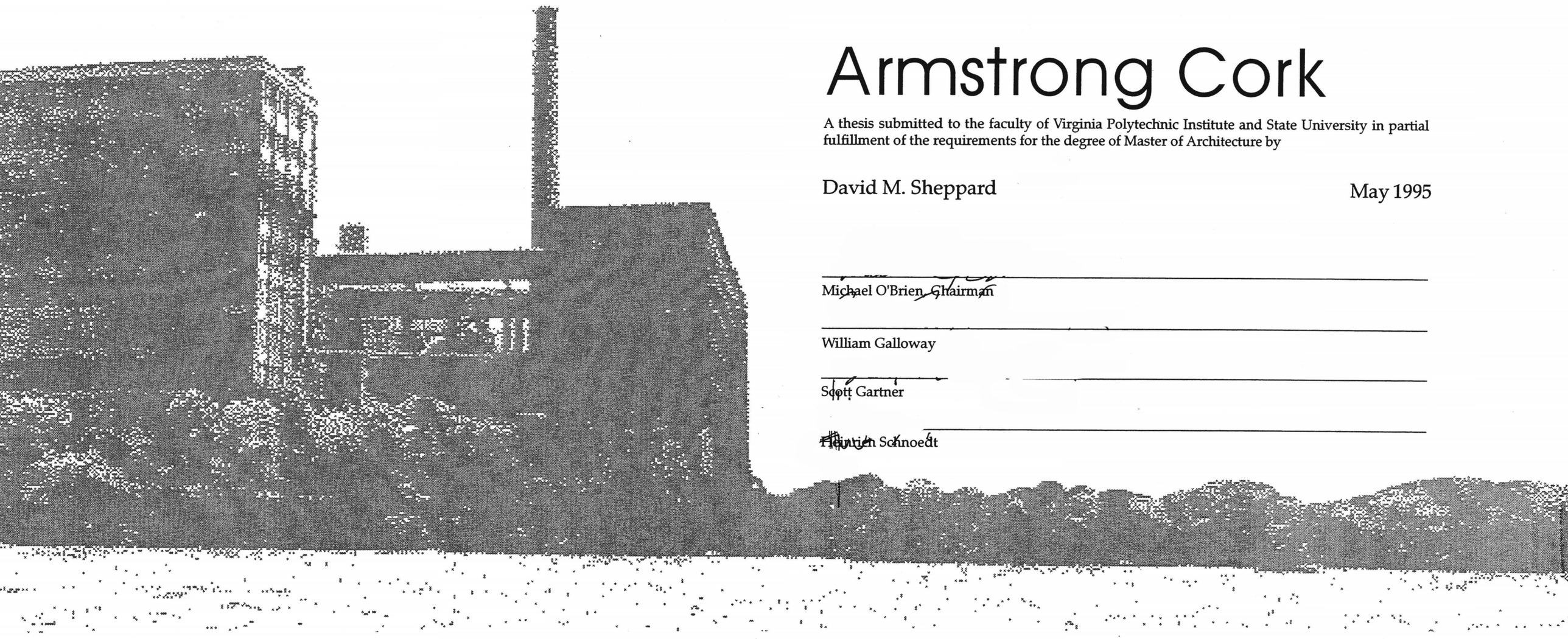

Armstrong Cork

A thesis submitted to the faculty of Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of Master of Architecture by

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May 1995

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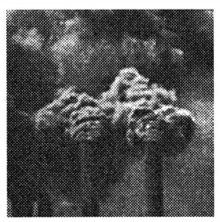
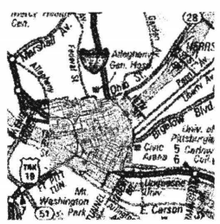
Within:

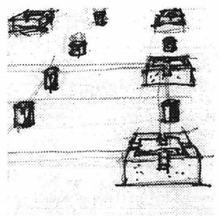
An understanding: the work at hand



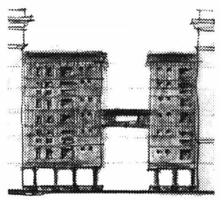
Hell with the lid off: what was



The face of the city: what is



Places and occasions: a discussion of the design proposal



The privileged language: drawings and models of the proposed work

End papers: works consulted, notes and appreciations

A photograph of the Armstrong Cork Factory in operation, taken by Luke Swank, probably between 1934 and 1944.

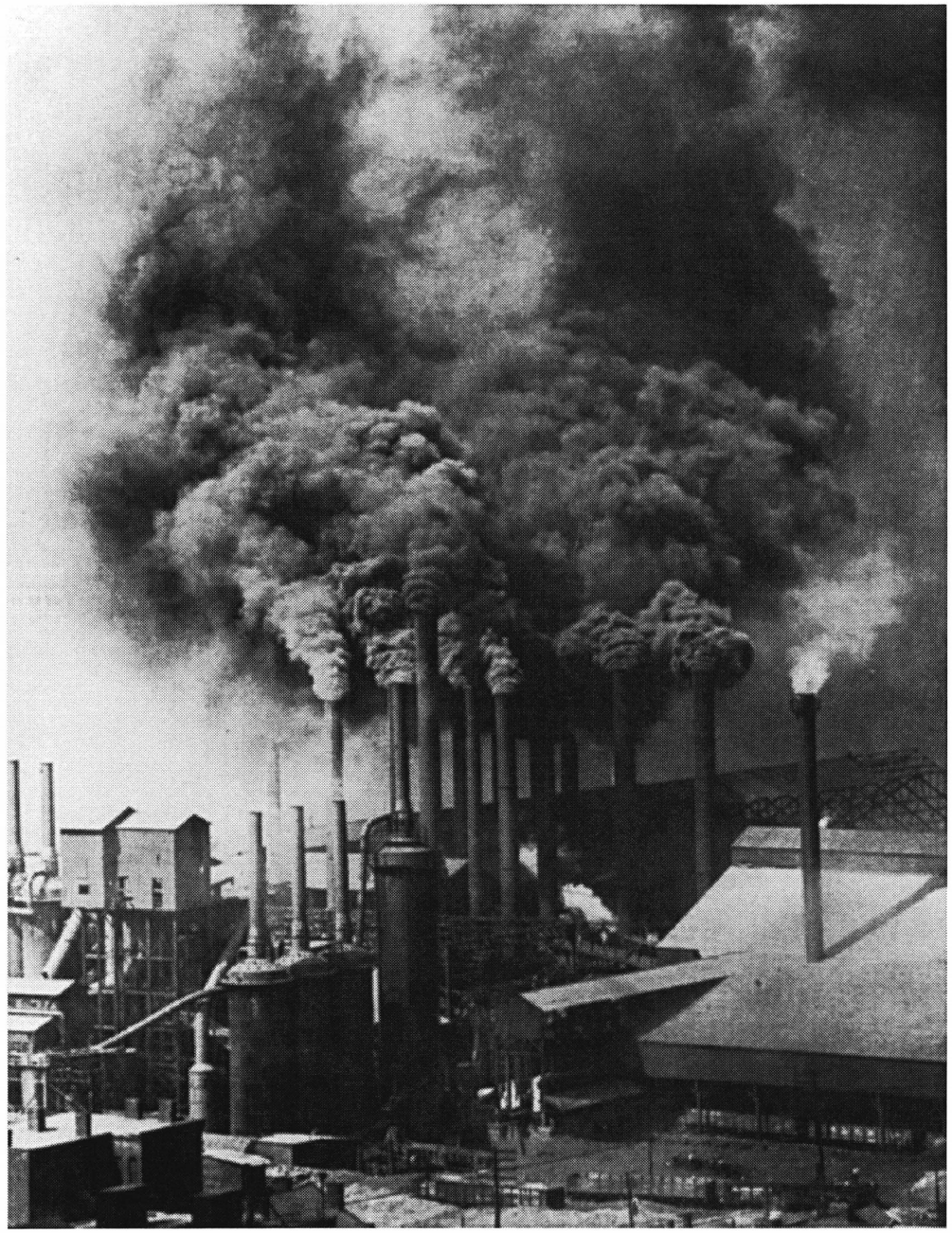
An understanding

Connection and variety are the quintessential characteristics of successful urban neighborhoods - variety in places to shop, products to buy, income level of residents, and in the interests and activities of the people who populate the sidewalks. Urban variety is not the consequence of population density alone: people must be in contact with one another, if only visually, for the place to succeed. The inside must communicate with the outside. For a city to work, its people must only follow the simple epigrammatic advice of E.M. Forster - *Only connect*.

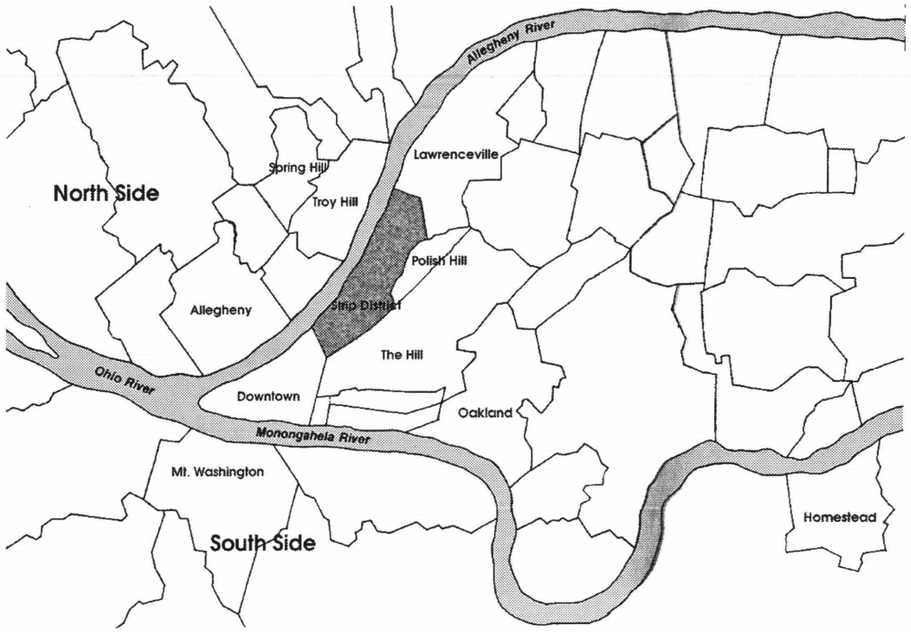
A place which facilitates connections must propose a physical variegation: different sizes of places, polyvalent places, places diverse in age and in cost. At the scale of the dwelling, diversity necessitates an economy of material and action, through which even a relatively modest apartment can become an excellent home.

Recognizing, then, these fundamentals, is it possible to apply them in such a way that a single project may provide the seed for urban growth in a misused part of a city district? And what constitutes such a seed - what components are indispensable for it to grow? How does the articulation of degrees of privacy energize the city? The question requires that the city, both general and particular, is understood.

Hell with the lid off

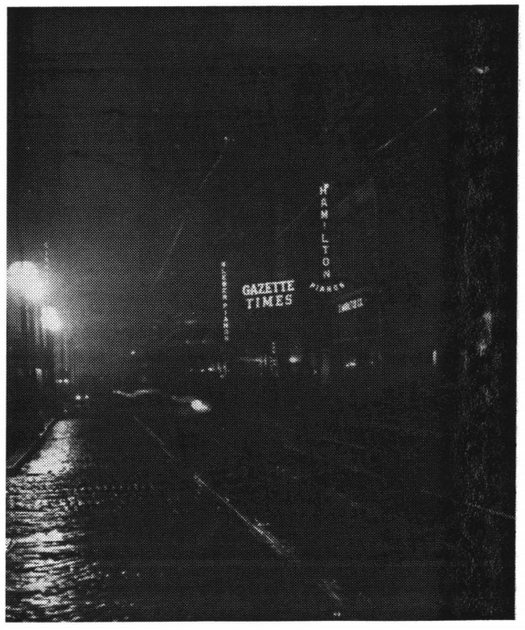


1 Photograph of the Strip District, taken from the Hill about 1906.



2 Map of Pittsburgh and surroundings.

In 1859, Edwin Drake drilled the world's first commercial oil well in Titusville, Pennsylvania - a town on the Allegheny. Pittsburgh became the largest oil refining city in the world in the latter half of the nineteenth century; in 1871 there were sixty refineries processing the crude oil floated down in barges from Titusville, capable of producing 36,000 barrels of refined oil each day. The glass industry, founded in 1797, was booming, with 32 plants; the area produced twenty percent of the nation's coal, and, as almost all of it was ideal coking coal, the iron and steel industries blossomed in Pittsburgh as nowhere else. Glass was one of the largest industries from the city's inception; by the end of the nineteenth century, almost half of America's glass was made there. Transportation flourished; the Pennsylvania Railroad grew into a transportation monopoly on the back of Pittsburgh industry - until the steel and ore magnates of the town acquired enough wealth to build their own railroads.



3 Wood Street in downtown Pittsburgh, winter of 1913. The photo was taken at noon.

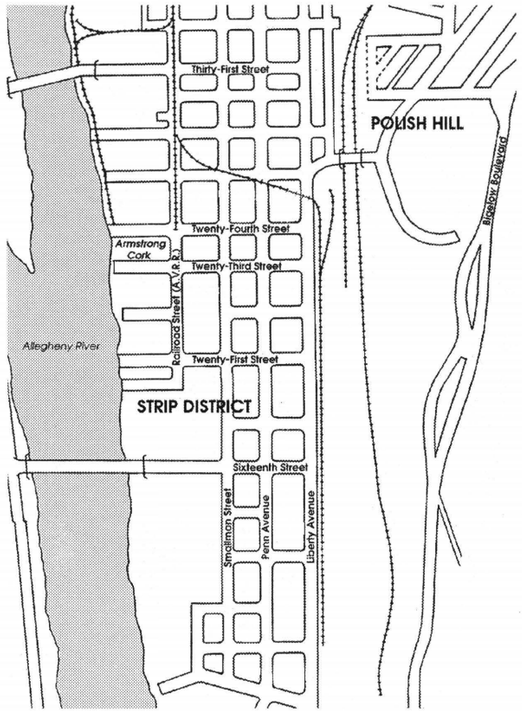
The City of Pittsburgh began existence as a military objective. Situated at the point formed by the confluence of the Allegheny, Monongahela, and Ohio Rivers, it was defensible and commanded a prominent trade route. As Fort Duquesne (French) and then Fort Pitt (British), it was often fought over by the European powers, the Native Americans, and ultimately the revolutionary Americans. The triangle formed by the Allegheny and Monongahela is closed on its third side by Herron Hill, known in Pittsburgh simply as The Hill, leaving little land around the Point to build upon; the landscape across the rivers was not more promising. A small strip of land across the Monongahela, eventually the home of a booming glass industry, rests in the shadow of Coal Hill - now Mount Washington, a hill that dominates the modern city, and which, with its once-extensive bituminous deposits, played a pivotal role in its industrial transformation. Across the Allegheny and Ohio from the Point is a small plain that became the city of Allegheny, which was incorporated into Pittsburgh in 1906, and is now known as the North Side. Upstream from the North Side the land rises abruptly from the shore of the Allegheny into Spring Hill and Troy Hill. On the city's side of the water, a thin strip of land extends upstream between the Allegheny and the Hill -an area aptly known as the Strip District.

The rivers were the reason for the founding of Pittsburgh, and the city has ever since carried on a symbiotic relationship with them - a relationship sometimes passive, sometimes abusive. In the latter half of the nineteenth century, at the height of the city's radical industrial transformation, the Point became a slum, on both land and water; waterborne shanty towns sprang up as industry gradually occupied the flatlands and pushed the workers into the hills, valleys, and rivers. The middle class, with the advent of cable cars and especially electric traction, could relocate to the new suburbs; the affluent moved even farther out, where larger properties could be acquired But the rivers were choked with steamboat traffic and the air and water pollution they engendered; the untreated effluent of the burgeoning city contaminated the water supply and gave Pittsburgh one of its many unenviable distinctions - that of being the typhoid capital of the western world.

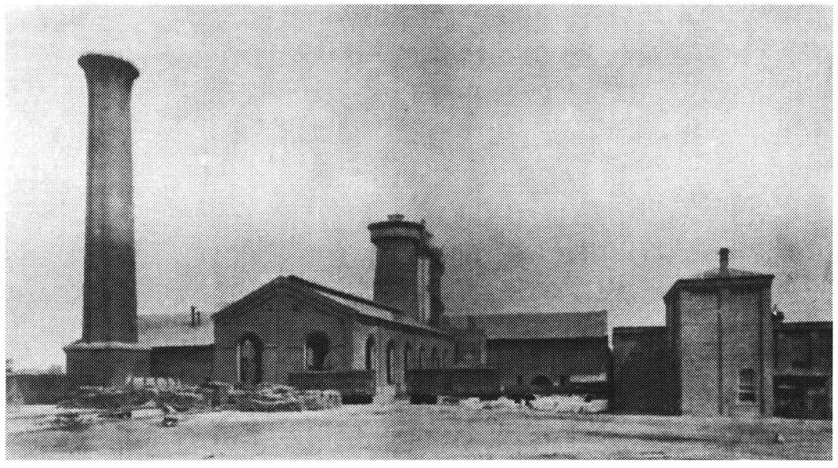
In the twentieth century, industry gradually left Pittsburgh. The local coal seams were depleted, and steel manufacturing moved closer to the Great Lakes, where raw materials could be shipped more cheaply. Pittsburgh became a city of corporate headquarters whose manufacturing facilities lay elsewhere. After the second world war, much of the downtown area was razed and rebuilt in an adventurous city redevelopment scheme known as "Renaissance." Renaissance reshaped downtown - sometimes for the better, occasionally not. Like many urban redevelopment projects of its time, it attempted to segregate activities into discrete zones and replace substandard housing with "projects." Much of the Lower Hill was cleared to make way for a never-completed cultural center - the only significant element which was built was the Civic Arena, home to the city's National Hockey League Franchise, and sporadically used for a decade after its completion by the Pittsburgh Symphony. Adrift in a sea of parking separating it from downtown, the Civic Arena consequently does little to activate the city. The housing projects adjoining it were typical of the repetitious, monolithic projects built almost everywhere in America in the 1950s and 1960s. A second campaign - "Renaissance II" - began late in the 1970s, and was aimed at completing the metamorphosis of the city from an industrial to a corporate and financial center. The city's skyline was wholly remade. Renaissance I and II remade downtown Pittsburgh and the Lower Hill - but left the Strip District largely untouched.

The Strip District was the heart of Pittsburgh's industrial nascence. In 1870 George Westinghouse set up the Westinghouse Air Brake company at the corner of Twenty-Fifth Street and Liberty Avenue, transforming the railroad industry by radically increasing its load-carrying capacity. In 1886, as a result of his work with alternating current, he split part of this firm off as the Westinghouse Electric Company. In 1872, Andrew Carnegie opened the Lucy Furnace on Fifty-First Street; in the same year a consortium of other steel makers opened the Isabella Furnace a few blocks away, and the two enjoyed a fierce competition, each eventually producing up to 300 tons of pig iron each day - well beyond that of any other blast furnaces in America or England. In 1888, the world's first commercial aluminum ingot was poured by the Pittsburgh Reduction Company on Smallman Street, which grew into ALCOA. The air pollution which was exuded by all of this unregulated industrial exuberance gave to Pittsburgh the epithet "the Smoky City," an identity which remained with the city long after the truth behind it had blown away. A Pittsburgh biographer, James Parton, looked down at the Strip District from the Hill and described what he saw as "Hell with the lid off."

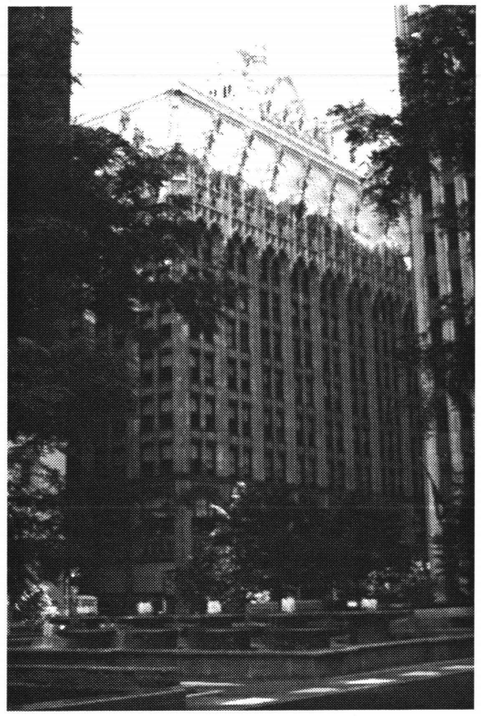
In the planning stages of Renaissance I, Frank Lloyd Wright was one of the architects approached to propose a redesign of downtown Pittsburgh. He replied that "It would be cheaper to abandon it."

