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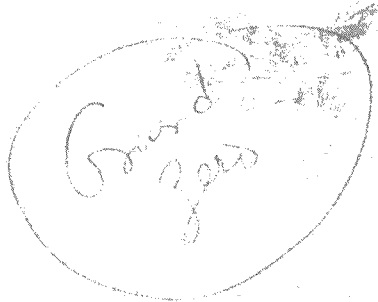
The McGraw-Hill Companies

September 9, 2002 \$5

COMMEMORATING
9/11/01-9/11/02
Part Two: New York City

HOPE

Recutting
Ground Zero's
shattered jewel
leads the way
to renewal of
lower Manhattan



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For the six-month anniversary of the attack on New York City, 88 spotlights beamed two 50-foot squares of light upward in a symbolic reconstruction of the twin towers. The "Tribute in Light" was in memory of those who were lost and to celebrate the spirit of all New Yorkers working to renew the city.

In the coming months and years, New York City faces extraordinary challenges. Architects, engineers, government officials and the citizens will collaborate to rebuild in a manner that honors the character and heroism of a city and a nation.

Bentley appreciates that spirit and we applaud and share in the determination to rebuild the great city of New York.



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EDITORIAL

COMMEMORATING

9/11/01 - 9/11/02

Part Two: New York City

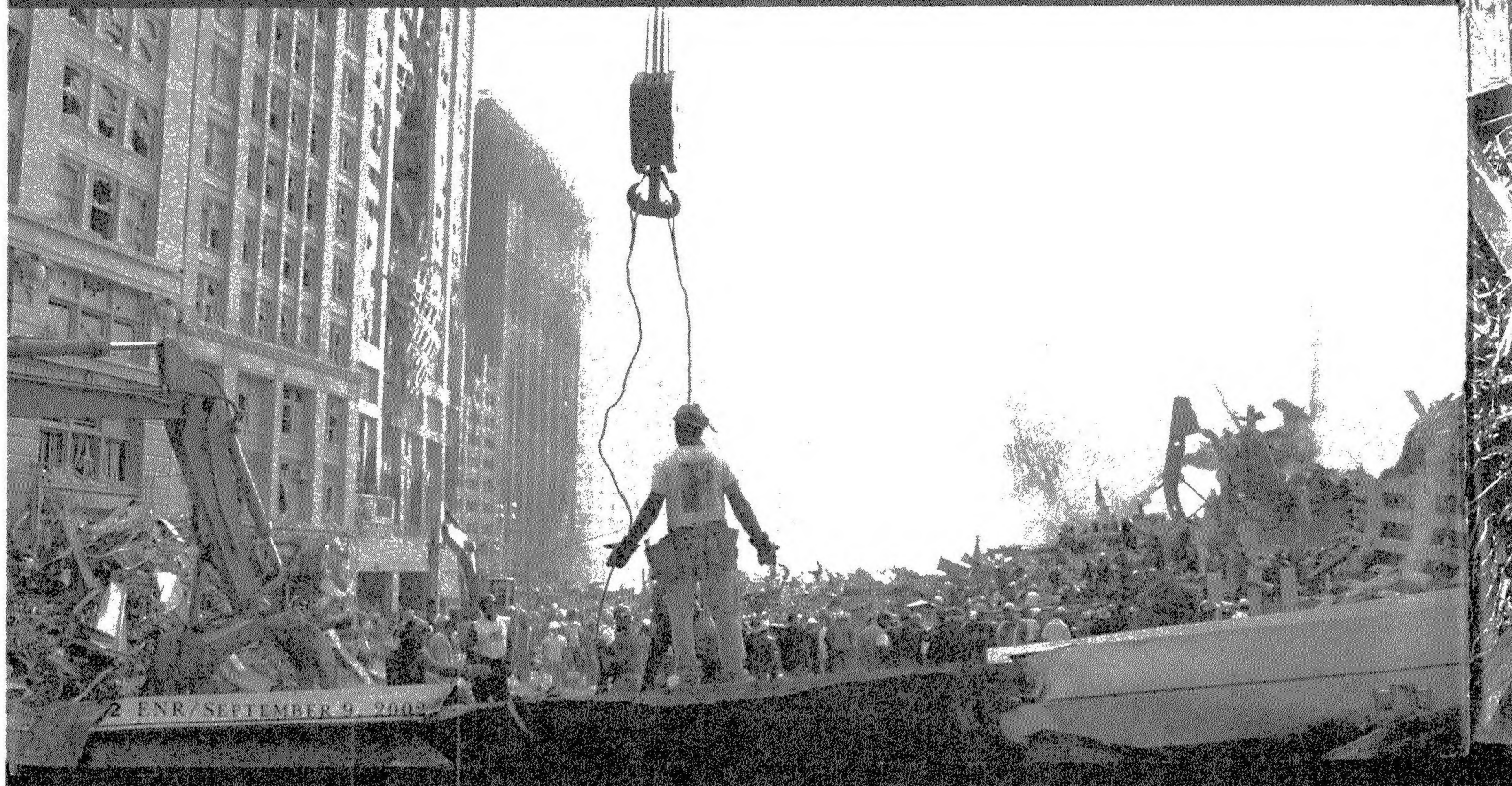
There is a hole in the heart of America that is as big as the World Trade Center towers were tall. A year ago, terrorists struck at what they thought was the symbol of American business. That they succeeded in bringing down the twin 110-story skyscrapers that had defined the New York City skyline for 30 years is a testament to their deter-

mination, their hatred of America and their willingness to sacrifice their lives and the lives of almost 3,000 innocent people. But they were mistaken in their belief that their action could seriously damage or weaken a nation and government of the people by the people and for the people.

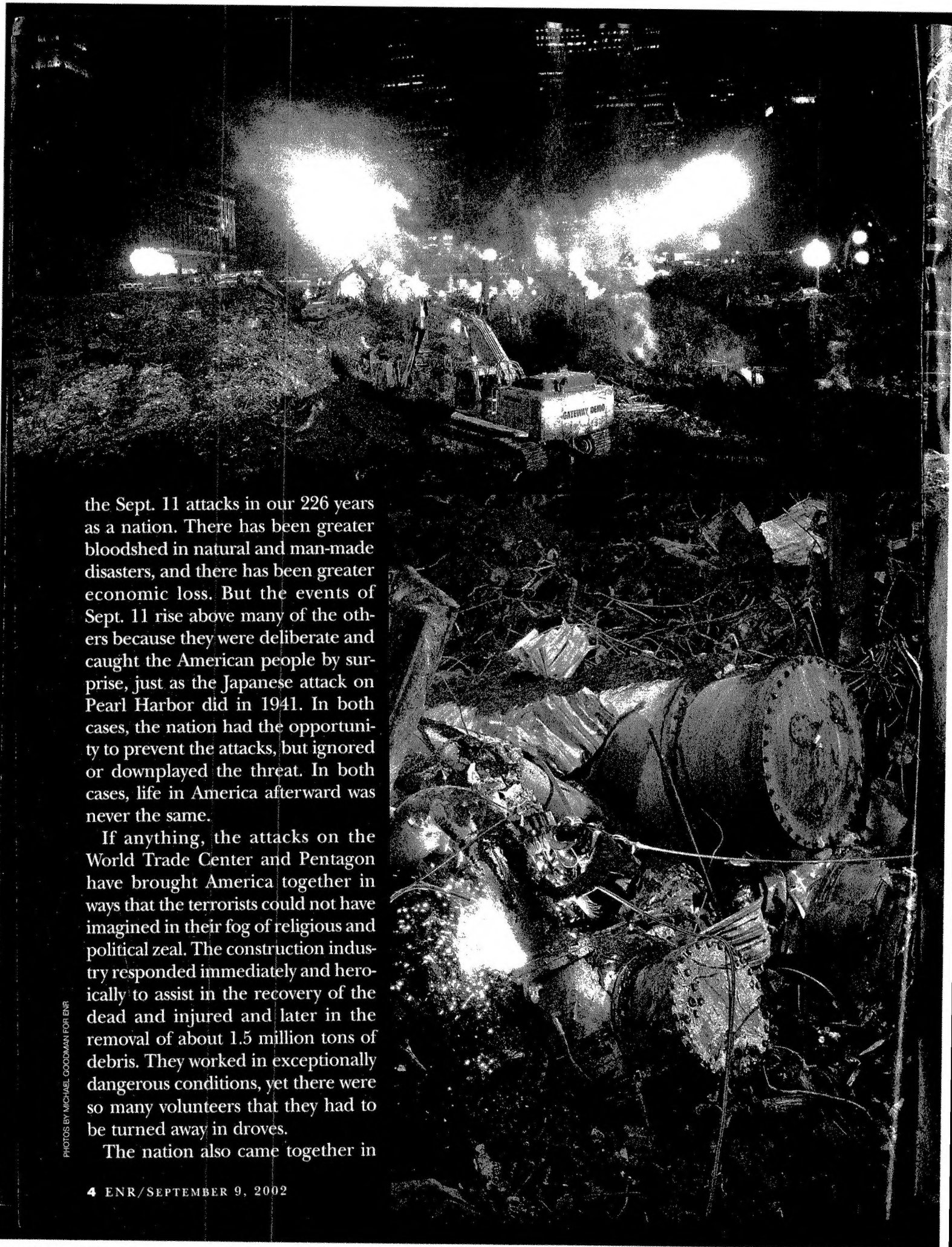
America has endured greater tragedies than

PHOTO TOP BY AP/WIDEWORLD, BOTTOM COURTESY OF FEMA

PHOTO OPPOSITE PAGE BY MICHAEL GOODMAN FOR ENR







the Sept. 11 attacks in our 226 years as a nation. There has been greater bloodshed in natural and man-made disasters, and there has been greater economic loss. But the events of Sept. 11 rise above many of the others because they were deliberate and caught the American people by surprise, just as the Japanese attack on Pearl Harbor did in 1941. In both cases, the nation had the opportunity to prevent the attacks, but ignored or downplayed the threat. In both cases, life in America afterward was never the same.

If anything, the attacks on the World Trade Center and Pentagon have brought America together in ways that the terrorists could not have imagined in their fog of religious and political zeal. The construction industry responded immediately and heroically to assist in the recovery of the dead and injured and later in the removal of about 1.5 million tons of debris. They worked in exceptionally dangerous conditions, yet there were so many volunteers that they had to be turned away in droves.

The nation also came together in

PHOTOS BY MICHAEL GOODMAN FOR ENR



hand-wringing over the state of land-use planning for urban environments. The 16-acre site sits in the midst of some of the most densely developed real estate on the planet and the volatile mix of politics, money, emotion and art may yet cause another explosion over what to do with it. Some want the towers rebuilt, some want smaller structures and still others want a mega-memorial.

The array of buildings and the amount of public space in

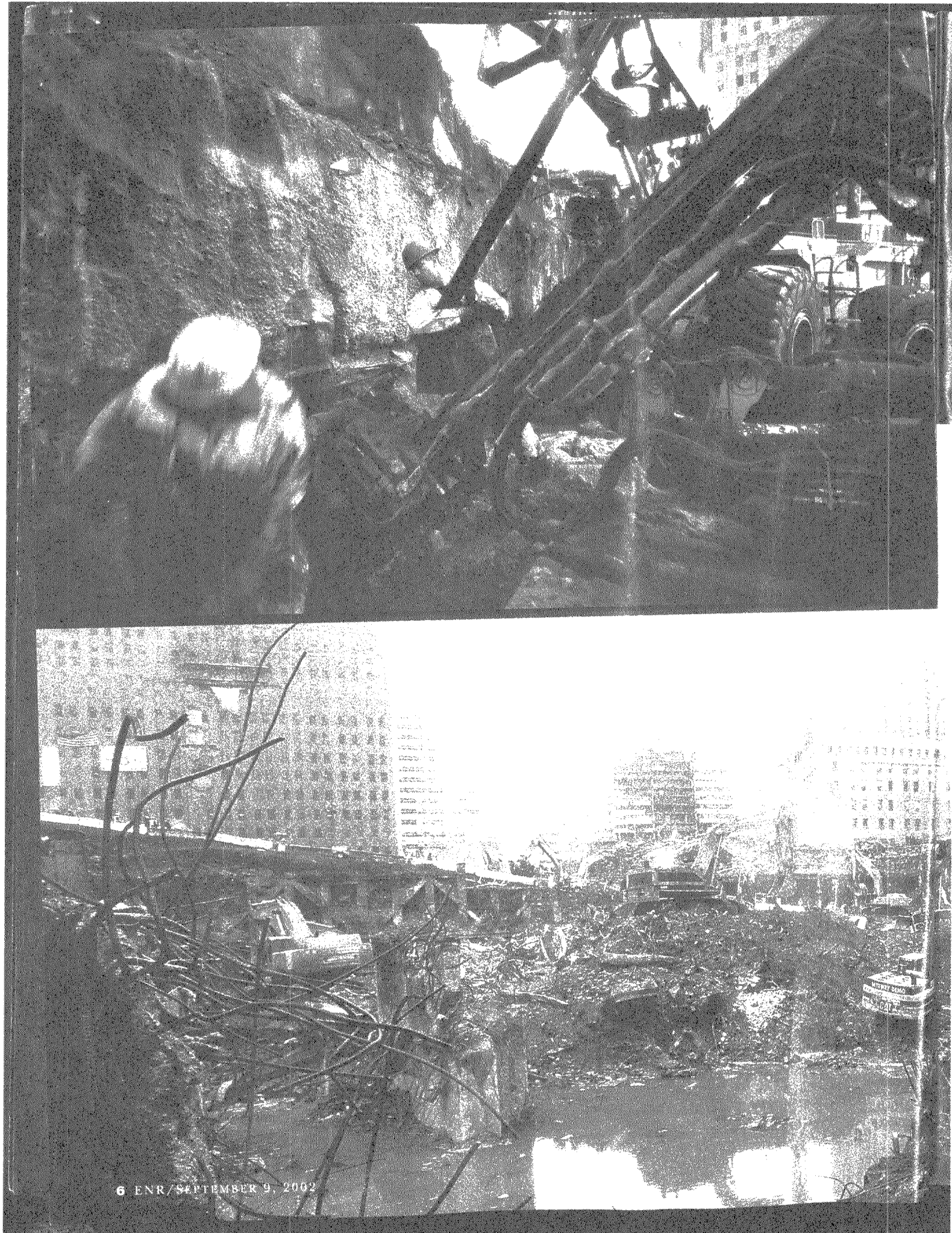
recognizing that it was at war and actually had been since the first attack on the World Trade Center in 1993. If that recognition had come sooner, many of the initiatives taken later under the Homeland Security push might have thwarted the attacks.

