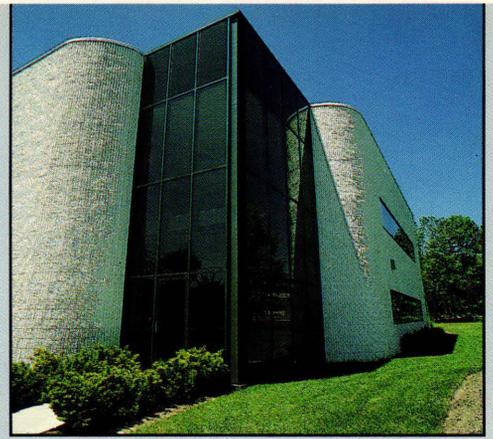


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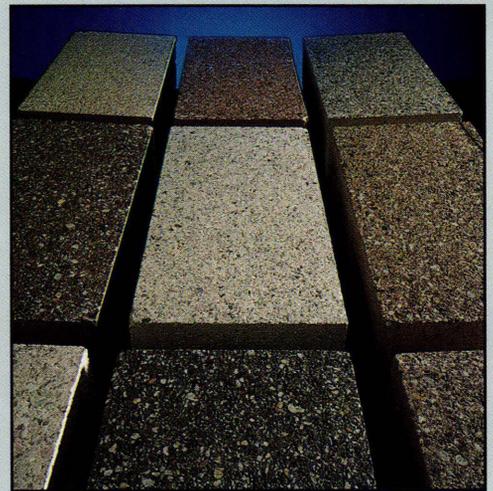
Issue 3: 1989

New Jersey

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Cover photo: William Hubbell

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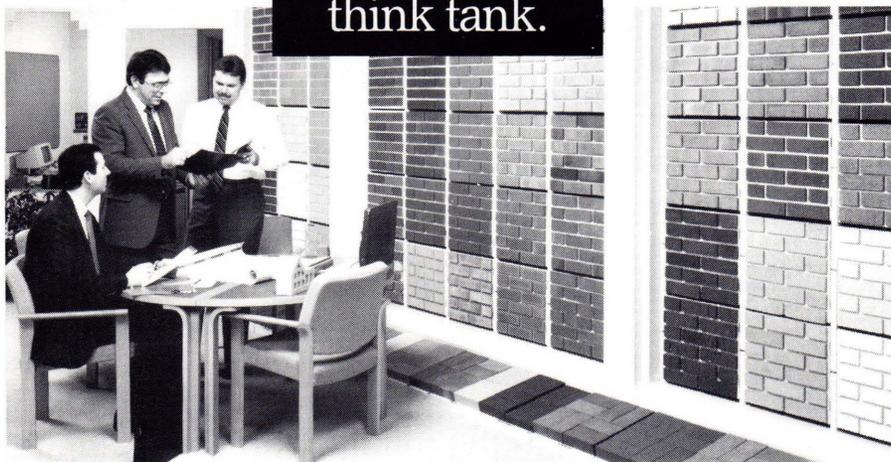
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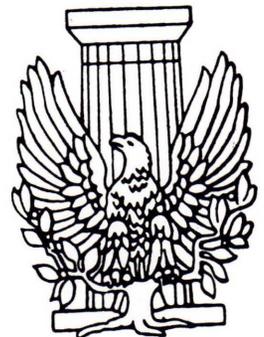
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Urban Design

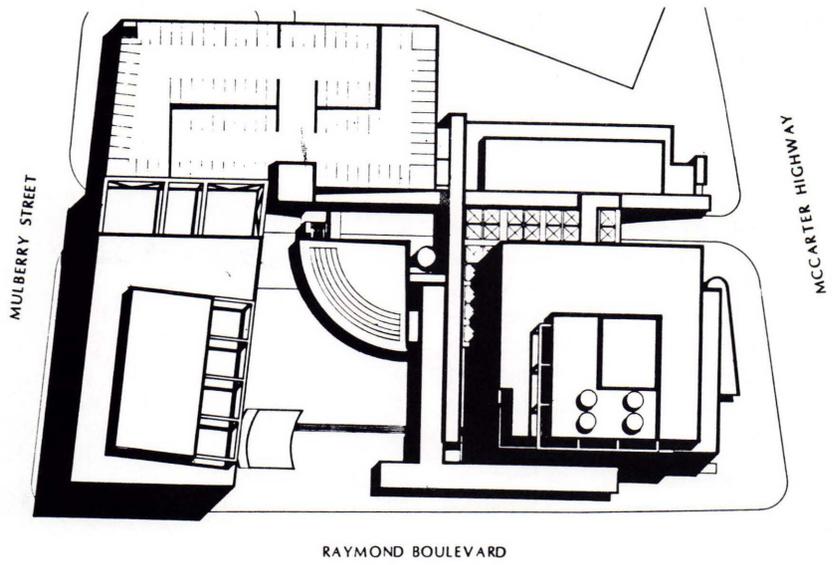
To anyone who has spent time sitting in traffic lately, it must seem that the most urban state, New Jersey, is becoming the most suburban state. The recent building boom has left its mark more on our suburbs than our cities. Although the initial costs of suburban development may appear less, the long-term cost of maintaining this new infrastructure is sizable, not to mention the significant environmental impact on this sprawl.

We are therefore beginning to focus once more on the city. Sociologists William H. Whyte writes persuasively in *City: Rediscovering the Center* about the city's centripetal force, and how density can create its own momentum and energy. Echoing some of the principles set forth several decades ago by Jane Jacobs, Whyte calls for a lovely and varied street life in a city designed with the human scale and human needs in mind.

Yet opinions differ on how to revitalize our cities. Some people, for example, argue that cities should imitate successful suburban shopping malls—instituting strict design standards, carefully selecting tenants, creating an enclosed and controlled environment—whereas others, like Whyte, believe that the "honky tonk" aspect of cities is what gives them their vitality. Furthermore, in local terms, debate exists about whether New Jersey's tax structure hinders urban redevelopment. Certainly the federal government's post war policies of mortgage subsidies and highway building have favored the suburb over the city.

This issue of *Architecture New Jersey* takes an in-depth look at one city, Trenton, our state capital. Trenton is representative of current urban conditions, with its abandonment by industry and its 1960s exodus of residents and businesses. Yet Trenton is becoming actively engaged in redevelopment, as are other New Jersey cities. This issue looks as well at seven urban projects by New Jersey architects, and, on a different note, at a better way to plan trees on urban sites.

American cities are ready to take a new direction, with architects and planners among those leading the way. The re-envisioning and reshaping of cities today will effect city dwellers' lives for decades to come.



The Bluffs, Red Bank, New Jersey

Jerome Morley Larson, Sr., AIA, Red Bank, New Jersey

As part of the revitalization of downtown Red Bank, the architect designed a project of twenty luxury units located on the river's edge. The site included three Victorian buildings, the mansions of nineteenth-century merchants and sea captains. Some of the units were created in these houses and others in new three-story buildings added to the sloping site.

The major rooms of the buildings are oriented toward the water, which provides "breathing room" for the high-density project. At the waterfront are docks for pleasure boats and a walkway, included as part of the city's master plan.

Brick paving, wood shingles, and white trim help unite the new buildings with existing ones. The central building has a pool, and the Garden State Arts Center, train station, yacht club, and other amenities are all a few blocks away.



Development of Berkeley Heights Property, Berkeley Heights, New Jersey

Michael Burns, AIA, Rocky Hill, New Jersey

The development of this property is part of a larger master plan currently being formulated by the town's planners. The fundamental idea of the master plan is to turn existing expanses of parking lots into a town square and main street, thereby giving the commercial district a more distinctive character. The architect's development design addresses the expansion and facelifting of an existing supermarket, the need for affordable and market-rate housing, and the need for parking space.

Since the supermarket lacks adequate street frontage, the design adds a tower that serves as a landmark for vehicular traffic. A pedestrian arcade will wrap the supermarket and link it to the pedestrian sequence from the town square. Pedimented entry ports link the parking lot to the building.

The residential portion of the development places units around the perimeter of the site, so that they face onto a central garden space with a pond. The shape of the site is reinforced with tower elements at juncture points and courtyards as transitions between private and public areas. A new garage lies next to the railroad right-of-way, and a treelined "arcade" connects the residences to the town square and to the stores.



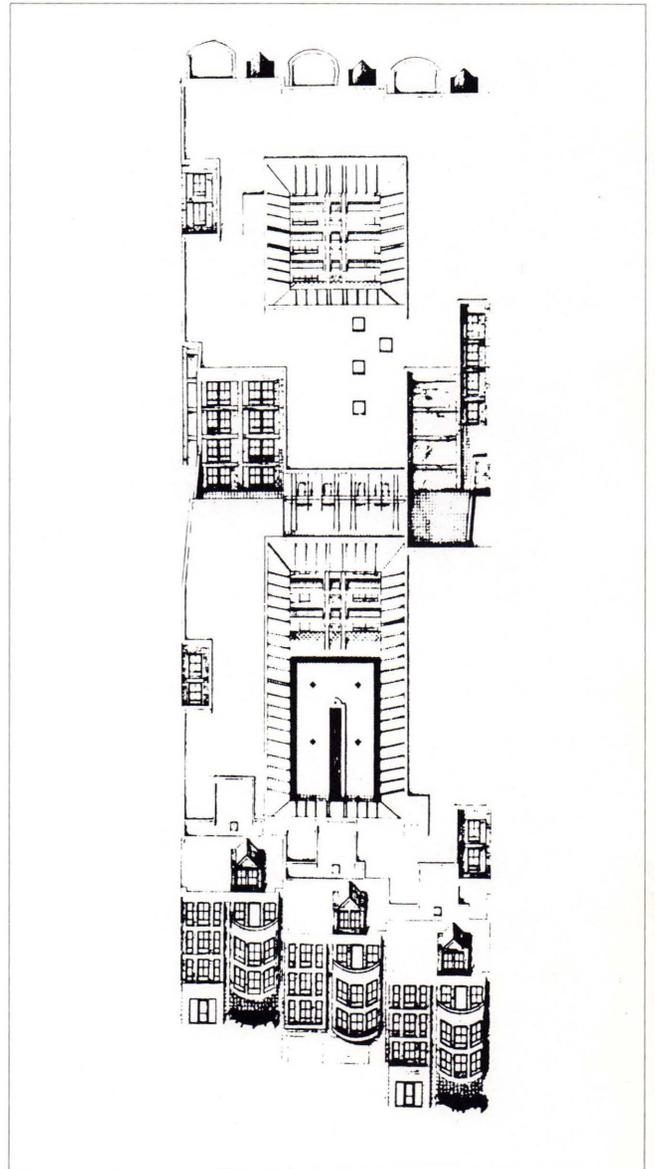
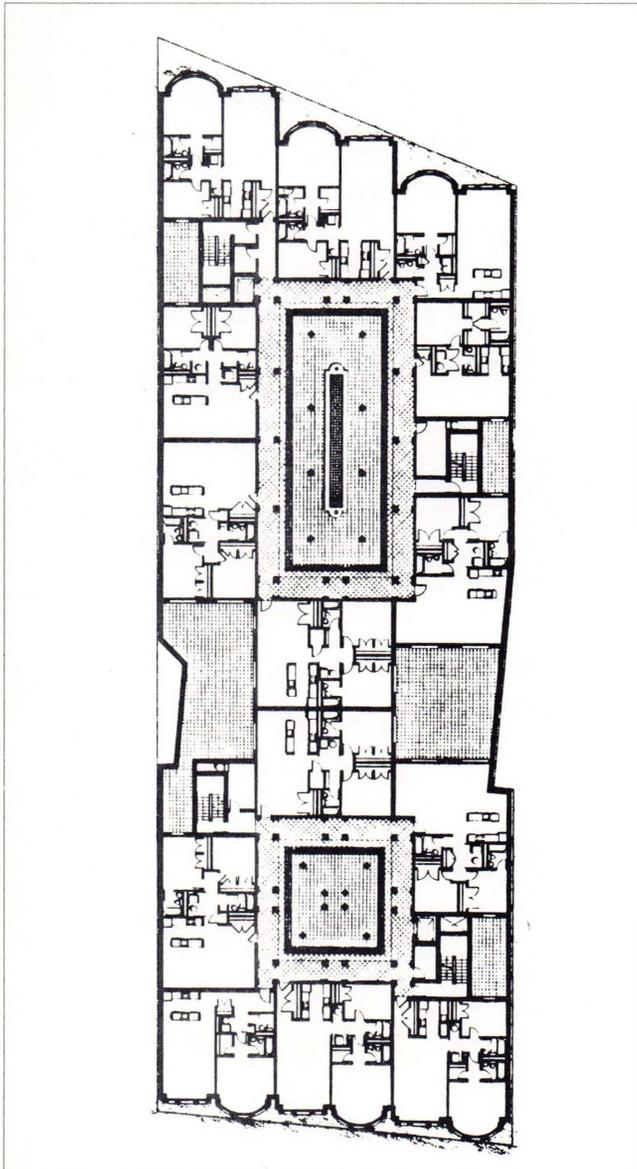
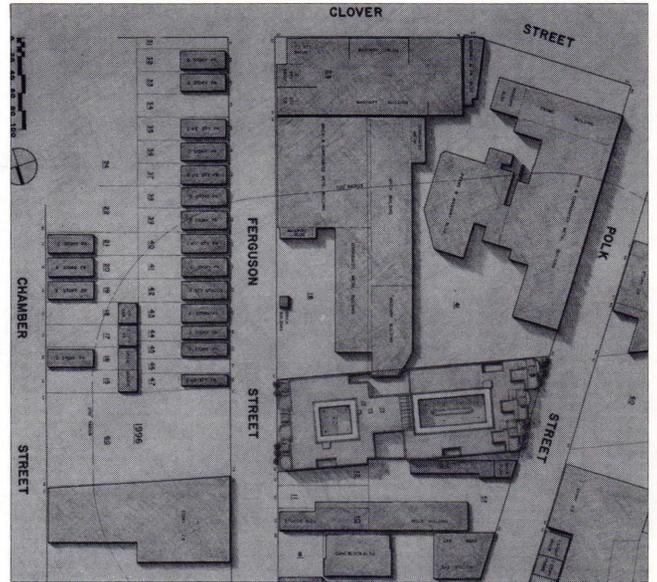
Polk Street Condominiums, Newark, New Jersey

Barrett Allen Ginsberg, AIA, Bedminster, New Jersey

This project creates forty-eight medium-priced condominium apartments, each with its own off-site parking spaces. Located on an abandoned railroad right-of-way in the Ironbound section, the .65-acre site lies midway between Market and Ferry Streets and only ten blocks from Pennsylvania Station. The neighborhood is a mix of residential and commercial properties, with brick the predominant material.

