
Chicago Tribune/Steve Duenes, Celeste Schaefer

cooling power, the system does not have **to** use as much water as other cooling systems.

City Hall was a bit, well, **cool** **to** the **idea** of a central system at first. The **idea** of installing another system of pipes that would carry millions of gallons of water under the streets of Chicago seemed an open invitation **to** a repeat performance of the Great Flood of 1992. Also, there were fears that construction would further tie up downtown traffic.

But construction work was done

only at night, and Unicom's water is dyed pink so that any leak can be easily identified as coming from Unicom and not the Chicago River.

The second plant, at Van Buren and Franklin Streets, is under construction; the third plant will be part of the new Blue Cross-Blue Shield development at Illinois Center.

District cooling may be a greener type of air conditioning, but it does not seem **to** save building owners much green, at least

not at first. The cost of the special equipment each building needs is wrapped into the fee that Unicom charges, but building owners then avoid the cost of installing their own new equipment, Mitola said.

"Principally, they avoid a capital investment," he said. "Over the life of a contract, we're very competitive."

It is a pitch that seems **to** work. All of the capacity of the first plant is sold, and portions of the second and third plants are spoken for.

William Gruber



Edison sister firm expands big-chill plans downtown

Here's a cooling thought on a June day:
 A sister company of Commonwealth Edison Co. is planning to build a third facility to supply chilled water for air-conditioning office buildings in downtown Chicago.

A spokesman for Unicom Thermal Technologies Inc. said its first plant, located at State and Adams Streets, is completed and has begun limited operations. The company will break ground later this month for a second facility, at Franklin and Van Buren Streets.

Plans for the third unit, which haven't been announced publicly, call for building a cooling facility in a parking structure near the new 28-story headquarters of Blue Cross and Blue Shield of Illinois under construction at Columbus Drive and Randolph Street.

The third facility is expected to serve buildings in the Illinois Center complex beginning in 1997.

Unicom Thermal Technologies is a subsidiary of Unicom Enterprises Inc. That, in turn, is owned by Unicom Corp., a holding company that Commonwealth Edison created in 1994 to offer other sources of energy besides electricity. Edison now is also a subsidiary of Unicom.

The three plants will be connected by more than three miles of underground pipes in the downtown area.

The concept borrows an air-cooling technique used a century ago. The plants produce ice at night, using Edison's off-peak rates for electricity. They melt the ice during the day and distribute the chilled water to the air-conditioning systems of customer buildings through the underground pipes.

The first facility has signed up the Dirksen and Kluczinski Federal Buildings, the Post Office at Clark and Adams, the Inland Steel Building and the LaSalle National Bank Building as customers, according to the spokesman. Another user, as might be expected, is the Commonwealth Edison Building. Five more buildings have agreed to join the list, which will use up the rest of the plant's capacity.

One or more retail tenants are expected to lease ground-floor space in the State Street facility, which formerly was the site of a Baskin's clothing store.

A footnote: Commonwealth Edison President Samuel K. Skinner will be spending part of the summer back in school. Skinner will deliver lectures to business students as the first recipient of the Harold A. "Red" Poling Chair of Business and Government at Indiana University's School of Business in Bloomington. Before he joined Edison, Skinner was secretary of transportation and White House chief of staff in the Bush administration.

Towering sale: Chicago real estate auctioneer Sheldon Good & Co. has taken on its biggest assignment yet: to sell the 30-story world headquarters building of Owens-Corning Inc. in Toledo. Owens-Corning plans to move at the end of 1996 to an office park that the company and the city are constructing two blocks away.

No minimum bidding price has been set for the 398,000-square-foot tower, which has an attached four-story garage for 519 cars and a shopping arcade. But the sellers, an investment trust, have agreed to finance a required down payment of at least \$4 million, says Gordon Greene, president of the Real Estate Auctions division of Sheldon Good. Sealed bids are due July 25.

Business beat: The Chicago Historical Society is creating an annual Marshall Field award for corporate leadership, and its first recipient will be Robert W. Galvin, retired chairman of Motorola Inc. Marshall Field V will present the award at a dinner Thursday. "Our purpose is to recognize people who literally made history in their lifetime," says Phillip W. Hummer, the society's chairman and a managing partner of Wayne Hummer & Co.