Now that they are down, the World Trade Center towers have taken on a greater symbolism and significance than they ever had in life, for they were not universally loved while they stood. The people who died there came from all walks of life and were not a military target by any stretch of the imagination. Such is the way of cowardly terrorists and religious fanatics.

While the attack on the Pentagon has stimulated debate over design, materials and construction techniques to harden critical structures from attack, the World Trade Center has ignited discussions on whether supertall structures are viable, how to effectively evacuate people from high-rises and how to mitigate the risk of collapse after a devastating event.

The towers are gone and even the massive space they once occupied is causing

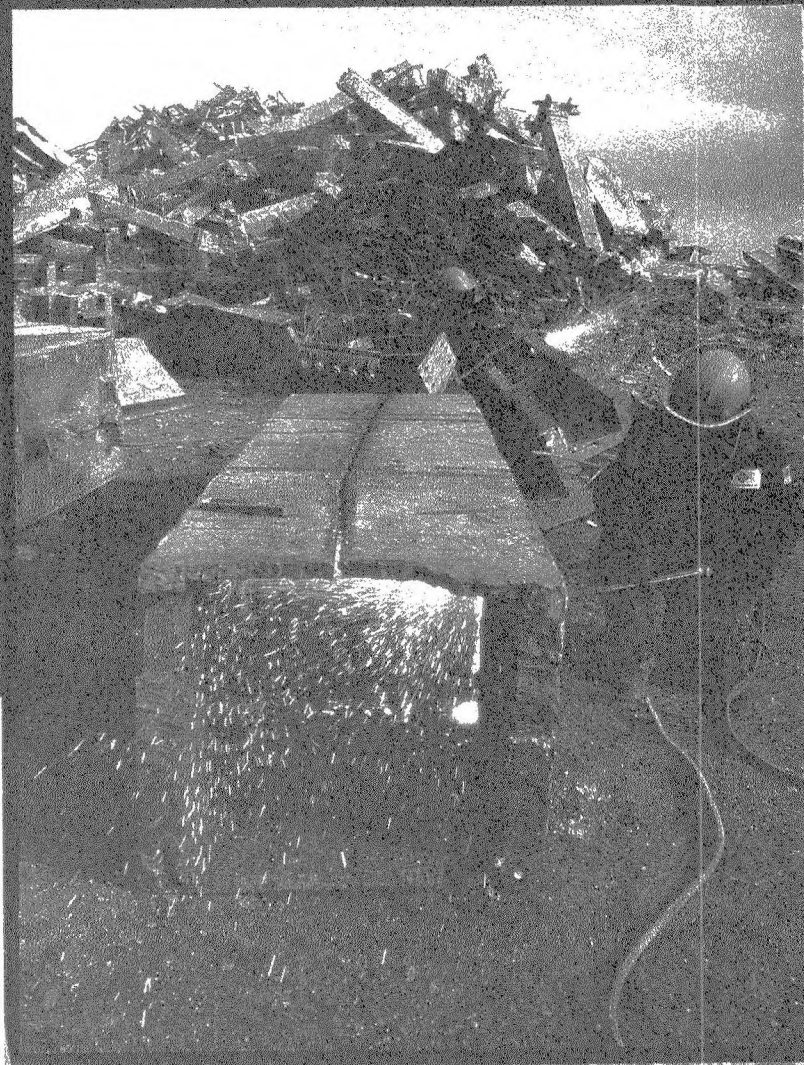




the redevelopment may be open to debate, but everyone agrees that there must be a memorial at the site so that the nation may remember and reflect on what happened for generations to come. The size and shape of this is yet to be determined, but not the significance.

As Abraham Lincoln eloquently said in his Gettysburg address: "...we cannot dedicate, we cannot consecrate, we cannot hallow this ground. The brave men, living and dead, who struggled here have consecrated it far above our poor power to add or detract. The world will little note nor long remember what we say here, but it can never forget what they did here."

PHOTOS BY MICHAEL GOODMAN FOR ENR



SEPTEMBER 9, 2002/ENR 7

COVER STORY REBUILDING

Lightning Renewal of Dazzling Atrium Lifts Lagging Spirits

Winter Garden team
fulfills daring pledge to
finish redo by Sept. 11

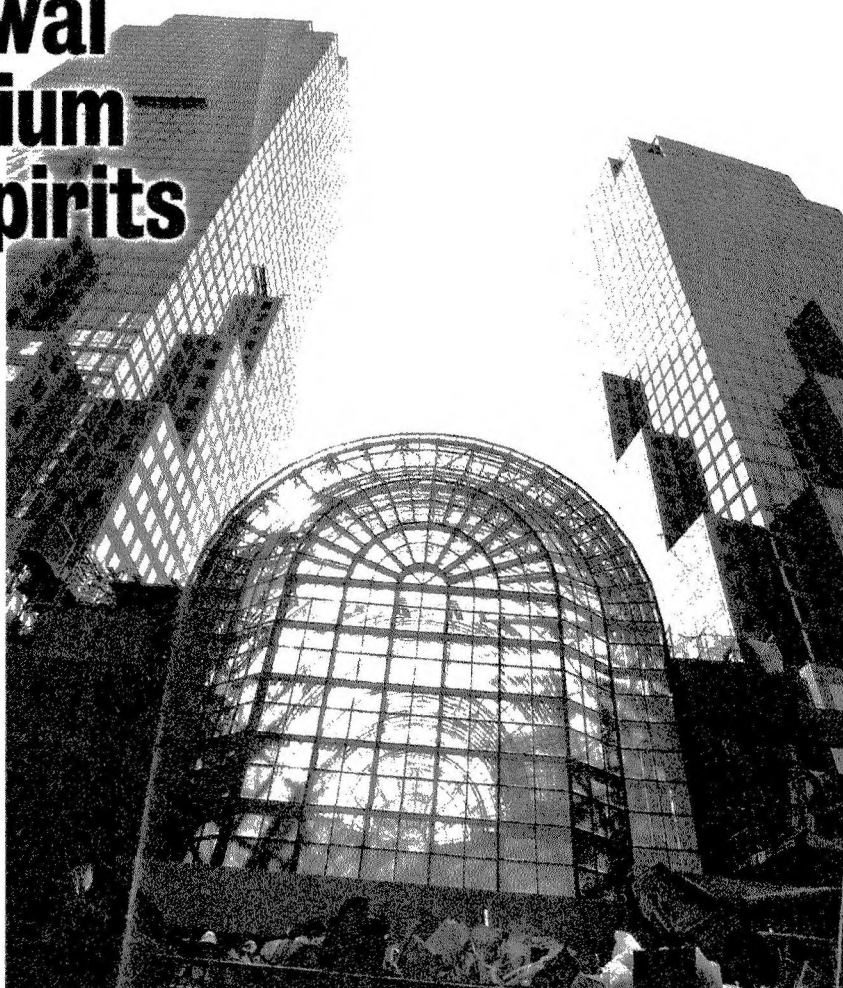
On a continuous adrenaline rush, a hyper-dedicated team working in the wings of Ground Zero has been bounding toward a goal once considered unachievable—completion of the \$50-million renewal of the Winter Garden at the World Financial Center by the anniversary of the Sept. 11 terrorist attacks. The effort to repolish the architectural gem of lower Manhattan, a cavernous steel-and-glass skylight smashed close to smithereens by the collapse of the 110-story One World Trade Center, owes its success in large part to a brilliantly conceived exterior hoist-and-trolley system. The contraption not only sped the roof steel rehabilitation, it compressed the reglazing of nearly 60,000 sq ft of glass from the two years the job originally took into just 4.5 months.

Over the year, the cacophony of reconstruction noise at the grand atrium building has served as a welcome counterpoint to the somber strains issuing from the 16-acre crater across the street. "This project provided a certain optimism everybody was so hungry for," says Craig Copeland, an associate in the New York City office of the Winter Garden's original and current architect, Cesar Pelli & Associates. "It inspired everything," he adds.

The magnitude of the task only served to supercharge the workers. "We got 250% from these people," says James White, project superintendent for the WFC recovery team of Turner Construction Co., New York City, and the acknowledged mastermind behind not just the trolley system but the overall strategy for getting to the finish line by Sept. 5.

The rebuilt Winter Garden stands as a 110-ft-tall symbol of hope amidst the shattered lives and dreams of the area. And with its new glass entryway facing Ground Zero, it also is a giant welcome-back mat for the citizens of New York City and beyond. Beyond that, it has boosted the spirits of those grappling with the sticky issues of rebuilding, a process rife with emotions, politics, economics and countless agendas.

It is "a fantastic symbol for the planning effort," says Margaret Helfand, a principal of Helfand Myerberg Guggenheimer Architects, New York City, and outgoing chair of New York New Visions, a coalition of more than 80 firms and groups representing architects, planners, graphic designers and engineers that has labored without compensation to advise city and



GEM Sky-lit garden, 110 ft tall, sits across the street from Ground

state officials on the area's renewal. Among its many accomplishments, NYNV designed, *pro bono*, the Ground Zero viewing fence, a portion of which is set to open Sept. 11.

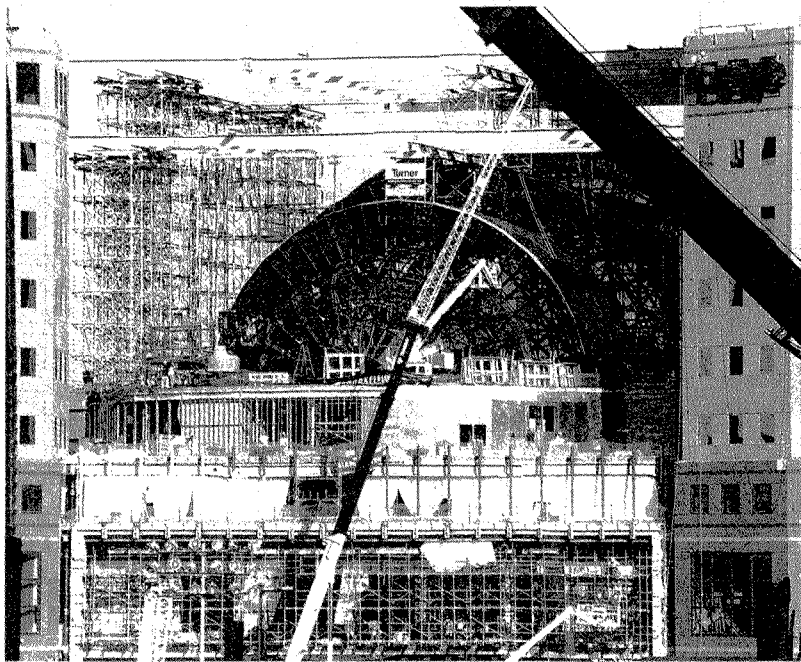
Helfand predicts that with its new "front door" on West Street, which replaces stone cladding, the Winter Garden will become "the major public space downtown," and "much more important than it ever was before."

CRITICAL LINK. The \$65-million Winter Garden, between West Street and the Hudson River, opened in 1987 as the centerpiece of the 8.5-million-sq-ft WFC (ENR 3/7/85 p. 28). One of the few "quality-of-life" indoor spaces in Manhattan, it is a critical indoor pedestrian link to mass-transit connections, both subways and ferries, to New Jersey. "It is the reason Cesar Pelli won the commission for the WFC in the first place," says Sabrina Kanner, a vice president of WFC owner Brookfield Financial Properties, and project manager for the rebuild.

The structure's four-story, U-in-plan base skirts the 192-ft-wide vaulted skylight, framed by architecturally expressed steel truss arches 15 ft apart. A 110-ft-tall glass window wall offers views of the Hudson River and New Jersey to the west.

Trusses are pin-connected into composite concrete and steel ladder columns along the sides of the garden. In the long

PHOTO TOP BY MICHAEL GOODMAN FOR ENR



OVER THE TOP Trolley system let glaziers do their work in just 4.5 months.



NEW FRONT DOOR Dream team's (l. to r.) Zborovsky, Kanner, White, architect Rafael Pelli and Copeland in front of new wall.

direction, trusses radiate from an apse at the east end of the roof, across from Ground Zero. Loads go to drilled-in caissons.