As a result of the site's narrowness and length, views are extremely limited. To provide adequate light and air, the design divides the site into two courtyard buildings. All apartments are placed on the perimeter and face one of two principal courtyards open to the sky. The apartments are set atop a one-story parking garage, accessible from both ends. One-half of the building contains three and one-half stories of apartments; the other half rises four stories above the garage. An entry lobby faces each street.

The street elevations take architectural details from neighborhood buildings, as well as adapting generic urban townhouse architecture. The exterior materials are brick and stone, with courtyard elevations finished in stucco.





Golden Triangle Plaza, New Brunswick, New Jersey

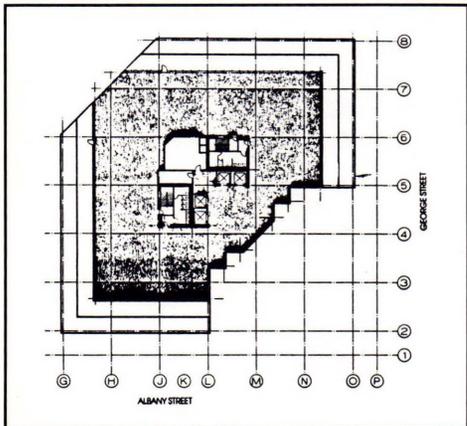
Rothe-Johnson Associates, Edison, New Jersey

Golden Triangle Plaza is an office complex located in the heart of downtown New Brunswick. Conceptually, the project is an L-shaped office tower that sits on top of a triangular, two-story retail component, with parking in a garage behind and below the retail space.

The 1.8-acre triangular site is bounded by two major streets and the Amtrak rail line. At the west end of the the rail line side is a nineteenth-century train station; at the intersection of the two streets is the termination of the George Street pedestrian mall and the pedestrian boulevard along Albany Street. I.M. Pei's Johnson & Johnson World Headquarters, modern in style, sits east of the project site in a park-like setting.

The building responds to its context in a number of ways. The main entrance, for example, with its granite steps leading up to a projecting canopy and three-story, skylit atrium, takes advantage of the highly visible corner at Albany and George. With a modernistic building on one side and a general community of lower-scaled brick buildings, Golden Triangle Plaza offers both: a metal-and-glass tower and a brick-clad, two-story base. The darker "medallion" panels on the outside, as well as the central glazed panels on the outside, as well as the central glazed section, emphasize the verticality of the building.

Inside, retail and office space open onto the atrium, to pull people in from the street and give this entry area life.



Kerney Center, Mercer County Community College, Trenton, New Jersey

Clarke & Caton, Trenton, New Jersey

The Kerney Center of the Mercer County Community College is located on a one-half-acre site adjacent to a main artery through the center of Trenton. The fortress-like existing structure built in 1968 turns inward, away from the city it serves, and seems to reflect a period of strife in the late 1960's rather than any optimistic and positive relationship with the city. The fabric of the street is broken with a building face recessed from the sidewalk and a sunken courtyard isolating this ominous structure from all adjacent buildings. An immense wall of dark monochromatic brick devoid of scale-giving windows and details is all the pedestrian sees.

The proposed addition expands the existing building to fill the void between the college and adjoining retail structures. The addition's new facade is more compatible with the scale and character of the commercial street. This facade is more solid on the right next to the existing buildings and evolves into a free-standing

screen by the time it reaches the buildings' entryway.

The new brick facade will have a range of red and brown hues arranged in a strong horizontal pattern. Glazed ceramic tile will

be used on the base of the building to articulate further the facade.

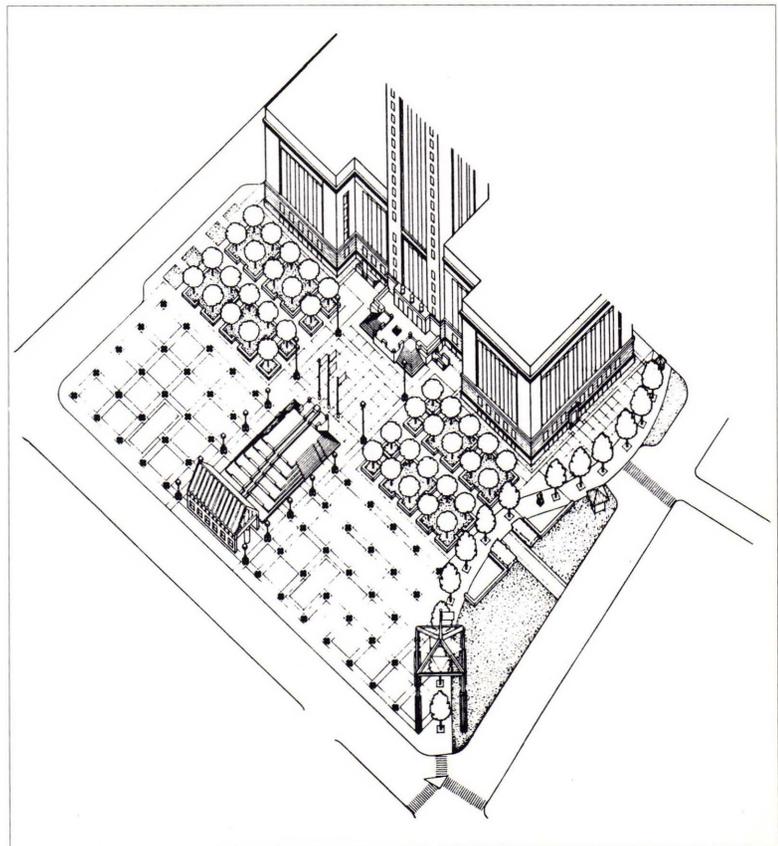


Roosevelt Plaza Redevelopment, Camden, New Jersey

Lammey and Giorgio, Haddonfield, New Jersey

Located west of the Camden County Courthouse/City Hall, Roosevelt Plaza has been the city's public square since the 1930s. Unfortunately, over the years it evolved into a parking lot. This new design doubles the size of the plaza and reestablishes it as the major open space for downtown Camden.

The plan responds to the overlaying of pedestrian circulation patterns and stimulates the vitality of this urban space by the ways in which it locates active and passive zones. An east-west axis is created by placing a new PATCO Transit Headhouse opposite the new main entry steps for the courthouse. Formal gardens with trees and seating areas establish a north-south axis. The axes intersect at a central space where community events can take place. Retail pavilions, occupied by small cafes and shops, will be located on the southwest and northwest corners.



Trenton: Recalled to Life

In Memory of Mayor Arthur Holland
1918-1989

In the mid-twentieth century, the decline of manufacturing and heavy industry, combined with a population exodus to the suburbs, left many Northeastern cities in decay and despair. Large parts of these cities came to resemble ghost towns, haunted by residents who wandered among vacant factories and boarded-up rowhouses.

New Jersey's urban areas fell upon harder times than did New York City to the north or Philadelphia to the south. In the last two decades, though, a statewide economic revival has brought attention back to New Jersey's troubled cities. As the state capitol, Trenton has always been the symbol of New Jersey's historic past. With the success or failure of this city's attempt at revitalization, which we examine here, Trenton may also stand as symbol of the state's future.

In earlier decades, "urban renewal" meant turning a city away from its past. But Trenton exemplifies current thinking about city revitalization, in which recognition of the past becomes an integral part of the city's future.

For Trenton, like other New Jersey cities, this past began at the waterfront. In fact, colonial Trenton was first called "The Falls," after some nearby rapids (now vanished). Once an area where the Lenni-Lenape tribe roamed, Trenton was settled in 1679 by Mahlon Stacy and a group of other Quakers. At Mill Hill, near the juncture of the Assunpink Creek and the Delaware River, the settlers built a gristmill and a village. In 1714 Philadelphia merchant William Trent bought

part of Stacy's estate and in 1719 built a home there. Trent, who became Speaker of the state's House of Assembly, persuaded the Hunterdon County government to keep its seat at The Falls, which was later renamed for this colonial leader.

Trenton grew slowly during the eighteenth century, but it was the site of a critical Revolutionary battle at the end of 1776, when Washington successfully attacked Hessian troops quartered there. Trenton was chosen in 1784 by the Continental Congress as the new nation's capital, and though it later lost out to Washington, DC, it did become the capital of New Jersey in 1790.

Industrial growth came during the nineteenth century. The city was best known for its pottery companies, rubber producers, and iron and steel works. As Trenton mayor and native Arthur Holland points out, the city boasted this country's first blast furnace, first commercial steamboat, and first manufacture of both steel cable for suspension bridges and steel I-beams for skyscrapers. These and other industries gave Trenton its proud—but eventually ironic—slogan, still spelled out in giant steel letters on the Route 1 bridge: "Trenton makes—the world takes."

Seventy-year-old Mayor Holland, who has held his office from 1959-66 and from 1970 to the present, recalls that as late as 1950 Trenton was still a major industrial city. After World War II, Trenton started to lose industry to southern cities that could

offer manufacturers economic concessions and low-paid, non-union employees. "But," says the mayor, "the 1968 riots did more to hurt the city than anything else—they caused people and businesses to leave."

By the 1970's, Trenton was a city whose best days, in both architectural and social terms, seemed left behind. A number of important historic buildings survived, including the Old Barracks, built in 1758 for the French and Indian War, and later occupied by the Hessians whom Washington routed; a Friends Meeting House dating from 1739; Douglass House, where Washington held a council on war on January 2, 1777; the William Trent House, restored to its original appearance; Ellarslie, designed by John Notman around 1850; and a State House with portions dating from 1792. Also surviving were numerous factory buildings and rowhouses, typically of brick, that dated from the late nineteenth and early twentieth century. But new development was almost at a standstill: when Capitol View was constructed in the late 1970s, it was the first speculative office building erected in the city in two decades.

In Mayor Holland's view, two fundamental problems faced the Trenton of the 70's—and still face the Trenton of today. "One is the socio-economic imbalance of the population," says the mayor. "Mercer County has thirteen municipalities, and though Trenton has less than a third of the population, it has seventy percent of the poverty in the county—ninety-three percent of the county's AFDC cases." Trenton, he says, has two thousand public housing units—and its neighbors, Lawrence, Ewing, and Hamilton, have none. And, as the mayor points out, the Reagan administration did little to develop new housing programs: Trenton is struggling to deal with its homeless people, about a quarter of whom are families.

"The other problem is the tax system in this state," continues Mayor Holland. "It's just crazy. We rely on real estate tax for most of our revenue. Since we're already built up, the only way we can raise revenue is to raise the rates against the existing base, and that base has been declining for decades." The mayor believes that Trenton will need state aid until the city can become self-sufficient, and sees a more progressive income tax as the long-term solution: "Unless there is tax reform, and unless communities share the burden of housing and caring for the poor, we'll continue to have the same

Turn of the Century: Trenton



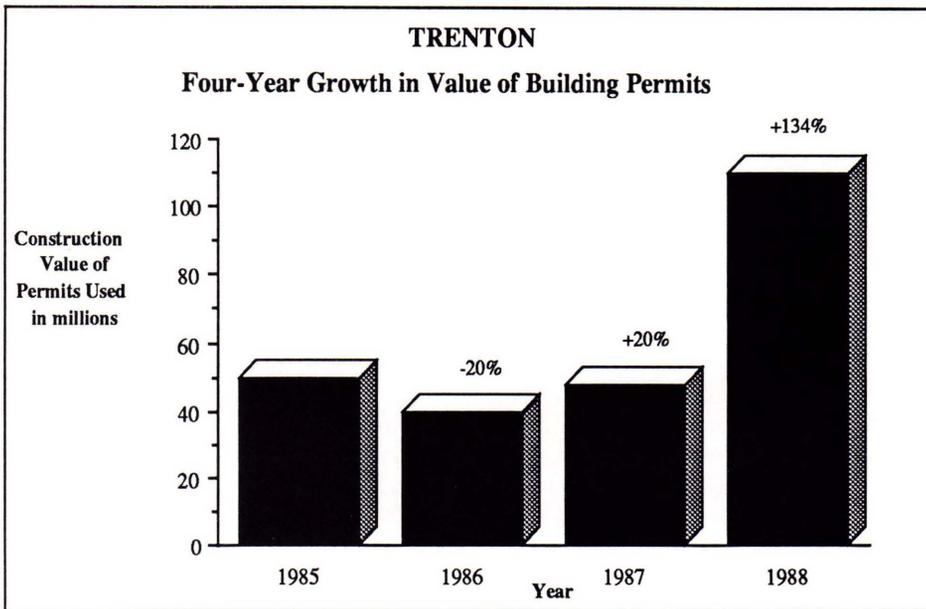


Table excerpted from *The Times* problems.”