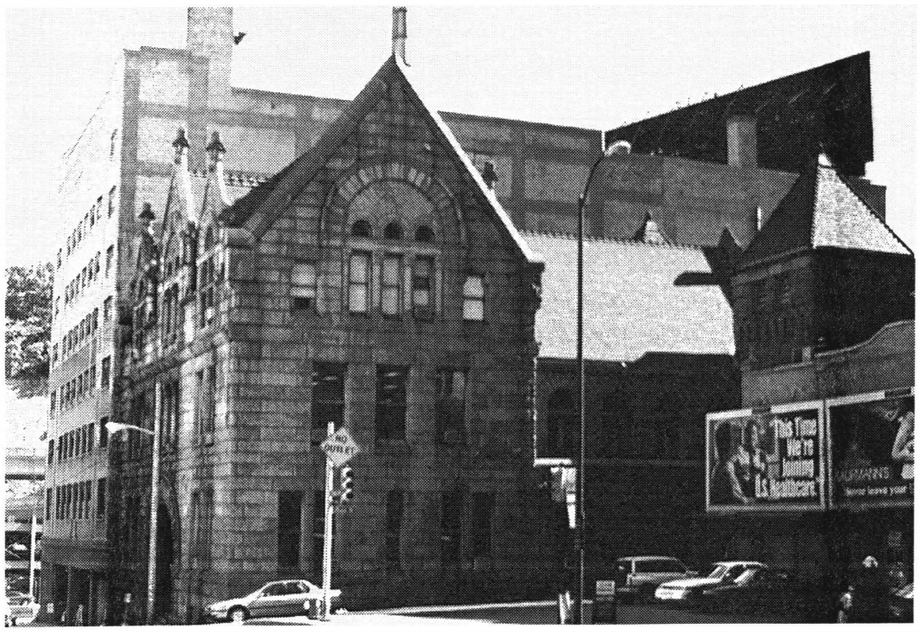


4 A map of the Strip District.



5 The Lucy Furnace of the Carnegie Steel Corporation.





6, 7 Two buildings by Frederick Osterling. At top, the Union Arcade Building; below, the Allegheny County Morgue.

In 1902, Frederick Osterling completed the Arrott Building, one of the city's early skyscrapers; it is still in use. He was also the County Architect of Allegheny County, and on the verge of receiving a number of significant commissions, including the Allegheny County Morgue, a Romanesque Revival building clearly inspired by H.H. Richardson's nearby Allegheny County Courthouse and Jail complex. Osterling was responsible for the addition of several wings to Richardson's jail, as well as a highly controversial plan - unexecuted - to add two floors to the courthouse. He designed the Union Arcade, built in 1915-1917, for Henry Frick - a massive building, the ground area of which was said to surpass that of any other office building in America. It remains one of the city's more popular buildings, but it marks the end of Osterling's most productive years; a strained relationship with the very powerful Frick led to litigation, which damaged Osterling 's reputation. After the Union Arcade building, Osterling built a new office for himself - and very little else.

Pittsburgh was the preeminent center of glass manufacturing in the nineteenth century, producing about half of America's output in the last few decades. It was consequently a major producer of bottles, and, hence, of bottle closures, which, in 1860, were made of hand-cut corks. In that year Thomas M. Armstrong and John Glass bought an existing cork-cutting operation in Pittsburgh, and two years later bought the exclusive rights to a newly-invented cork-cutting machine. Armstrong's brother Robert succeeded Glass. As other technologies supplanted cork as a bottle closure, Armstrong, Brother & Co. diversified into the manufacture of cork board, pipe insulation, and a variety of other products. In 1878, the company moved from its small operation on First Avenue into a new factory in the Strip, on Twenty-Fourth Street. The firm was incorporated as the Armstrong Cork Company in 1895, and included under its corporate umbrella seven other cork manufacturers, three of them across the state in Lancaster.

Cork, especially cork flour, is highly combustible, and in February of 1901 fire gutted the Twenty-Fourth Street plant. The company rebuilt immediately. By June of that same year the first building of the new plant, designed by Frederick Osterling, was in production, despite the fact that its roof was not yet completed. It is a seven-story concrete frame structure with a brick exterior, three bays wide; it was followed one year later by a building identical in structure, but four bays wide and slightly longer. In 1913, a ten-story addition was added on to the river side of the 1902 building. In its new, much expanded headquarters, Armstrong Cork became the leading producer of cork board in the United States, and moved into the insulation and cork floor tile industries.

Frederick Osterling. the architect of the Armstrong Cork complex, was one of Pittsburgh's most successful practitioners of the time, and nearing the peak of his career. Like most of his peers, Osterling's work was revivalist - he did a little Neoclassical work, but for the most part he worked in the Romanesque Revival; as Montgomery Schuyler wrote in 1911, "Pittsburgh is the American city which more than any other, more even than Boston, bears traces of the Romanesque Revival." Certainly H.H. Richardson's Allegheny County Courthouse and Emmanuel Lutheran Church had tremendous influence on the architectural direction of the city. The buildings for Armstrong Cork are a simplified version of the prevalent style. They appear in a monograph Osterling published in 1904; evidently C. D. Armstrong, son of the company's founder and its president upon his father's death, was pleased with the work, for he commissioned Osterling to design his residence - a building whose exterior restraint conceals an interior dense with the ostentatious detail which the houses and lives of Pittsburgh industrialists of the day were notorious for.

C.D. Armstrong observed that the cork industry had no compelling reason to remain in Pittsburgh. It no longer relied on the bottling business, which had moved on to other forms of closures anyway; floor coverings became the company's largest product line. The raw material came from abroad, and shipping it to Pittsburgh was an unnecessary expense. Sixty-five percent of the cork the company processed wound up as scrap, which was then shipped to Butler, Pennsylvania or to Lancaster, where, as cork flour, it was used in the manufacture of linoleum. In April of 1929, the company moved its headquarters to Lancaster, where it eventually grew into Armstrong World Industries. The Pittsburgh plant continued making cork products - floor tiles, insulation, and finally automobile gaskets - until 1974, when it was closed.

After Armstrong left Pittsburgh, part of the plant was used very briefly as a grocery warehouse. But in the twenty years since it has been empty. Like all good buildings, it is a fine ruin. The well-detailed facades of Armstrong Cork conceal just the opposite - a spartan concrete frame, and nothing else. At the time of his monograph, Armstrong Cork was one of Osterling's largest jobs, but not one of his more prized - it merits but a single page toward the end of the work; C.D. Armstrong's house is given three pages. The inattention is unfortunate. Perhaps because of the hurried circumstances under which it was built, or perhaps because its program, divorced from civic life, was of less interest to Osterling, Armstrong Cork escaped the overattention to historicist decoration that marred some of the architect's more prominent projects, notably the county morgue. The architecture of Armstrong Cork lies in the spatial changeabilities it offers, not in the academic application of style. Though deserted, it is still offering.

8 The Armstrong Cork Factory, by Frederick Osterling. A view of the elevation of the 1901 building facing downtown, from A.V.R.R.

In a 1927 address to the Pittsburgh Chamber of Commerce, Charles D. Armstrong declared:

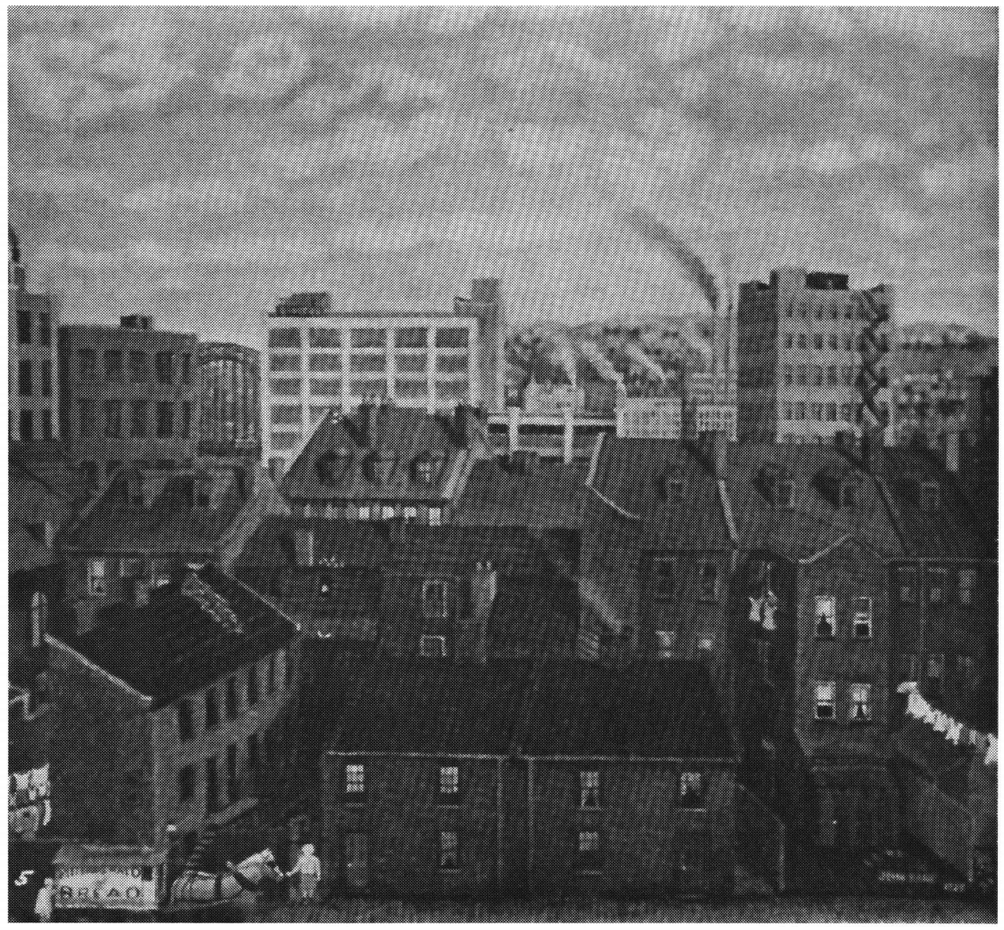
"One of the live problems of modern industry is to maintain a proper interest in the community in which it operates, for the improvement of the condition of the working class. If the factory is located in a small city and the management is actuated by the right spirit, the problem is not difficult, but if the factory is only one of many operating in a district where the interest in the community among the factories is not general or deep-seated, it results in conditions which are not helpful to the community and which engender an attitude that is a threat to stable society. I have the strong conviction that it is the duty, and should be the pleasure, of a corporation operating in any community, to take a real interest in whatever is good, uplifting, and for the benefit of the working classes. We should lend our aid to orderly municipal growth, to education, to hospitalization, sanitation, recreation, and all other activities which must be conducted on a community scale to make a city a worth-while place in which to reside or to conduct a business."

Armstrong was following the declamatory footsteps of most prominent Pittsburgh industrialists; often, though, their practices strayed far from their stated social intentions. Andrew Carnegie, who became one of the wealthiest men on earth but waged bitter battles with workers struggling to organize, selected as the motto for his family emblem the phrase "Death to Privilege."

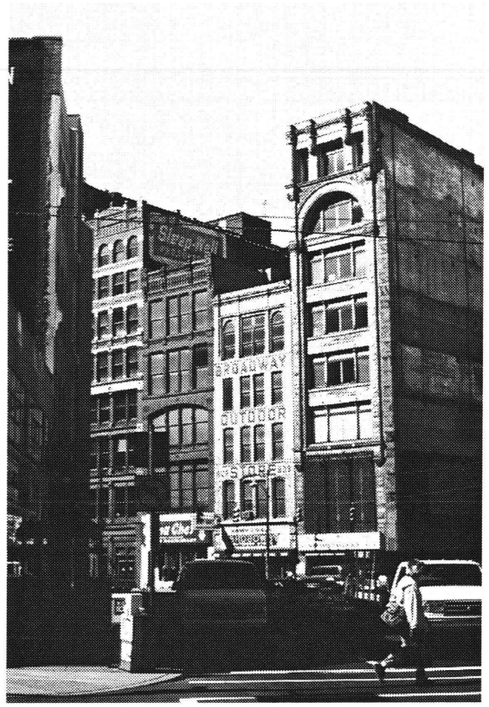
The face of the city

....the more homogenous the urban population, the less we are entitled to talk about a city. The more segregated urban functions and urban groups, the less we are actually creating an urban community. The city as diagram, in the end, is the story of dreamers who want the complexity and richness of the urban structure without the problems, tensions and volatility. In dreams we expect this sort of gratification without dues or consequences. In real life, we know better.

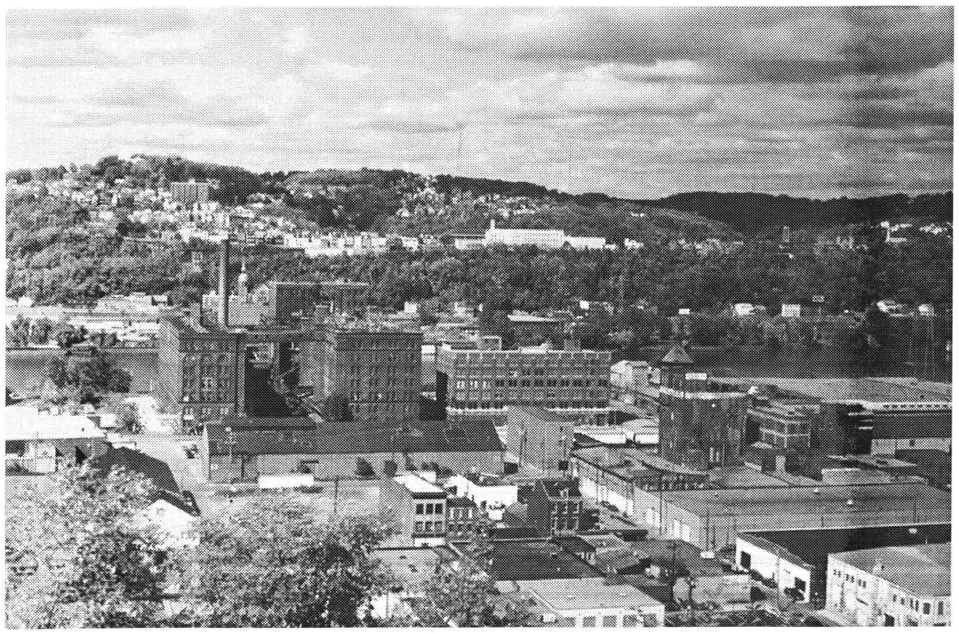
Spiro Kostof



1 John Kane, *Across the Strip*, 1928.



2 Downtown Pittsburgh on a Sunday afternoon, October 1994.



3 The Armstrong Cork Factory and surroundings, from Bigelow Boulevard on The Hill. Troy Hill faces the Strip District across the river.

Pittsburgh is still known as the Steel City, although the steel industry maintains a vestigial manufacturing presence, comprised of the Jones and Laughlin coke plant on the Monongahela and a few steel fabrication companies. The corporations are still headquartered in town, but the manufacturing occurs in places like Sharon, Pennsylvania; Gary, Indiana; and Conneaut, Ohio. So it is with ALCOA and PPG. H.J. Heinz has a large manufacturing plant on the north side of the Allegheny. Downtown Pittsburgh, though, has no remaining manufacturing facilities; it is a city of corporate offices. PPG is headquartered in the large glass 'cathedral' of Philip Johnson; USX Corporation (formerly U.S. Steel) is in the "rusty ingot," a 64-story Cor-ten steel building by Harrison & Abramowitz. The same firm did ALCOA's aluminum-clad headquarters a decade earlier, as well as U.S. Steel's earlier headquarters, sheathed in stainless steel.

On weekdays, the city is always active. After work, events at Heinz Hall, the Stanley Theater, and the Civic Arena help populate the streets. Sundays are quiet downtown; the largest events take place in the North Side, at Three Rivers Stadium. Some people drive downtown, park, and take the water taxi to the stadium, or to the new science museum just down the Ohio from it. Kaufmann's department store is open, all ten floors of it, but some of the shopping is now done at Station Square, a renovated train station across the Smithfield Street Bridge from downtown. Station Square has been a commercial success; it has a high-end residential component, office space, the Grand Concourse restaurant, and hordes of boutiques.

The water remains an important aspect of the life of the city. Allegheny County has the second-highest number of registered pleasure boats in the nation, behind Dade County, Florida. Marinas are frequent, particularly along the Allegheny and Ohio rivers. However, there is only one public boat landing in the Pittsburgh pool - the section of water extending from the confluence of the three rivers at the Point to the first lock on each river - and it is overrun on summer days. Most of the river traffic consists of small motorboats, and there are a number of hourly rentals available from docks downtown. Some of the boats are larger cruisers, including many from out of town. Then, too, there is the steady barge traffic on all of the rivers.

The Strip District is the largest food distribution center in western Pennsylvania. It never sleeps; the warehouses are open, receiving and dispatching shipments, through the night. By day, many of the wholesale distributors open retail shops or streetside stands. Wholley's Fish Market is the best known; its warehouses extend for over two blocks on Penn Avenue. Dozens of produce stands appear, notably on Penn Avenue and on the Smallman Street plaza in front of St. Stanislaus Kostka. The plaza is a former rail yard several blocks long which Smallman Street wanders down the center of, beside the old Pennsylvania Railroad Fruit Sale and Auction building. Free parking lines both sides of the plaza; a bus stop is nearby, at the corner of Seventeenth and Penn. There are Oriental food stores, European food importers, coffee wholesalers, and many produce purveyors. Owing to the large Italian business community in the Strip, there are also a number of espresso bars, too. Some of these make the predictable gesture toward the stylish; at least one, though - La Prima, near Twenty-First and Penn - is simple to the point of crudity and just as orderly. The cappuccino is excellent. On Smallman Street, the Metropole, a dance club, is doing well, as are several bars, drawing people in from the suburbs. Standing on the walkway in front of the Metropole, Armstrong Cork stands behind the long Fruit Auction and Sales Building like an ore carrier at dock.

4, 5 Two views of Smallman Street. St. Stanislaus Kostka stands at the head of the plaza; Armstrong Cork is visible beyond the long Pennsylvania Railroad Fruit Auction and Sales Building.

6 The placement of ducts and walkways contradicts the order of Osterling's factory in plan and section.

The Armstrong Cork factory is a Romanesque Revival building for its first sixteen inches. Inside the skin, it is a factory - a very simple concrete frame which has been equipped and stripped by successive generations of mechanical engineers. The industrial equipment with which a variety of products were manufactured - from cork to urethane foams - sometimes protrude from the buildings, interconnecting them in odd and seemingly random ways. Their order is the order of abandoned processes; the order of the facades had nothing to do with them. The interference between these ideas of order animates the complex. The pipes, ducts, trusses, and bridges which break out of the brick skin of the buildings are the marks of the life of the building revealing themselves from behind a historicist mask. That mask itself is valuable, for the color of the brick was changed by decades of exposure to Pittsburgh's once notorious smog; the finish of the brick speaks of the historical relationship between industry and the environment in an era that valued productivity above all else.

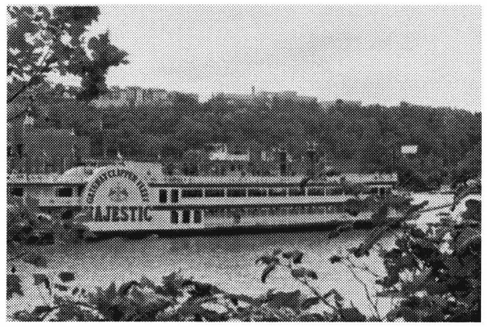
Machines not only penetrated the skin of the buildings, but penetrated the bounds of the property; traces of their metal tracks remain. A spur curved in between the two rows of buildings. The vacant lot across what was once Twenty-Third Street was once a rail yard. Both were served by the rail line, now abandoned, that ran down the waterside; now it is beginning to subside behind the failing retaining wall. The height of the rail cars set the height of the ground floors; most of the complex sits on a uniformly raised plinth. In the 1901 and 1902 buildings, the plinth is of soot-blackened stone; the 1913 building employs concrete. The 1902 building has a long and dilapidated loading dock serving the interior rail spur.

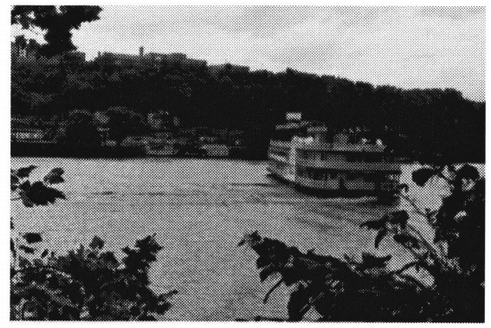
Osterling's disposition of the facades points to a social order which, together with the industrial order it accompanied, has disintegrated. The greatest attention to detail was expended upon the Twenty-Third street elevation, facing downtown. The least attention was given to the elevations of the interior courtyard and to Twenty-Fourth street. The act of turning its best face toward downtown was a tacit recognition that Armstrong Cork was *from* downtown, not *of* it. Moreover, it looks toward downtown for recognition, and literally turns its back on the suburbs, from which its workforce came. Armstrong Cork was made at a time when the city was a dense urban core which looked outward at what surrounded it. But the industrialization which created it, and which it was a participant in, remade American cities. Electrification and the mechanization of transportation brought about a residential diaspora which inverted the city; it was no longer looked from as much as looked at. As Armstrong Cork went to work, the population of the city was flowing out past it. Put another way, it was the economic power of the city which radiated ouwards from downtown and made Armstrong Cork, made all of the suburbs, all of which looked back toward their origin. But the suburbs claimed increasing measures of autonomy, and today the city endeavors to draw life from the economic power of the suburbs. The Station Square project, and the older Allegheny Center shopping development on the North Side, are the built admissions of this striving. They are efforts at creating attractions, places to look at. But to successfully recharge an urban core, it is most important to make places to look *from.*

For all of the importance of the rivers to the city, the retaining wall makes a harsh separation between Armstrong Cork and the life of the river. It faces passing boaters with dumb abruptness, denying them the shore. The Gateway Clipper Fleet, a group of tour boats based at Station Square, constantly plies the three rivers. In number of passengers carried annually, it is the largest tour boat fleet in the United States. Many times a day the Majestic, flagship of the fleet, turns around directly in front of Armstrong Cork and heads back toward downtown. The first lock is still some distance upstream, at the Highland Park Bridge; but the operators of the Majestic evidently feel that the interesting part of Pittsburgh ends in front of the factory, between Troy Hill and Herron Hill. Upstream, the river's edge is marked by little more than sporadic marinas and scrap yards, by a park or a road, but the edge of Pittsburgh on the Allegheny River happens in the Strip, by its most prominent waterside building.