Two top producers at Rodman & Renshaw Inc., Mark Skerich, senior VP-investments, and Steve Myinski, a VP, jumped to Kemper Securities Inc., where they have the same titles.

Bob Carr, premier of New South Wales, Australia, will visit Chicago with a trade delegation June 12 and 13, seeking to attract investments in his province. Sydney, its capital, will host the 2000 Summer Olympics. The group also has scheduled a meeting with Gov. Jim Edgar during its stopover here.

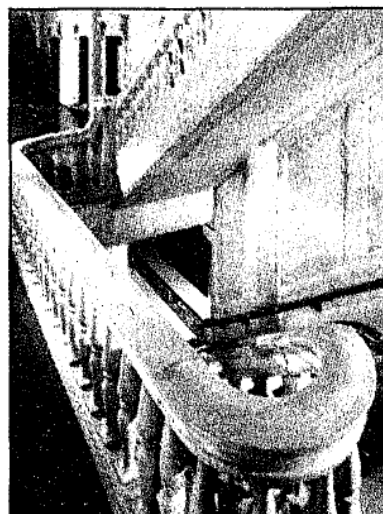
Chicago United, an organization of top business executives designed to improve race relations in the city, named Carolyn Nordstrom as president. She has filled the post on an acting basis since William A. Sampson resigned last fall.

William Bryan becomes dean of Loyola University Chicago's School of Business on July 1, after nearly 30 years at the University of Illinois in Urbana-Champaign.



Bronze

Above the doors of the Marquette Building are bronze panels depicting Father Jacques Marquette.



Marble

The building's widely heralded lobby includes access from unique heavy marble staircases.



Mosaic

The Marquette's unusual mosaics, which include glass and mother-of-pearl, were made by Tiffany's.

Polishing a gem

Marquette Building explores old path to gain new competitiveness

By Jane Adler
SPECIAL TO THE TRIBUNE

Like any good property manager with a new assignment, John McDonald did some detective work when his company was named agent for the Marquette Building last August.

He dug through architectural catalogs, papers from the Chicago Historical Society, and big heavy books that looked like they'd probably just gather dust on someone else's coffee table.

Certainly, there was no lack of material, because the people who keep track of these things have collected lots of facts about the historic Marquette—one of Chicago's architectural jewels, best known for the \$4 million worth of artwork in its lobby.

In one of the books, McDonald, who previously worked at the Rookery and Reliance buildings, came upon the ideas of Owen E. Aldis, the first agent for the Marquette Building, after it was built in 1895.

The current owner of the Marquette Building wanted to make some changes, and what really sparked McDonald's interest, were the principles for economic office building design that Aldis had mapped out in a letter to the Boston developers of the building.

In part, the prescriptions read:

- The office building with the most light is the best investment.
- Second-class space costs as much to operate as first-class space; therefore build no second-class space.
- Common areas should make a lasting impression.

■ Operating expenses must always be kept in mind.

■ Upkeep is important; it should be management progressive.

While today the ideas may seem like nothing more than just plain old common sense, they became the basis of modern building management and design. And McDonald says he's using the axioms like a century-old roadmap for a renovation program currently underway at the Marquette.

"We are adhering to these principles," said McDonald, vice president of Continental Offices Ltd. Realty, Chicago, which is spearheading a \$2 million upgrade of the seal-brown building sitting at 140 S. Dearborn St., the northwest corner of Dearborn and Adams.

"We want to bring the building up to today's technological standards. We also want to bring it up cosmetically."