Yet since the early 1980s, Trenton has shown signs of reversing its downward trend. The first reason for this reversal (which has still to benefit many of Trenton’s 90, 646 residents) is generally cited as the statewide economic comeback, and especially the New Brunswick-to-Trenton Route 1 corridor boom. The second is the new state policy of leasing office space rather than owning office buildings—and thereby providing leverage for new construction by private developers. A third, corollary of the first, is the skyrock-

eting cost of housing and non-residential construction in Mercer County: developers are turning to Trenton, where land is relatively inexpensive and infrastructure such as streets and utilities is already in place (and, as of 1988, the average sale price of a home was \$69,133).

Trenton has felt confident enough to promote itself with a new motto: “Where business meets opportunity.” With the approvals of four major projects in 1988, Trenton’s percentage increase in value of building permits issued for the year was the fifth

greatest among the nation’s 202 largest cities. Trenton’s total went from \$48.5 in 1987 to \$113.8 million, an increase of more than 134 percent. Such an increase was not anomalous; increases in the value of Trenton’s building permits have occurred in five of the last seven years. Currently about one million square feet of non-residential construction is underway in the city. In addition, the Trenton Department of Housing and Development’s figures for July 1989 showed, in a tally of new housing with four or more units, a total of 146 units completed in the previous twelve months; 648 under construction or rehabilitation; and 376 proposed for construction or rehabilitation in the next twelve months.

With 20,000 employees in the city, the state now leases about 3.5 million square feet of office space in Trenton. In fact, the state has been responsible for the majority of the money spent on non-residential construction since 1980. In addition to various tax abatements and exemptions, the federal, state, and city governments all offer businesses grants and loans through such agencies as HUD, the New Jersey Economic Development Authority and Department of Commerce, and the non-profit Trenton Business Assistance Corporation.

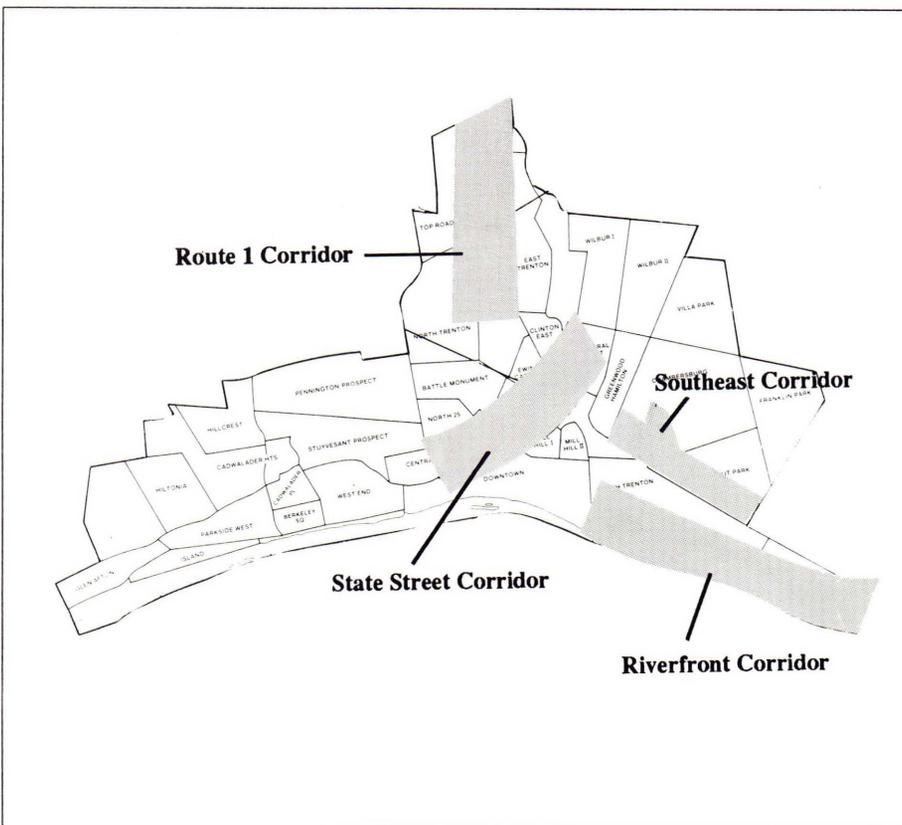
Yet the mayor and other city officials, such as Director of Housing and Development Thomas Ogren, are equally eager to call attention to Trenton’s growing cultural and arts programs. They talk about the Mill Hill Playhouse, a theatre opened in 1981; the State Museum next to the Capitol and the Trenton City Museum at Ellarslie; the 2,000-seat War Memorial auditorium and the famous performers who appear there; and the new art gallery and studios housed in a renovated warehouse. These types of attractions, as much as new offices, stores, and homes, are integral to the life of a healthy city, and to a city’s self-image.

Urban Planning

A measure of Trenton’s improving self-image is the city’s reawakened focus on the future, as embodied in new planning. New Jersey itself, in a preliminary plan released last November, is urging that the state’s new growth take place in major urban centers, and is calling for improved public services and development incentives in the state’s most “distressed” cities and communities—including Trenton.

In 1986 Trenton adopted its own “Corridor Development Plan,” which designates four areas within the city where development—and redevelopment—should be promoted. The first, lying along Route 1, is targeted for industry, as it is located within a highly tax-advantaged Urban Enterprise

Map of Development Corridors



The Capital City Renaissance Plan: Design Principles

The Capitol City Renaissance Plan is the primary document that for the next twenty years will guide development activities in the Capital District of Trenton. Developed by the Liebman Melting Partnership of New York in association with Andres Duany and Elizabeth Plater-Zyberk Architects of Miami, Florida, the plan calls for major physical restructuring within the Capital District, which is roughly defined by the Delaware River, the Delaware and Raritan Canal, and the Amtrak rail lines.

The plan envisions Trenton as a "college city", a "city as museum," wherein many periods exhibited in various qualities are made legible and linked by traditional urban elements such as streets and squares. The college is created by layering the urban fabric to recover lost urban elements such as Stacy Park, and recoding the entire fabric to repair existing flaws and provide a framework in which future building insertions can collectively contribute more than their individual merit.

To repair the urban fabric, streets, squares and other public spaces are introduced to provide a contiguous network of consciously formed urban space, and to permit pedestrian circulation throughout the district. These elements serve as "connective tissue" of the city and are given deference in the plan; streets and squares are conceived of a "urban poche", where space is the figure and buildings are the ground. Buildings define and shape the streetscape and give a textural quality to the urban space.

The principal method to restore the urban fabric is the reclamation and reuse of vast areas of surface parking, located throughout the district. In the area west of the Justice Complex, more than a dozen

new city blocks are created by reclaiming surface parking area and restoring a rational, traditional street grid that serves as a framework for new buildings.

In other parts of the district, where already established yet incomplete blocks exist, the restoration strategy is to infill blocks with new structures to provide a continuous facade along pedestrian ways. The "block" becomes an important module in the city. In the area behind the State House Complex, surface parking areas are given over to new buildings, green space, and elevated parking structures. Other incomplete blocks, such as those within the largely residential area located between West Hanover Street and the D & R Canal, have been infilled with buildings that respect existing typologies. New housing is also extended east along the D & R Canal to reinforce the significance of the canal as an edge of the district.

The design of the urban fabric is regulated by an urban code, a document that establishes standards and controls for the entire district and takes precedence over the Trenton Zoning and Land Development Ordinance. These controls specify four permissible building types and, for each type, specify building height, placement, use, and a series of architectural standards.

The controls give primacy to the design of a complete urban fabric. Building placement controls, which specify that "facades be built on the frontages along eighty percent of their length," serve to hold street lines. Use controls, which specify that "seventy percent of the frontage at the sidewalk level be for commercial use," encourage commerce by bringing together merchants and patrons. But by far the most stringent controls are placed upon the design of buildings.

Briefly stated, the architectural controls are: Exterior finish materials on all facades are limited to brick, stone, terra cotta, cast stone, and clear or lightly tinted for most structures. Stucco is permitted as an alternate material for buildings with a height limitation of 4-1/2 stories, and wood clapboards and shingles for 3-1/2 story buildings. Glazed areas on all facades are not to exceed fifty-five percent of the total area for each facade, and along pedestrian continuity frontages, the facade of the story at sidewalk level is to be not less than seventy percent glazed. Additionally, the height of glazed areas and other openings in the facade must be equal to or greater than their width.

These standards limit many decisions typically considered to be within the purview of the architect, including: the choice of materials, the relation of solid to void, the ratio of solid to void, the proportions of the solids and voids themselves, the building texture, and massing.

Conformance with these standards will predispose all new construction in Trenton in favor of the masonry load-bearing building's aesthetic. Yet State Street Square, the Department of Commerce Building and Capitol Center are all precast concrete buildings. The Department of Environmental Protection Building is finished in precast concrete and an out-sulation product; the Department of the Treasury Building, while clad in brick, is finished with dark tinted glass at the ground level. In fact, the majority, if not all, of the major construction projects built in Trenton, over the past five years would not, had they been built today, conform to the Renaissance Plan's code.

—Sharon Ayn McHugh

Zone, contains vacant industrial land, and has easy access (to be further improved) to the highway. Second is the Southeast Corridor, site of two former industrial complexes proposed for adaptive reuse, and also site of proposed Route 129, which will connect with I-195 and I-295. Third is the Riverfront Corridor, lying along the Delaware from the Route 1 bridge east. A new marina, waterfront park, and mixed-use commercial and residential complex are either already built or under construction.

The fourth corridor, State Street Corri-

dor, contains most of the central business district, and extends from the State House to the railroad station. It contains Trenton Commons, a two-block pedestrian mall. The corridor's plan calls for "mutually supportive retail and office development," and encouragement of pedestrian movement. As Housing and Development Director Ogren points out, "The retail stores and restaurants are amenities that give some excitement to a downtown workplace. It's different from an office campus on Route 1, which tends to be fairly sterile, unexciting except for a few

fountains—and we're providing those, too."

The major focus of planning efforts at present is on a larger segment of central Trenton, called the Capital District. Presented in proposal form on June 20 of this year, the Capital City Renaissance Plan is an ambitious, twenty-year program "to preserve the historic assets of the district and to propose new development opportunities." Although city and state are cooperating, the plan is essentially a state initiative. It is the creation of the Capital City Redevelopment Corporation (CCRC), a non-profit group

established by an act of the New Jersey State Legislature in the fall of 1987.

"This is a commitment of the public," says Ingrid Reed, chair of CCRC's board and an assistant dean at Princeton's Woodrow Wilson School. "After forming the corporation, our procedure has been to involve many people in thinking about the way a city looks and feels." Reed recalls that the corporation identified four primary issues: making the city a "user-friendly place" built on a human scale; recreating access to waterways that shaped the city; enhancing and exploiting the historic character of the city; and "reinforcing the role that the state capital played, encouraging people to have access to the government." CCRC's executive director, Robert Litke, met with members of the community, and the corporation invited over 200 people to attend sessions on various areas of interest. The ideas generated in meetings helped guide the teams of architects and planners. A final public hearing was scheduled for September of this year, and formal approval for October.

The Renaissance Plan opens tantalizingly by listing ideas for major new development on city-owned sites (such as the acres of parking lots that Reed calls "part of urban renewal's faded dream"). Although it does not include the long-debated, never-approved civic center, the plan recommends two to three million square feet of office space; 100,000 to 200,000 square feet of retail space; 2,000 to 3,000 units of housing; garages to accommodate 15,000 to 20,000 parking spaces; a 200-room hotel and conference center one block east of the War Memorial Building; a new drive and park along the D&R Canal; new parks and plazas in front of the Battle Monument, the main public library, and a cluster of churches, a recreated Stacy Park between the river and the State House; a community center and plaza on Perry/Bank St.; a park with am-

phitheatre and ice skating rink one block south of the War Memorial; a helipad on the river north of the Calhoun Street Bridge; a sports arena next to the Justice Complex, right off Route 1; and a governor's mansion between Trent House and the river. The goal, according to the plan, is "to spread new development throughout the Capital District rather than concentrate it in a few tall buildings."

Major areas of development would include housing infill along the new Canal Road, and multi-story apartments along the river. Trent House and the Justice Complex would be integrated with the rest of downtown by creating a traditional street grid pattern and filling it with new development and parks. Design standards are specified to ensure that new development is compatible with existing buildings, in terms of height, materialism and design. And, emphasizes Reed, the plan does not call for the removal of any existing buildings.

The plan also addresses concerns about getting around the district, especially by foot. In keeping with the current rediscovery of the pedestrian, the plan calls for connection of neighborhoods and centers of activity; filling in vacant lots; creating retail activity along the streets; improving signs, lighting and street furniture; and creating parking garages that have active uses along sidewalks. Route 29, an elevated highway along the Delaware, would become an on-grade, tree-lined boulevard that permits walkers to cross the river's edge. Vehicular



State Street Square

Photo by Katharine Wyland

traffic would benefit from the reopening of the Trenton Commons Block between Broad and Montgomery Streets; from the new Canal Drive, which would relieve rush hour traffic on Perry/Bank Street; and from the designation of some narrow downtown streets as one-way pairs.

"We expect people to make further proposals for implementation," Reed acknowledges. "But the principles are what's important: human scale, the streetscape—no more walking past blank walls—the use of traditional materials, heights that complement existing historic buildings as well as good new buildings, parking in structures, and so on." After approval of the plan, the CCRC will prepare implementation strategies and continue to guide its realization.

The plan does, in closing, address the harm that revitalization could do to poorer residents if it forces them to relocate. However, the CCDC states that none of the proposed development would physically displace any resident, and if future proposals do, the corporation will provide a relocation plan that conforms with New Jersey statutes. The corporation also says that it will promote mixed-income development and improvements on existing housing, and, in residential projects created with CCDC assistance, will set aside twenty percent of the units as affordable housing.