At the foot of the retaining wall, an incidental event points toward what might be - sedimentation at the edge has created a thin and irregular ribbon of wet earth, where slight grass and a few Paulownia trees - the weed tree of the railroad system - have taken hold. From a boat on the water, this thin veneer of vegetation tantalizes with the image of pleasant mooring, without providing the fact of it.

7 The view from the river. The trees, which do much to soften the edge of the retaining wall, sprout from a narrow strip of mud at its base.



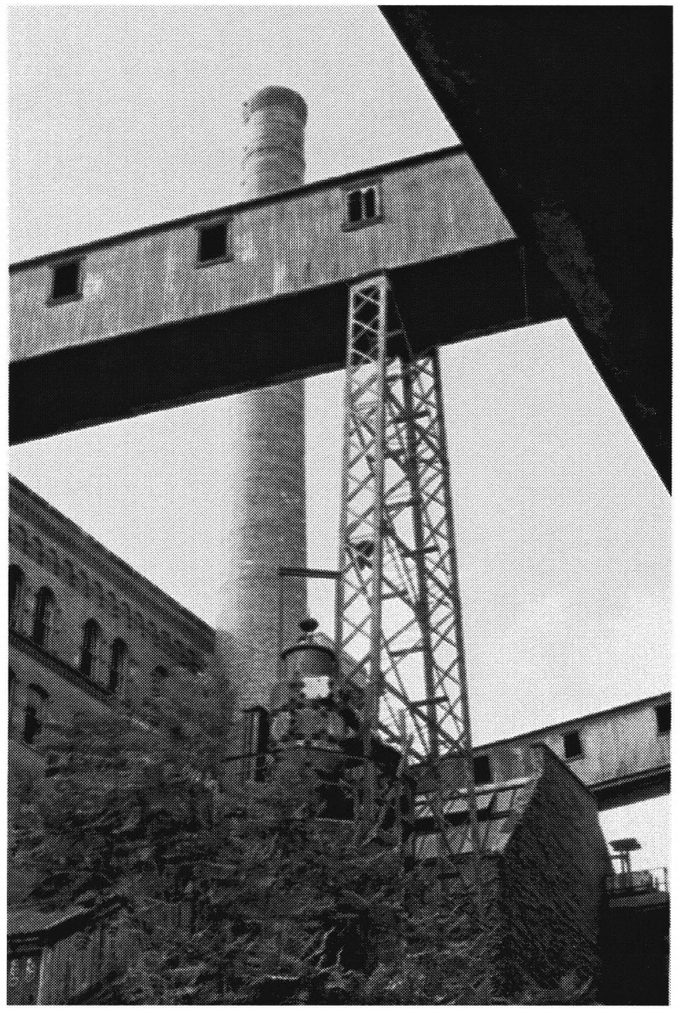


8, 9 The tourist boat Majestic cruises up the Allegheny as far as Armstrong Cork before turning back toward the Point.

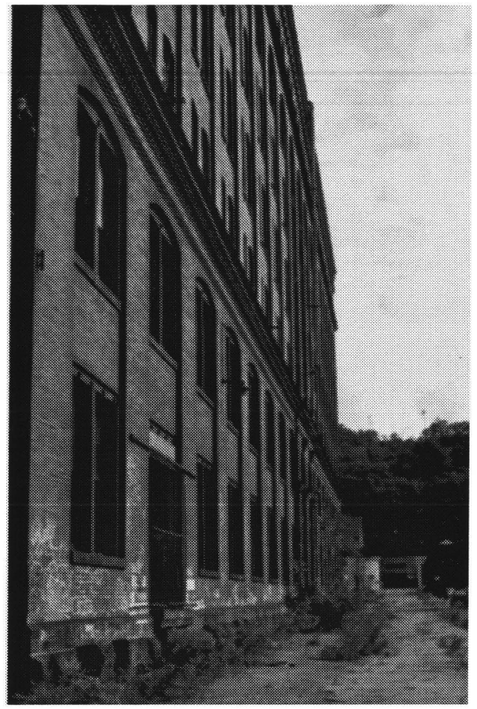
10 The courtyard between the 1901 and 1902 buildings. Remains of the rail line can be seen in the foreground.

The internal yard - that once made by rail cars pulling into the midst of the factory complex - is, even in its ruined condition, the most exciting place in the complex. Unlike Twenty-Fourth Street, the distance between the parallel seven-story buildings is wide enough - about 117 feet - to admit plenty of light. Addressing one another, the 1901 and 1902 buildings, through their regular and agreeing fenestration, create a rhythmic field within which disparate events occur which are regulated by the rhythm but not dictated by it. In the penumbra of the 1901 building stand a series of small one and three story buildings of varying character. Their presence in the yard tempers the scale of the larger buildings, their irregularities marking points along the line of the larger scale. The 1913 building hints of a closure on the river side. Overhead, the smokestack pierces the covering implied by the pair of metal bridges which connect the top floors of the 1901 and 1902 buildings.

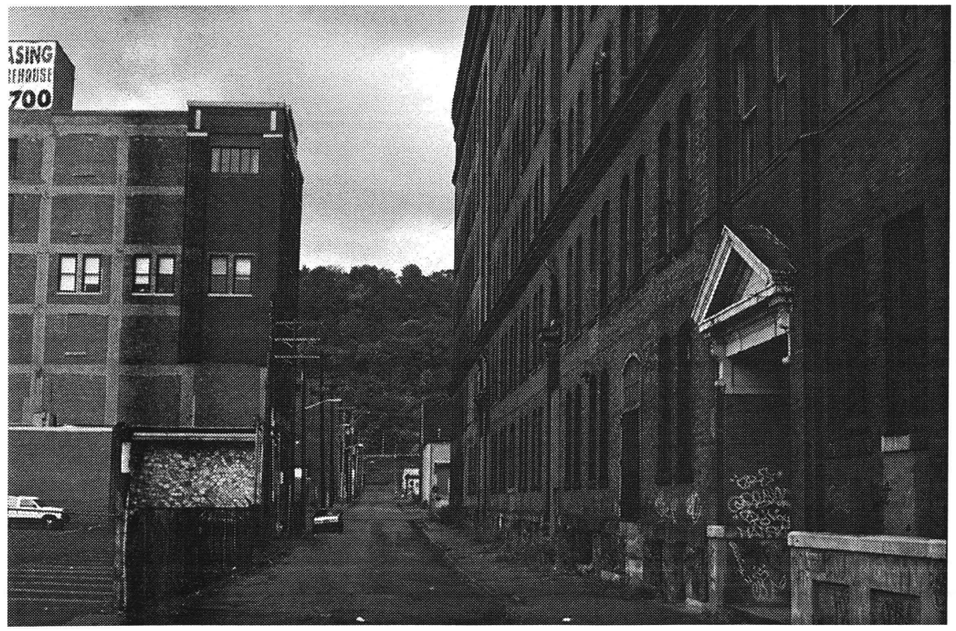
The smokestack is the exceptional element of the collage of buildings on the site. It is excepted from matters of style, having nothing to do with the Romanesque or the Neoclassical or any other historical reference; it is the factory's clearest statement of the exigency of industrial process. It exists in an ambiguous state between building and machine. As a building, its verticality stands against the stated horizontality of the buildings around it - a formal exception which allows the smokestack to claim its role as center of the collage, as the point of orientation. It is the one building in the group which can only be looked at, and never looked from. It is an unreachable center, hollow, never occupied. As a machine, it is a marker of dereliction, of the once occupied. It is a simple thing to envision reasons for the persistence of the buildings, and of the smokestack as a building, but it is a difficult thing to envision a continueing reason for it as a machine. It can no longer be a machine, and interventions made with respect to it must acknowledge as much.



11 The smokestack, seen from the loading dock of the 1902 building.



12 Twenty -Third Street, or rather the now-abandoned end of Twenty-Third Street between the 1901 building and the old Armstrong rail yard.



13 Twenty-Fourth Street, looking toward The Hill. The entrance to the 1913 building is in the foreground; the 1902 building stretches away to A.V..R.R.

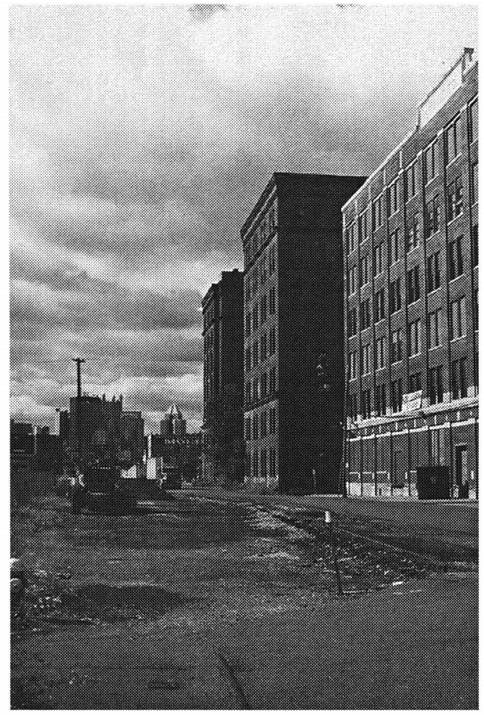
Standing on what once was Twenty-Third Street at the base of the factory is a lonesome experience. Across the closed-off street is an empty lot; only by poking through the thick scrub can one find evidence of the old rail yard. The suddenness of the transition to emptiness is jarring. It rudely emphasizes Armstrong Cork's disconnection with the rest of the Strip. While the heart of the Strip is a vital place, its waterfront is not; Pittsburgh has made poor use of it. Past the empty lot is a low and unremarkable warehouse operated by Consumers Produce Co. Beyond that, Railroad Street dead ends past the Twenty-First Street intersection. A series of vacant lots and city vehicle parking areas lines the river down toward the Sixteenth Street Bridge and the East End Expressway. There is nothing of any visual interest on the waterfront between Armstrong Cork and downtown. As for the street itself, the city of Pittsburgh has amputated it; on the city maps of 1984, Twenty-Third Street ends at Railroad Street, and no longer continues beside Armstrong Cork to the river. It is absorbed into the property called "Armstrong Square," the name given to an ill-fated redevelopment scheme of the early 1980s.

Twenty-Fourth Street approaching the river provides a different sort of unsettling experience. Whereas the Twenty-Third Street side is open and exposed to sunlight and weather, Twenty-Fourth Street is almost always overshadowed by the factory. The height of Armstrong Cork, coupled with the height and blankness of the warehouse building across the street, imprison the street; the buildings are overscale, and the repetition and lack of variegation on their elevations do little to enliven it; no distinctive place occurs anywhere along the 1902 building's length. The warehouse building has an underused parking lot behind it, which is the only vehicular use that Twenty-Fourth Street sees. There is nothing present to make a functioning street. Because it is almost always in shadow, the brick on this elevation seems darker and dingier that elsewhere; when sunlit, the same brick has a soft, warm color. The concrete sidewalk is a featureless plain, the asphalt street listless. The 1902 building is more modestly detailed than either the 1901 or 1913 buildings. The 1913 building's Twenty-Fourth Street elevation provides the only place on the street, in the form of a curiously placed and scaled Greek-revival entrance. But this end of the street needs the least amount of help; so close to the river, the street receives adequate light, and enjoys a good view of Troy Hill beyond. Merely raising the sidewalk to the level of the first floor would help, by bringing the three "arcade" bays of the 1902 building into contact with people and thereby marking a few more places.

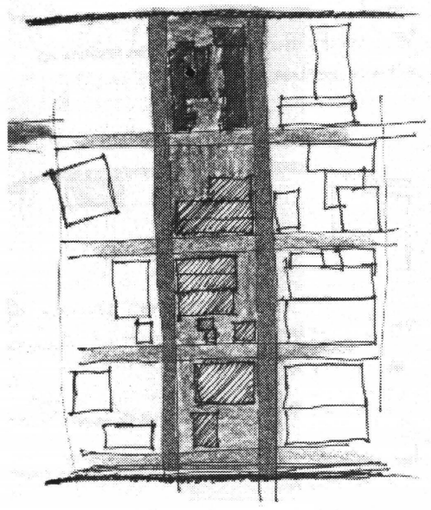
Railroad Street - or A.V.R.R., as it is often called - is a quiet street. It is little used by cars, in part because it dead ends past Twenty-First Street. There are only a few warehouses on it, and nothing to attract people. Its proximity to the river is unrecognized. Cars use Smallman Street for destinations in the Strip; they use Penn and Liberty Avenues to pass through it. The paving is occasionally rough. A few trucks are often idling along its side, waiting for a loading dock to free up. There are rails in it, passing the seafood warehouse across the street and arcing toward City Banana Co. Sometimes a boxcar or two moves down the tracks, or is parked there, by the roadside. It is a wide road, but with little traffic, and with a low-rise, prefabricated industrial vocabulary.

The concrete interior of the buildings is generally well-lit but hauntingly empty. The few indications of illicit inhabitation heighten the loneliness of the place - an unripe tomato hides in a niche by a ruined door sill; a tattered shirt hangs over a derelict window frame, scraps of burned mattresses and shredded pornography decorate the floor. The walls and columns wear polychromatic graffiti. A trucker, loading at the warehouse across the street, reported lights in the upper floors at night - some moving, most not. In the bland wash of daylight on bare concrete, the largeness of the interior volumes is depressing, but at night, with the enclosure made by the limits of the firelight's reach, it is conceivable that a comfortable place would happen.

14 Railroad Street, looking toward downtown.

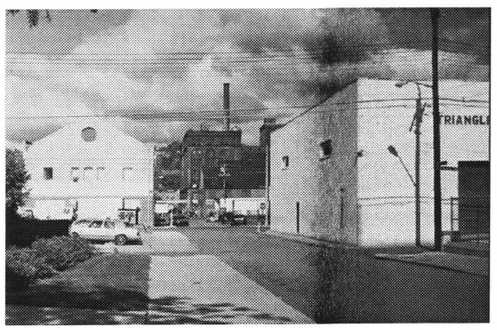


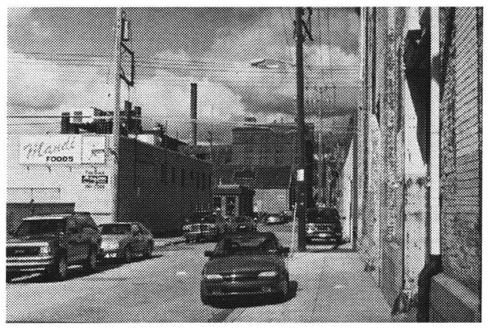
15 The interior of the 1901 building; the southwest elevation, which faces downtown, is to the right.



16 A one-block strip between the Allegheny River and Liberty Avenue, a primary thoroughfare to downtown from upriver. Armstrong Cork is at top center; to its left is Twenty-Third Street, and to the right Twenty-Fourth Street.

One idea, suggested by Jane Jacobs, would be to subsidize low-income housing only to the extent necessary. Jacobs proposes that the government subsidize rents on a sliding scale, paying only what the tenant demonstrably cannot. To go Jacobs one better, the amount of rent which the tenant pays ought to become equity, as a percentage of unit price at the time of occupancy. This, of course, opens the housing units to the competition of the free market, and after one or two occupancies, they will quite possibly no longer be "affordable," and other housing will need to be constructed - but something of value will have been created in the process, which alone is a vast improvement over the existing system. The relentless uniformity of centralized control also finds expression in the economic homogenity of tenants in a public housing project, and prevents such places from ever becoming coherent urban neighborhoods, as Jacobs notes. A successful urban seed must have places for a wide variety of people to remain.

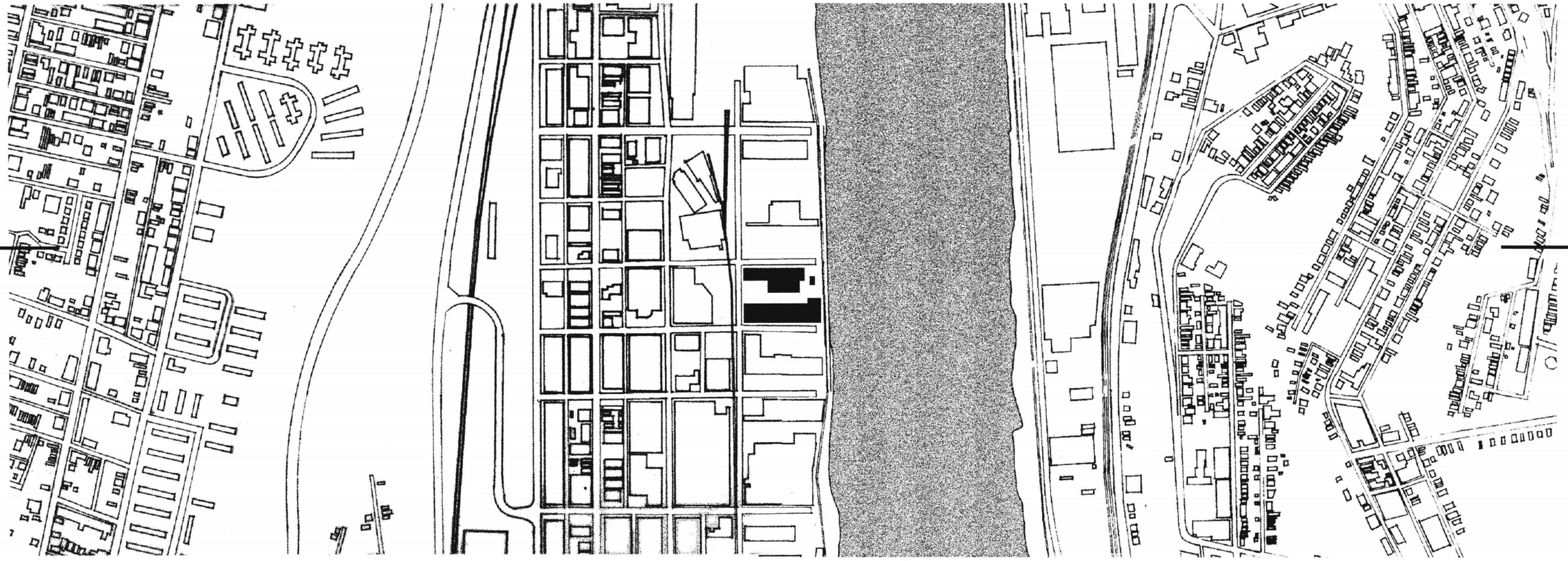




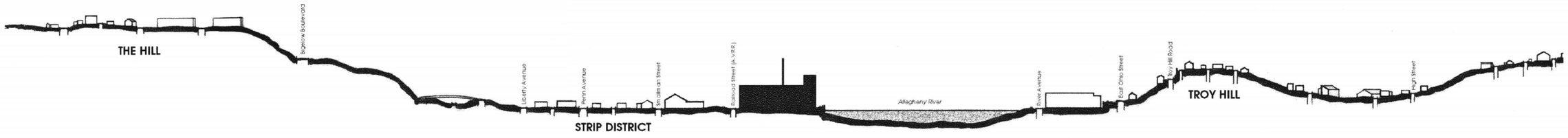
17, 18 Armstrong Cork as seen from Liberty Avenue, looking down Twenty-Third and Twenty-Fourth streets, respectively. With increasing distance from the river, scale, in plan, diminishes; office and other commercial uses supersede warehouses and factories. The smokestack of Armstrong Cork is the dominant element of orientation.

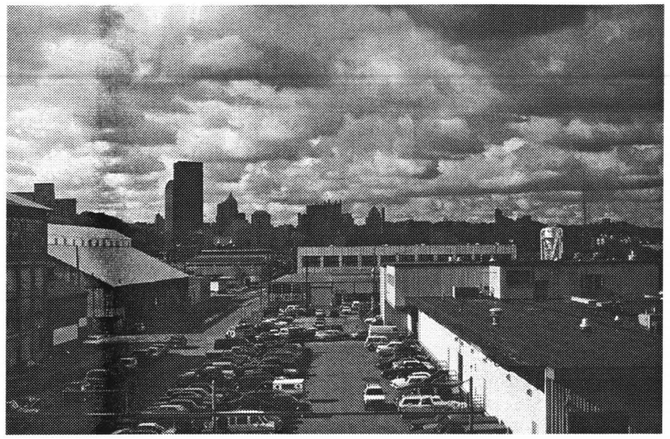
A place to look from is also a place to remain. The making of such places requires the construction of both material and social structure. Spiro Kostof, in *The City Shaped*, cites the example of the Jeffersonian grid, relentlessly applied to the Northwest Territory as a means of apportioning property under the freehold system, as the most telling example of the American belief in the significance of property ownership. The Jeffersonian equation - that property ownership confers rights of citizenship - was not, legally, long-lived, but the spirit of it persists today. Yet the public housing movement of the latter half of the twentieth century has ignored this belief. Libraries have been filled with analyses on the shortcomings of this movement; for the present purpose, it will suffice to observe that public housing projects suffer from a binary paradigm of public and private realms, and suffer intensively because what is articulated as little other than an amalgam of uniformly "private" (in the sense of affording privacy) places has no truly private places, because ownership rests with an abstract bureaucracy, not with the dweller. Only by denying the possibility of ownership, and hence the possibility of self-actualization, can the public housing system promulgate the myth of the place which forever remains 'affordable.' It would be a better idea to provide for the homeless not mere shelter but property, something tangible rather than impermanent. In a successful city, this idea of property must be bound up with one of inclusion: property must not be geographically stratified by value, as happened with the evolution of suburbia; the successful city must gather its economically diverse residents together.