Upon initial inspection of the damage, locally based Thornton-Tomasetti Engineers (T-T), the garden's original structural consultant, thought the building was unsalvageable. Many arches were damaged or partially down, as was the east facade and a large portion of the east floor framing. Most seriously, the system for lateral stability, a 350-ft-long, 50 to 60-ft-wide horseshoe-shaped horizontal diaphragm truss within the fourth floor, was heavily damaged at its most critical area, the 50-ft-long turning point at the curve of the horseshoe.

Even more worrisome, says the engineer, the inner edge of the truss was still attached to its edge girder. But the breached girder had lost structural stability. If lateral forces were to push the horseshoe apart, the whole structure would have collapsed, says Leonid B. Zborovsky, a T-T principal involved in the original project and the repair.

If that had happened, there would have been damage to the 51-story Three WFC, to which the garden

was attached for lateral stability through its horseshoe truss.

"Miraculously," says Zborovsky, a three-story pile of debris from One WTC, the downed pedestrian bridge that gave access to the garden from the WTC and the damaged Three WFC was propping the Winter Garden's broken horseshoe truss.

But the fire department, searching for survivors, was eager to remove the debris. Fortunately, T-T also was representing New York City's Dept. of Design and Construction as structural consultant at Ground Zero and was able to convince officials to leave the debris until workers could shore and brace the structure.

From mid-September to December's end, crews from local construction firm AMEC and scaffolding contractor Atlantic-Heydt Corp., Brooklyn, N.Y., installed compression struts between the ends of the garden's roof arches and bracing at critical locations. Workers had to cut 5-ft-square shafts four stories deep through the thicket of debris to install shoring towers under damaged roof arches. The trick, says

Zborovsky, was staging the work to prevent further compromise to the structure. During the operation, other than some broken glass falling, there were no secondary collapses.

Beyond T-T's structural assessment survey and shoring and debris removal, the city would not allow any work on the garden until January, when it turned the building back to the owner. "We couldn't get people to the site because the pieces of the corner of Three WFC, including One WTC steel, were dangling precariously over the Winter Garden," says White.

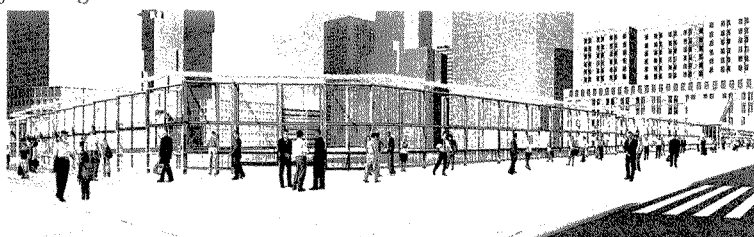
White, at Ground Zero since Sept. 13, didn't waste the waiting time. Hired for the garden's fine demolition and restoration, Turner used the "delay" to collect original drawings, procure replacement glass, order steel and lock up time for fabrication of replacement steel, stone and the curtain wall.

The earliest preliminary schedule for the Winter Garden redo called for completion by late October or November 2002. But Brookfield wanted the work done by the anniversary of Sept. 11, so White promised to finish by Sept. 5. With 350 activities, the schedule has not changed since Oct. 1, other than the east facade redesign, he says.

Turner's approach was to work in as many areas as possible at the same time and to get double duty from as many systems as possible. The "dance floor," a work platform built 67 ft above the Winter Garden's first floor, is an example. The platform provided a safety net for roof workers, protected workers below from falling objects and weather and gave workers roof access from the interior. Another



HELFAND



VIEW IN Part of Ground Zero viewing fence is set to be done by Sept. 11.

PHOTO TOP COURTESY OF TURNER CONSTRUCTION/NAT VALENTINE; CENTER LEFT BY MICHAEL GOODMAN FOR ENR; LOWER RIGHT BY NADINE M. POST FOR ENR; RENDERING COURTESY OF NEW YORK NEW VISIONS

COVER STORY REBUILDING



then later after arches were repaired, workers hooked up trolley motors for placement of the skylight system.

Glass installation started in April on the west end of the garden and was completed by the end of July. Turner had four trolley rigs on the job, each measuring 12 ft deep, 25 ft wide and 10 ft in height. Thanks to a four-point suspension system, the rigs could follow the contour of the roof. Each rig contained a platform that dropped out and a small derrick equipped with suction

UNDONE, REDONE Winter Garden damage was so severe (below) that engineers thought it not salvageable and in danger of total collapse, threatening 51-story adjacent tower.

cups to maneuver each 400-lb light of glass. "We would load the car in the morning and it would never come down until the day's end," says White.

When it was time to move a rig down the roofline to install another bay of skylight, workers would drop the rig onto the ground, roll it to the next bay, and hook it up to the next set of trolley beams.

In the early months, the logistics of getting equipment, workers and materials to and from the site hampered progress. "The roadways were blocked," says White, and the WTC work took precedence.

Turner worked closely with the Port Authority of New York & New Jersey, which owns the WTC site, and the city's Dept. of Design and Construction,

"to gain some space," says White. Using carpenters and laborers, Turner even helped the city build command posts. Turner eventually found ways to get vehicles down West Street and over to the riverside promenade alongside the Winter Garden.

For the redo, Turner called upon firms involved in the

original project, even the quarry in Italy for the stone flooring. Subs were hand-picked and though most contracts were not competitively bid, "we were not gouged," says Brookfield's Kanner. "People were glad to have something like this to work on [and] were generous with time and good will. It was a crazy, creative group."

By virtue of the Sept. 11 anniversary reopening, the Winter Garden has moved from the wings to center stage in the public's eye. "The Winter Garden represents all [that] we wish to embody in the development across the street," says architect Helfand, referring to Ground Zero proper. And with its new front door, she adds, "it is a demonstration that we can put things back and make them better." □

By Nadine M. Post



er example are the arch shoring towers. They helped support the dance floor, along with the horseshoe truss.

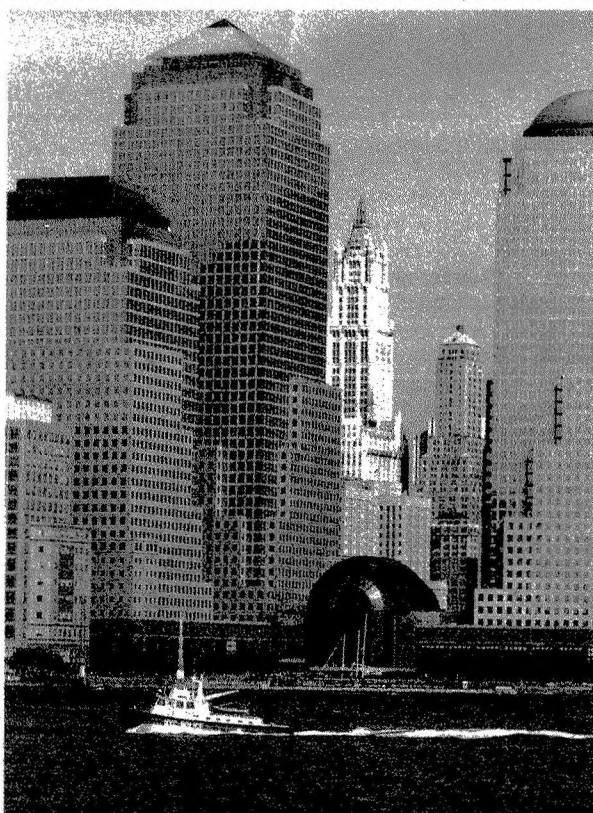
Last but not least, the trolley system deserves the most bows in the reconstruction. The inspiration for the system is that "it took two years to glaze the roof the first time and we needed to do it in four and a half months," says White.

Crews from Atlantic-Heydt installed the 375 x 225-ft structure up and over the Winter Garden roof last January. Beams spanning the roof to shoring towers on either side were located slightly offset from roof arches, which align with skylight mullions.

Beam flanges became the rail for the trolley rigs but the beams also supported damaged roof arches during their restoration. In an operation that lasted from February through April, ironworkers from the New York City office of Canron Construction Co. hung an arch off a beam while they cut out damaged segments, hoisted them away using a 450-ton crawler crane and welded in replacement sections.

In areas of zero arch damage, and

MISSING BACKDROP View of WFC from the Hudson River is minus the 110-story twin tower, One WTC.



PHOTOS TOP, LEFT, CENTER AND BOTTOM BY MICHAEL GOODMAN FOR ENR

A solemn *remembrance...*

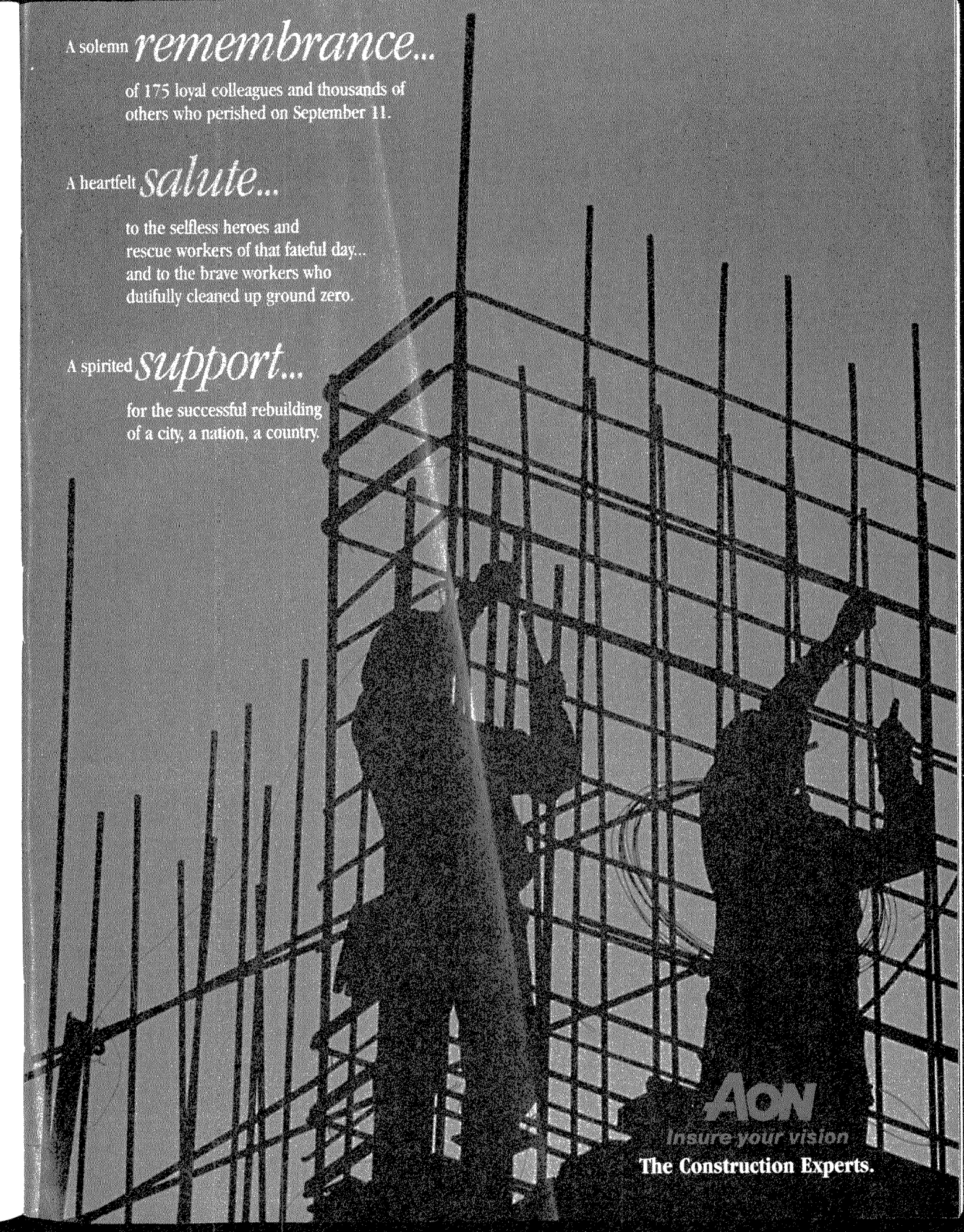
of 175 loyal colleagues and thousands of
others who perished on September 11.

A heartfelt *salute...*

to the selfless heroes and
rescue workers of that fateful day...
and to the brave workers who
dutifully cleaned up ground zero.

A spirited *support...*

for the successful rebuilding
of a city, a nation, a country.



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FEATURE MANAGEMENT

Ground Zero Rush Response Followed By Site's Painstaking Cost Recovery

Contractors endure complex audits and long waits as city verifies expenses



IRON-RICH Equipment-intensive World Trade Center recovery was costly and not all reimbursement rules are settled.

Last Sept. 11, construction industry companies rushed equipment, workers and management to the stricken World Trade Center complex with barely a thought to permits, schedules, risk or compensation. Their resources were desperately needed and they responded without hesitation. A year later, the impact of that rapid response is sinking in, as firms and government officials endure the painstaking—and to some, painfully slow—process of cost recovery. But the Ground Zero ordeal has also provided valuable lessons for future “first responders” and is proving a marketing boon as well.

This summer, New York City officials turned over control of the former World Trade Center site to the Port Authority of New York and New Jersey. With its original debris removal mission done, the city’s Dept. of Design and Construction is

now enmeshed in reconstructing the project’s complex paper trail and in seeking final reimbursement from the Federal Emergency Management Agency.