Apart from the Corridor and Renaissance plans, the city's own recent planning efforts have included hiring the Philadelphia firm of Wallace Roberts Todd to lay out an open-space master plan for city. Already



16 Architecture New Jersey 89:3
West State Street 1913

private developers of large office buildings are being required to provide open space as part of the permit approval process.

Currently under review is the Duck Island master plan by the Fellows Read Organization in association with Clarke and Caton of Trenton. Covering the waterfront from the Route 1 bridge south to the juncture of Crosswick's Creek and the Delaware, the plan proposes a treelined boulevard and meandering walkway starting at River View Executive Park. It also suggests reconstructing the Delaware and Raritan Canal down to Duck Island, and creating a wetlands nature preserve as well as recreational parks, for a total of about 1500 acres of open space. A new recycling and resource recovery center, as well as new county offices, would join the existing sewage treatment, energy-generating, and oil plants.

Neighborhoods, too, are undergoing new planning. With a grant from the New Jersey Department of Community Affairs, the Interfaith Organization for Community/Trust and Redevelopment to Unite South Trenton (TRUST) is commissioning a redevelopment plan for part of South Trenton. This residential area covers fourteen blocks, bordered by Route 1, Lambertson Street, Federal Street, and the river. Zvosec and Associates of Princeton were asked to examine land use, building conditions, land ownership, and infrastructure in this run-down area, where no major redevelopment has yet occurred. According to John Zvosec, the goals include improving housing, introducing new community facilities, and making recommendations about traffic, parking, commercial, and recreational uses. So far the firm has met with the Mercer County Improvement Authority, city officials, members of the CCDC, the Department of Transportation, and interested developers. "Our planning will be an organizing of all their efforts," says Zvosec.

The South Trenton neighborhood is slated for a \$500,000 block grant next year, and the plan will show how that money can best be used. Cautions Zvosec, "Most important is

not to get rid of the people in the neighborhood, not to gentrify them out. The intent is to work with them. They have a big say in what is happening."

New Development

As developers seize the opportunities that Trenton offers, their buildings reflect the new thinking in urban planning. The state itself is leading the way, Ogren points out. Instead of continuing to build isolated offices complexes, like the Justice Center, the state has located three new office buildings in the central business district: The Department of Environmental Protection on East State Street, the Mary G. Roebling

tors in patronizing local stores and restaurants, the complex will have no cafeteria.

Not only state-owned office buildings, but also private ones, have been the catalyst for downtown redevelopment. According to Ogren, downtown Trenton had no class A office space until the last few years; now it has over 500,000 square feet either leased or available to lease in private buildings. Again, though, the nonresidential construction boom is largely thanks to the state, which is leasing space in all Trenton's major new, privately developed projects.

Among the largest of these are the re-



Capitol Center's grand entrance opens directly onto the new Trenton Commo pedestrian walkway.

Building, housing the Department of Commerce, at Warren and State Streets; and the William Ashby Building, housing the Department of Community Affairs, on South Broad Street.

The latest governmental project, to be built by the NJEDA and leased to its various occupants, fits in with the Renaissance Plan's recommendations by providing an interior parking garage and, at street level, a post office and stores. Deigned by Rothe-Johnson Associates of Newark, the new Division of Motor Vehicles Headquarters/New Jersey Network complex will fill a block bounded by Front, Montgomery, State and Stockton Streets. To encourage employees and visi-

cently constructed Capital Center and State Street Square, both located on State Street. The site of the former, explains Ogren, was also that of Trenton's last department store, which closed a decade ago; as he says, "Psychologically that was a very devastating blow to the downtown." Half of the block, part of the Trenton Commons pedestrian mall, had been vacant for a long time.

Today that block is occupied by the new Capital Center, developed by DKM Properties, Lawrenceville, and designed by Cope Linder Associates of Philadelphia with Clarke and Caton. According to architect John Clarke, who served as city planner from 1971-1977, the seven-story building



33 West State Street

Photo by Bruce Goldsmith

exemplifies downtown Trenton's new planning goals. Its five floors of office space will be occupied by the New Jersey Department of Human Resources, thereby continuing the integration of state offices with the downtown. The bottom two floors will house retail stores and a 450-seat food court. And, Clarke points out, the building forms a solid city block, rather than standing alone the middle of a parking lot.

"The only way to do successful downtown retail is to do it at the right scale and control the environment," comments Robert S. Powell, Jr., president of DKM and a former director of NJEDA. "Downtown retail is usually fragmented, whereas malls are so well designed and managed to deal with customers' wants that they draw many customers away." In Capital Center, therefore, the developers/managers are not only providing garbage collection, daily streetcleaning, and landscaping, but also supervising the mix of retail tenants and their locations vis-a-vis pedestrian traffic patterns. Stores catering to the residential and office-worker markets will include a large drugstore, a bookstore, gift stores, possibly a fine jewelry store taking advantage of the three percent sales tax, and so on; as Powell wryly observes, "There's no competition for almost any new store you

open in Trenton."

Nearby State Street Square, at the corner of West State and North Willow, replaces a group of underutilized and run-down buildings. Developed by Aegis Property Group Ltd. and designed by Curtis Cox

Kennerly, both of Philadelphia, the two-phase project will include two office towers connected by a three-story, skylit retail space called the Wintergarden. The new office towers, one fourteen stories high and one twelve stories high, have pedimented facades that echo the classical style of both the National State Bank, a 1920s building that the developer is also restoring, and the State House. The tenants at the fourteen-story tower, now completed, will include the New Jersey Department of the Treasury, a bank, a brokerage, two law firms, and a wine-and-flower shop.

Some other downtown projects are DKM's nine-story office/retail building at 33 West State Street and a partially completed office/retail complex on South Clinton near the train station (developer Sydney Sussman's Station Plaza). Powell notes that his company wants to contribute to a substantial, timeless-appearing financial district with the bank-tenanted buildings it owns along State Street; thus, for example, the Hillier Group's design for no.33 uses classical elements and brick-and-granite facades.

In keeping with Trenton's planning goals, the waterfront as well as the downtown is undergoing new construction . The most noteworthy project along the Delaware is

developer Michael LaMelza's River View Executive Park, occupying the former site of U.S. Steel warehouses.

Designed by Cecil Baker and Associates of Philadelphia to be a self-contained, mixed-use community, River View is to include office buildings (three are already built), a hotel with 200 rooms, high-rise apartment buildings, a nursing home called Water's Edge,

River View Executive Park



a residence for the elderly, and a retail center (also completed) with bank, restaurant, stores, and more office space. Parking lies on the highway side of the thirty-acre site, and a promenade along the riverfront. The site also includes a two-story, red-brick building, the Cooper Iron Works, where the country's first steel I-beams were manufactured. LaMelza hopes to get city and state financial aid to restore the mid-nineteenth century building and turn it into a 400-seat restaurant with conference and banquet rooms. At Riverview, as at Capital Center and State Street Square, the state of New Jersey is the primary lessee.

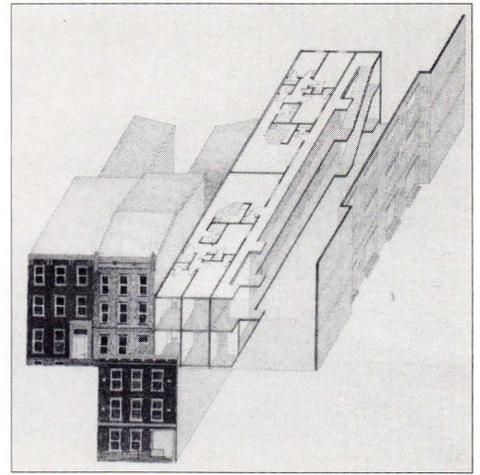
A footnote to any description of new development is Trenton's percentage-for-art program. According to Thomas Moran, Visual Arts Coordinator for the State Council on the Arts, the state has commissioned works of art for its offices in Trenton since 1982; for example, a George Segal sculpture at the Mary Roebing Building. Now a City Council ordinance enacted last year requires that any new building of more than 50,000 square feet include publicly visible artworks. The developer is to spend fifty cents per square foot or .5 percent of the total cost of construction, whichever is greater.

Photo by Janet M. Gnall

The Public Art Committee of Trenton Arts Commission, which oversees this program, recommends that developers visit slide registries to select New Jersey artists, preferably local artists. Alternatively, a developer can contribute to the Arts Development Fund.

The future of more new development like Capitol Center and State Street Square is an open question. John Clarke is one who believes that more such projects could be done, and on a larger scale. On the other hand, Thomas Ogren says, "I think we're going to be seeing a pause in the leave of office development in downtown Trenton, and the next opportunities for private developers or businesses are going to be small shops in the retail areas." Furthermore, although state occupancy is guaranteed in office space already constructed, some new buildings are going up with no such assurances. As Powell observes, current state finances contribute to a pause; he foresees more private sector leasing and development as the new amenities attract additional businesses.

New residential development presents a very different picture from new commercial development, in terms of both developers and approach. One earlier example is Archi-

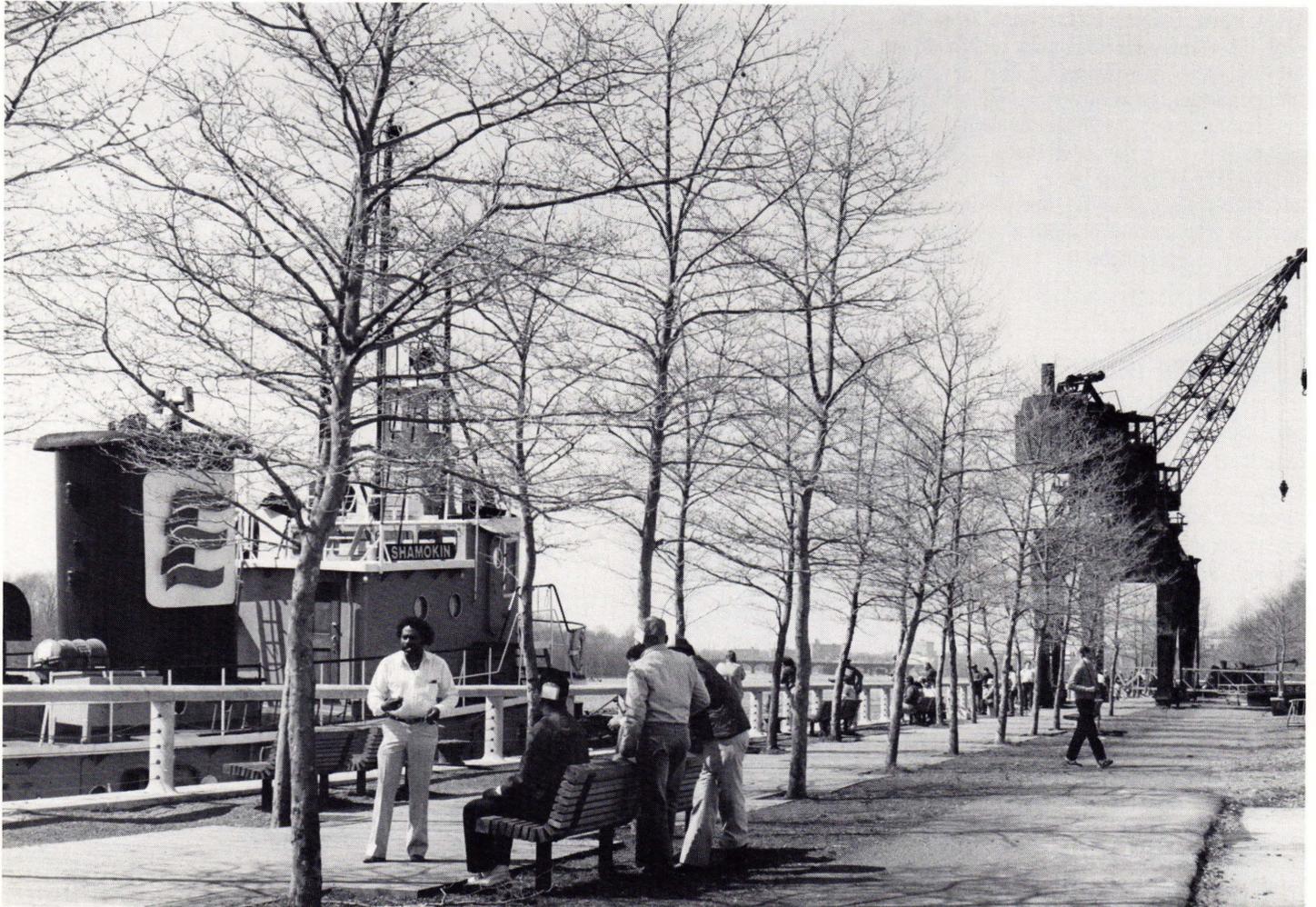


Cityside Housing New Units

tecs Housing, a 122-unit apartment building for low-income senior citizens that was conceived and carried out, and is still managed by, NJSA's Central Chapter. The red-brick project celebrates its tenth year of successful operation this October.

Present-day Trenton is not, however, relying solely on this kind of large-scale residential construction. Of the 1,170 housing units in projects (of four or more units) that

Trenton Marine Terminal Park





Mid-Century view of War Memorial

have recently been completed, begun, or proposed for completion in the near future, less than half are new. Developers vary from a Catholic diocese, which has built one hundred new units, to Habitat for Humanity, which is building six. The first significant new residential development downtown is the Colony at Mill Hill, a group of forty new units in a historic district that has already undergone much restoration.

One current and extensive residential project is in Old Trenton, an area that includes both an historic district and vacant lots and that is almost completely city-owned. With some financial assistance from the city, the Kaplan Organization of Edison is turning existing rowhouses into seventy-five condominium apartments and building one hundred new townhouses stylistically compatible with the rowhouses. About a sixth of the units will be set aside for low- and moderate-income families. Combining new construction and rehabilitation, this project seems appropriate for Trenton's planning vision.