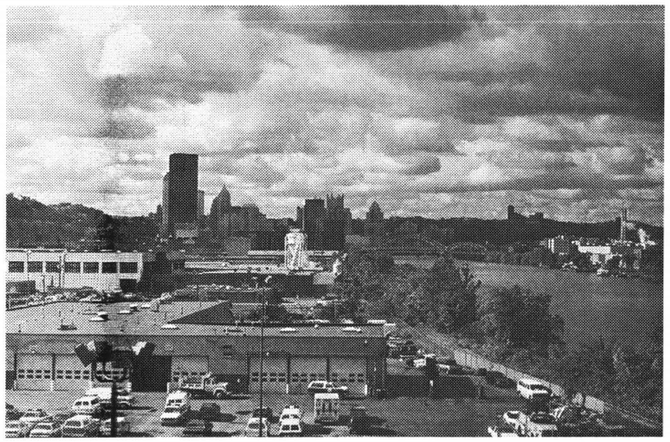
The map on the facing page reveals the economic stratification that electrification, amongst other influences, wrought on the urban pattern. Near the river, buildings claim large footprints, indicating the investment of substantial sums of capital. Further from the river, the scale erodes - first to smaller office and commercial buildings, which seek to maximize rentable area on a minimum of real estate, and finally to dwellings and small shops, at far left and far right. A residential anomaly appears between the Hill and the Strip, to the left of Bigelow Boulevard - the Bedford Terraces, a postwar public housing project on the crest of the hill. Here, too, the scale belies the application of substantial sums of money - in this instance, government funding. All of these scales evolved for particular reasons, but it is safe to say that the larger the scale, the more underutilized the area is today: the Hill District remains a vital neighborhood, while much of the Strip is dormant. An answer to this lies in the breaking down of the scale of the Strip - within the existing walls of the older buildings. The spatial fragmentation of the older buildings into discrete pieces of property, available to a much wider range of capital interests, greatly increases the district's ability to adapt to change and remain vital. While generally outside the purview of the architect, issues of ownership and rental inevitably influence the way a placed is lived in, and hence ought to inform its design.

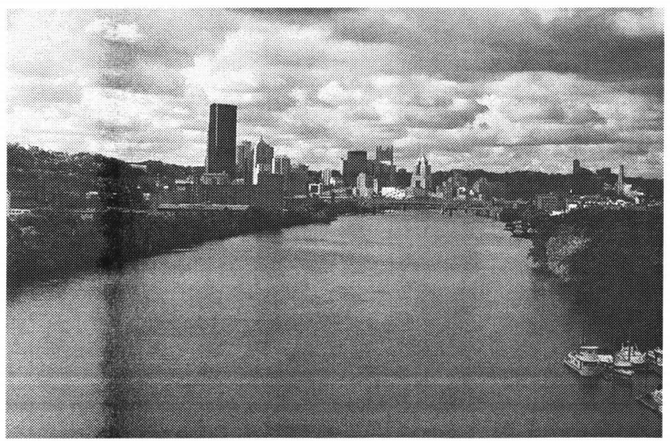


19, 20 Map and section through the Allegheny River Valley, at Armstrong Cork.









21, 22, 23 The Strip District and Downtown from the Thirty-First Street Bridge. Armstrong Cork is on the left bank in the last photograph.

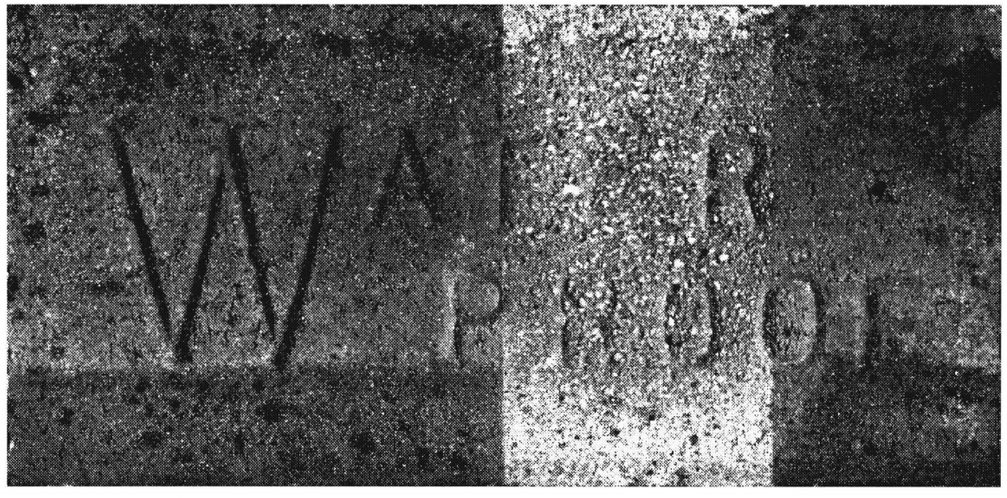
Armstrong Cork, now, is quiet. The quiet is disturbing experienced alongside its visual cacaphony. The wind through the buildings sometimes bangs a pipe or duct somewhere inside, and the sound reverberates about the courtyard. There is no life to filter, mask, or absorb it. Standing in the courtyard and looking at the complex is like watching a mute man try to shout. People pass by on the river, pass by on Smallman Street - always at a remove from the factory, seldom noticing it. My sister commuted downtown daily for several years and never gave it a second glance. In fact, none of the friends and relatives living in the city knew the building by name, or even by description, when asked. It was once so with the old Pittsburgh and Lake Erie Railroad Station on the Monongahela, before it became, generically, Station Square, a name that pays only token respect ot the history of the place. At present Armstrong Cork goes unobserved because there is no reason to look, and there is there is no reason to look because no one imagines a possible destination there. And yet a busy, urban, variegated life is going on very close by.

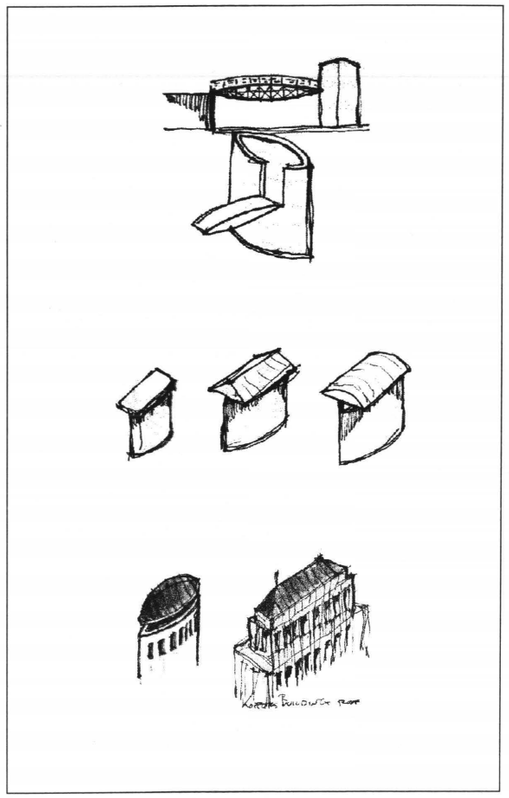
Places and occasions

The face of a city is half the truth - satisfactory housing is the other, complementary half.

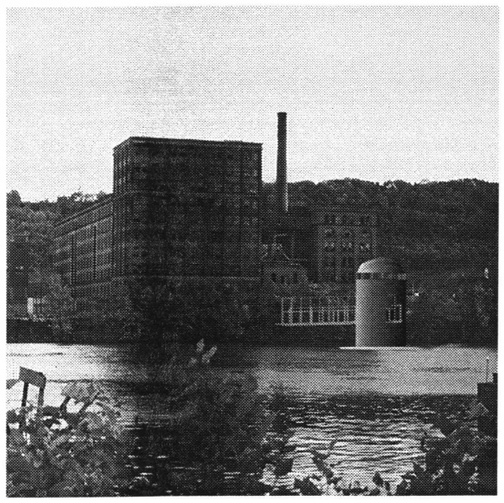
Herman Hertzberger

1 A brick from the Armstrong Cork factory. The sandblasted stripe across the center reveals the discoloration caused by the smog once rife in the city. What appears as a deep orange-brown brick is, beneath its industrial patina, a very light buff color. The color produced by the air pollution presents the opportunity for 'painting,' by removing the patina selectively.





2 Developmental sketches of the river tower, documenting the development of the roof. The shape finally adopted was a synthesis of the lenticular truss of the Smithfield Street Bridge and the green copper roof of the Koppers Corporation Building, a prominent downtown landmark.



3 Photomontage of the river tower in place.

The City

The reinhabited Armstrong Cork factory must not only connect with downtown, seek to be an extension rather than a satellite of it, but must become an excellent place to live. At the outset of the design process, my understanding of the interrelationship of public and private places was quite binary - there was the one, and the other, and an articulated threshold between them. Hertzberger's work made it clear to me that the habitations evolved by people represent a broad range of places ranging from more public to more private, without absolutes. Immediately the organization of places to live becomes clearer. The door to an apartment is no longer the impermeable barrier which defines a boundary of individual dwelling - the most public of places can offer itself for temporary appropriation by individuals.

Design has proceeded on several scales, with several objectives, all of which endeavor to make Armstrong Cork the seed of an urban neighborhood in the Strip District. On the largest scale, the connection to the life of the city is made at the edge of the river. The river is the only road that Armstrong Cork abuts which runs directly downtown, and any opportunity to give the river back to the use of the citizens ought to be encouraged. This required the removal of the existing retaining wall - failing anyway - and the provision of several types of access - for pedestrians, for vehicles (launching boats), and for pleasure boats and water taxi service. The promise of a good mooring is realized.

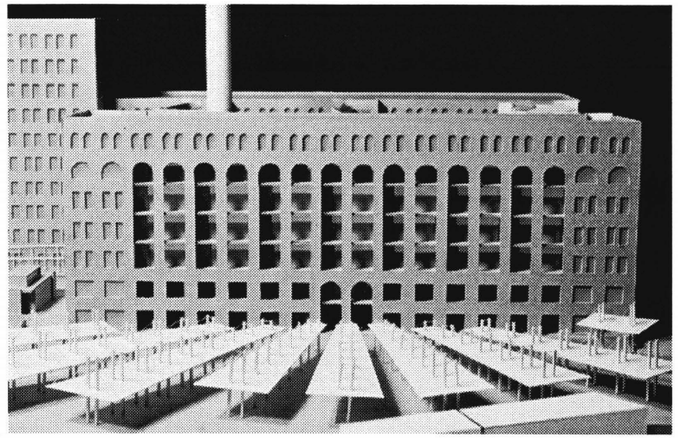
The change in elevation between the land and the river presented both a physical and a visual obstacle. Visually, the river is invisible from much of the site; the only clue to its presence is the unoccupied distance between Armstrong Cork and Troy Hill beyond. The River Tower, placed at the end of the axis of the new central street of the complex, is a marker of the presence of the river. Its lenticular plan follows from the flow of the river (and, in winter, of ice) around it. (The shape was also suggested by my interest in Gustav Lillenthal's Smithfield Street Bridge of 1884, across the Monongahela; it is a rare double-lenticular truss.) The tower's roof, a simple rotation of the plan, suggests the hull of a boat. The vertical coffers of its surface, seemingly disappearing into the ground, provide a visual cue to the drop in grade. It is an ordering point around which the activities of the river at Armstrong Cork can be organized, as well as providing a visual terminus to the new street. People will use the water if it is returned to them - for walking, fishing, or simply sitting, for launching boats, or for taking the water taxi to the stadium or the Point. Those people will bring life to Armstrong Cork, will help enable its commercial enterprises to thrive. This admittedly relies upon an enlightened attitude on the part of the owner/developer. If the waterfront is treated as "private property" and restricted to use by residents of the complex, its success is in doubt; the owner must understand that the public waterfront is a gift that must be given to engender financial success.

The District

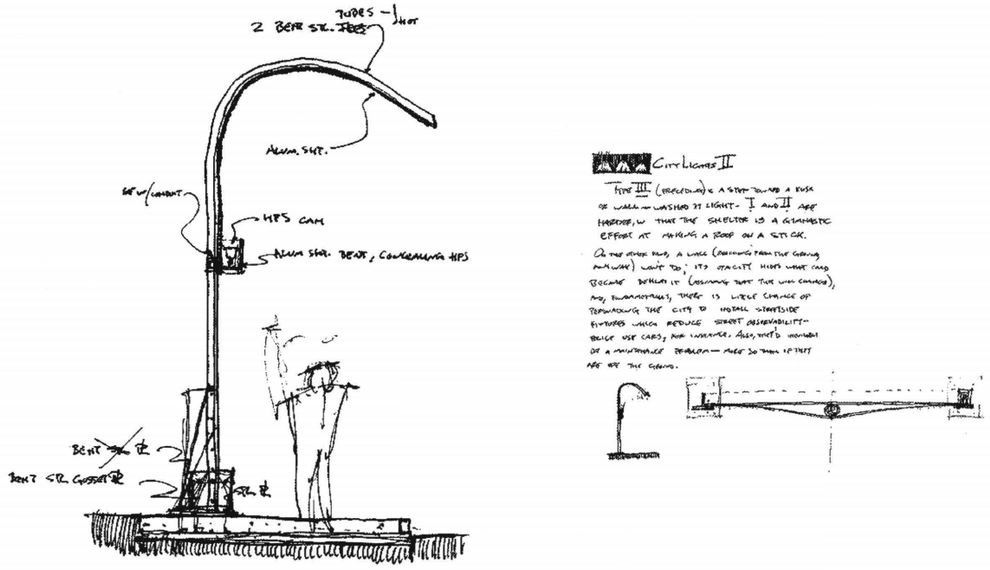
The places made for commercial enterprise vary in size and enclosure. The intention behind the open-air marketplace on the former abandoned rail yard is to attract seasonal businesses which require very little overhead to operate - "street" businesses, such as are often conducted from carts. The plan is kept as uncluttered as practicable; in the wintertime, the market structures serve as boat storage, much in demand in the Pittsburgh pool. The market ties Armstrong Cork to the life of the Strip District, which has a variety of open-air stalls scattered about its busier streets in spring, summer, and autumn. The variety of businesses encouraged by the variety of shells provided for them provides a more viable framework than a homogenous, gentrified approach. The open-air market stalls radiate from the main entrance through the 1901 building to the interior street and the shops there. They are an extension of the entrance, rather than a barrier to it. Through most of the design process, I clung tenaciously to the belief that the market stalls ought to radiate from the point of the smokestack, because the smokestack, being the exceptional vertical element in the complex, is its prominent point of reference. This, I came to understand, is an intellectual rather than experiential idea, and of little use to the shopper in the market, who might well never make such an abstract connection.

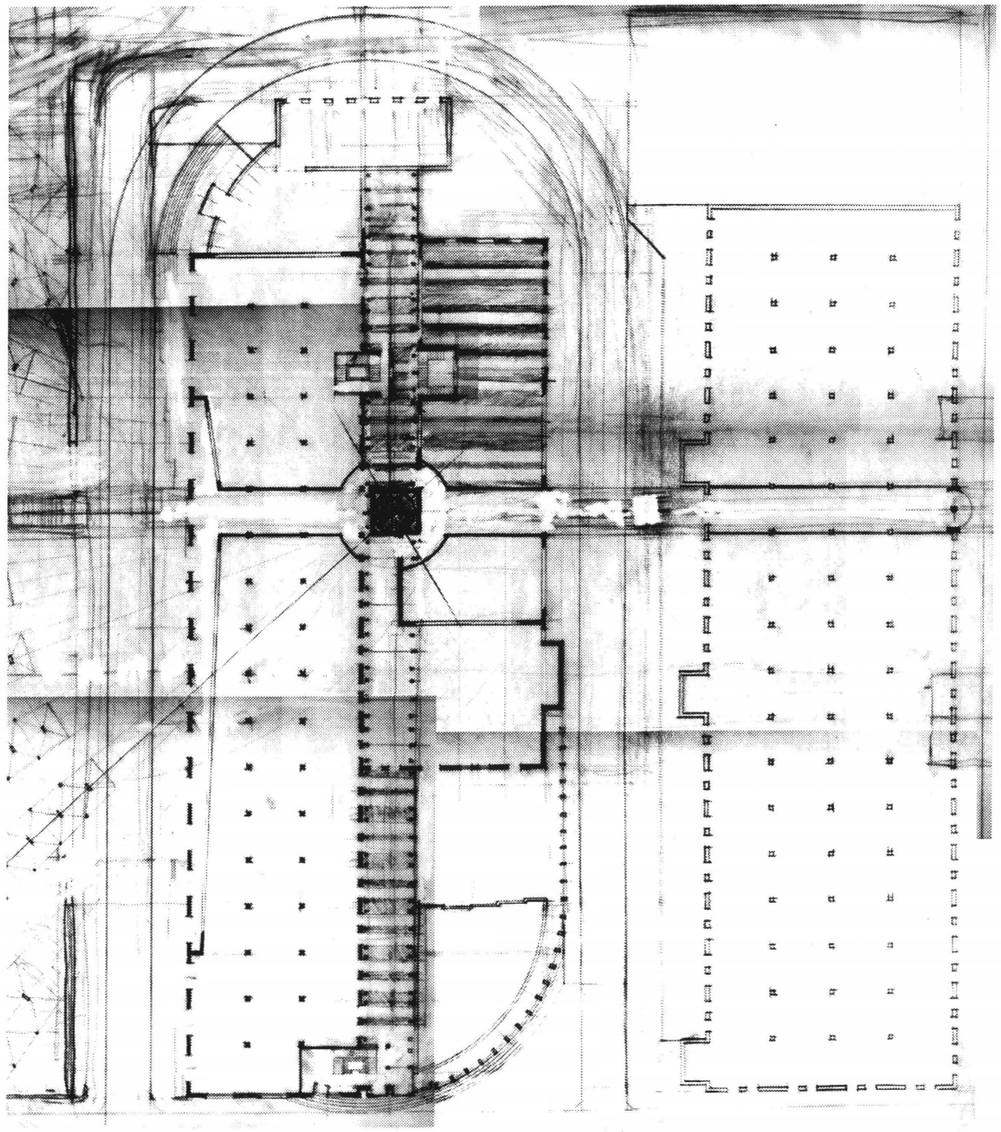
On the ground plane, a more direct connection to the Strip is made by a series of streetlights which connect the marketplace with the Smallman Street plaza in front of St. Stanislaus. The streetlights are considered as parts of a segmented walkway; each affords a place of shelter along the walkway. The light is directed principally upon the sidewalk, and is diffuse, rather than direct, to avoid glare. Motorists do not need much in the way of streetlights for vision, but for orientation; a street with lit sidewalks is perceived as a safe street. The lights, as discrete parts of a walkway, mark the track to Armstrong Cork by day just as well as they do by night. High pressure sodium lamps are suggested as the best compromise between efficacy and color temperature; the low pressure sodium lamps typically used in roadway applications, while marginally cheaper to operate, exude an alienating orange hue.

4 The open-air market radiates from the main entrance to the project, located on Twenty-Third Street. The roofs are held aloft by cables from pairs of columns, to keep the ground plane as open as practicable. The column spacing is such that the structures can be used for boat storage in the winter.



5 A sketch proposal for street lights along A.V.R.R. and Twenty-First Street between Armstrong Cork and Smallman Street. A high-pressure sodium light is bounced off a curved aluminum reflector held aloft by steel posts. Each reflector would be about five or six feet in length, providing intermittent shelter along the path as well as light, and marking the route to Armstrong Cork by day as well as night.





6 Design as diagram: in the first proposal, the smokestack became the focus of a pair of coordinates unifying - on paper, at least - the project. Two diagonal lines through the smokestack describe lines to St. Stanislaus Kostka and the old Phoenix Brewery building, and were to suggest formal links to the Strip District, suggesting an order at a larger scale than that of the property, superimposed upon and complementing it. Diagrams, however, have much more to do with geometry than with people; as a method of design, this daigram yielded few hints of any places built at the scale of an individual, nor did it make many qualitative suggestions about the act of dwelling at Armstrong Cork.

My understanding of the conditions and events which help and hinder the making of a good street owes a great deal to the work of Jane Jacobs, who, in The Death and Life of Great American Cities, *sets forth four "indispensable" conditions for the vitality of city streets and districts:*

1. The district, and indeed as many of its internal parts as possible, must serve more than one primary function; preferably more than two. These must insure the presence of people who go outdoors on different schedules and are in the place for different purposes, but who are able to use many facilities in common.
2. Most blocks must be short; that is, streets and opportunities to turn corners must be frequent.
3. The district must mingle buildings that vary in age and condition, including a good proportion of old ones so that they vary in the economic yield they must produce. This mingling must be fairly close-grained.
4. There must be a sufficiently dense concentration of people, for whatever purposes they may be there. This includes dense concentration in the case of people who are there because of residence. (Jacobs, 150-151.)