By year’s end, New York City officials hope that the massive reconciliation of the estimated \$500-million Ground Zero cleanup job will be complete. The city has already paid 85% of all unreconciled invoices billed and is holding the rest, says William Cote, a consultant who has managed World Trade Center administration for DDC since last September. “Everyone will be made whole,” he insists. “But we are caretakers of public monies.”

The process has been erratic. “Some firms have been paid 100% and others less than 50%,” says one contractor. “We’re finished since April and still waiting for 30% of funds.” Others worry that originally agreed-upon or anticipated cost recoveries and definitions are being

changed. The city has set a deadline of Sept. 15 for receiving audited invoices from the site’s construction managers—a joint venture of Bovis Lend Lease, AMEC and Tully Construction Co. Inc.—for the project’s DDC-managed first phase that ended in early January. An Oct. 15 deadline is set for the post-January phase when project management shifted to the joint venture.

DDC and its specially hired auditor, KPMG, will then reconcile paperwork and turn it over to FEMA by year’s end. FEMA then will review, reimburse the city for payments and close out the project, officials say. “It’s an aggressive goal considering how much labor, equipment and material was expended down there,” says Peter Tully, Tully Construction president.

Reconciling costs has unleashed a virtual army of number-crunchers into the offices of Ground Zero cleanup partici-

PHOTO BY TOM SAWYER FOR ENR

pants over the past several months. They are verifying records and seeking to ensure that any rumored bogus claims and overcharges are caught. In addition to KPMG, the task is also being handled by the city's Dept. of Investigations and its consultants. "FEMA is committed to reimbursing 100% of eligible costs," says Brad Gair, FEMA's WTC federal recovery officer.

The process has been daunting for firms, as auditors spend days or weeks poring over existing records and asking for more. "We had 16 requests for payments, and each submittal was 3 to 4 inches thick," says George Wittich, senior vice president of Weeks Marine Inc., the Cranford, N.J., firm that managed marine-based debris removal. Tully says he's now down to "only six" staff members involved in Ground Zero paperwork, "but one of my vice presidents is ready to jump out the window almost every day" as new invoices and receipts are found.

While many Ground Zero firms are resigned to not recovering some response costs for patriotic reasons, amounts left unpaid have put some on the financial edge. "A lot of cash has not yet been recovered," says Andrew D. Walker, president of Nicholson Construction Co., the Cuddy, Pa., subcontractor that installed many of the site's 1,100 slurry wall tiebacks. "It's simply taking a long time."

One sore point is reimbursement for labor costs. Authorities are withholding 20% of payroll costs until timesheets are audited. Firms say it is impossible to track who was on site during the cleanup's early days and that a sign-in sheet system was



OVERSIGHT FEMA will reimburse city for payouts once eligible costs are reconciled.

not uniformly followed. "There's nothing in a union worker's contract that says he has to sign in and out," says Grace Mazzochi, president of Mazzochi Wrecking Co., East Hanover, N.J. There is still dispute over reimbursement for numerous site supervisors, a much-needed safety precaution on a hazardous site, she says. Mazzochi's records show 73,000 man-hours in the first phase alone. For some firms, payroll rose to between \$200,000 and \$300,000 a week during the cleanup's peak, says James Abadie, Bovis Lend Lease senior vice president.

Some firms are still haggling with DDC over rental equipment reimbursements and over definitions of "severe" conditions. Cote says the city is increasing Blue Book rates for severe conditions for contractor-owned equipment. All eligible

costs "should get reimbursed dollar for dollar," he says, adding that FEMA has paid 95% of payments requested by DDC. While allowed profit is about 10%, some firms may earn as much as 40%, says one source. "Some firms did OK but they had to finance things for so long," says Abadie. "That is eating away at profits."

But some worry about future liability and the still-uncertain status of FEMA's promised \$1-billion indemnification fund. While contractor officials cannot confirm any firms yet named in lawsuits, they worry that the fund may be siphoned by the city to pay for police and fire disability claims.

Despite financial strains, Ground Zero firms have gained valuable experience. Many speak of lessons learned in quick mobilization, work force management, site control and creative solutions. "We learned a lot about structural failures and rebuilding in areas we weren't even sure were stable," says Tully.

Bovis and Tully have already been named to the city's emergency contractor list. Mazzochi is on call to Philadelphia, Newark, Atlantic City, N.J., and other nearby cities.

Weeks Marine was called on to handle an emergency repair when an undersea cable broke near New Rochelle, N.Y., last May. "This was partly due to our relationship with ConEd but also to our experience at the World Trade Center," says Wittich.

Nicholson's Walker says the firm is getting more calls from New York City contractors "asking us to bid on jobs there." Adds Grace Mazzochi: "This has given us a certain amount of name recognition." □

By Debra K. Rubin



ON SITE? Firms worry that haphazard worker check-in complicates cost verification.

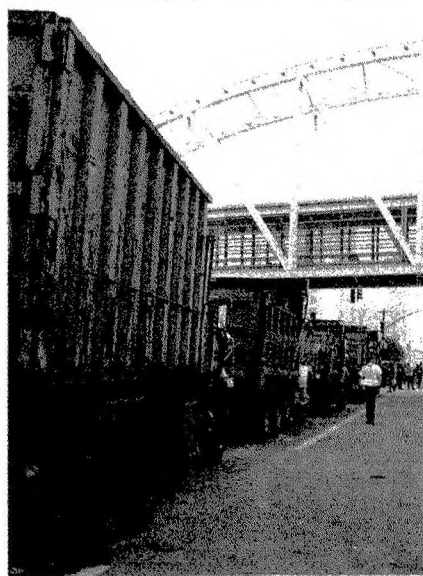
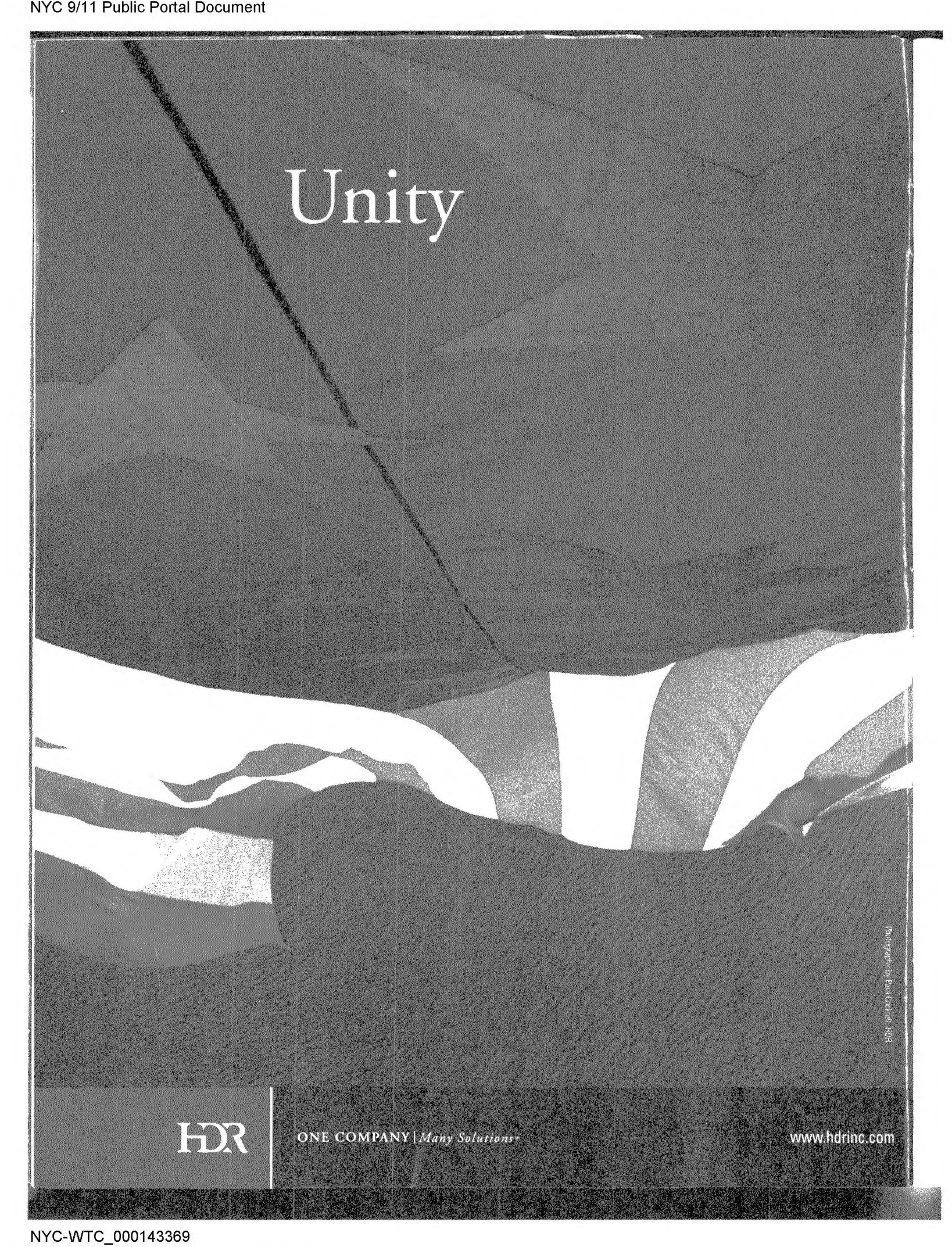


PHOTO TOP COURTESY OF FEMA. PHOTOS BOTTOM BY TOM SAWYER FOR ENR

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Photograph by Paul Fentress HDR

FEATURE HEALTH AND SAFETY

Screening Program May Shed Light On Exposure to Contaminants

But workers are slow to take federally funded exams

Most workers and volunteers at Ground Zero have long returned to their old jobs or taken new assignments far from the once-devastated site. But the issue of potential health risks for as many as 30,000 participants, in construction and other sectors, could stay with them. The impact of exposure to site contaminants is only now being felt as worker screening expands, providing new data on collective symptoms and possibly new fuel for litigation.

In July, the Center for Occupational & Environmental Medicine at New York City's Mount Sinai Medical Center launched a \$12-million effort to screen Ground Zero workers, including those involved at Fresh Kills landfill in Staten Island, for respiratory, psychological and other conditions. The federally funded effort will cover 8,500 exams, including 1,000 outside New York City, over the next year. Federal and state employees and city firefighters are being screened in other efforts.

The program is only slowly attracting prospects, with 250 screened so far, says Stephen Levin, co-director of the WTC screening program and medical director

of the Mount Sinai occupational medicine center. But he notes that asthma-like conditions were already showing up in patients he had checked last fall. "It became clear people inhaled airborne irritants," he says. An earlier screen of 100 ironworkers also revealed "rates of obstructive disease independent of smoking," Levin says. "I was surprised by that."

The lengthy screen, managed by a 60-person staff that includes 8 physicians, covers everything from pulmonary function tests and chest X-rays to psychological screens and detailed medical histories before and after Sept. 11. With few construction workers examined, Levin does not yet have much solid data on exposures. But toxicology tests have revealed varying levels of hydrochloric

acid, polyaromatic hydrocarbons and asbestos, he says. Among all types of workers screened so far, two out of three showed symptoms of "respiratory difficulty" and "persistent psychological distress."

Vamadevan Ragumar, a 40-year-old technical manager for Verizon Corp., who survived escape from his office on WTC Tower 2's 9th floor, was screened last month "just to make sure I'm healthy," he says. He had spent 10 minutes in the building's post-collapse cloud of smoke and debris.

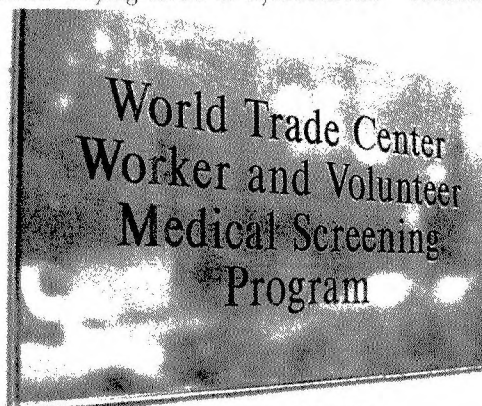
Some firms have instituted their own post-Ground Zero medical screening and counseling programs, "but very few people have taken us up," says James Abadie, senior vice president of Bovis Lend Lease. Executives say they know of no worker health-related lawsuits yet.

They may yet happen.

Thomas P. Maguire, president of operating engineers Local 15, wrote to members last spring, noting the possibility of claims against agencies and private interests "for breathing problems that have occurred or may occur in the future." The letter includes a questionnaire that seeks information on members' WTC work experience, possible symptoms and treatment. "We're trying to get a complete assessment," says Maguire. "Our members feel fine now. It might be 20 years before we see the residuals."

Expanding the Mount Sinai program is uncertain. New York Sen. Hillary Rodham Clinton (D) sought \$90 million for extended WTC screening and treatment to be included in a \$5.1-billion emergency spending bill that President Bush would not sign. A Clinton spokesman says the funds may be attached to an upcoming federal agency fiscal 2003 spending bill. □

By Debra K. Rubin



HAZY Exposure to airborne substances is being tested in hospital program.