Renovation and Rehabilitation

The reuse of Trenton's existing architecture, sometimes for entirely new purposes, best illustrates how old and new can remain fruitfully intertwined. Trenton is encouraging these efforts through homesteading programs, in which tax-foreclosed residences can be bought at auction, and through grants and loans (also offered by the Trenton Downtown Association) for renovating the facades of residences and businesses. The city monitors renovation; proposed work on buildings located in historic districts requires a restoration permit as well as review by the city's restoration specialist and Landmark's

Commission.

In addition to code enforcement, renovation and rehabilitation are particularly important in addressing Trenton's need for better housing. Individuals, non-profit groups such as Better Community Housing and the Latino Land Trust, and commercial developers are all rehabilitating Trenton's housing stock, which consists largely of brick rowhouses. Several major projects are now under construction.

Commercial developers and nonprofit groups such as Isles, Better Community Housing and the Latino Land Trust are all rehabilitating Trenton's housing stock, which consists largely of brick rowhouses. Several major projects are now under construction.

One such project is Raziville Commons, a residential community being created (or rather, re-created) by Shaikh Moiz Matin, the Princeton-based president of Matin Development Corporation. Matin bought sixty-five buildings and twenty-two lots on Ewing, Carroll, Southard, and Perry Streets. He is turning the three-story rowhouses, which had been abandoned or tax foreclosed, into single-family homes and condominiums. The houses date from the late nineteenth centuries, and the facades are being restored in period. Matin plans to turn vacant lots into playgrounds and green space, and to bring a few stores and restaurants

back to the neighborhood.

Architect John Zvosec has already remodeled a cigar factory in Chambersburg into Grand Court Villas, a hacienda-style complex of luxury apartments. He is now turning a paper products warehouse at the corner of East Hanover and Stockton Streets into thirty-four condominiums. The brick exterior will be restored, and much of the building's original interior will be restored, and much of the building's original interior structure will be retained and left exposed.

Cityside Housing, developed by Seymour Gould's company Rental One, takes a step toward meeting the desperate need for low-income housing. The Ho-Ho-Kus developer worked with the Department of Community Affairs to put together a financial package for the 296-unit project. A combination of HUD Section 8 certificates and balanced housing funding from the state will subsidize the homes' mortgages; the occupants will be required to pay no more than thirty percent of their income.

Rental One and the Princeton firm of Mosteller and Travisano, who designed the renovations, chose vacant buildings in five neighborhoods. According to architect Fred Travisano, the criteria for area selection included clustering of usable buildings, proximity to neighborhood shopping, and location on streets with high visibility. He notes that clusters were located in an historic district and traditional older neighborhoods, and that most of the buildings were brick rowhouses with three stories in front and two in back (one building is new). Rehabilitation of the former Trenton Orthopedic Hospital as a residence for senior citizens was also part of the project.

The Roebling Complex



Travisano took as his model a similar project in Bologna, where center-city old housing was remodeled for working-class residents. Travisano and Mosteller's design converts each rowhouse into a two- or three-bedroom apartment on the ground floor and a three- or four-bedroom duplex on the top two floors. The interiors are now modern in style, with grey carpeting and off-white walls.

With the projects mentioned here and others, the push to put Trenton's vacant houses back into usable condition has been proceeding well. Travisano, a former director of development in Trenton, says that the city listed 550 abandoned units in 1986-87, and now has 150 or fewer.

A second category of renovation is the work being done on cultural and recreational attractions. NJEDA's creation of Marine Terminal Park in 1980 was one step in the re-discovery of Trenton's waterfront. Designed by Arnold Associates of Princeton, the park centers on the old terminal building, which dates from the 1930s; the landscape architects proposed use of the terminal for food concessions and a farmer's market. The park includes a new bike path and boardwalk, as well as old cranes and cargo masts repainted in bright colors.

The city's two theatres, Mill Hill Playhouse and Artists' Showcase, were already housed in churches that had been converted (in the architectural sense). In September of last year a fine arts center opened in a former Sears warehouse, right next to Architects Housing. The renovation, designed by Clarke & Caton, cost under \$400,000 in funds supplied by HUD and the State Council on the Arts. The building now has artists' studios, classrooms, and 2,000 square feet of gallery space illuminated by a skylight running the spine of the building. Operated by Artworks (the rechristened Princeton Art Association), the center holds workshops, lectures, and exhibits that director Mary Yess says have gotten reviews in the *New York Times* and *Philadelphia Inquirer*.

Restoration of the War Memorial, a building that contains the second-largest concert hall in the state, is significant on several levels. "Trentonians have a strong sentimental attachment to the War Memorial," says Alison Harris, an assistant state treasurer who is guiding the project. "Many of them had their graduations here and came to see such performers as Vladimir Horowitz and Paul Robeson. The citizens themselves raised half the money for constructing the building."

Opened in the 1932, the War Memorial was a tribute to the people of Mercer County killed in World War I. Its design was the

concept of architect William Klemann, who died in 1929; another architect, Louis Kaplan, completed Klemann's work. Harris points out that almost all the decorative details, from doorknobs to light fixtures, were designed for the building.

In his 1988 State of the State address, delivered here, Governor Kean called for restoration of the run-down landmark, and the state took over ownership later that year. Harris comments, "Since there were never enough funds, the roof has had not been altered and is basically intact as first conceived." It was, she says, always intended as a multipurpose community center, with a ballroom and meeting rooms as well as the auditorium.

Aided by the original drawings and plans, which still survive, the Princeton firm of Geddes Brecher Qualls Cunningham is working with state officials and theatre consultants to make a master plan for restoration. Harris says that the plan will include ways to meet safety codes, to preserve and restore elements, to improve the concert hall functionally (acoustics and so on), and to phase the project over a number of years—goals that often conflict. So far, only a few necessary repairs have been done to keep the building open for performances.

The most ambitious and imaginative idea for giving new life to Trenton's old architecture is, like the restoration of the War Memorial, partly a nostalgic one. It is to transform a group of over two dozen industrial buildings on fifty acres into a mixed-use development, which could include a unique—and thematically appropriate—children museum. Such a transformation acknowledges,

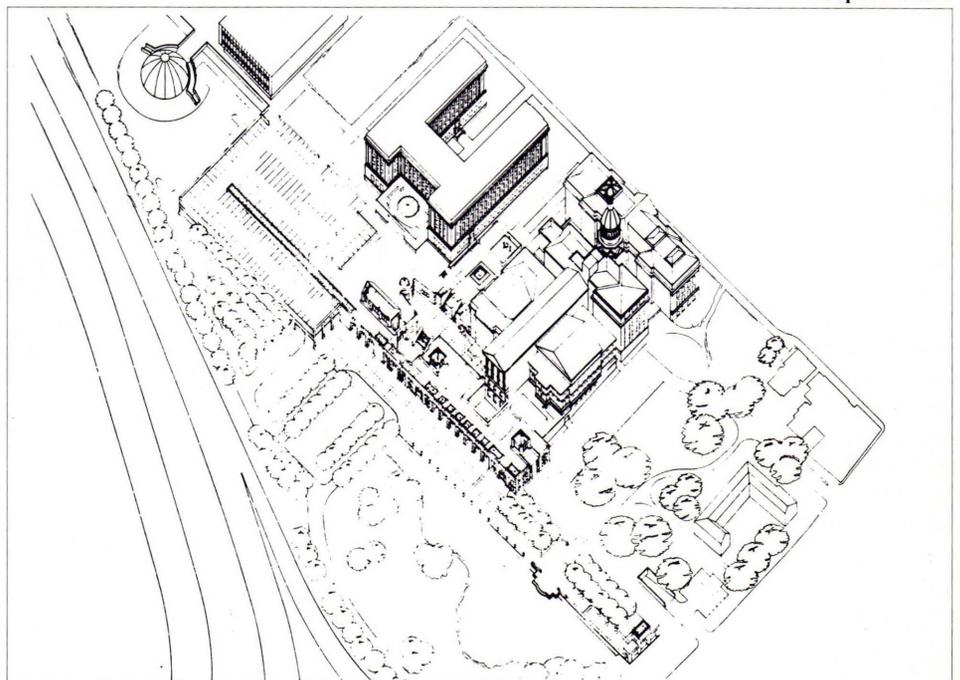
symbolically, the passing of America's great industrial age.

Little manufacturing has been done at this historic site for the past decade. But at their peak the factories of John A. Roebling's Sons and the American Steel and Wire Company, divided by the Delaware and Raritan Canal, employed thousands of workers and kept the smokestacks busy. Wire rope for America's suspension bridges was produced here, and the Roeblings were involved in the design and construction of the Brooklyn Bridge. Buildings on the AS&W site include some from the Trenton Iron Company and the Trenton Locomotive and Machinery Company, founded in 1845 and 1854 respectively; buildings on the Roebling site include some dating back to the 1880s. The steel-framed brick buildings cover a century's worth of different styles.

A mixed-use redevelopment was originally proposed by Clifford Zinc, who became executive director of the nonprofit Trenton Roebling Community Development Corporation. The organization devised a proposal to create housing, office space, research facilities, shopping, and cultural amenities; it also called for designating the site a National Historic Landmark. The area would then come under the jurisdiction of the U.S. Park Service and its restoration guidelines.

The children's museum, to be housed in the 1980 Roebling Machine Shop and called "The Invention Factory" after Thomas Edison's workshop, is the most exciting single feature of the proposal. Carrying out the theme of invention, all the exhibits would be interactive and many would refer to the

Capitol Center



site's past; for example, a robotic arm that visitors could manipulate would be placed below a mechanical crane once used to move spools of wire rope. Visitors could even look through a glass wall at the Exhibit Factory and see the staff working on future exhibits. In front would be the complex's central public space, a brick-paved plaza, and a historic trail would lead from here throughout the site.

At present, DKM owns a majority of the Roebing/AS&W property. But as John Clarke, whose firm DKM hired to do a master plan, says, "To go ahead with the plan they will need a critical mass of reuse committed to it."

The master plan calls for construction of a new county courthouse here, but county officials have turned down the idea. It also calls for a state commitment to leasing office space. DKM president Robert Powell says, however, that the state cannot make such a commitment at present, because it is not expanding employment. Thus, even though the developer has a list of retailers eager to locate here, the project's future is uncertain.

Last, one Trenton project embodies many of the architectural approaches to revitalizing the city; preservation, restoration, adaptive reuse, new construction, and landscaping. This project is, appropriately, at the heart of Trenton—the State House Complex.

New Jersey's Capitol Building, the second oldest in this country, dates from 1972. Together with landscape architect Philip Winslow and archeologist Richard Hunter, the Princeton firm of Short and Ford has studied the entire Capitol site, which includes the famous Old Barracks, in order to reconstruct its history. Michael Farewell, an architect with Short and Ford, explains that a steel-plating mill originally stood next to the Capitol building. The mill's hydraulic system used Petty's Run, a stream that was covered over in the nineteenth century with a brick vault. At the time, the site was on a bluff overlooking the Delaware, says Farewell, an underground tour of the stream today reveals a fall-off as well as foundations of old buildings now vanished. He adds, "Campaigns of beautifying the landscape, and changing it from a picturesque to a formal, classical landscape, to the modern macadam landscape, had as great an effect as these earlier industrial and military activities."

The State House itself originated as a two-story structure, with Greek Revival additions—including a classical portico and rotunda—by John Notman in 1845. In the 1880's, after a fire, the rotunda and dome

were rebuilt, and later the center wing was extended to the south. "The building is a collection of pieces from two hundred years of architectural history, and that makes it extremely complicated as a preservation project, because there has been a lot of remodeling and it's necessary to select certain eras to return building to," says Farewell.

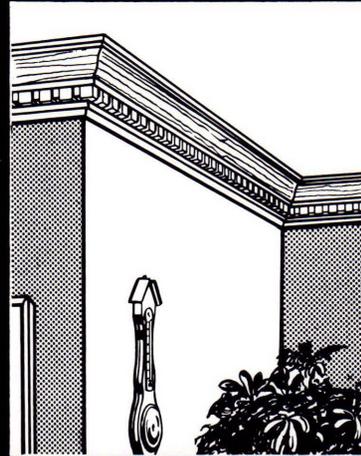
As a Bicentennial project, Short and Ford was hired to do some work on the Assembly and Senate chambers. In 1980, they and the firm of Johnson Jones undertook a study of the legislature's functional space needs, and concluded that the legislature needed more room than the Capitol building could provide. Later Short and Ford prepared a master

plan for the whole site.

The master plan, according to Farewell, calls for areas of preservation, restoration, rehabilitation, and adaptive reuse in the State House. (The annex, a classically detailed building erected in 1928 and 1932, will receive similar treatment.) Most spaces are being returned to their earliest period. Michael Mills, another architect with Short and Ford, observes that the most difficult task is to find structural spaces for such mechanical services as air conditioning, piping, ductwork, telecommunications, and electrical and computer wiring; in some cases ceilings and their plasterwork had to be

Continued on p. 29

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Planting Trees on Urban Sites

By Henry F. Arnold, ASLA

Most trees planted on the streets of Northeastern cities grow slowly for a few years, then become stunted and die within ten years of planting. Yet the same tree properly planted on the same site could have increased in crown size more than tenfold over the same time span (Fig. 1).

The reasons for this lack of success in growing urban trees are not obscure. Conventional tree planting techniques used in cities do not accommodate the root system enough to support a healthy tree. These planting techniques were designed for suburban site conditions, but in the city more sophisticated planting systems are needed.

For the purposes of this article the term "urban site" means any area of ground where more than fifty percent of the ground surface is paved and where pedestrian traffic is

too intense to allow grass to grow. Such sites normally do not contain agriculturally suitable topsoil and a natural soil profile. On this kind of planting site extensive modification of ground conditions is required to grow healthy trees.