The Street

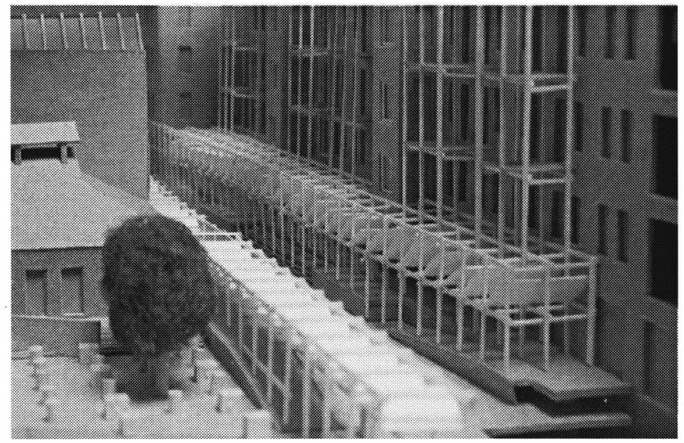
Initial proposals placed the smokestack at the center of an overarching design strategy to bind the disparate elements of Armstrong Cork into a cohesive unit. In addition to the aforementioned treatment of the marketplace, the smokestack became the origin of orthogonal axes describing routes of pedestrian traffic. On rereading my notes on Rowe and Koetter's *Collage City*, I recognized that my efforts to this end were of the "total design" approach, anathema to the development of viable cities. The idea of "total design," partaking of inherently utopian myth, inevitably fails as a paradigm for an urban enclave. City planning, as Rowe and Koetter remark, is the work of the bricoleur, not of the engineer. Additionally, there is the fundamental objection that by making the axis parallel to Armstrong Street a passage, I would drain pedestrian traffic, and hence vitality, off the very street I was trying to create. The axial organization would merely become a built diagram. The notion of smokestack as formal organizer was abandoned in favor of allowing it to remain, as it is, a point of reference, the marker which allows those on or near the site to orient themselves. It orients people, not buildings. Elements placed into the composition are arranged within a field that the stack locates.

The new street through the center of the project is the most important element of the proposal. Were it to fail as an urban street, the project would fail with it. Its success is in part a function of the nature of its political boundaries - the inhabitations which occur around and along it, from grade to the uppermost floors. I do not believe that an architect, acting alone, can create a successful urban street; he can merely make a series of opportunities which engender one. That an architect, acting alone, can kill a successful urban street has been amply demonstrated.

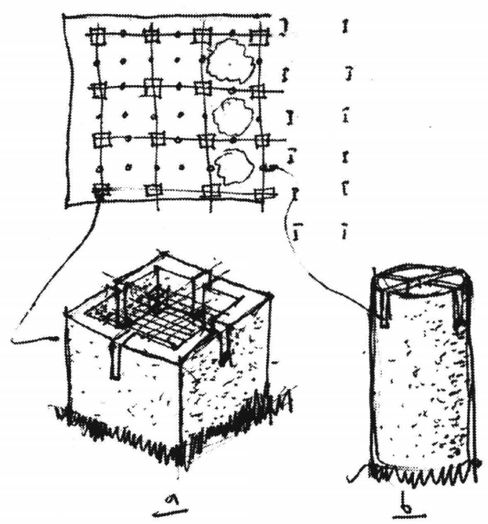
The aforementioned variegation of commercial enterprises is intended to bring a variety of traffic to Armstrong Cork, addressing the first of Jacobs' concerns. Initially I proposed a mixture of vehicular and pedestrian traffic, but, upon further reflection, I decided to permit the vehicular but emphasize the pedestrian. Underground parking is provided below the open-air market; above-grade parking occurs on Twenty-Third and Twenty-Fourth streets. The shops are serviced from the street, as are those in the rest of the Strip District; hidden loading docks and service entrances are the stuff of suburban malls. As Jacobs observes, the desire is not just for traffic but for various types of traffic. It is not reasonable to attempt to specify the businesses in the complex - a restaurant here, a laundromat there - because the permanence implied by that act is frivolous. The best that a designer may do is articulate the qualities of a number of places, and trust that the political life of cities will digest them and make them work. By designing good, flexible places with as little as possible, so that rent is as low as possible, the chances of success are magnified. The commercial interiors will change with each tenant anyway; the free market will generate the greatest feasible diversity, if it is economically permitted to - that is, if the act of intervention does not require rents that exclude the barber shop in favor of the gourmet kitchen boutique.

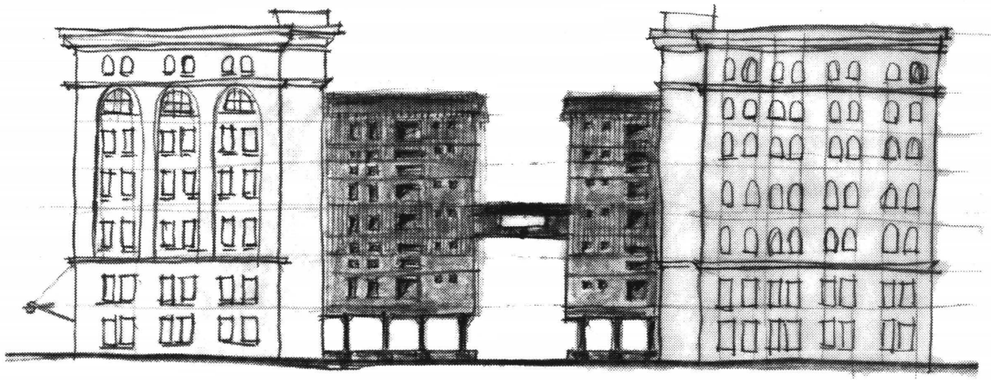
To encourage pedestrian use of the street, the pedestrians ought to be afforded a modicum of protection from the weather. On Twenty-Third Street, facing the market, the arcade implied by Osterling's brick detailing is realized, providing a sheltered walkway for most of the length of the 1901 building. The internal street is bounded on both sides by new covered walkways, cubic steel frames containing lightweight aluminum canopies, responding to the material history of the city as well as the properties of the materials themselves. The frames have somewhat different scales, and differing canopy shapes; the canopy parallel to the axis of the principal buildings has a larger scale and its canopy, a regular series of curves, articulates a path toward water. The walkways converge toward the river, and their steel frames become the trusses of the bridge to the River Tower. The walkways, by their transparency, preserve the essential variety of the street, and form new frames of reference, through which the old is juxtaposed. In their insistence upon a cubic ordering of volume coupled with ambulatories bounding a central place, they are interpretations of Romanesque precepts in modern materials, more so in fact than Osterling's mere skin of historicism was.

7 A view of the walkways lining either side of the new street between the buildings. In the left foreground is a recreational area - a leftover of the public realm designed, with minimal effort, to facilitate temporary private appropriation.

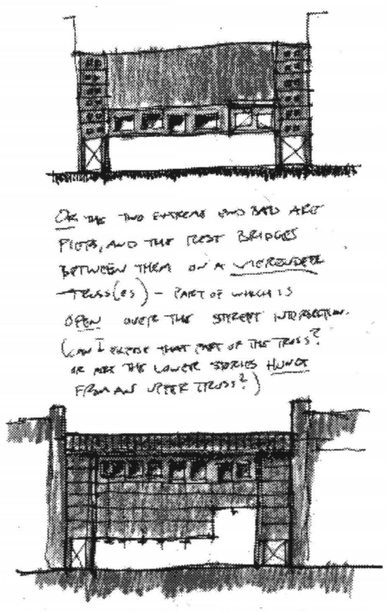


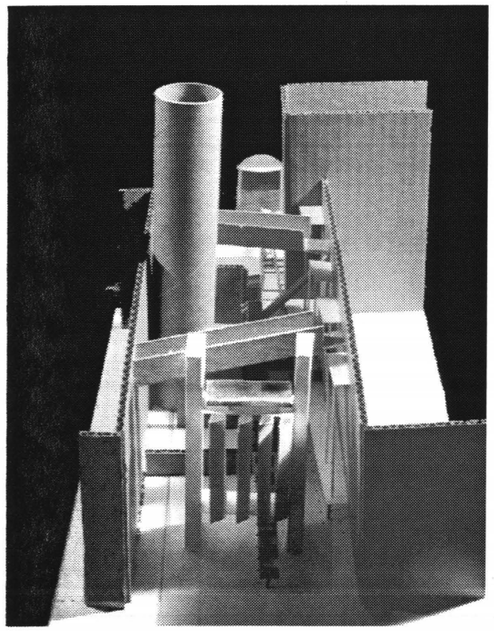
8 The fundamental idea for the recreation area along the street was to place a grid - a miniaturization of, and thus to some extent a myth of, the city - marked with multivalent pieces. The pieces, cast of concrete, could form piers for a future building. Both the cylindrical and square piers have notches to accommodate standard two-by lumber, up to twelve inches nominal in depth. The grid pieces are spaced at 8'-3" center to center, so lumber need not be sawn - just laid between the piers to quickly erect a temporary platform. The square piers are hollowed to the depth of the lumber grooves, and also have six-inch shoulders cast in the inside corners; by laying a piece of steel grate within, they become outdoor grills. They can also be seats, small planters, or whatever else people wish to make of them.





9 An early elevation study for the Gate Building. The building was conceived as analogous to the existing metal skywalks between the 1901 and 1902 buildings. The overhang of the roof, as a way to complete the building against the sky, was intended as analogous to the cornice of the existing buildings.





10, 11 Left, another proposal for the Gate Building. In these sketches, the idea of the building as bridge, now spanning between two stair towers, is furthered; the apartments are carried on a set of inhabited Viereendeel trusses. Right, a study model of the complex; the Gate Building is in the foreground. The roof canopy is now free of the building; the flat roof is a covered walkway beneath it. The building is now less a bridge than a screen along the street - moving in the direction of becoming a wall.

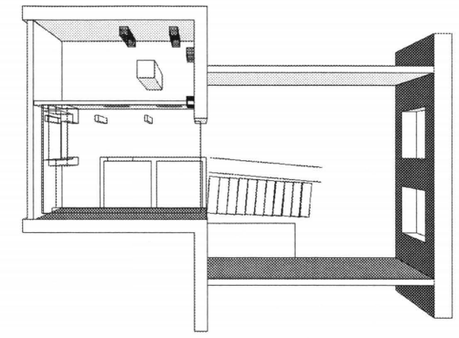
The coherence of Armstrong Street, of the central entrance along Twenty-Third Street, and the connection of the neighborhood to the river requires the closing off of the A.V.R.R. end of the interior yard. At the same time, vehicular and pedestrian access from A.V.R.R. must be maintained. The Gate Building is essentially a wall between the 1901 and 1902 buildings, within which residences occur above grade. The wall is penetrated at grade by the street and the principal covered walkway, and above grade by the dwelling units; the inhabited portion of the wall is punctuated at either end by a stair/elevator tower. The uppermost level is a covered promenade accessible to the residents, similar to - but spatially more generous than - the reconstructed metal sky bridges.

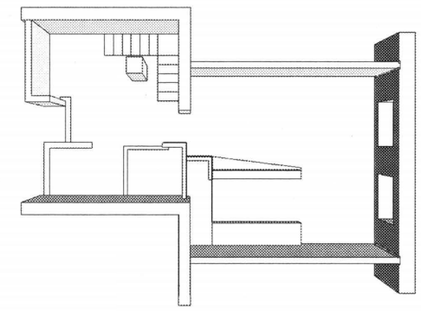
The Dwelling

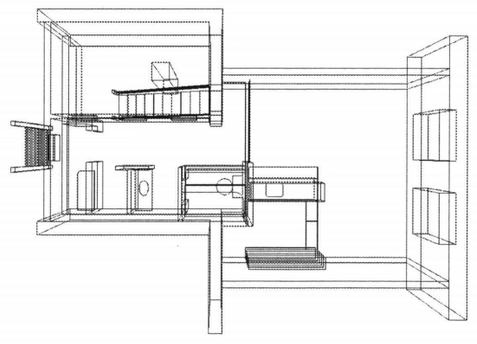
The residents of the apartments must be encouraged to survey their streets. The promenade atop the Gate Building and the refurbished sky bridges are two of elements enabling them to do so. The Gate Building residents survey the length of the street both from the passageway to their apartment and from the lofts within each which project over the passageways. In addition, most of the apartments in the 1902 building have exterior balconies which spring from the structure of the walkway below. All of the apartments in the 1901 building are serviced by exterior exitways; these have places which penetrate the brick envelope and allow the residents to step out and survey the street, as well as exterior places along the passage belonging to each apartment.

On the smallest scale, the apartments themselves must afford interesting and congruous places. As with the commercial places, an economic variety of residents is required to make an urban seed; the geographic segregation according to income level that was effected by improvements in electrification and transportation were injurious to the urban core. The facts of the site, though, include inexorable forces acting upon the types of dwellings which can be made. The 1913 building, for example, will command high rent almost regardless of what is built there, because of its location on the river and the views it commands. The 1901 building, receiving excellent sunlight and facing downtown, is in a similar situation. The 1902 building, on the other hand, offers little in the way of views, and its Twenty-Fourth Street elevation, as has been noted, has the poorest solar orientation of any building on the site, suggesting that the apartments along that elevation ought to be fairly shallow. This elevation is a natural candidate for the lowest-rent apartments, and therefore one of those apartments has been selected for detailed study.

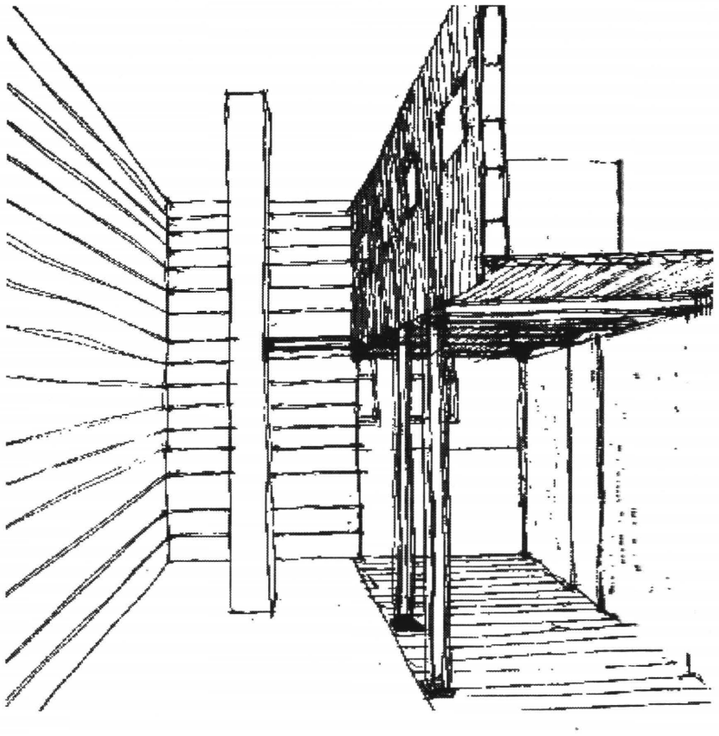
Lighting characteristics within the apartments help clarify varying levels of privacy and enclosure. The plan springs from the desire to incorporate the existing concrete columns into the dwelling in a significant way, so that the resident possesses the column as an object or element to live around; the apartment-dweller owns part of the structure, not merely infill. The mass and density of the column are too substantial to be contained in a frame wall; the L-shaped walls which describe the places of the columns are of concrete masonry, joints struck flush, tinted with spray-applied aniline dye and lightly sandblasted to remove surface fines; both color and texture are accomplished, while avoiding the textural violence which paint does to masonry. The L shape is enough to make a stable enclosure about the column, and nothing more. All other walls in the apartment are steel-stud framed walls with gypsum board; they are "soft" walls of clearly secondary nature: at points where they abut either new or existing masonry, they contract to form a shadow line.







12 Three early computer models of the proposed apartment in the 1902 building. In the top plan, selected blocks in the L were turned to provide ledges for shelves, lights, or other uses; the stair to the loft swung down into place through the kitchen. As a result, the kitchen cabinets were unusually high and followed the slope of the stair to allow for extra storage. In the second plan, the swing-down stair, rejected as unnecessarily complex, was replaced by a stair wrapping the column. The kitchen adopted an ordinary U-shaped layout. In the third, the services were broken into their constituent parts, and the place of each was considered; the plan became more coherent as a result.



13 The entry of the first version of the L-shaped apartment. The room claimed by the column is the most significant aspect of this proposal. The loft is articulated as a tectonic entity assembled within the stereotomy of the place claimed by the L. The small steel columns are structurally unnecessary, as no great spans are involved; they were a preliminary effort at defining the entry implying a plane between it and the column room. The loft elevation refers to the two bridges between the 1901 and 1902 buildings in their use of corrugated metal cladding penetrated by simple unglazed openings.

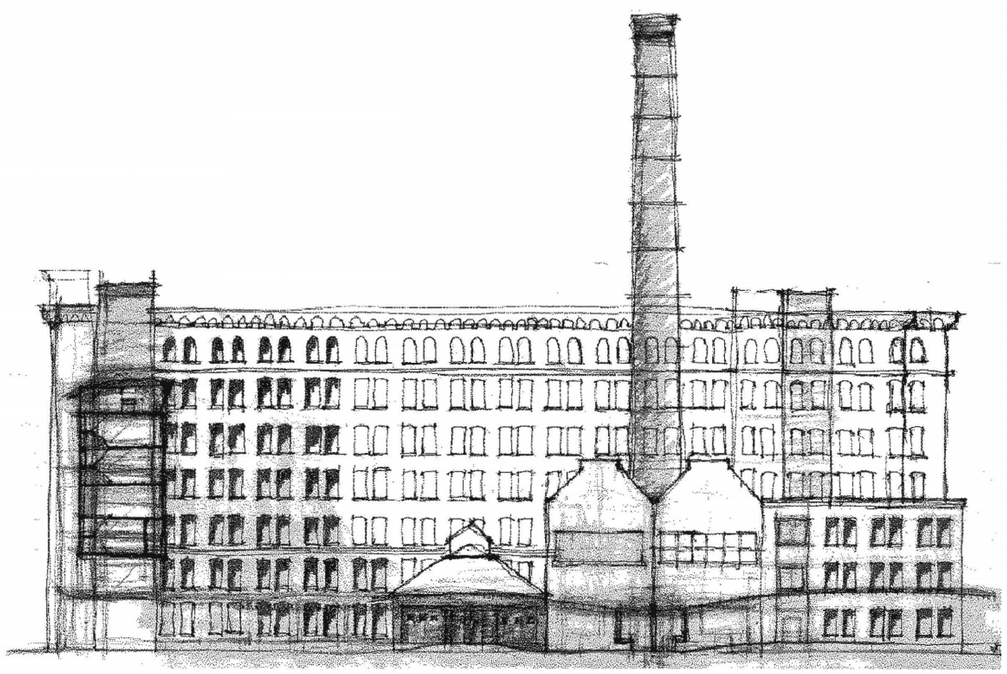
The L-shape divides the apartment, in plan, into two zones; the zone by the corridor, within the angle of the wall, is darker, more private. The existing ceilings, at fourteen feet, are sufficiently high as to allow erection of a loft, dividing the apartment into two zones in section. Within the intersection of the divisions in section and plan, a hierarchy of privacy is established. The loft projects through the corridor wall, making a ceiling over the entrance; the entrance, fitted with a bench adjacent to the door, is a place within the corridor which unambiguously belongs to the apartment, and in which the dweller can present a public self. Within, the low ceiling continues; to the right are bathing and closet places. To the left a narrow metal stair leads up to the loft in the small full-height room made around the column; straight ahead, the volume expands horizontally and vertically into the light, most public area, including an area for cooking. The preparation of food is often a public function, and can even take on elements of performance. The sleeping loft opens onto the full-height column room and onto the light area below.

Generally, the generative idea of the apartment is that of establishing a scale of privacy which would clarify both the physical dwelling and the acts of dwelling within it. Further, this scale of privacy does not stop at the apartment door, but continues out into the corridor, to the stairs, into the streets outside. By developing both horizontally and vertically in this way, each apartment becomes an urban artifact of its own, and collectively they reform the traditional double-loaded corridor, which is too often a pair of opposing planes perfunctorily perforated by doors. The corridor, as a result, is now no longer one zone, but a series of variegated zones; the act of entering an apartment is no longer accomplished unthinkingly in the space of a few inches of door frame, but involves a transition through a place where one can stop and talk with neighbors, set down a package or grocery bag while unlocking the door, or simply experience a sense of increased shelter and privacy before actually opening the door.