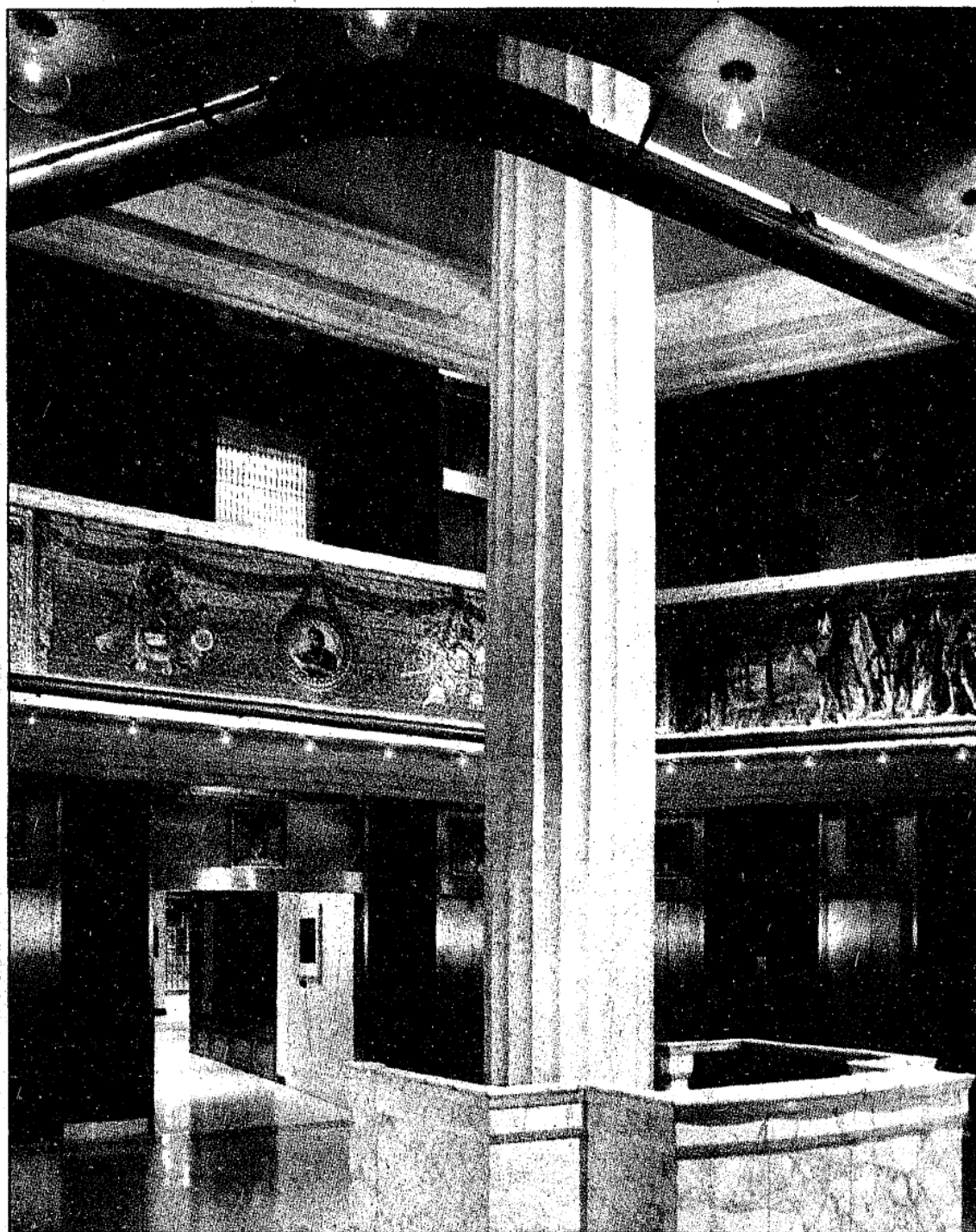
McDonald admits that with the recent loss of a big tenant, and a vacancy rate now hovering around 20 percent, the Marquette needs some "brushing up" to compete in a tough leasing market.

He says the first round of improvements will focus on lighting, efficient operating systems and new interiors—just as Aldis might have suggested.

The changes should be complete by the end of the year, and McDonald says another \$1 million to \$4 million will be spent over the next few years on tenant spaces as the need arises.

While the owners of most older buildings these days aren't interested in pouring money into them because the

SEE MARQUETTE, PAGE 8



Centerpiece

Surrounding a marble column, the building's interior provides a depiction of the explorations of explorer Father Jacques Marquette, on the face of a balcony in the two-story, rotunda-like lobby.

Marquette

CONTINUED FROM PAGE 1

market for aged office space isn't good, the Marquette has lucked out in one big respect.