Trees have a remarkable, extensive system of underground tubes and ducts that support the trunk and convey nutrients and water to the branches and leaves. Roots of a healthy tree extend well beyond the branch spread of the tree in a shallow expanse of fiber-like feeder roots (Perry, 1982). The diagram in Fig. 2 shows a typical root system (except in very porous, well-drained soils), varying little with species.

Tree roots do not ordinarily penetrate the soil more than three feet deep, and most trees stay in the top eighteen inches of soil.

A healthy tree has a predetermined ratio of fine-root surface to leaf surface (Perry, 1982); if the root is curtailed the growth of the tree will be inhibited.

We can see, then, why trees are stunted on most urban sites and why conventional tree-planting holes will not support a healthy tree. The space needed for roots determines how large a soil volume is required for a tree of a given size and determines what shape (how deep) the soil volume should be (Craul, 1985). Therefore, the first step in developing an urban planting site is to relate the desired crown volume to the soil volume needed for root growth.

A simplified rule of thumb is that we should construct a zone of aerated, well-drained soil measuring one cubic yard for every five cubic yards of desired crown volume. For example, a maple tree (taken as a

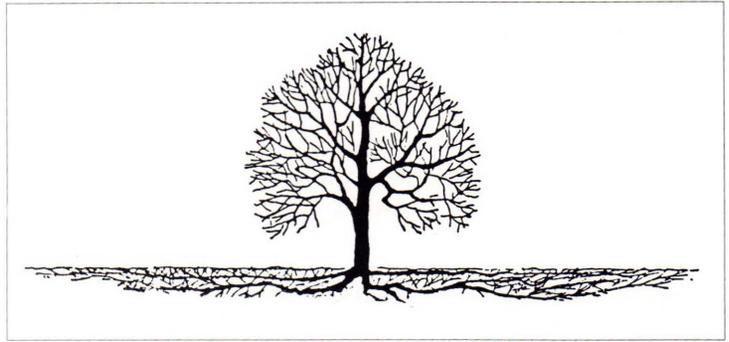


Figure 2. Schematic section showing typical root configuration.

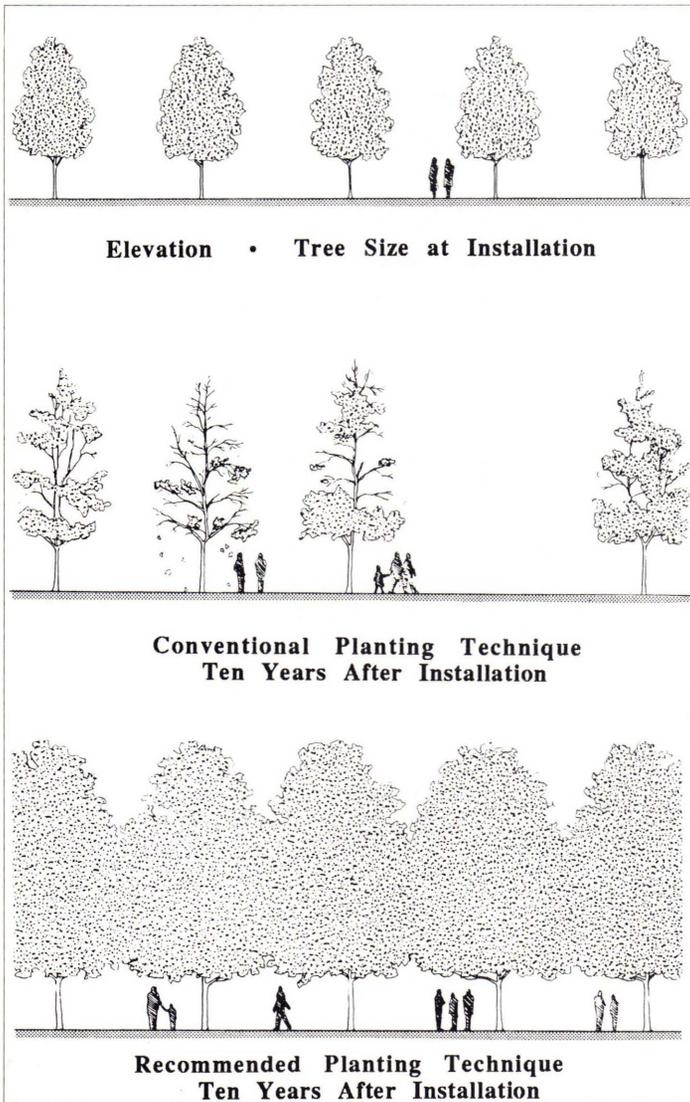


Figure 1. Street tree planting technique comparison

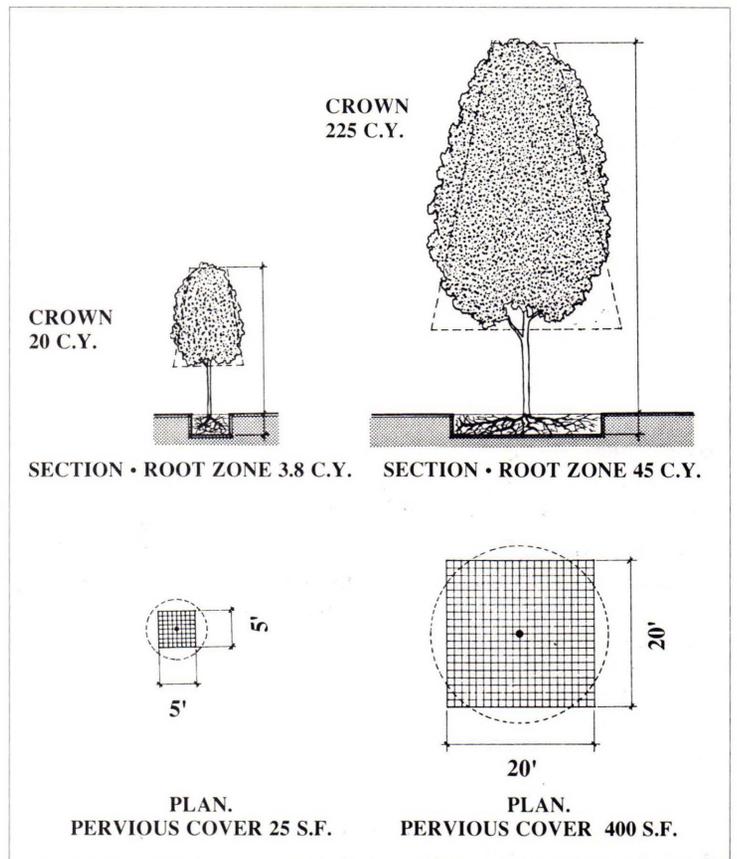


Figure 3. Tree size response to soil volume. Architecture New Jersey 89:3 23

truncated cone) that is thirty-two feet high from the lower branches to the top contains 225 cubic yards of crown (branches, leaves, twigs, and interstitial space). Such a tree would require at least forty-five cubic yards of prepared root space (see Fig. 3). Yet in the typical urban tree planting, the volume of the constructed root zone is no more than 4 cubic yards. Note that extension of roots beyond this prepared zone is constrained by lack of oxygen. The tree crown is thus limited to twenty cubic yards—a puny size for a street tree and only one-tenth the volume of the twenty-five foot tree.

As important as soil volume is the physical quality of the soil or growing medium. Soil structure is critical to plant growth because it determines the amount of pore space within the soil. A typical forest soil is made up of solids, liquid, and gas in the proportions shown in Fig. 4a (Patterson, 1976).

Under urban conditions the soil structure is altered by compaction from heavy traffic, which squeezes out air and water and reduces pore space (Fig. 4b). When bulk density, optimally 1.32 grams/cubic centimeter, is increased by compaction to 1.60 grams/cubic centimeter or higher, the soil retains too little oxygen to sustain root growth (Patterson, 1976).

Therefore, the requirement for good soil composition and structure must be satisfied as part of the tree installation procedure. How do you support traffic under the tree canopy without compacting the soil to a density that prevents root development? Where trees are planted in places of heavy pedestrian traffic, four measures can be taken to protect the root-zone soil from excessive compaction:

1. Plant trees in porous, compaction-resistant soil mixture.
2. Provide an underdrainage system.
3. Provide a soil aeration system.
4. Design the surface to spread the traffic load.

To be effective the four measures described must be employed together in the tree planting. The prototypical diagram (Fig. 5) shows how such a detail is structured.

First, the tree needs a soil mixture that can allow compaction while maintaining porosity. The soil mixture can do so if it incorporates at least fifty percent porous aggregate. Loam and organic material in the soil mixture will help sustain plant nutrients and protect against chemical changes. A porous aggregate such as expanded slate preserves essential soil air even under heavy compaction.

Second, drainage is required to provide aeration and prevent the buildup of toxic con-

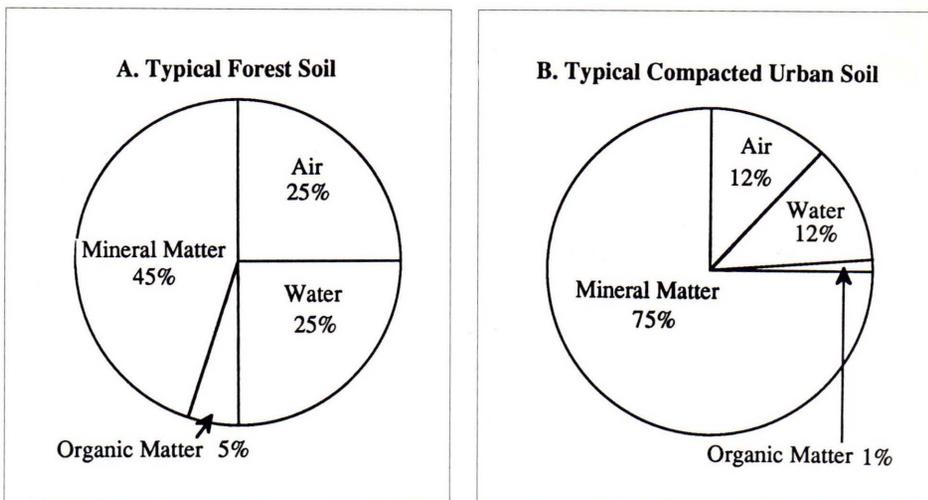


Figure 4. Diagram • Physical composition of soils.

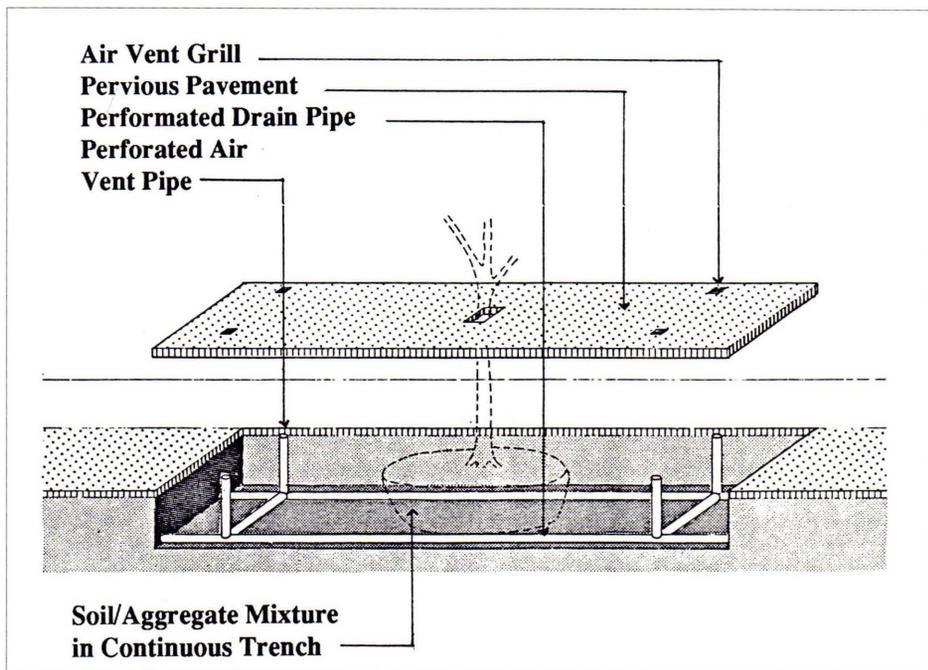


Figure 5. Recommended street tree planting components.

Evaluation of Surface Materials — Trees Under Urban Conditions

Surface Material	Allows Infiltration	Sufficient Area Practical	Protects From Compaction	Neat, Unifying Appearance	Retards Evaporation	Easily Maintained	Not Too Expensive	Overall Evaluation
Bare Soil	B	C	C	C	C	C	A	Very Poor
Grass	A	C	C	C	C	C	A	Poor
Low Planting	A	C	A	C	C	C	A	Poor
Coarse Organic Mulch	A	C	A	C	C	C	A	Poor
Crushed Stone	A	B	B	B	A	B	A	Intermediate
Unit Pavers with Open Joints	C	A	B	A	A	A	B	Good
Monolithic Pervious Pavement	B	A	A	A	A	A	B	Good
Tree Grates	A	C	C	B	C	A	C	Poor
Peat Moss	B	C	C	C	C	C	A	Very Poor
Materials Rated:	A	Good	B	Intermediate	C	Poor		

centrations of carbon dioxide, methane and other gases (Craul, 1985). A drainage system at least thirty-six inches below the ground surface will draw water and oxygen down through the soil, thereby encouraging deeper root growth. To some extent this deeper root penetration will compensate for the inevitable limitation on urban trees' root spread.

Third, a supplementary system of sub-surface aeration is also necessary. This system is constructed of pipes that convey air into the deeper levels of the root zone. Even paving block with open or sand-filled joints allows very little penetration of air, so pavement requires the addition of some air vents.