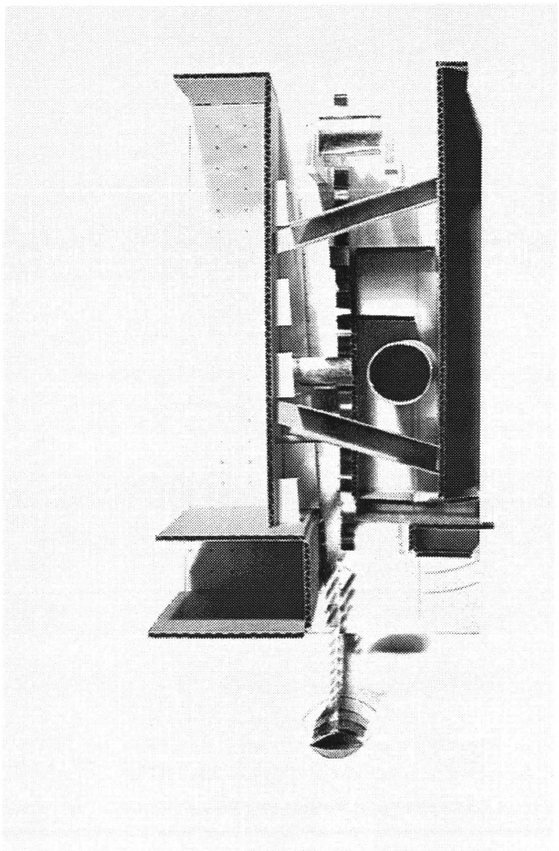
The privileged language

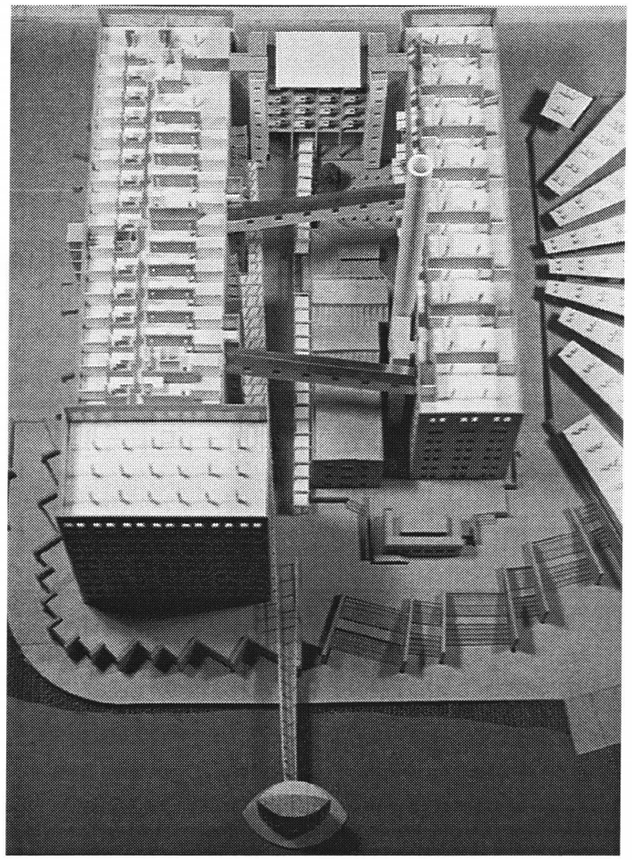
In the contemporary battle of words versus images in the field of architecture, there is no doubt for us that only the project itself always wins. We do not believe in an architecture that ultimately depends on texts for understanding. Although drawings and models cannot replace the actual experience of architecture, they are still the privileged language through which architects communicate their ideas.

Rodolfo Machado and Jorge Silvetti

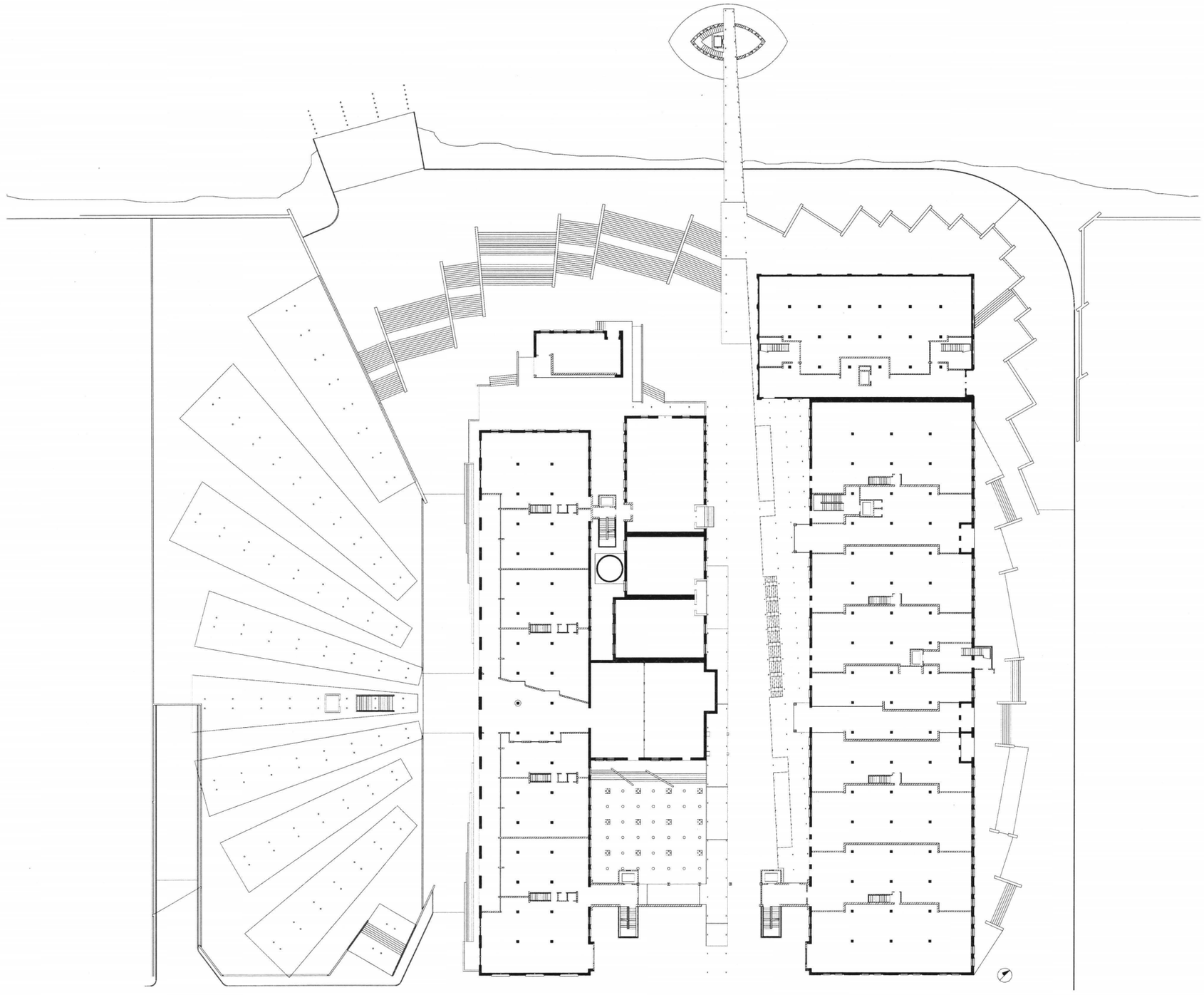


1 Early elevation study of the internal street, showing the covered walkway, and the proposed Gate Building in section at left.

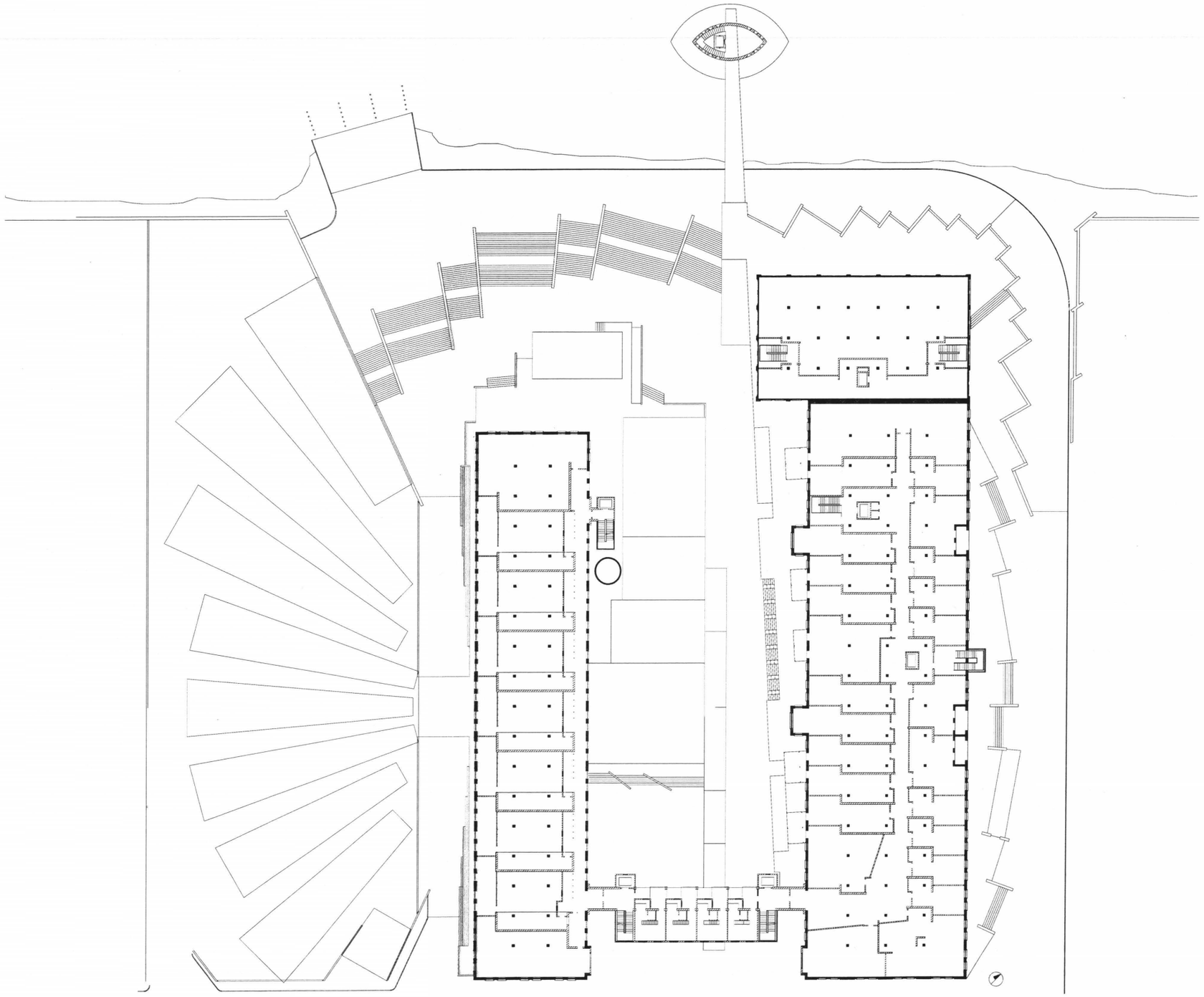




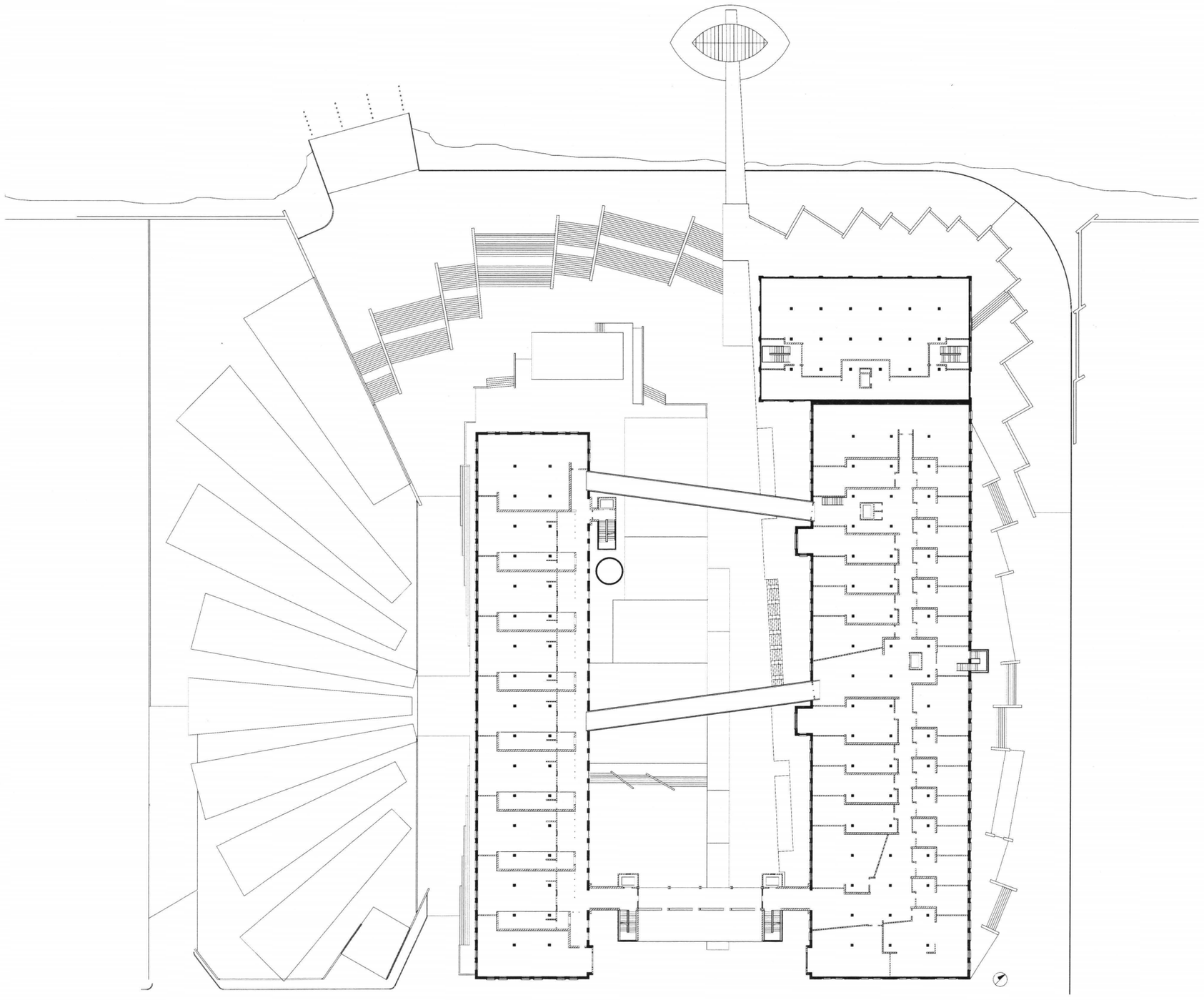
2, 3 Left, aerial view of the second study model; the walkway alongside the 1902 building also provides balconies for every apartment save for those on the uppermost floor. At right, a similar view of the final model; the roof is removed to allow a scalar comparison of the exterior streets and the "streets" made by the corridors.



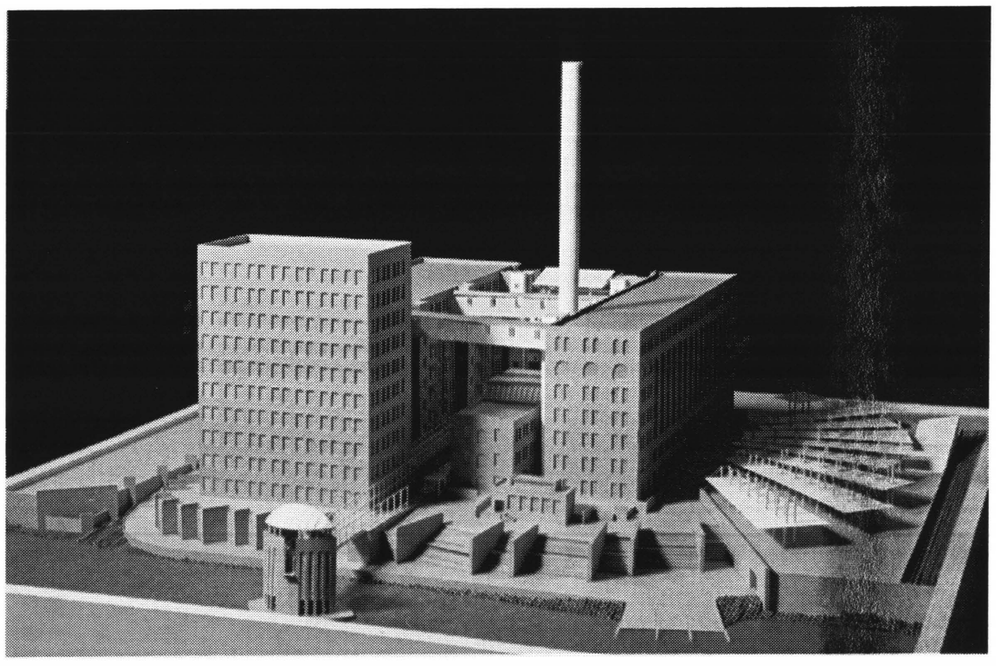
4 First floor plan, current proposal. On the left is the open-air market place, with two levels of subterranean parking. A three-bay public boat landing is accessed from Twenty-Fourth Street, exiting through the same ramp that serves the underground parking. An encompassing radial geometry wraps the property, but, rather than being focused on the smokestack, it is focused on the principle entrance to the complex, on Twenty Third Street. This shift reflects a move away from a geometry aimed at homogenization and toward a rule articulating differences within itself.

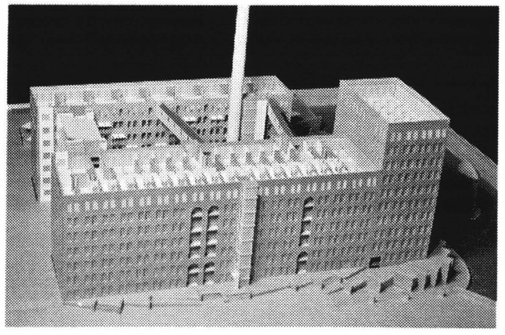


5 A typical plan of floors two through six. The corridors which serve the apartments become more than mere circulatory passages. They are as much about stopping as about moving. Each apartment has a place in the corridor which, though ostensibly public, belongs to the apartment, and affords the residents a stage for the presentation of their public personas. Similarly, there are places on the exterior streets which do not belong to particular dwellings, but are made so that they can be temporarily appropriated by anyone.

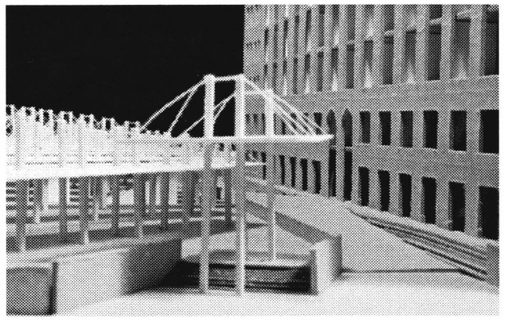


6 On the top floor, the existing sky bridges link the 1901 and 1902 buildings. They are stripped of their existing metal siding and reclad in sandblasted glass; the fenestration remains the same. The buildings do not require these bridges for any 'practical' purpose - that is, as means of egress. They are merely another means of activating the street by encouraging surveillance of it, and, just as importantly, they impart a sense that the street is surveyed by their mere presence. By linking to stairs and elevators, they also provide residents of the 1902 Building a path from the underground parking lot - accessed below grade directly by the northernmost stair tower of the 1901 building - to their homes.