The building is owned by The John D. and Catherine T. MacArthur Foundation, which also happens to be the building's largest tenant with 75,000 square feet of space.

"This is an asset that we feel is our home," said Tim Hoepfner, director of real estate for the foundation. "We see this building at a transition point. But we would rather hold onto it and take it through the renovation process and create value in it."

Built for about \$1.4 million, the Marquette Building was designed by the architectural firm of Holabird & Roche.

Thought to be the firm's best example of its Chicago School of architecture, the 16-story building stands out from the other rather simple buildings of the period because of its intricate lobby artwork.

Above the lobby's doors to the outside are four bronze panels illustrating the journey of French explorer and missionary Jacques Marquette. Colorful glass and mother-of-pearl mosaics made by Tiffany Co. further depict the explorations of Marquette, circling the face of the balcony in the two-story, rotunda-like lobby.

Also, over each elevator door on the first and second floors are bronze portraits of noted Indian chiefs, and several less remarkable European explorers.

The Marquette Building was the focus of a major preservation battle in the mid-1970s when developers wanted to tear it down and redevelop the site. Instead, it was designated a landmark.

About that time, Banker's Life and Casualty (the insurance company started by John D. MacArthur) foreclosed on the building, later donating it to the foundation.

The building was completely renovated from 1979-81 for about \$17 million.

Although the MacArthur Foundation's stated mission is to "improve the human condition," it's certainly not looking to lose money in the process. So, to diversify its investment portfolio, a large portion of the foundation's real estate holdings have been sold off since the mid-1980s, according to Hoepfner.

At one point, he says, the foundation had about 75 percent of its assets in real estate and even became the largest owner of build-



"This is an asset that we feel is our home," says Tim Hoepfner, director of real estate for the John T. and Catherine T. MacArthur Foundation, owner and chief tenant of the Marquette Building.

ings in Manhattan.

The foundation's real estate holdings now have been reduced to about 27 percent of its entire portfolio. (It still owns about \$700 million worth of property and remains the biggest landholder in Palm Beach County, Fla.)

Hoepfner says the foundation has no plans to sell the Marquette for now, but he does think there's a window of opportunity as the real estate market improves to move the building up a notch and make it "really enjoyable" for a certain type of tenant.

A plus for the building: the MacArthur Foundation funds energy conservation research and is using some of that know-how in the current renovation.

At the suggestion of a foundation fellow—Amory Lovins, the head of an energy think tank—an energy study of the building was commissioned back in 1992.

"We wanted to provide a good working environment that goes along with our sensitivity to energy efficiency," said Hoepfner.

The energy analysis of the Marquette, by Sieben Energy Associates Ltd., Chicago, focused heavily on lighting.

Energy experts, who probably would agree with Aldis' century-old idea that light was the first in-

gredient of a good office building, say lighting is usually the quickest and simplest way to conserve electricity.

"Lighting is a big thing in commercial projects," said George Malek, senior research engineer, Energy Resources Center, University of Illinois at Chicago.

Malek says most commercial building owners could probably cut their lighting bill by about 50 percent if new, energy-wise lighting were introduced.

Figuring that a lighting retrofit will probably save about \$158,000 a year at the Marquette, new energy-efficient lighting is being installed in most of its common areas. That change not only should produce more light, but also more natural-looking light, energy experts said.

Building manager McDonald says improved lighting also will help accent the lobby's trademark artwork and its marble staircases. He adds that the lighting will be upgraded on the interior stairways that corkscrew through the building to enhance their appeal as well.

Simple changes are being made to improve the lighting, too. Recently, the lobby ceiling was washed.