Finally, the surface area under the urban tree's canopy must provide some protection from soil compaction while allowing penetration of air and water. Organic mulches or planting, often used in suburban areas, do not function well where there is traffic. Porous or open-jointed paving around trees functions as a mulch, curtailing the rate of evaporation from the soil, but allowing infiltration of water.

The surface material—usually paving—used around the tree over the root zone poses concerns for the designer who needs to satisfy aesthetic and functional requirements in an intensively used area. Sug-

gested criteria are:

1. *The surface material must allow infiltration of rain water and air.* With the proper surface material, a porous growing medium, and positive sub-soil drainage, the movement of rain water through the soil will draw in oxygen for root development.

2. *The pervious surface material must encompass a large area.* Where practical, provide an area over the roots with a diameter equal to one-half the mature height of the species being planted. The minimum pervious area should be 200 square feet per tree for trees expected to grow to a height of forty-five feet or taller. To encourage lateral root development, it is important that the pervious surface extend well away from the tree trunk.

3. *The surface material must protect the soil from compaction under pedestrian traffic conditions.* Sometimes the root zone can be bridged, but the structure necessary to do so can result in complicated and expensive details. Spreading the live load with unit pavers is usually more practical and adequately effective if the pavers are placed on an aggregate/soil mixture. The usual tree-gate installation detail interferes with root development, and is not desirable because of its small area and concentrated weight.

4. *The surface material must have a neat*

and unified appearance. Using a single paving material and modifying the pavement within the root zone to meet tree growth requirements allows an uninterrupted ground plane and visual continuity.

5. *The surface material must retard evaporation from the soil.* Paving materials should be impervious, such as stone, brick, and tile, or semi-pervious, such as crushed stone, which acts as a mulch by retarding soil evaporation.

6. *The surface material must be easily maintained.* The material must be durable, long-lasting, and easily cleared of litter. Most soft materials, such as wood chips, are thus unsuitable under heavy traffic.

7. *The surface material should be economical.* A general rule is that the material covering the tree's root zone should not exceed the cost of high-grade paving. For example, note that the cost per unit area for tree grates is about twelve times the cost of brick paving. Such a high cost deters the use of an adequate area of pervious surface.

The accompanying table (p. 23) evaluates the suitability of some common paving materials.

It is possible, and often practical, to grow large, healthy deciduous shade trees along city streets in intensively used urban pedes-

Continued on p. 29

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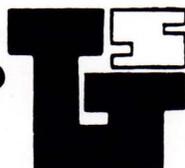
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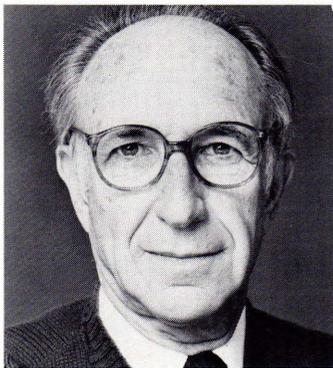
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News

Robert Geddes, FAIA, founding partner of Geddes Brecher Qualls Cunningham of Philadelphia and Princeton, has been elected a Fellow of the New York Institute for the Humanities. Geddes is the first practicing architect to be named a Fellow.



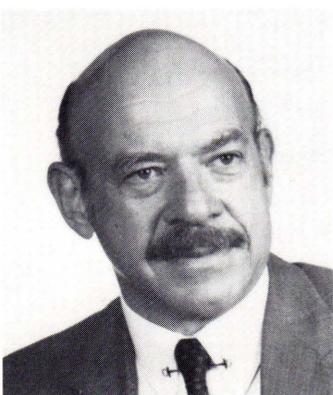
Robert Geddes, FAIA

J. Robert Hillier, FAIA, founder and Chief Executive Office of the Hillier Group, Philadelphia and Princeton, has been named a New Jersey "Entrepreneur of the Year" by INC. Magazine and the Arthur Young Accounting firm.



J. Robert Hillier, FAIA

James Gaspari, AIA, has been elected Regional Director of NCARB, the National Council of Architectural Registration Boards. As one of twelve regional directors, his term runs from 7/1/89 to 6/30/90.



James Gaspari, AIA

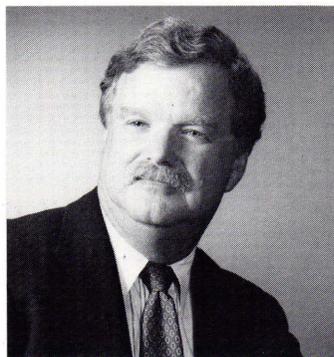
Ralph Lerner, AIA, has been named the dean of Princeton University's School of Architecture.



Ralph Lerner, AIA

Charles M. Decker, AIA, has been elected president-elect of the Building Officials and Code Administrators (BOCA) International, Inc., a non-profit service organization dedicated to professional code administration and enforcement for the protection of public health, safety, and welfare.

Gary Y. Kaplan, AIA, served as moderator and panelist on a forum during the Government Workplace Conference in Washington, that concerned procurement of government commissions for architects and engineers.



Gary Y. Kaplan, AIA

Eleanore K. Pettersen, AIA, Director of the New Jersey Region on the AIA Board, has appointed the following liaisons to national committees: *Maurine R. Stone, AIA*, Women in Architecture Committee, and *Floyd Scott, AIA*, Minority Resources Committee.

Joseph D. Bavaro, FAIA, has been elected Director of the New Jersey Region to serve a three-year term on the AIA Board, 1990-1992.

Suzanne DiGeronimo, AIA, has been appointed to the steering committee of the AIA Practice Committee, as vice-chair.

New Jersey School of Architecture at the New Jersey Institute of Technology—*Sanford R. Greenfield, FAIA*, Dean, announces that the school has full accreditation of the Masters in Architecture program.

Accreditation was granted at the June 1989 Board Meeting of the National Architectural Accrediting Board (NAAB).

Maximillian J. Hayden, III, AIA, is a project architect with Michael Graves, Architect, of Princeton, since December 1988.

Constance Emilie Gill, AIA, announces the opening of an office in Montclair, for the practice of architecture, interior design, and land planning. She was formerly with Naskasky Kopelson of Morristown.



Joseph D. Bavaro, FAIA



Suzanne DiGeronimo, AIA



Constance Emilie Gill, AIA

Noted

In the last issue of *Architecture New Jersey*, the architect for the Bertsch Residence featured in Houses and Housing was Kyle Paul Van Dyke.

The architect who designed The Mill at Little Falls, New Jersey, is Barry Poskanzer.

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1989 Scholarship Awards

Twenty-six New Jersey architectural students were awarded educational grants totalling \$19,600 at the New Jersey Society of Architects' 29th annual Scholarship Awards Dinner in May at the Forge Restaurant in Woodbridge. The scholarship recipients have maintained excellent grade averages while attending architectural schools throughout the United States, and have demonstrated marked talent and potential for success in the architectural profession.

NJSA annually sponsors the scholarship awards program with donations from individuals and organizations that are committed to aiding promising design students. Since its inception in 1959, the program has distributed more than \$250,650.

A \$700 scholarship donated by Shive Spinelli Perantoni & Associates (formerly Scrimenti Shive Spinelli & Perantoni), in memory of Adolph R. Scrimenti, was awarded to *Jean O'Toole* of Ringoes (Illinois Institute of Technology). NJSA also awarded \$1,000 in memory of Adolph to *Sean P. McGovern* of Iselin (School of Architecture/NJIT, SOA/NJIT). NJSA gave a Past President's Scholarship of \$1,000 to *Donald J. DeBruin* of Fair Lawn (SOA/NJIT). A second Past President's Memorial

Scholarship of \$1,000 was awarded to *Kevin C. Young* of Whitehouse Station (SOA/NJIT), and a NJSA Memorial Scholarship of \$750 was awarded to *Stefanie A. Greenfield* of Westfield (Washington University of St. Louis).

The Newark Suburban Chapter of NJSA donated two \$1,000 scholarships: the Parker Edwards Memorial Scholarship to *Kenneth J. Szeles* of Newark (SOA/NJIT) and the Newark Suburban Chapter Scholarship to

Michael Hoon of Ridgely Park (SOA/NJIT).

A \$1,000 scholarship, donated by Brown's Letters, went to *Susan T. Pady* of Garfield (SOA/NJIT).

Romeo Aybar, FAIA, gave a scholarship in the amount of \$500 to *Stephen M. Vedral* of Hillsdale (SOA/NJIT).

The Frank Grad Memorial Scholarship in the amount of \$1,000 was awarded to



John Barr, NJ State Concrete Products; Jean O'Toole, Sean P. McGovern; Richard Shive, AIA, Shive Spinelli, Perantoni; Kevin Young; Leo Mahony, AIA, Scholarship Foundation Committee.
Architecture New Jersey 89:3 27



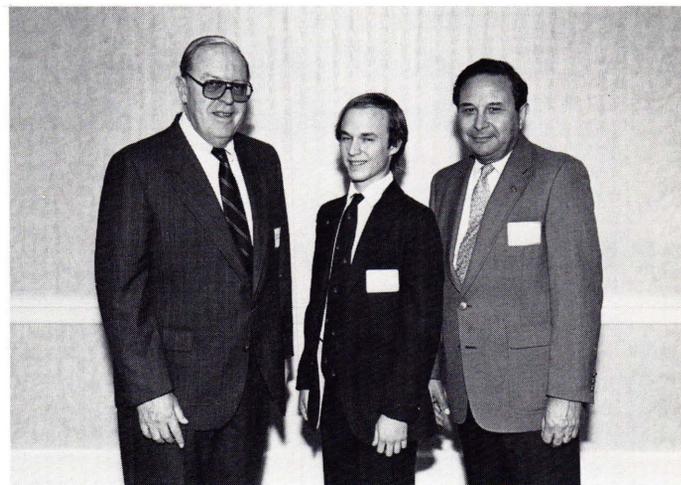
Susan Pady; Michael S. Oren; Stefanie A. Greenfield; Benjamin Toscano; Joseph L. Haines; Herman C. Litwack, FAIA; Harry Corvino of Whittier-Ruhle Millwork Co.; L. Michael Schenker, AIA, Schenker, Schenker, Rabinowitz; Ruth Duggan, Brown's Letters; Allan Dalarymple of Whittier-Ruhle Millwork Co.; Antoinette A. Gazzo; Geoffrey Kahn.



Patricia Hessberger, Fundraiser, Architects' Wives Scholarship; Christine Miso, AIA, Newark/Suburban Chapter Scholarship Committee; Michael Hoon; Edward Kolbe, Kolbe & Poconi, Scholarship Foundation Chair; Melissa R. Cohen; Gustav H. Neidinger; Donald J. DeBruin; Brian E. Tierney; Michelle H. Feigelis; James P. Hennessy; Martin Santini, AIA, Scholarship Foundation Commissioner; Howard Horii, FAIA, The Grad Partnership.



Charles Weiler, AIA, President, West Jersey Society of Architects; Paul Anderson, Edward Kolbe, Kolbe & Poconi, Scholarship Foundation Chair; Lyna T. Hwang; George Sundell, AIA, The Tarquini Organization.



Edward Kolbe, Kolbe & Poconi, Scholarship Foundation Chair; Jonathan L. Peiffer; Joseph D. Bavaro, FAIA, President, NJ Society of Architects.

Gustav H. Neidinger of Hillsdale (SOA/NJIT); the Harry Ruhle Memorial Scholarship of \$500 went to *Geoffrey C. Kahn* of East Orange (Southern California Institute of Architecture).

The John Trich Memorial Scholarship of \$500 went to *Brian E. Tierney* of Weehawken (SOA/NJIT); the Charles Porter Memorial Scholarship of \$500 to *Benjamin Toscano* of Union (SOA/NJIT). The West Jersey Society of Architects Memorial Scholarship to commemorate deceased past members in the amount of \$1,000 was awarded to *Paul A. Anderson* of Clementon (Drexel University Evening Classes); the Hudson Blueprint Company Scholarship of \$500 to *James P. Hennessy* of Haskell (SOA/NJIT); and the NJ State Concrete Products

Association Scholarship of \$500 to *Jean M. O'Toole* of Old Bridge (Catholic University of America).

A \$500 scholarship, donated by Harry B. Mahler, FAIA, went to *Salvatore A. Tranchina* of Ocean Township (Columbia University); the Tarquini Organization donated a \$1,000 scholarship that was awarded to *Lyna T. Hwang* of Jackson (SOA/NJIT); The R.S. Knapp Memorial Scholarship of \$500 went to *Melissa R. Cohen* of Teaneck (Columbia University); the NJ Tile Council Promotion Fund Scholarship of \$1,000 went to *Michelle H. Feigelis* of Cresskill (SOA/NJIT) and the NJSA Scholarship of \$750 to *Joseph L. Haines* of Nutley (SOA/NJIT).

The Pella Windows & Doors Scholarship of \$500 was awarded to *Jonathan L. Peiffer*

of Oceanport (Ball State University); the Architects' Wives Scholarship of \$500 went to *Daniel J. Balto* of Wayside (SOA/NJIT).

A \$1,000 scholarship, donated by the family of the late Sidney Schenker, was awarded to *Michael S. Oren* of Harrison (SOA/NJIT).

A scholarship donated in memory of Jacob Shteir by friends was awarded to *William E. Schmidt-Kaufman* of Milford (SOA/NJIT).

Planting Trees,

cont. from p. 25

trian areas. The practices recommend here are more expensive than conventional methods, but more cost-effective.

Architects exert some control (shared with municipal regulators and utility companies) over many urban tree planting sites. Both architects and urban planners should welcome the discovery that we can dependably grow sixty-foot tall, broad-spreading trees on urban sites.