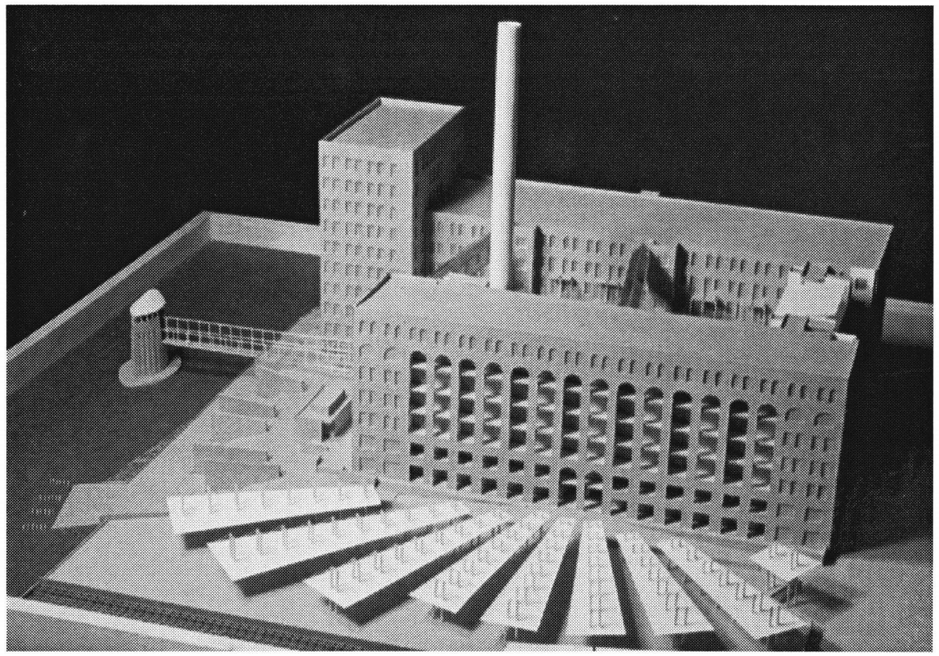


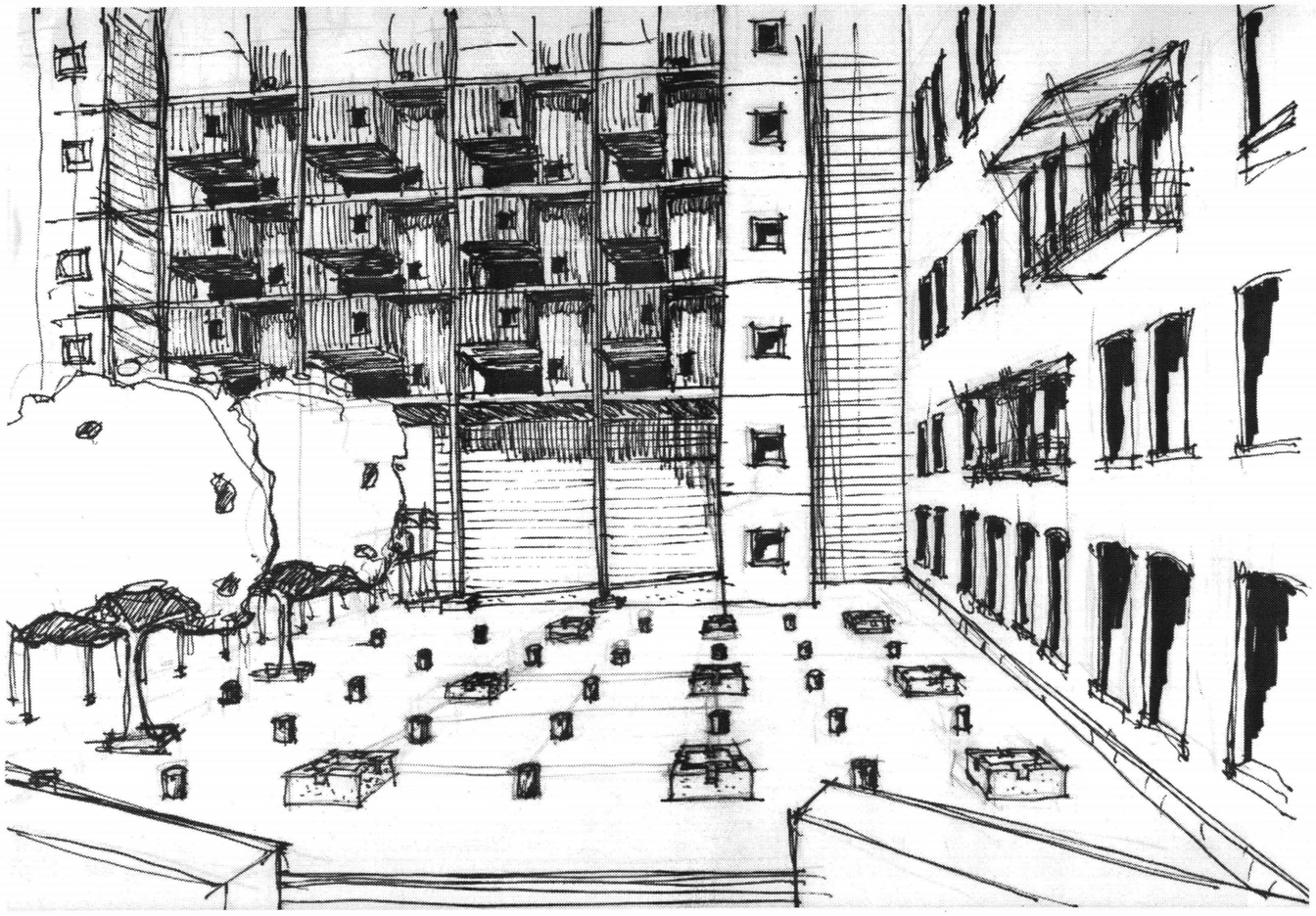


7, 8 At left, the proposed Armstrong Cork project as it meets the Allegheny River. At right, a view toward the Twenty-Fourth Street elevation of the 1902 building.

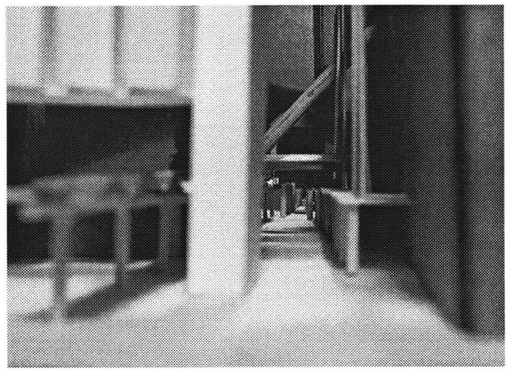


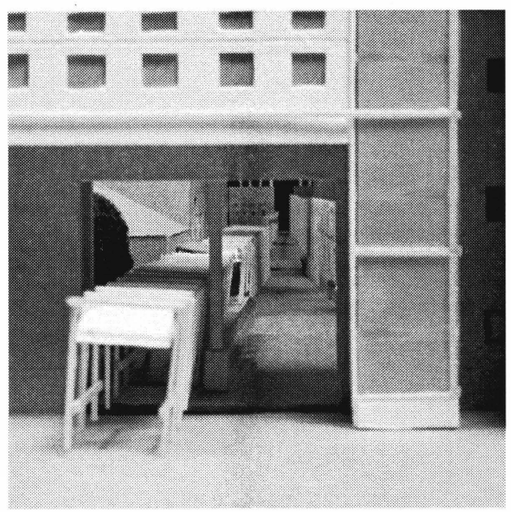
9, 10 At right, the market structures radiate from the main entrance to the complex, orienting pedestrians almost anywhere on the periphery of the property. On the left, the view down Twenty-Third Street past the raised canopy covering the steps up to the market; this is the way the pedestrian from the Smallman Street plaza arrives.

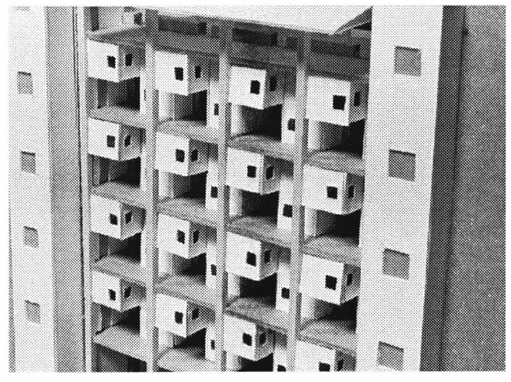




11, 12 A sketch of the Gate Building and recreation area as they appear when entering the internal street from the entryway through the 1901 building. Below, the recreation area and the balconies off of the accessway corridors of the 1901 Building; the balconies help connect residents to the life of the street by providing places for them to step out and survey it, place a folding chair or even a small table.

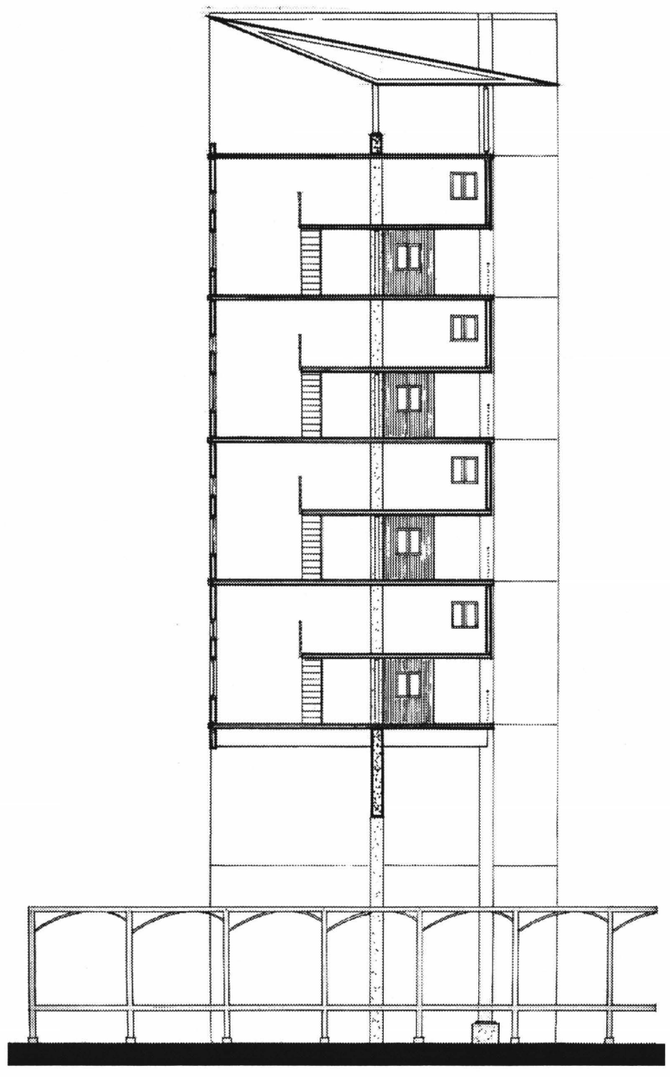


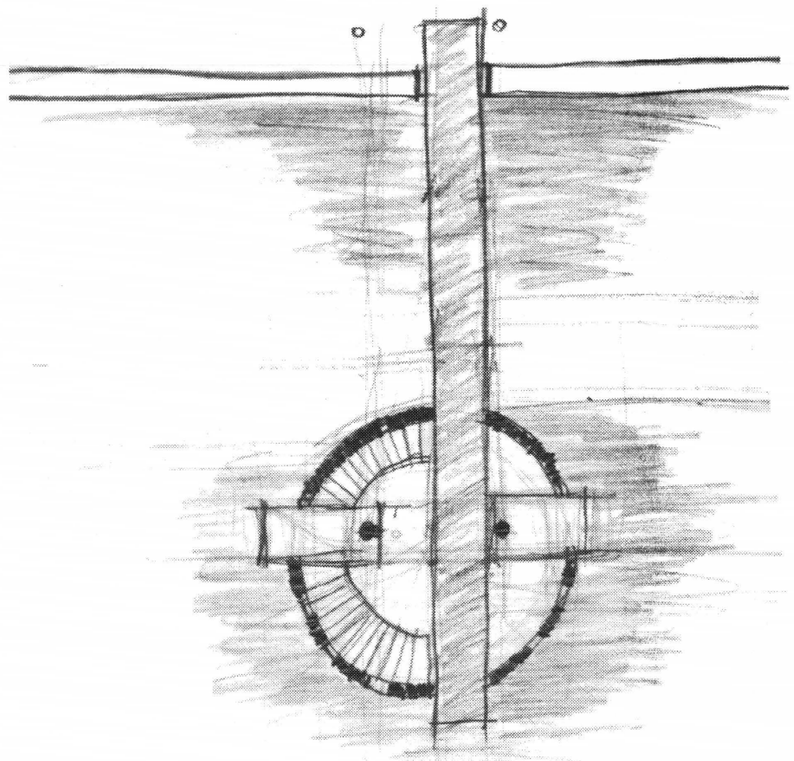


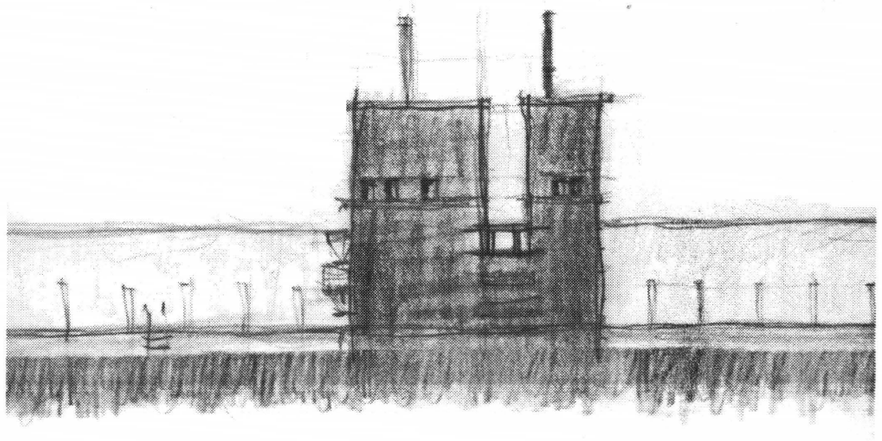


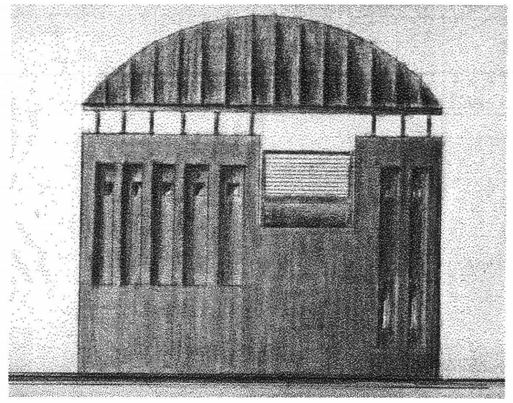
13, 14, 15 The opening through the Gate Building on A.V.R.R. provides a frame for the view toward the river tower; the converging walkways, seen through the frame, exaggerate the distance. This framing was first tested in the study model at top left; the results in the final model are at center left. Below, the elevation of the Gate Building facing the internal street; the apartments are developed in much the same way that those in the 1902 building are, affording a multiplanar elevation which mechanically engages the space.

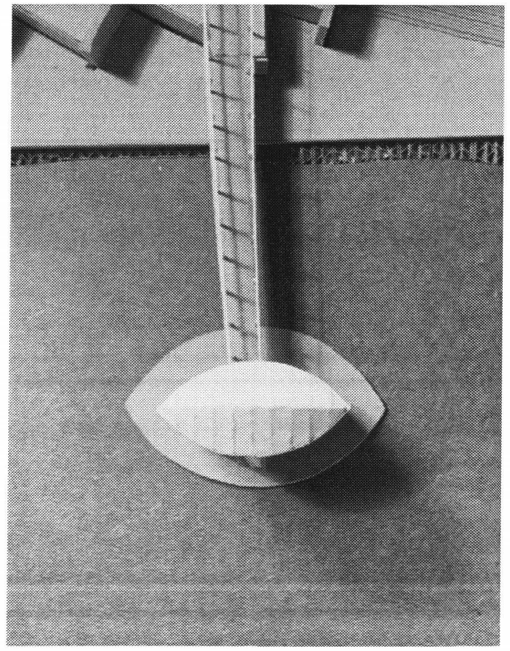
16 At right, a section through the Gate Building, taken through the opening, facing the 1901 building.



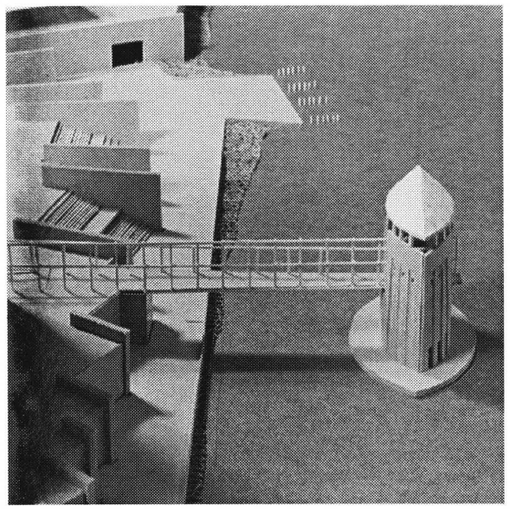


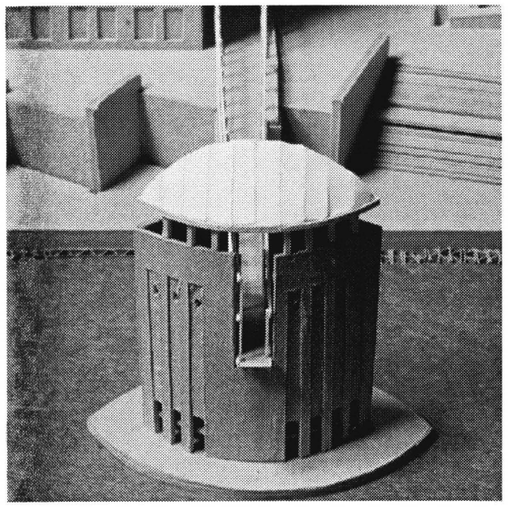




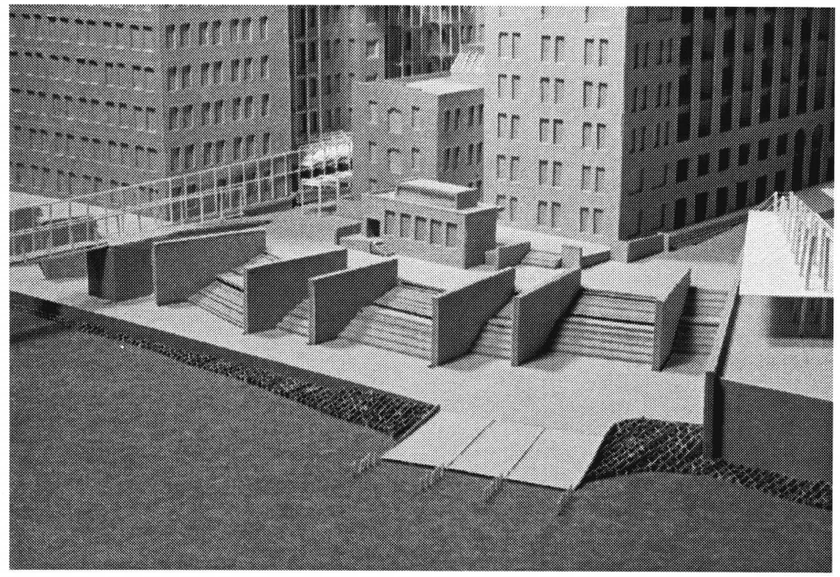


17, 18, 19 The earliest drawings of the river tower, left, proposed a cylinder of concrete with no roof. It attempted to juxtapose the "axis" of the river with that of the line of the walkway from A.V.R.R., in turn relating to what was then an axial organization for the project with its origin at the center of the smokestack. Later, the lenticular plan and semilenticular roof were explored and, after a number of variations - principally explorations of the height of the tower - adopted. The drawing at top right was the first of these explorations. At bottom, the tower and the bridge leading to it in the final model, from above.

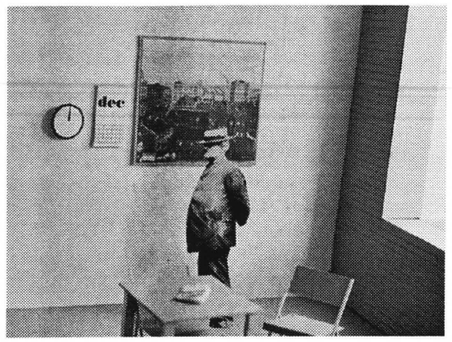




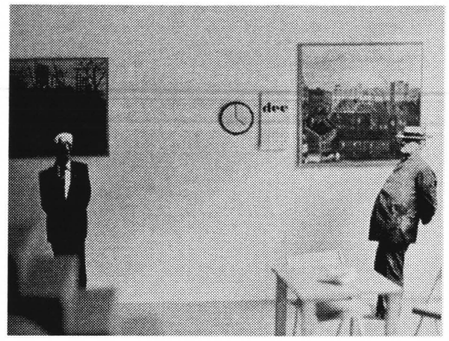
20, 21, 22 Two views of the river tower and its relationship to the waterfront. Right, the steps leading to the waterfront, and the three-bay launching ramp, which will doubtless draw a considerable crowd in the summer. The concrete fins between the sets of steps are still very diagrammatic; the possibility to make inhabitable places of the lines they form, rather than barriers, would necessarily be explored at a further level of development.



Nine a.m.



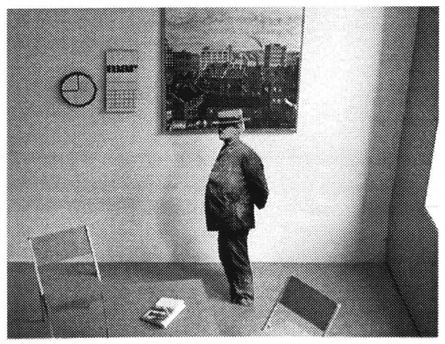
Noon



Four p.m.

23 - 31 Photographs taken in a light study model of an early version of the apartment. Since the apartment windows face northeast, the light, for the most part, is indirect and diffuse. Measures that would raise the albedo of the street below, and of the elevations along it - such as selectively sandblasting the brick - would increase illumination levels somewhat. The apartment does get some direct morning sun, especially around the summer solstice. Throughout the year, the daylighting of the large room is adequate. In the final version of the apartment, opaque surfaces between the main room and the smaller rooms are minimized.

Winter solstice



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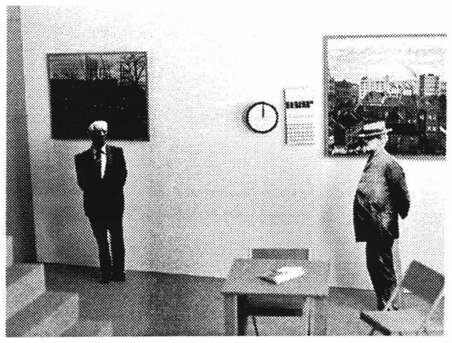
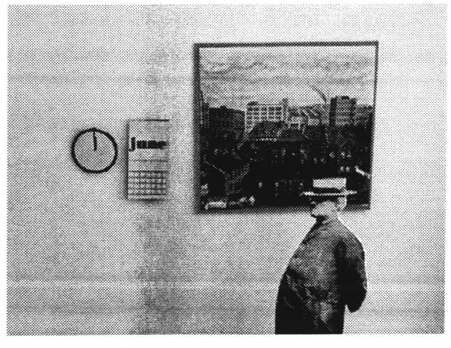


Noon

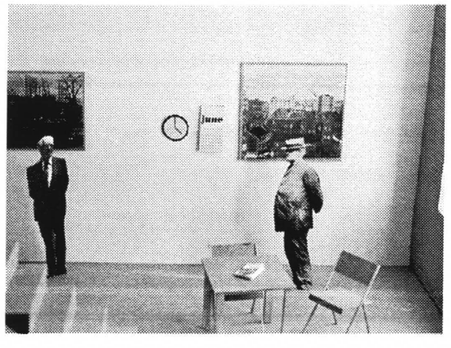
Four p.m.