PHOTO CENTER BY DEBRA K. RUBIN FOR ENR. BOTTOM: COURTESY OF FEMA

FEATURE RESTORATION

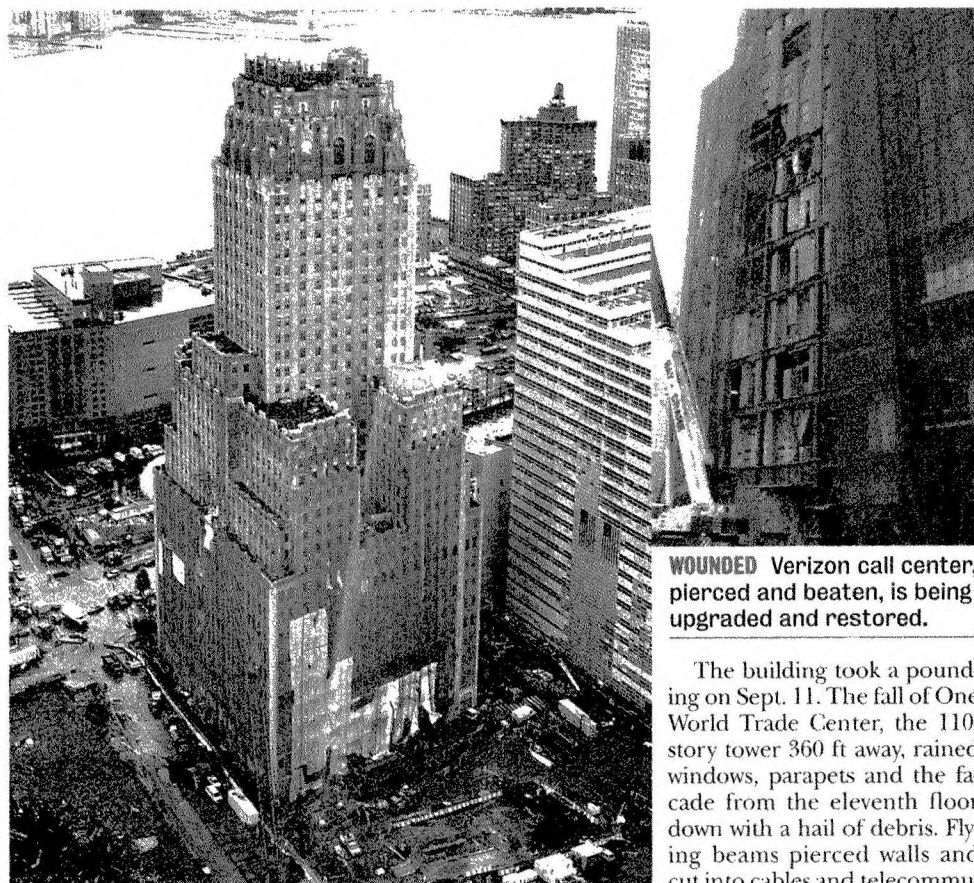
Landmark Battles Back After Being Down and Briefly Out

Battered call center powers through \$1.4-billion upgrade

The battered, 32-story telecommunications center that looms over the north side of the World Trade Center site has a toughness much deeper than its stout 76-year-old steel frame and brick and limestone facade.

With only a pause between the death of its backup batteries at 10:21 p.m. on Sept. 11 and the restoration of emergency power on the night of Sept. 16, the center has continuously processed millions of calls and data transmissions daily through banks of delicate equipment that have been smothered by corrosive dust, exposed to the elements and even, in some cases, suspended in space by cables when floors fell crashing away.

A multipronged reconstruction program is in progress. Environmental cleanup is complete and a gut renovation is under way. Restoration of the facade, a job begun well before Sept. 11, has resumed. A new mechanical and electrical system is being installed. Switching and routing equipment, most of which still functions but whose



WOUNDED Verizon call center, pierced and beaten, is being upgraded and restored.

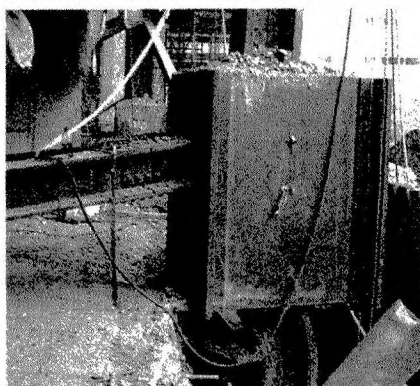
The building took a pounding on Sept. 11. The fall of One World Trade Center, the 110-story tower 360 ft away, rained windows, parapets and the facade from the eleventh floor down with a hail of debris. Flying beams pierced walls and cut into cables and telecommunications gear. Choking dust and a 9 to 12-million-gal basement flood ravaged the interior.

"By far the worst damage" was caused hours later by the collapse of the 47-story Seven WTC, 60 ft away, says Andrew Mueller-Lust, project manager for structural engineer Severud Associates, New York City. The building burned and fell late in the day on Sept. 11. Debris stacked against the face of the Verizon building to the fifth floor and the bottom of the pile pushed into it at grade level. The pressure bent two adjacent steel columns 20 ft apart, just above and just below grade. Despite that, Mueller-Lust says "the overall building frame was apparently not

reliability was seriously compromised, are also being replaced.

The owner, Verizon Communications, New York City, says it expects the total cost to hit \$1.4 billion. It hopes to move administrative staff back in by late 2003. "It's the telecommunications equipment that makes it so expensive," says Verizon spokesman John Bonomo.

Through it all the call center continues to operate as the nexus of 300,000 voice lines and 4.5 million data lines in the financial hub of the world. "It's like changing flat tires on a moving bus," says John V. Magliano, a partner with project mechanical and electrical engineers Syska Hennessy Group, New York City.



SPLINT Temporary brace supports column pushed inward at base.

PHOTO CENTER COURTESY OF BERNSTEIN ASSOCIATES PHOTOGRAPHERS, RIGHT AND BOTTOM BY TOM SAWYER FOR ENR

significantly displaced."

George Famulare, Verizon real estate area manager, says "right now we're working on infrastructure mostly," with extensive repairs from the 10th floor down.

Famulare's office is in the building and he was one of a handful of managers and engineers who stayed with it through the heart of the disaster. It was important to manipulate air handling equipment and backup electrical systems to try to minimize damage, and then start the recovery process as soon as possible.

Construction management is by Tishman Interiors, which was on the exterior renovation project prior to Sept. 11. It has a staff of 23 housed in new offices created on the first floor in the early phase of the cleanup. "We're giving our undivided attention to fulfilling the owners' requirements," says Bob McNally, Tishman vice president and project executive.

Environmental cleanup was an urgent priority from the beginning, says Burton



ONE-TWO PUNCH Call center was struck from two sides by successive collapses.

Fried, president of LVI Services, New York City, an environmental engineer that had 500 workers on the job in three shifts for months. "After doing the first remediation we cleaned the remaining floors, all the way to the top, under asbestos containment conditions," Fried says.

Heavy dust continues to infiltrate, however. Racks of communications gear require constant re-cleaning. They are being replaced by equipment installed in newly created, environmentally controlled switch and frame rooms in other parts of the building.

Cleanup also involved removal of 30 ft of contaminated water from lower levels. Onsite separators extracted 40,000 gal of petroleum products from fuel tanks that floated and spun

over. An aggressive mold bloom on one basement level was also attacked with disinfectant.

All building systems are operating now in temporary mode. The mechanical plant on the next-to-lowest basement level was submerged. Chillers for a replacement plant with double the old capacity were delivered in early August. "We're rebuilding it now on the first floor," Famulare says.

Electrical service capacity is being upgraded from 12 Mw to 20 Mw. Two emergency backup generators lost in the flood are being replaced by four 4.2 Mw units going in on the 10th floor. Backup batteries, which reversed polarity when they were totally discharged, are being replaced and increased in number from 440 to 584 to support system expansion. Steam, fire protection and plumbing systems are also being extensively repaired.

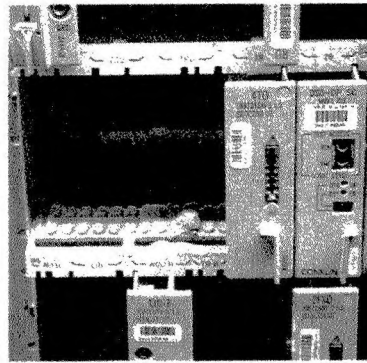
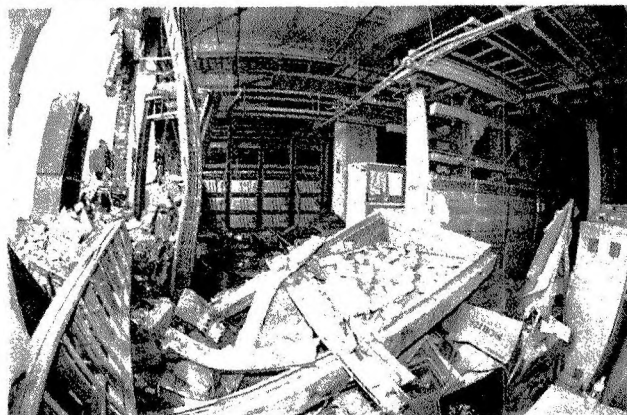
Mueller-Lust says repairs to one column and several spandrel beams and associated floor sections on the face overlooking Ground Zero are complete.

Now, preparations are being made to splice in four new exterior column sections

on the face damaged by debris from Seven WTC, although street utility work is delaying access needed to construct foundations for shoring.

Famulare says if Verizon had known a year ago how much "pain and expense" the job would entail, its officials might have had second thoughts. But back then, "we never had a doubt," he says. "And we've been at it ever since."

By Tom Sawyer



NEW LIFE New backup generators will support replaced equipment.

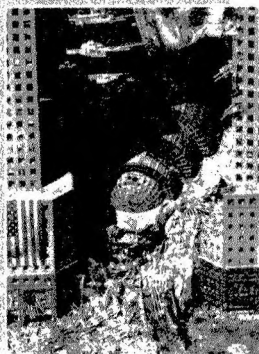
PHOTO TOP LEFT COURTESY OF U.S. CUSTOMS SERVICE, TOP RIGHT AND BOTTOM LEFT COURTESY OF VERIZON, CENTER AND BOTTOM RIGHT BY TOM SAWYER FOR ENR



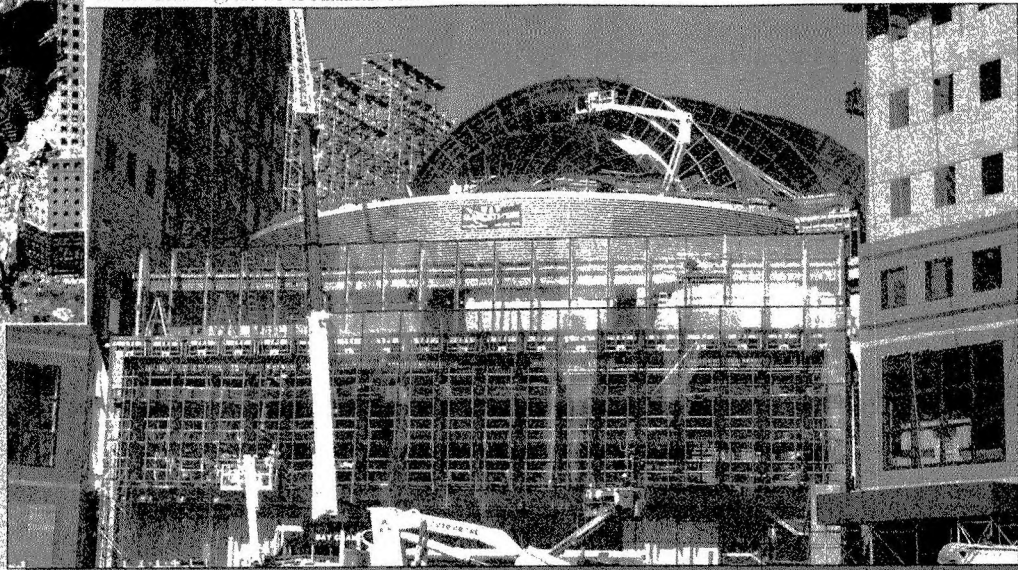
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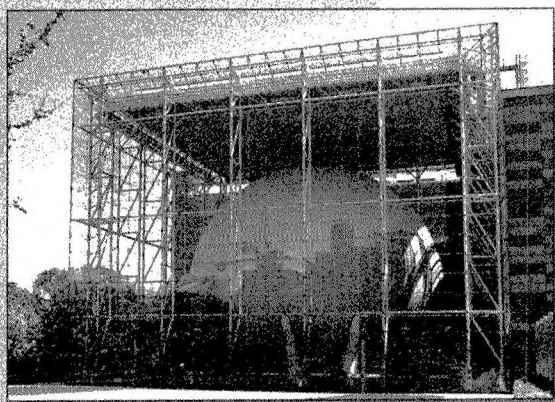
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FEATURE UTILITY CONSTRUCTION

Disaster Spawned Opportunity To Vastly Improve Utilities in Area

Service providers rebuilt and dispersed for better security

Turning disaster into opportunity, utility companies and other service providers are using the wholesale reconstruction of Lower Manhattan grids and networks to upgrade, modernize and rationalize their systems.

Two electrical substations serving load in Lower Manhattan were destroyed by the collapse of World Trade Center Building 7, where they occupied the two bottom stories. On Sept. 11, their combined 407-Mw capacity was loaded about 75%. Two 138-kv feeder cables serving them also were lost.

Restoring electric power became the top priority, says Louis Rana, Consolidated Edison Co. vice president for Manhattan electric operations. To meet the immediate goal—reopening the New York Stock Exchange on Monday, Sept. 17—Con Ed technicians working round the clock ran 36 miles of what Richard P. Fogarty, substation and transmission chief engineer, calls “13-kv extension cords” around both sides of the site to the blacked-out areas.