Henry F. Arnold is a landscape architect practicing in Princeton.

References

Craul, Phillip J. 1985. A Description of Urban Soils and Their Desired Characteristics. Journal of Arboriculture 11, No. 11.

Patterson, James C. 1976. Soil Compaction and Its Effects upon Urban Vegetation. In Proc. of a Symposium on Better Trees for Metropolitan Landscapes, USDA Forest Service, General Technical Report NE-22.

Perry, Thomas O. 1982. The Ecology of Tree Roots and the Practical Significance Thereof. Journal of Arboriculture 8, No. 8.

Trenton,

cont. from p. 22

lowered. The architects were fortunate enough to find storage desks, glass globes set and shades, about two hundred doors, and other pieces from various periods. These items will be reused if possible, and stored away again if not.

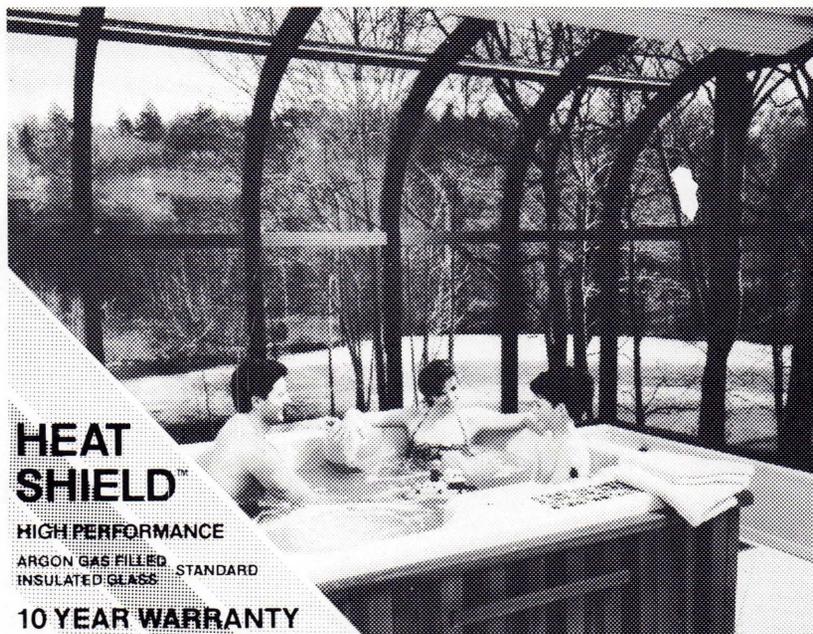
The major new addition to the complex is an office building for the legislative staffs. Mills describes the building conceptually as a continuation of State House's heavy stone base, with historic structures sitting as objects on top of the base. The master plans includes a south entrance portal, a press building in the center of the site, a visitors' center, and a parking garage. A terrace running along the southern side of the new office building would lead to a pond and green area replacing the present-day surface parking lots.

Right now, the state house is in the proc-

ess of being restored, the new office building is under construction, and construction documents for the annex are being prepared. But state has made no commitment to follow through on the rest of the master plan; the architects say that the project will need more political pressure behind it.

The same is true of Trenton as a whole. A city with all the severest urban problems—poverty, drug use, racial tensions, high taxes, a lackluster school system, blighted neighborhoods, and other woes—Trenton is also rich in creative ideas for its transformation. Whether that transformation is just starting, or will fail to go much further, remains to be seen.

By Nora Odendahl, with assistance from Sharon Ayn McHugh, a consultant on urban design and planning; and from Robert D. Cerutti, AIA, a Princeton architect and member of ANJ's editorial board.



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Books in Brief

Morality and Architecture

by David Watkin.

Chicago: University of Chicago Press, 1984.

Originally published in 1977, this extraordinary book is based on a lecture first given in 1968 to art history students at Cambridge University. The theme of the book is a single-minded one. It compares the attitude of self-righteousness that pervades the writings of Pugin, Viollet-le-Duc, Leth-

aby, Le Corbusier, Giedion, and Pevsner. Watkin shows that the theoretical position taken by various authors has been established to justify a specific doctrine. For example, "Pugin knew before he formulated his theories what he wanted architecture to look like. If one did not know that what Pugin happened to be defending was Gothic architecture one would certainly not guess from his supposed principles."

In pointing out the inconsistencies between principles and realities, Watkin laments the historicist tendency toward "providing shortcuts to the solution for the very complicated problems presented by the re-

lationship between architecture and society. Our conclusion is that an art-historical belief in all-dominating *Zeitgeist*, combined with a historicist emphasis on progress and the necessary superiority of novelty, has come dangerously close to undermining, on the one hand, our appreciation of the imaginative genius of the individual and, on the other, the importance of artistic tradition.

The Architecture of Kallman McKinnell & Wood

edited by Alex Krieger.

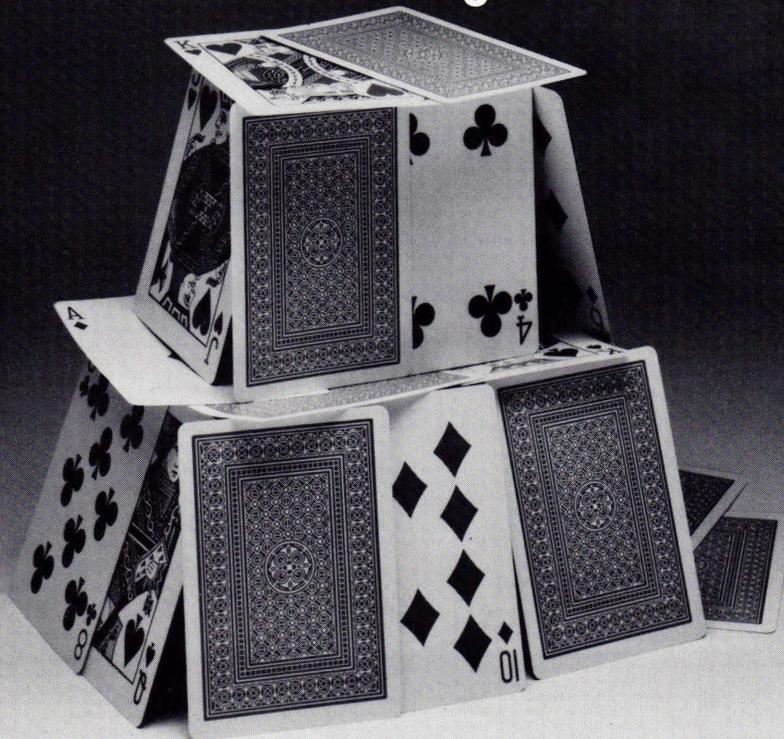
New York: Rizzoli, 1988.

The practice of Kallman McKinnell & Wood has had three very distinctive public successes during the course of these architect's careers. The first was their firm's competition-winning design for the Boston City Hall in 1962; second was the American Academy of Arts and Sciences building in Cambridge, Massachusetts, completed in 1981; and most recently, the corporate headquarters for Becton Dickinson and Company, in Franklin Lakes, New Jersey, 1986.

Although the partners have had their practice since 1961, they have made no effort to proselytize. They have been content to teach, refine their thoughts, and find inspiration in their students and in history.

The firm has had approximately forty projects in the first twenty-five years of its existence, twelve of which have been built and five of which are under construction. This small number, however, includes a high percentage of important buildings. This book presents seven of these projects, all completed structures, wonderfully illustrated with sketches, architectural drawings, and photographs. Published in conjunction with an exhibit of the firm's work at the Harvard University Graduate School of Design, the book is essentially by Peter Eisenman, Edward Seckler, and Robert Campbell. A chronology and bibliography are also provided.

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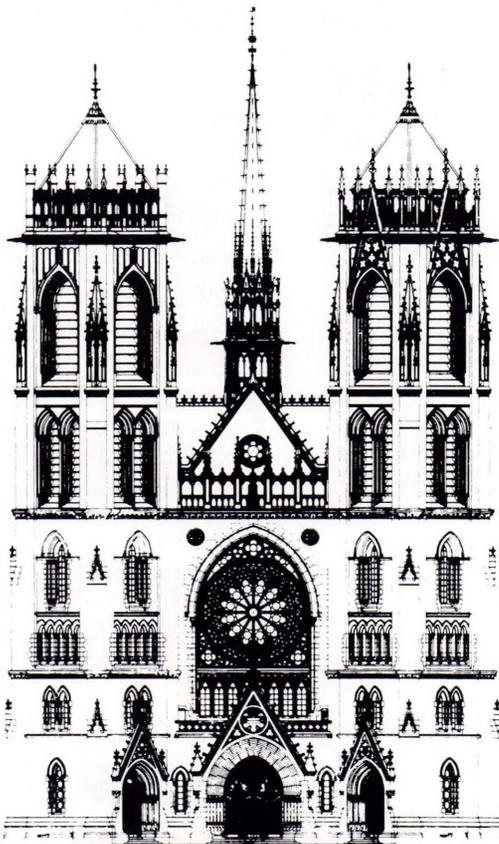
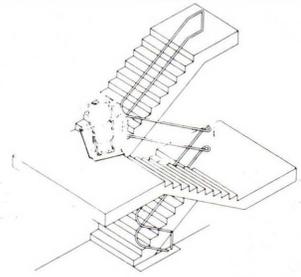


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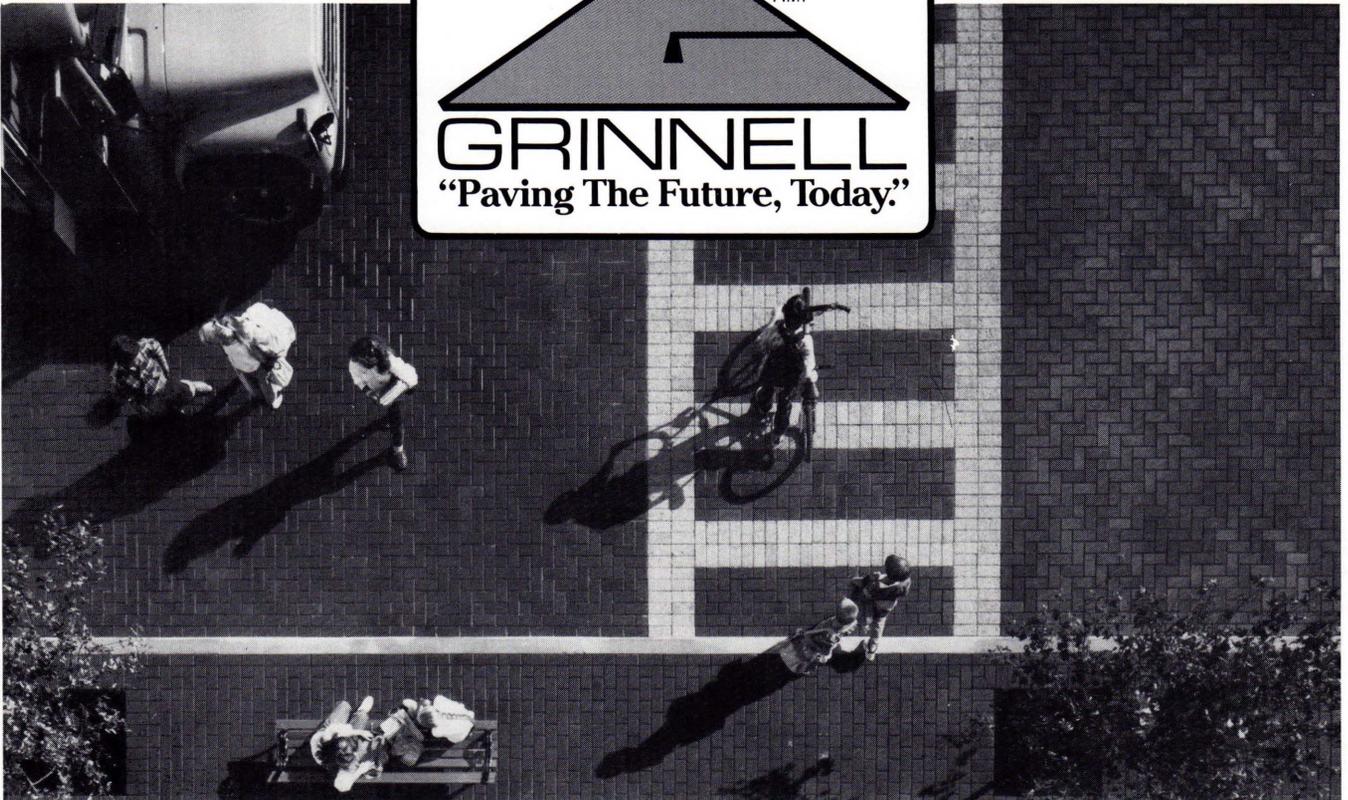
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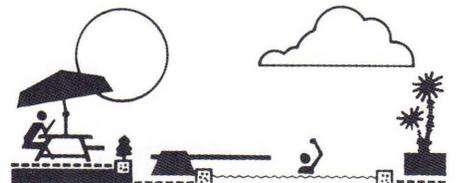
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- Colored concrete units, patterns and shapes can identify lanes, parking and crosswalks.
- Instant improvement. No curing time.



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- Pavingstones never need maintenance.
- They never wear out.
- They won't crack or fade.
- They add measurably to property value.

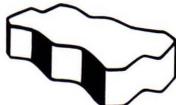


Grinnell Pavingstones are a universally acceptable alternative to asphalt, concrete, brick and other traditional paving methods.

- They resist de-icing salts better than conventional pavements.
- The mortarless installation facilitates repair of underground utilities. No ugly patches.
- Chamfered edge permits easy snowplowing.
- Pavingstones are non-slippery, perfect for pool areas and all pedestrian walkways.



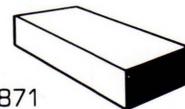
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