Spring/Autumn equinox

Nine a.m.

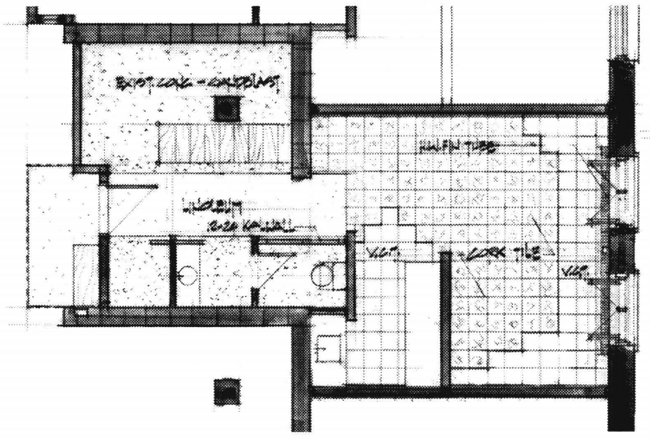


Noon

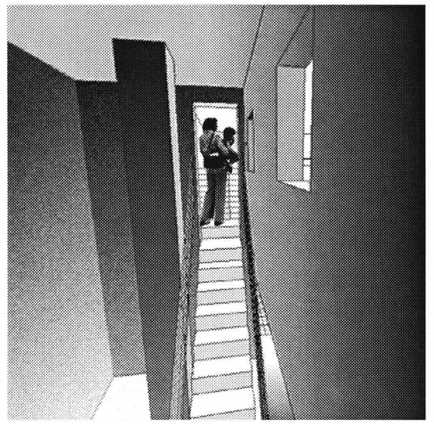


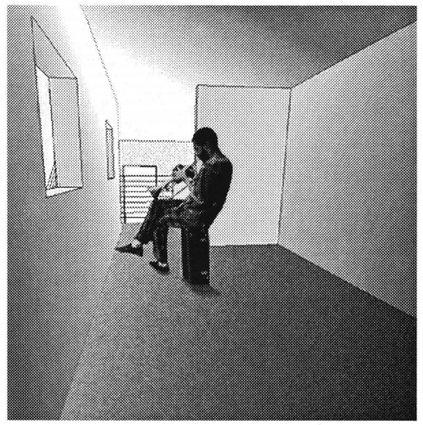
Four p.m.

Summer solstice

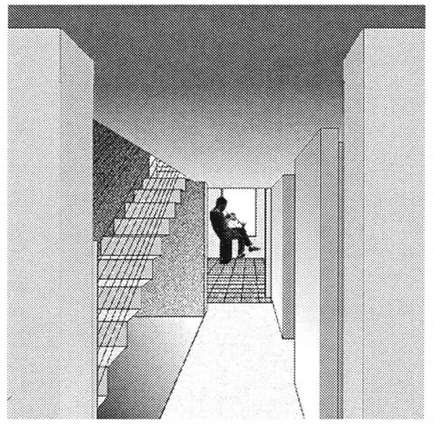


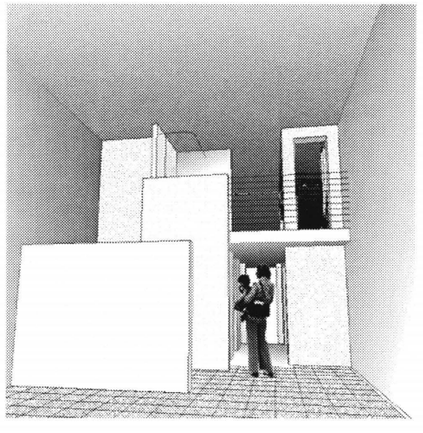
32 - 35 Four interior views of a computer model of the version of the apartment shown in plan at left. The top two images are of the column room just outside of the loft, and the loft interior. The image on the bottom right is taken from the vantage of the entrance door; adjacent to it is a view from the window back toward the front door.

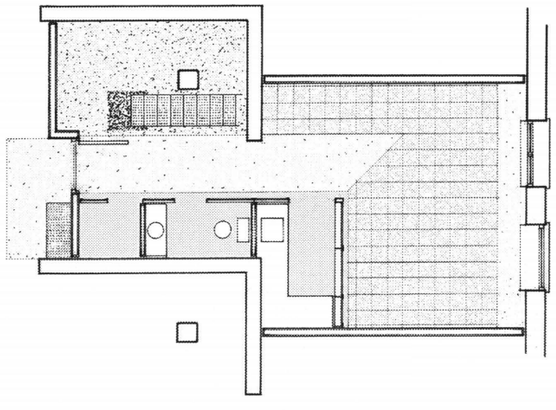


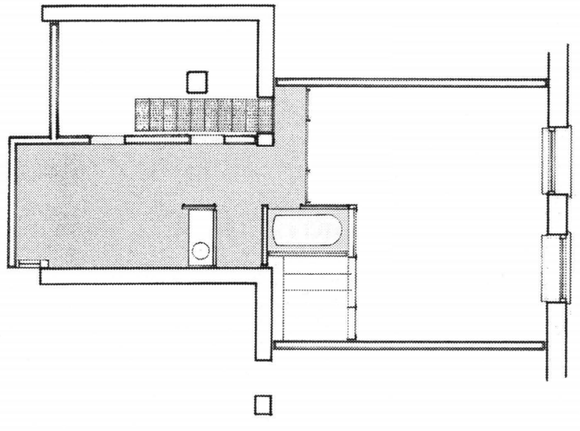


36 Left, a plan of the entry level of the apartment, since modified. In this version, the services occupy a zone of planes separated by Kalwall partitions to allow daylighting. The thought behind the selection of floor materials is a rather straightforward reference to the manufacturing history of the building; cork flour was used by Armstrong to make linoleum. But the palette of materials is not consistent in that respect - the Kalwall relates to nothing other than a desire for daylighting. In the next iteration of the plan, on the following pages, glass replaced it, and the formal organization of the service area better relates to the architectural idea of the apartment.

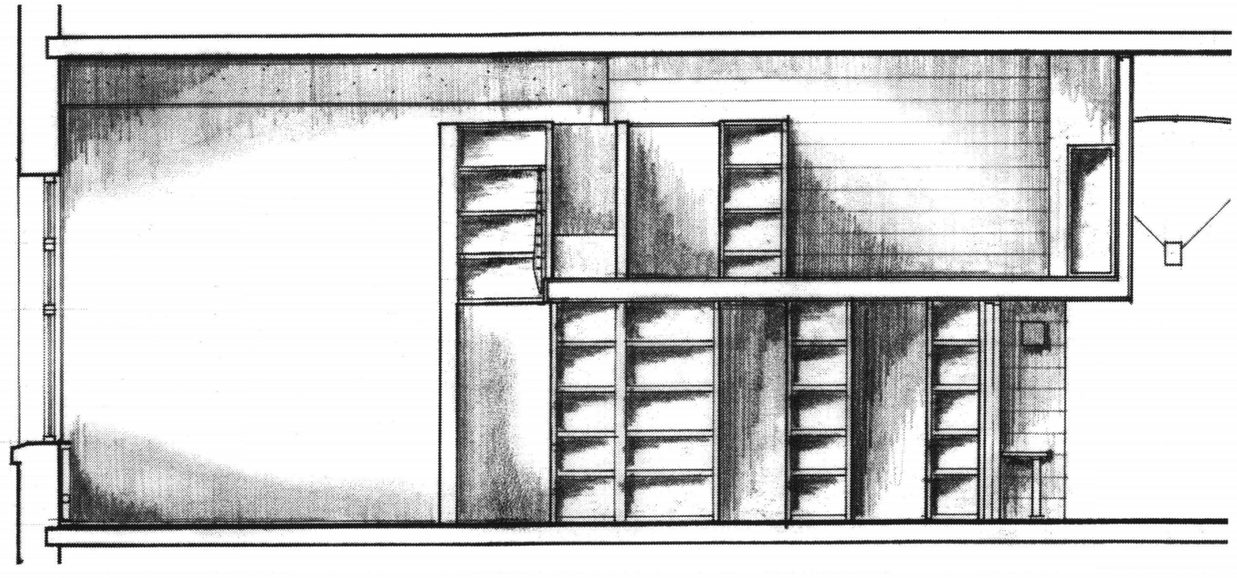




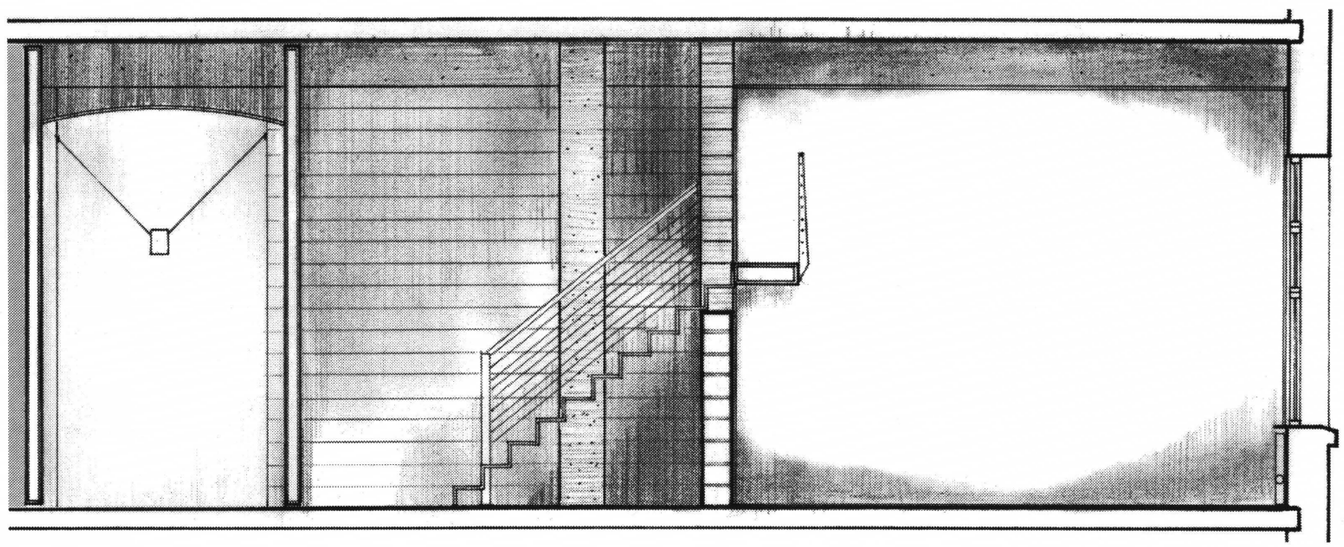




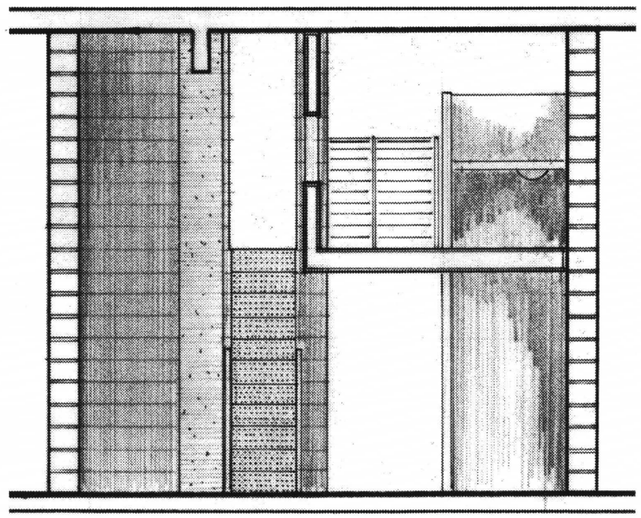
37, 38 The entry level and loft level plans, respectively, of the most recent proposal for the apartment. Rather than incorporate a traditional "bathroom" containing all of the plumbing equipment described by such a room, each fixture has been given its own place, which is defined according to the levels of privacy our society requests for each. The water closet is just that - an enclosed closet beneath the loft, with a lavatory. The bath is up in the loft, with another lavatory, All services are enclosed in a steel and glass structure which wraps around the masonry L. The glass is selectively sandblasted for privacy. It is proposed that the glass above the rim of the bathtub is not sandblasted; rather, a separate curtain fitted within may be drawn - one may bathe in the traditionally small confines of the tub, or within the larger apartment, merely by drawing the curtain. In the kitchen, the steel mullions become six inches deep, to afford a place to set things - bottles, jars, and so forth. Two flat steel bars extend overhead to provide a place to hang pots and pans. One of the exterior windows is pushed out to make an occupied sill; the other is pushed in - a decision which breaks the symmetry of the wall in keeping with the asymmetric plan of the apartment, and which consequently describes the nature of the apartments on the exterior elevation of the building.

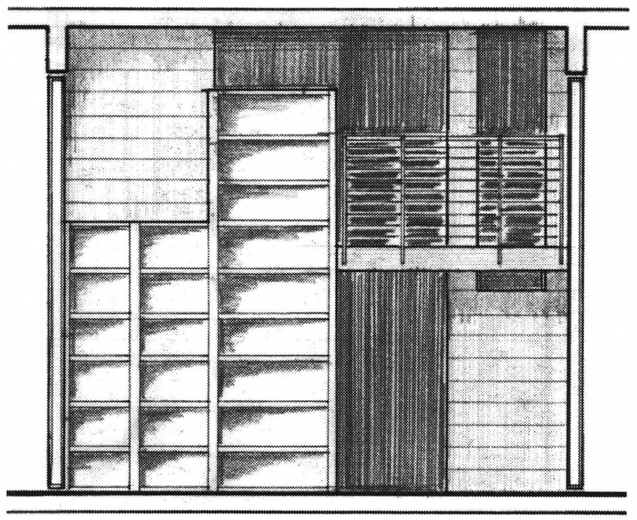


39 A section through the front door of the apartment, looking at the steel and glass enclosed service area.

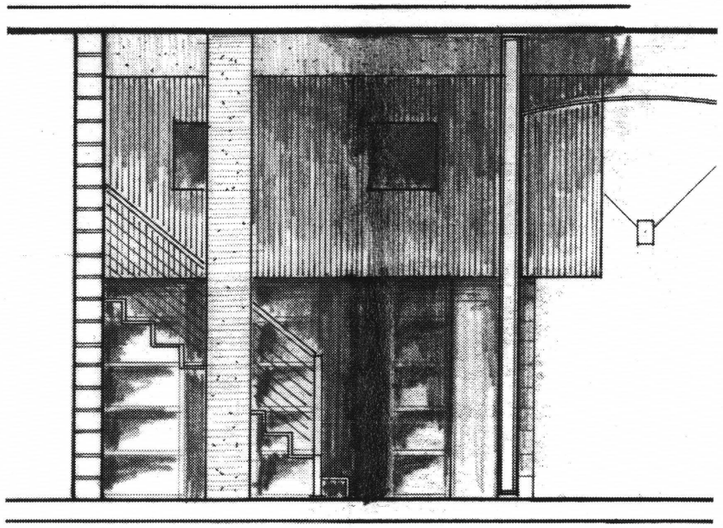


40 Section through the apartment and the corridor, taken through the centerline of the stair. In the corridor, floodlights are reflected off the curved ceiling to provide diffuse lighting. Point sources are located in turned concrete blocks in the entryway to each apartment (visible in the previous section) - thus emphasizing the texture of the concrete masonry at the entrances by muting the textures in the corridor.

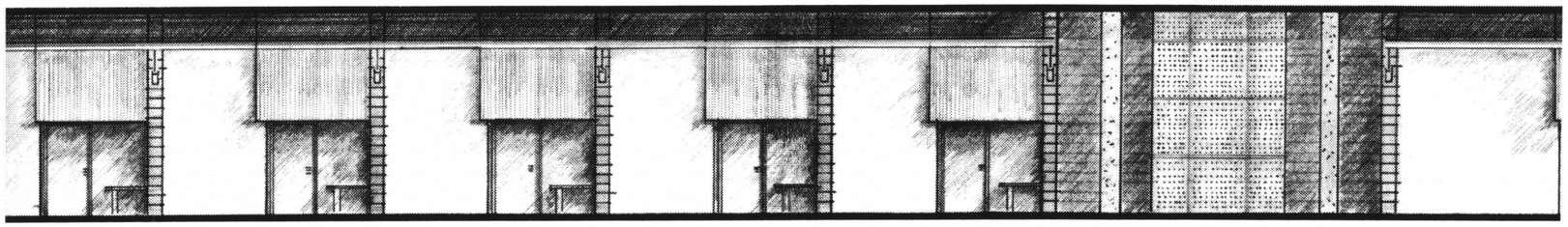




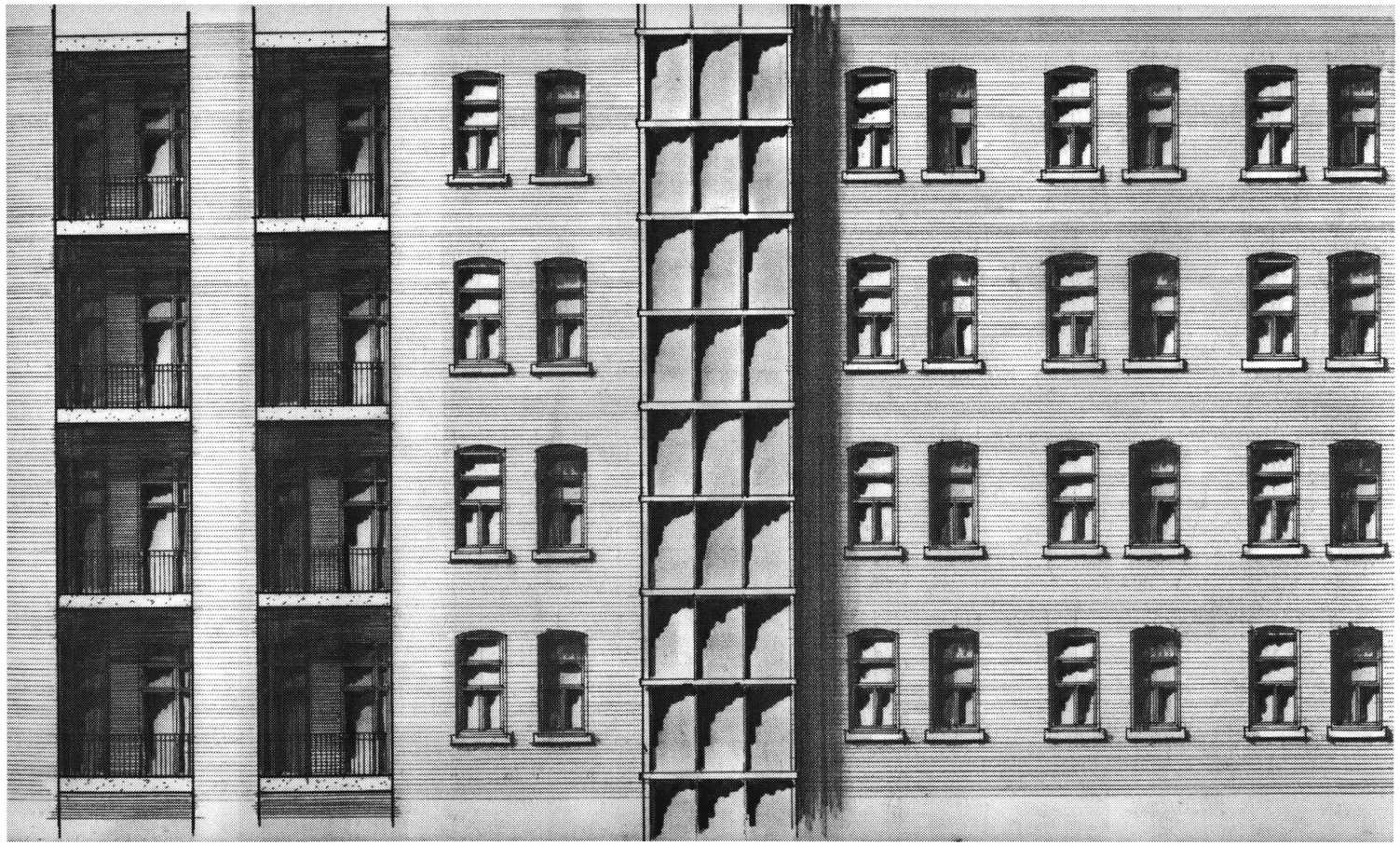
41, 42 Left, a transverse section, cutting through the loft and the column room, facing the stair. The stair is constructed of welded diamond plate. The bare concrete floor of the column room is sandblasted to distinguish it from the entryway; a small rectangle where the stair meets it has a coarser sandblasting pattern. The top riser fastens to a steel channel picking up the loft; a very slight one-eighth inch gap occurs between the top riser and the floor of the loft. At right, a transverse section cut through the large room, looking toward the loft and kitchen.



43 A section through the column room, toward the loft. The equivalence afforded to tread and riser allow the stair to become a simple diagonal juxtaposed against the vertical line of the column, rather than a diagonally arranged series of horizontal treads; the resulting geometry is quieter and more suited to the darkness and greater intimacy of the room.



44 An elevation of a typical corridor in the 1902 building, including the elevator shaft, which is clad in steel diamond plate.



45 The decision to stagger the glazing plane of the windows in the apartments of the 1902 building, mentioned earlier, has consequences on the exterior elevation, shown here in a partial elevation which includes the glass stair tower from Twenty-Fourth Street.

End papers

There must always be an end in view, and the end must not be final.

Eliel Saarinen

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