Lines laid directly in the streets to save time were buried only at intersections to allow passage of emergency vehicles. The power was restored by 6:00 a.m. on Sept. 17 and the exchange opened on schedule. Ten days after the attack, power had been restored to the rest of the affected areas.

The priority then shifted to preparing for the summer peak load, requiring replacement of at least one of the stations. At an existing station in the vicinity of the South Street Seaport, five bays were available, complete with 138-kv feeders. Transformers ordered for another project were diverted to the replacement station. Vendors went all-out to meet emergency orders for switchgear and other equipment, says Fogarty. With that kind of cooperation and packaged equipment being installed in an existing building, the substation was in service April 27, after less than eight months. “Normally that takes two to three years,” notes Rana.

Underground utility replacement also proceeded on a grand scale and a fast track. The emergency cable on the streets was replaced by 130 miles of new underground cable in nearly nine miles of trenches, says Rana. In late May, Con Ed removed the last of the temporary electric cable in the streets. Now, “the bulk of the underground work has been completed,” he says.

A substation is planned for the building now being constructed on the 7 WTC site. The lower four stories will hold up to 10 transformers and associated switchgear, says Fogarty. Con Ed was hoping to have the station available by summer 2003, but “that’s physically impossible now,” he says. Con Ed plans to have its new station operating even as the building rises above it, but Fogarty says he will serve next summer’s load with diesel generators, if necessary.

Telecommunications also reeled from the attack. “The square mile surrounding the World Trade Center is without doubt the most intensive square mile of telecom on Planet Earth,” says David Johnson, spokesman for AT&T, Bedminster, N.J.

The WTC basement held the largest AT&T local network transport node in the U.S., says Kevin Lynch, vice president of field operations. With the capacity to

handle more than 1.7 million voice messages at a time, it was a crucial telecom link serving all the financial exchanges in the nation’s financial heart. “We essentially had to rebuild [the network] in the outside plan,” says Lynch.

Following a rehearsed disaster recovery plan, AT&T restored service to the few customers remaining in the devastated area with a parking lot full of pre-loaded tractor-trailers in Jersey City, N.J. By Monday morning, the stock exchange could count on telecom as well as electricity.

AT&T now



IMPROVED OUTLOOK Rana oversaw rapid restoration of electrical system.

has dispersed replacement equipment to remote locations, making the system much less vulnerable to future attacks.

Workers cleared space for the new nodes in three separate buildings elsewhere in Manhattan and ran nearly 6,000

miles of fiber-optic cable up the east and west sides of the island to them from the area of the destroyed transport node. Of the cost, Lynch will say only that it was greater than \$100 million. □

By Thomas F. Armistead

PHOTO LEFT BY TOM ARMISTEAD FOR ENR, RIGHT BY TOM SAWYER FOR ENR

FEATURE DAMAGED BUILDINGS

Future of 'Ghost Buildings' Shrouded in Secrecy, Uncertainty

Questions of repair or raze haunt Ground Zero neighbors

The 40-story Banker's Trust Building still has a 15-story gouge on its north face. The 15-story Fiterman Hall of the Borough of Manhattan Community College has a corner sliced off. The 26-story 90 West Street, a New York City landmark, has at least \$70 million in fire and other damage.

These and several smaller buildings are the ghost buildings of Ground Zero. Having sustained collateral damage on Sept. 11, they remain gashed, slashed, gouged, contaminated and otherwise compromised. And they stand in stark contrast to their repaired neighbors.

Frozen in time, these haunted sideliners, stabilized and either mothballed or simply wrapped to contain debris, are the only concrete reminders of the destruction wreaked by terrorists. What was once the World Trade Center is just an open pit—benign to behold compared to the jarring sight of the nearby buildings.

The structures' fates are shrouded in secrecy and uncertainty. Owners say little or won't talk at all, and have muzzled their design and construction teams, even with respect to a building's current condition.

Some do talk on condition of anonymity. Invariably, the words "insurance," "claims" and "disputes" come up. Owners want one thing. Insurers want another. Negotiations stretch out for months and months.

For Fiterman Hall, which was six weeks from the end of a five-year renovation, the issue apparently is whether the insurer for the \$65-million project is responsible for damage caused by the collapse of Seven WTC. The owner says it is. The insurer says it isn't.

Beyond insurance quagmires, wild cards abound. One big one is the still-unshaped redevelopment plan for Ground Zero, which is likely to spill outside the 16-acre WTC site. Sources suggest the state's Lower Manhattan Development Corp. may take over some of the

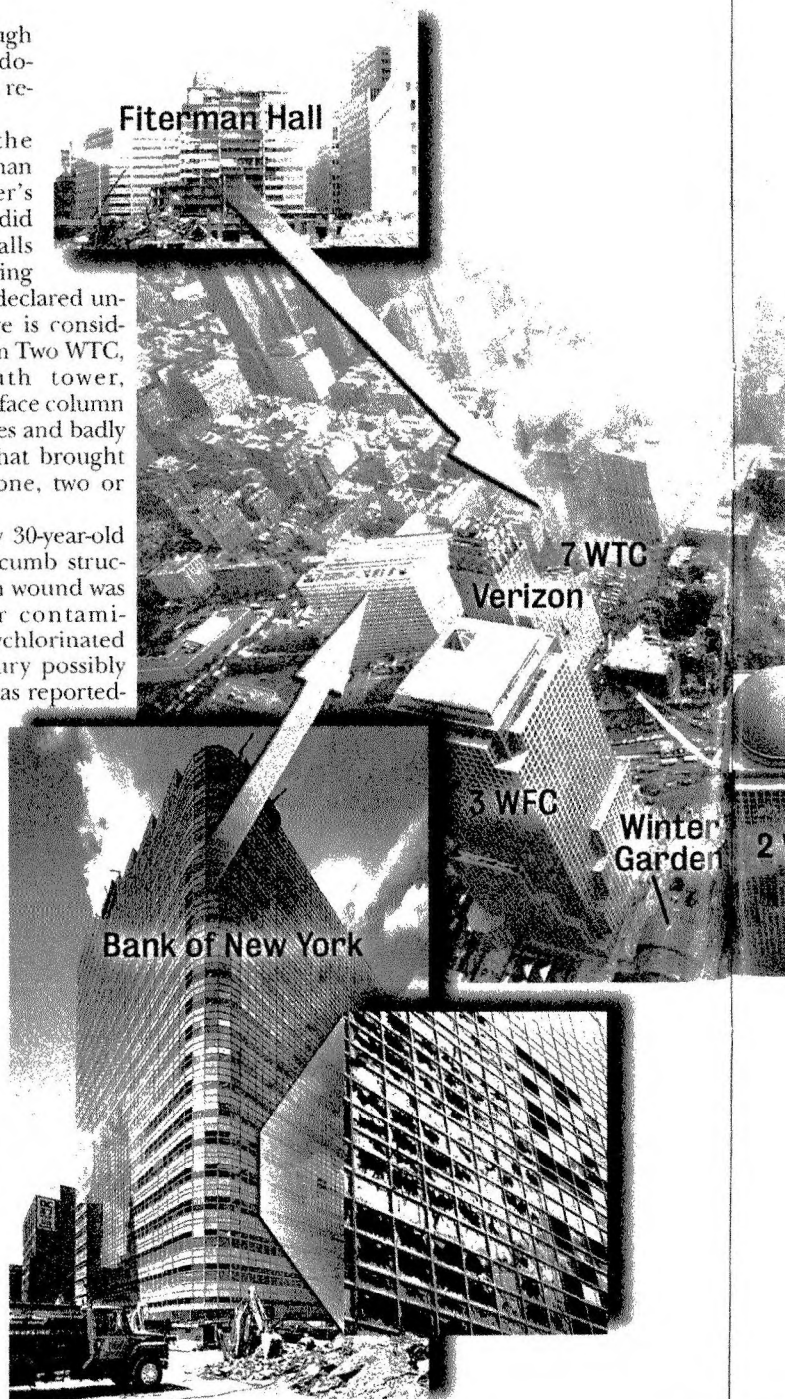
vacant buildings through powers of eminent domain. LMDC did not return phone calls.

Deutschebank, the owner of the more than 1-million-sq-ft Banker's Trust Building, also did not return phone calls but sources say it is trying to have the building declared unfit. Structural damage is considered severe. Steel from Two WTC, the 110-story south tower, knocked out one mid-face column line for some 15 stories and badly damaged another. That brought down 15 floors for one, two or three bays.

Though the nearly 30-year-old building did not succumb structurally, the giant open wound was a welcome mat for contaminants—asbestos, polychlorinated biphenyls and mercury possibly among them. Mold has reportedly proliferated.

According to sources, the real issue at Banker's Trust is not the contamination but its extent. The dust apparently infiltrated everywhere and everything, including ductwork. A gut rehab might be the only way to ensure an environmentally sound cleanup. But the owner wants the building taken down so it can start from scratch, say sources.

At 90 West Street, a steel-framed building with terra cotta floors and terra cot-





PERIPHERAL BUILDINGS Insurance issues and open questions about the area's redevelopment have stymied fixes of some, but not all, WTC neighbors.

ta and brick exterior walls that was still on fire on Sept. 13, the structural consultant is preparing construction documents for the repair of a sidewalk vault on the Ground Zero-facing side.

Though structurally sound thanks to terra cotta fireproofing, some 20 of the office building's 26 stories are damaged "beyond belief," says Donald Friedman,

director of preservation for LZA Technology, a division of the Thornton-Tomasetti Group, New York City.

LZA is providing full architectural and engineering services for the restoration of the city landmark, says Friedman. But the work is "on hold," he adds, pending resolution of insurance claims.

The owner, FTP 90 West, and its insurer have agreed to \$70 million worth of repairs. But there is a gray area of disagreement. Based on experience with terra cotta facades, there is "probably"

more damage than meets the eye, says Friedman. The insurer won't accept that without seeing it.

Coincidentally, the building was undergoing a facade restoration, which on Sept. 11 was 75% complete. So there are outstanding facade violations.

With some 40-odd leases broken, the building also has no tenants and therefore no income. The owner also wants to make some improvements, for which the insurer does not want to pay.

So the building remains "pseudo-mothballed," says Friedman. It was heated through the winter and there is little mold, he reports.

Fiterman Hall is weathertight, with little mold. There is no decision about whether the building will be "rehabbed, razed or whether the state is going to exercise powers of eminent domain for the expansion of Ground Zero," says Claudia Hutton, press officer for the owner, the Dormitory Authority of the State of New York, Albany. She adds that there is no time frame for the decision.

The renovation of the 1959 steel-framed building, done while the building was in use, included asbestos removal, installation of new mechanical, electrical and plumbing systems, and wiring for 60 "smart" classrooms.

Flying arrows of steel from the adjacent Seven WTC amputated a 10-story section of the building, 30 ft wide and some 15 to 20 ft deep. Additionally, shock waves from 7 WTC's collapse broke windows.

There are several noteworthy exceptions to the ghost building syndrome at Ground Zero, in addition to the Winter Garden repair at the World Financial Center (see p. 8). Owner Brookfield Properties reopened One Liberty Plaza and Four WFC, which sustained non-structural damage, last October. Close on the heels of those comebacks, Brookfield reopened One WFC in November and Two WFC in January. American Express reopened Three WFC, which had sustained structural damage along one corner, in April.