"Keeping reflective surfaces

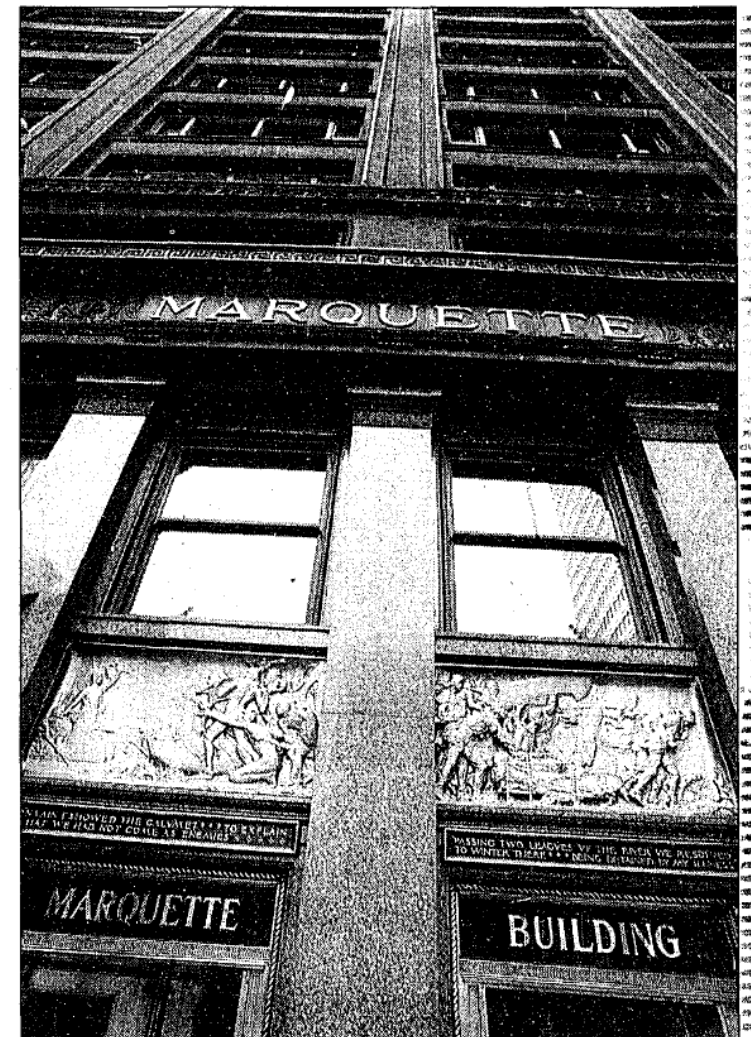
clean can make a tremendous difference," said Kevork Derderian, president of Continental Offices Ltd. Realty, the firm now managing the Marquette. "It even changes how the mosaics look."

Energy experts point out that any analysis of indoor lighting naturally leads to the study of other building systems, such as windows and air conditioning.

For example: The U-shaped Marquette includes a light court that was originally designed to insure an abundance of light into offices on the back side of the building. That means it has a lot of large windows that not only let in light, but heat too.

"We are looking at the windows," Derderian said, explaining that the Marquette's panes are tinted red to cut down light and thereby reduce cooling costs. "There are windows that can be made clear, but that reflect 51 percent of the radiant heat."

While no decision has been made on whether the windows in the building will be replaced, new windows could cut cooling costs. That's important because the building will get a new air-conditioning system (the biggest expense of the current round of changes) by the beginning of next year.



Built in 1895 by Holabird and Roche, the Marquette Building is the best example of the firm's Chicago School of architecture.

The circa-1947 air conditioning system will either be replaced, or the building will buy chilled water from Unicom Thermal Technologies Inc., which is providing cold water to air condition a number of Loop buildings.

"It is expensive to replace all the windows, but if we can prove we are lowering the cooling load on the building, then the utility will charge us less," Derderian said.

He belongs to the Merritt Alliance, a group of 44 businesses studying ways to cut energy costs.

"We can sit with someone who is retrofitting a building and show him all his options on a computer model. We can show him the effects on his cooling load and choose the most efficient systems and the best environment by using computer models instead of by guessing," he said.

But those kinds of systems are a

little easier to swallow in drawing specifications for a building without such a prominent past.

"You have to do all your work in a way that doesn't affect the historical aspects of the Marquette," Derderian said. "Those beautiful bronzes have to stay there. There is a premium in a building like that."

McDonald says the building is primarily being marketed to law firms. Accordingly, special conference and deposition rooms have been built for tenants. Also, cable television and a fiber-optic communications system to transmit data have been installed.

"It might look like a nondescript brown building from the outside, but when you walk in the lobby, those hidden jewels are what makes Chicago a great place to visit and a great place to work," McDonald said.