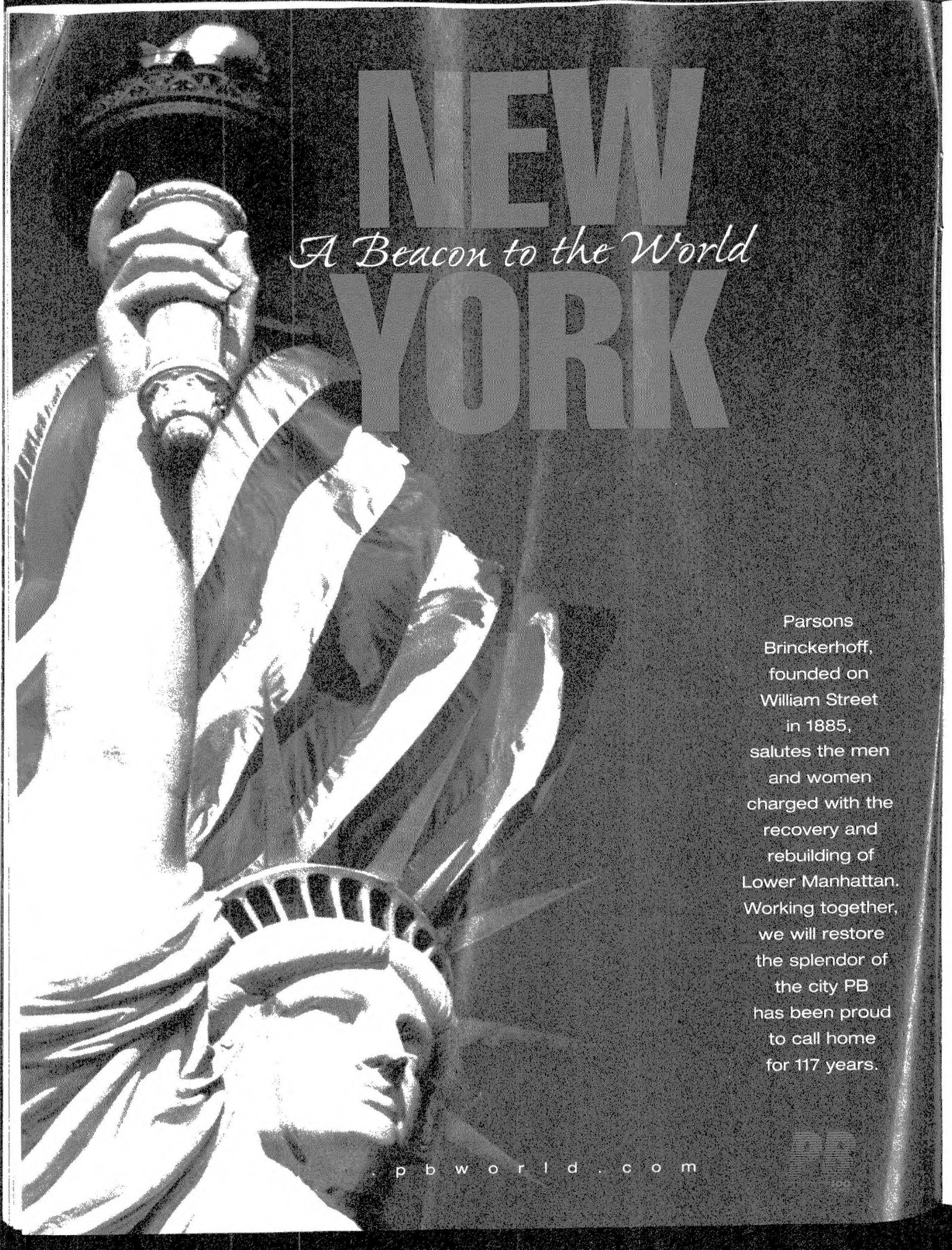
Several blocks away and across the street from Fiterman Hall, The Bank of New York also wasted no time marshaling forces for the

repair and renovation of its 305-ft-tall building, which sustained major curtain wall and other cosmetic damage. The work began on Sept. 18 and will be complete in the next week or so, according to the construction manager, Tishman Construction Corp., New York City.

The renovation included the installation of 1,642 replacement-glass facade panels, which match the originals installed during construction in the early 1980s.

Perhaps the Millenium Hilton, a 600-ft-tall hotel only 50 ft wide, best stands for the uncertainty in lower Manhattan that has affected so many since Sept. 11. Though the hotel has a sparkling new glass facade, it is not clear when it will reopen its doors. □

By Nadine M. Post



NEW YORK

A Beacon to the World

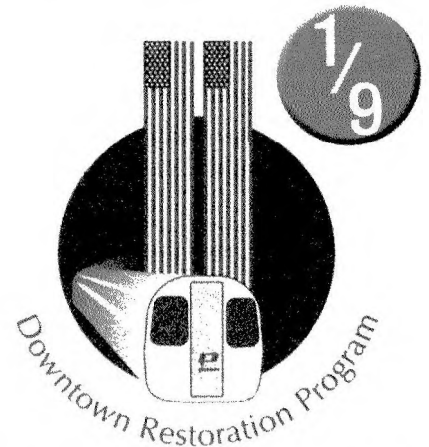
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FEATURE TRANSIT

Extra Effort Speeds Repair of Train Systems

Money and commitment expedite push for speedy service restoration



The terrorist attack that destroyed the World Trade Center's subway station on the 1/9 line and shut Port Authority Trans-Hudson commuter train service from New Jersey exacted a terrible price in death and destruction. It also provided a rare opportunity for New York City to reconfigure a key hub in its transportation network. Working 24-7 since last September

\$4.55 billion and \$7.5 billion of extensive downtown transit improvements. The centerpiece is a hub that will provide a single point for travelers at the tip of Manhattan to access ferry, commuter rail and subway service (ENR 8/19 p. 10). That project "will be sort of like a new Grand Central Terminal downtown," says Mysore L. Nagaraja, MTA chief engineer.

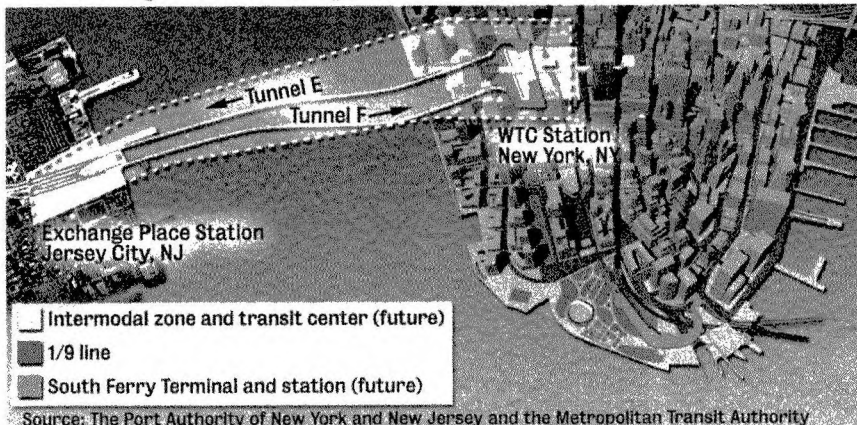
MTA designers working on the pre-

Construction Corp., College Point, N.Y. Although the contract scope was an evolving concept, the task at hand was fairly straightforward: restore 1/9 service as quickly as possible.

The attack closed three stations: Cortland St., within the World Trade Center; Rector St., a few blocks south of Ground Zero; and South Ferry, which provides access to the Staten Island Ferry Terminal at the southern tip of Manhattan. "We had 1,800 ft of subway line completely destroyed," says Nagaraja. MTA's in-house engineers, with assistance from New York City-based consulting engineers Parsons Brinckerhoff Inc., quickly decided to leave the Cortland station closed until a replacement could be integrated into Lower Manhattan Development Corp. site reconstruction plans.

The most expeditious plan meant reconstructing the track "exactly as it was upon completion in 1918, with the same alignment," says Nagaraja.

The in-house estimate for restoring track, adding signal equipment and rehabilitating and reopening the Rector St. station was about \$200 million. But



PATH WORK Project includes two terminals and Hudson River tunnels.

11, two New York-area transit agencies and their contractors are pushing to restore and interconnect key transportation links near Ground Zero.

The Metropolitan Transit Authority will resume full 1/9 subway service Sept. 15, a month ahead of schedule, with the joint venture repair contractor earning a \$3-million bonus. With its own contractors proceeding on schedule, PATH trains will be running again by the end of 2003, officials say. Those two jobs began early this year with Ground Zero site clearance and account for nearly \$700 million of transit-related cleanup, rehab construction and system improvements.

The work is really an intermediate fix that will establish the foundation for a more ambitious undertaking, between

liminary design for that project expect to have plans ready for public review near year's end, but few believe that the terminal will be in operation before 2008, at the earliest.

PATH train and subway service restoration are moving on a much faster track. "We're done on the 1 and 9," says Peter Tully, president of Tully Construction. Last winter MTA hired the Flushing, N.Y.-based contractor in joint venture with A.J. Pegno



STRIPPED PATH tunnels get new conduit and track.

IMAGE TOP LEFT COURTESY OF THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY. BOTTOM BY MICHAEL GOODMAN

FEATURE TRANSIT

the Tully-Pegno bid came in at \$92 million. Change orders will push that to about \$110 million, says Tully. Approximately \$40 million worth of additional materials—track, power supplies, communication and signal systems—pushes the total to about \$150 million, Nagaraja says. MTA, missing a vital connection in a 656-mile system that serves 4.8 million passengers every day, added change orders as it discovered the extent of the damage.

Early work involved stabilizing the interface between the subway line and the WTC "bathtub" foundation. Crews placed more than \$500,000 worth of grout and gunnite in sinkholes and voids. Restoring the original station design meant building a box tunnel approximately 800 ft long and 100 ft wide, comprising steel bents on 5-ft centers, enclosed in concrete.

Working two 12-hour shifts daily, the joint venture took the change orders in stride and replaced 1,900 ft of track and fully restored and reconditioned the Rector St. station. A test train was scheduled to run Aug. 30, and New York Gov. George E. Pataki (R) is scheduled to inaugurate resumed service in a ceremony Sept. 15.

"It's amazing to see the new tracks and station in such a short time," says Tully. MTA advanced the contractors \$20 million to purchase materials, Nagaraja says. A \$100,000-per-day early completion bonus, capped at \$3 million, added incentive. Tully-Pegno earned the full amount. "More than the money, there was an emotional commitment to the job, with both the contractor and our people," says Nagaraja. "You could see it this summer when the temperature was 95° to 100° in the tunnel. Nobody complained; they just kept working."

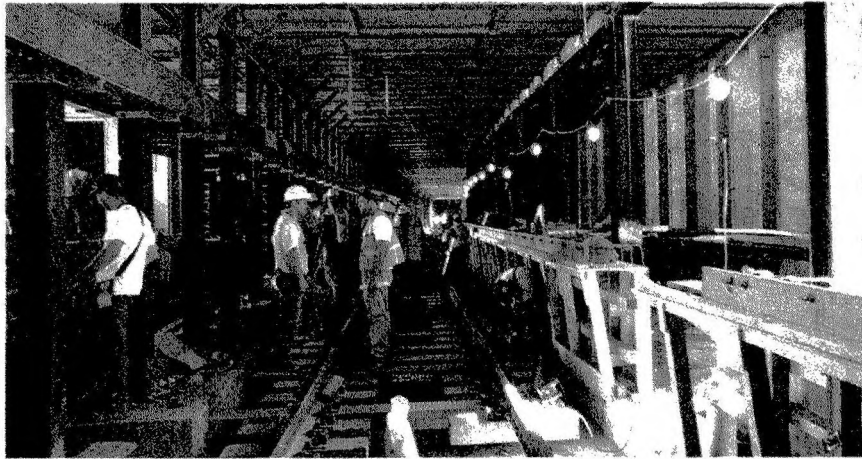
A can-do attitude also prevails on PATH train repairs, says Tom Groark, Port

Authority of New York & New Jersey engineer of construction. A \$544-million program includes three tasks: construction of a temporary terminal at the World Trade Center site, improvements to the Exchange Place terminal in Jersey City, N.J., and rehabilitation of the Hudson River tunnels connecting the two stations.

Tully and Pegno are also joint venture

nel expansion to accommodate 10-car trains. With office buildings above the station, subsurface work requires expertise, says Groark. In mica-schist, "we're using three methods: drill-and-blast, large impact hammers and a road-header that grinds the rock," he says.

Work will require removal of 12,000 cu yd of material. Exchange Place im-



BOX BUILDING Subway track enclosure and alignment mimics the 1918 original.

contract partners here, along with Yonkers, N.Y.-based Yonkers Contracting Co. Inc. When the port authority awarded the net-cost contract, "the project scope was not clearly defined," says Groark. Though an unprecedented event created the work, "we didn't change our spec book for this job. It's just on a very fast track," he says.

Site access was the first challenge. The 16-ft, 6-in.-dia tunnels were flooded for 40 days. By February crews began to strip out ruined conduits, ductwork, track and ballast. All will be replaced after minor structural repair to the tunnels.

Exchange Place improvements include new switches and connections to ferry terminals, track upgrades and tun-

nel expansion to accommodate 10-car trains. With office buildings above the station, subsurface work requires expertise, says Groark. In mica-schist, "we're using three methods: drill-and-blast, large impact hammers and a road-header that grinds the rock," he says.

Work will require removal of 12,000 cu yd of material. Exchange Place im-

provements are estimated at \$160 million, the same amount as tunnel repair. The job is expected to wrap next spring, says Greg Trevor, PA spokesman. Across the Hudson, the \$224-million temporary station at the World Trade Center will feature three eight-train platforms, new escalators and elevators and subway access.

The wing walls for the station are already in place. "We're putting in new electrical and communications ducts," Tully says. Within a month, crews will start replacing track. The contractor is on or ahead of schedule on all three repair segments, Tully says, adding that service could resume as early as 2003.

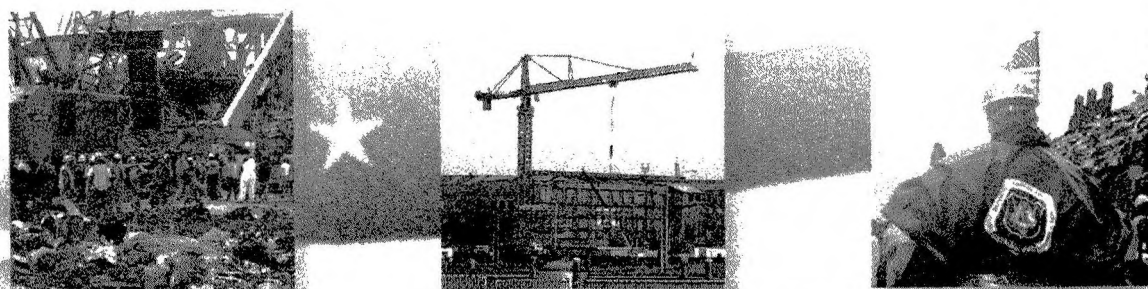
By Andrew Wright and Debra K. Rubin



MOVING ON With clear site at Ground Zero, transit repairs ramped up last spring (top). Subway line is now visible (below).

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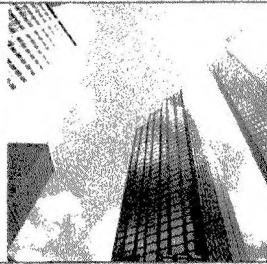


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COVER

Repolished Gem of Lower Manhattan Lifts Lagging Spirits
Team pulls all stops to get grand Winter Garden atrium across West Street from Ground Zero improved—not just repaired—for anniversary of Sept. 11 attacks. PAGE 8

Cover photos by Michael Goodman for ENR (inset) and courtesy of New York City's Office of Emergency Management (background); photo above by Michael Goodman for ENR.

MANAGEMENT Ground Zero's rush response is followed by site's painstaking cost recovery. PAGE 12

HEALTH AND SAFETY A screening program may shed light on exposure to contaminants, but workers are slow to take federally funded exams. PAGE 15

RESTORATION After being down and briefly out, a landmark call center battered on 9/11 powers through a \$1.4-billion upgrade. PAGE 16

UTILITY CONSTRUCTION The devastation of 9/11 spawned an opportunity to vastly improve utilities in the area, as service providers rebuilt and dispersed for better security. PAGE 19

DAMAGED BUILDINGS The future of "ghost buildings" near Ground Zero is shrouded in secrecy and uncertainty. PAGE 20

TRANSIT Money and commitment expedite the push for speedy restoration of train systems affected by the terrorist attack. PAGE 23

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UPDATE

In this issue, the editors of ENR commemorate the first anniversary of the attacks on the World Trade Center towers, as we did last week with the attack on the Pentagon (ENR 9/2 p. 2). Much has happened in the last year as we have adjusted our lives and habits to the reality that the U.S. is at war with an international syndicate of terrorists.

In these two issues, ENR presents, in a special format, a selection of photographs showing the attacks and the construction industry's response to these tragedies. Almost all of those of the World Trade Center site and in the feature on the Pentagon rebuild last week were taken by freelance photographer Michael Goodman, a regular contributor to the pages of ENR. We also provide a look forward at what will be going on at these sites in the years to come.

The poignant pictures of ruin and toil are not ones of despair. We, of course, mourn the dead who were cruelly slaughtered by the terrorists, but we also celebrate the industry that rallied to help the victims and the nation. Unlike the iconoclastic terrorists, the victims and the workers were of all races, sex and creeds. This should send a powerful message to the world that anyone can become a target of these terrorist organizations and also, perhaps even more importantly, that everyone can work and live in relative harmony even though they may not look, sound or pray the same.

With the closing of this chapter on the destruction and cleanup of the World Trade Center towers, another one opens on what will be done at the site. Debates triggered by the attacks over land-use planning, building codes, materials and even design and construction techniques may eventually change the way buildings and cities will look in the future. The answers or solutions to many of the questions posed are not yet clear, but the debate is healthy and almost certain to produce at least positive results.

ENR editors also would like to celebrate and commemorate the designers, builders and workers who constructed the twin towers in the late 1960s and early 70s, as we did on our cover for the Nov. 5, 1970 issue. A big idea in those days was not to have an initial public offering for shares in a worthless company, but to create the world's tallest buildings in the heart of one of the largest and busiest cities. Love 'em or hate 'em, the towers

Engineering News-Record



GIVING BIRTH Towers going up in happier days.

contained 220 acres of space and came to dominate the skyline. They also performed well in tragedy, with the robust structures withstanding the airborne attack, only to succumb to the raging infernos. Their destruction should not necessarily mean the end of tall buildings.

JANICE L. TUCHMAN
Editor-in-Chief

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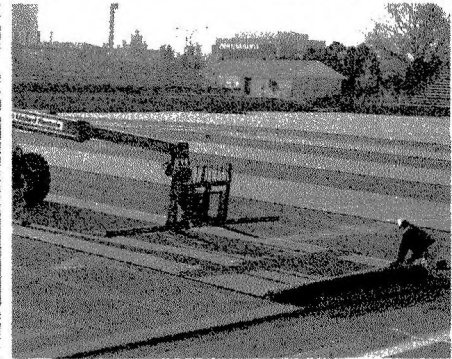
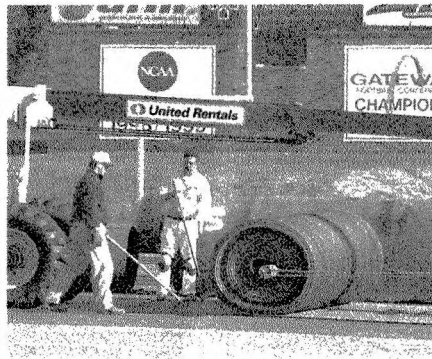
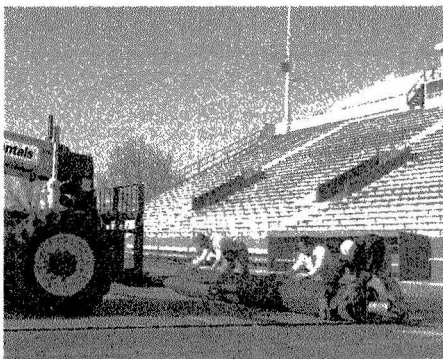
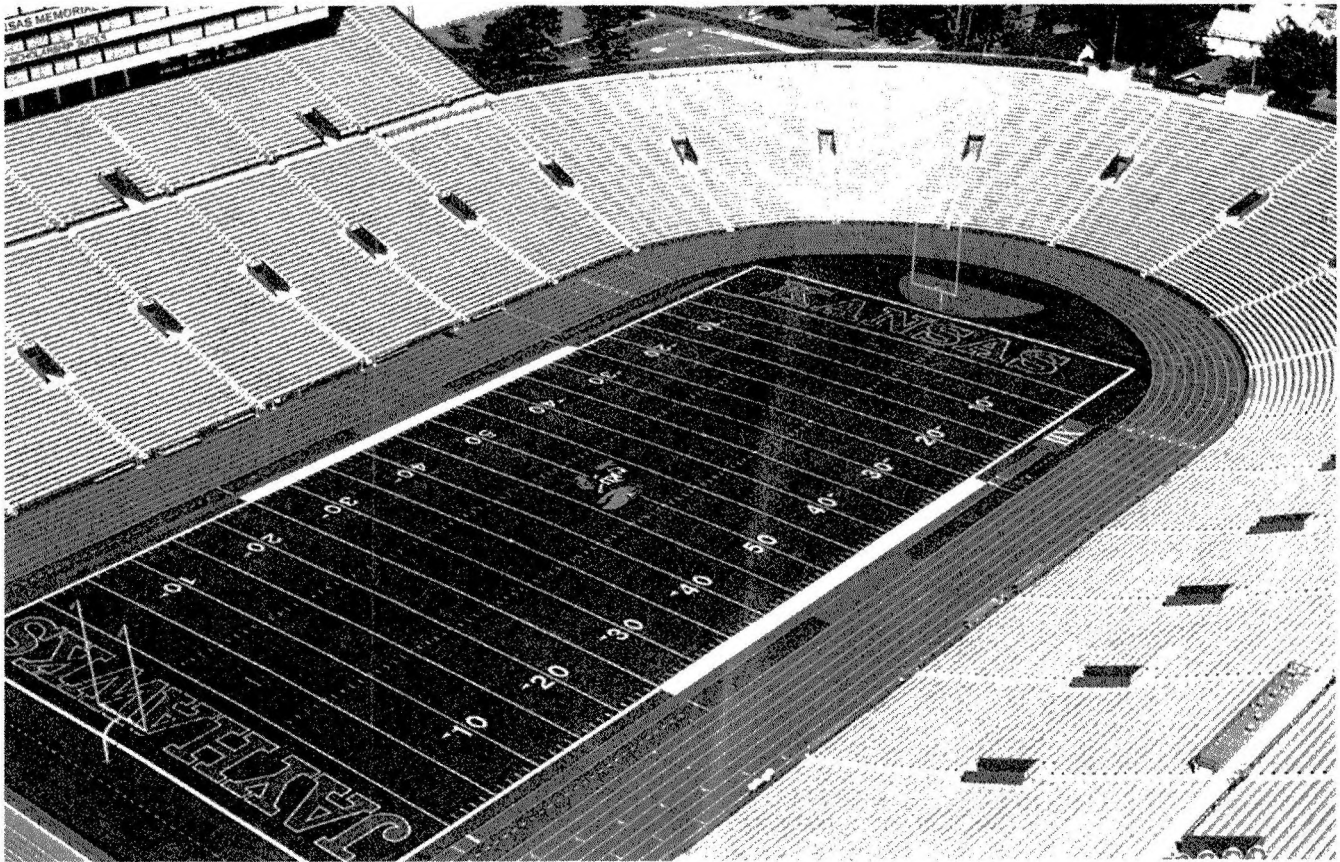
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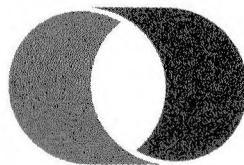
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WASHINGTON OBSERVER

Appropriations, Energy, Insurance on Hill Agenda

President Bush is warming up to fight with Congress over spending as lawmakers race to wrap up 2003 appropriations bills by Oct. 1, the start of the fiscal year. The industry is worried some construction funding may be swept up in the White House-Capitol Hill tussle.

Appropriations top construction's agenda as Congress returns from its August break. Also on the list are terrorism insurance and energy bills—both in House-Senate conferences—and measures to establish a Homeland Security Dept. and to set procedures for probes of building failures. Lawmakers want to finish at least the spending bills by mid-October, so they can campaign for November's election. That won't be easy. The House has finished just five of the 13 measures and the Senate three. "Something has got to give," says David Bauer, vice president of government relations for the American Road & Transportation Builders Association. "Either they get them done...or break, come back and do a lame duck." Signaling his anti-spending stance, on Aug. 13, Bush cut \$5.1 billion in discretionary aid, some for construction, from a \$28.9-billion bill he signed. "I think that greatly contributes to the uncertainty on how this plays out," says Bauer.

The industry cheered when the Senate Appropriations Committee restored \$8.6 billion in highway aid Bush proposed to cut. Construction will push for the House, which

has not acted yet, to match the Senate panel. "I think it's going to be tough since the House has a much lower allocation overall for the transportation program," says Cathy Connor, senior vice president of government affairs for Parsons Brinckerhoff Inc., New York City.

In the energy conference, construction is nervous about a Senate provision to nearly triple the use of ethanol fuel. The federal tax on ethanol is 5.3¢ a gallon less than gasoline. "We know that's going to cost the Highway Trust Fund at least a

billion dollars, maybe two, over the course of its phase-in," says Jeffrey Shoaf, the Associated General Contractors' senior executive director for congressional relations. The Senate partly offsets that by shifting 2.5¢ a gal in ethanol taxes from the general fund to the trust fund.

Also in conference is a bill providing a federal backup for insurers in case of big terrorism-related claims. Bush is pushing for a bill, saying the lack of coverage has hung up \$8 billion in construction.

The House approved a bill to have the National Institute of Standards and Technology lead building failure investigations and give probes authority to get needed information. The Senate has not moved. "They could just take up the House-passed bill," says Casey Dinges, senior managing director for the American Society of Civil Engineers.

The House also approved a Homeland Security Dept. bill that follows Bush's blueprint. A Senate committee cleared its version July 25. But potential snags include Bush's desire for civil service "flexibility" and the Senate panel's application of the Davis-Bacon Act to the new department's construction.

—By Tom Ichniowski, with Sherie Winston

BILL 2003	STATUS
Appropriations	House passed five of 13 bills as of August break; Senate passed three. Bush takes harder line on spending.
Energy	In House-Senate conference. Expansion of ethanol fuel likely. Key issue: Arctic refuge drilling.
Terrorism insurance	Conference ready to start. House, Senate bills provide different types of federal "backstop" for extraordinary claims.
Homeland Security Dept.	House passed, Senate floor action starts early Sept. Final version will be close to Bush plan. Big hurdle: Senate Democrats oppose civil service changes.
Building accident probes	House passed bill putting NIST in charge of investigations. Administration supports it. Senate yet to act.

Source: Congressional Record, ENR

■ Unions Labor Dept. may revise financial reports

The Labor Dept. may accelerate its effort to revise the annual financial disclosure documents—LM-2s—that unions must file with the government. The reasons include public outcry over financial practices at big corporations and charges that accountants helped a construction union hide certain expenses (ENR 9/2 p. 18). Department officials contend that the forms, mandated in 1959, have not been updated and use broad categories where overspending could be easily hidden. Many are filed late. Unions want a bigger role in a rewrite than they have had before.

■ Superfund Senators seek program financing data

Two top Senate lawmakers are keeping a close eye on what they see as the Environmental Protection Agency's slow pace in cleaning up Superfund sites across the nation.

"We continue to be deeply concerned over the slowdown in the pace of cleanup and the inability of [EPA] to make progress at sites that are ready for further action," Environment and Public Works Committee Chairman James M. Jeffords (I-Vt.) and Barbara Boxer (D-Calif.), Superfund subcommittee chair, said in an Aug. 26 letter to EPA Inspector General Nikki Tinsley.

On June 24, Tinsley reported to senior members of the House Energy and Commerce Committee that efforts to clean up 33 Superfund sites in 18 states would be delayed or terminated this year because of a lack of money.

Jeffords and Boxer told EPA to update that report by Oct. 10, and account for all funds and projects through Sept. 30, the end of the fiscal year. "We are also concerned that cleanup delays may create new threats to public health and drive up the cost of cleanup," they said.

EPA officials say the agency plans to release an additional \$100 million for cleanups at the end of September.

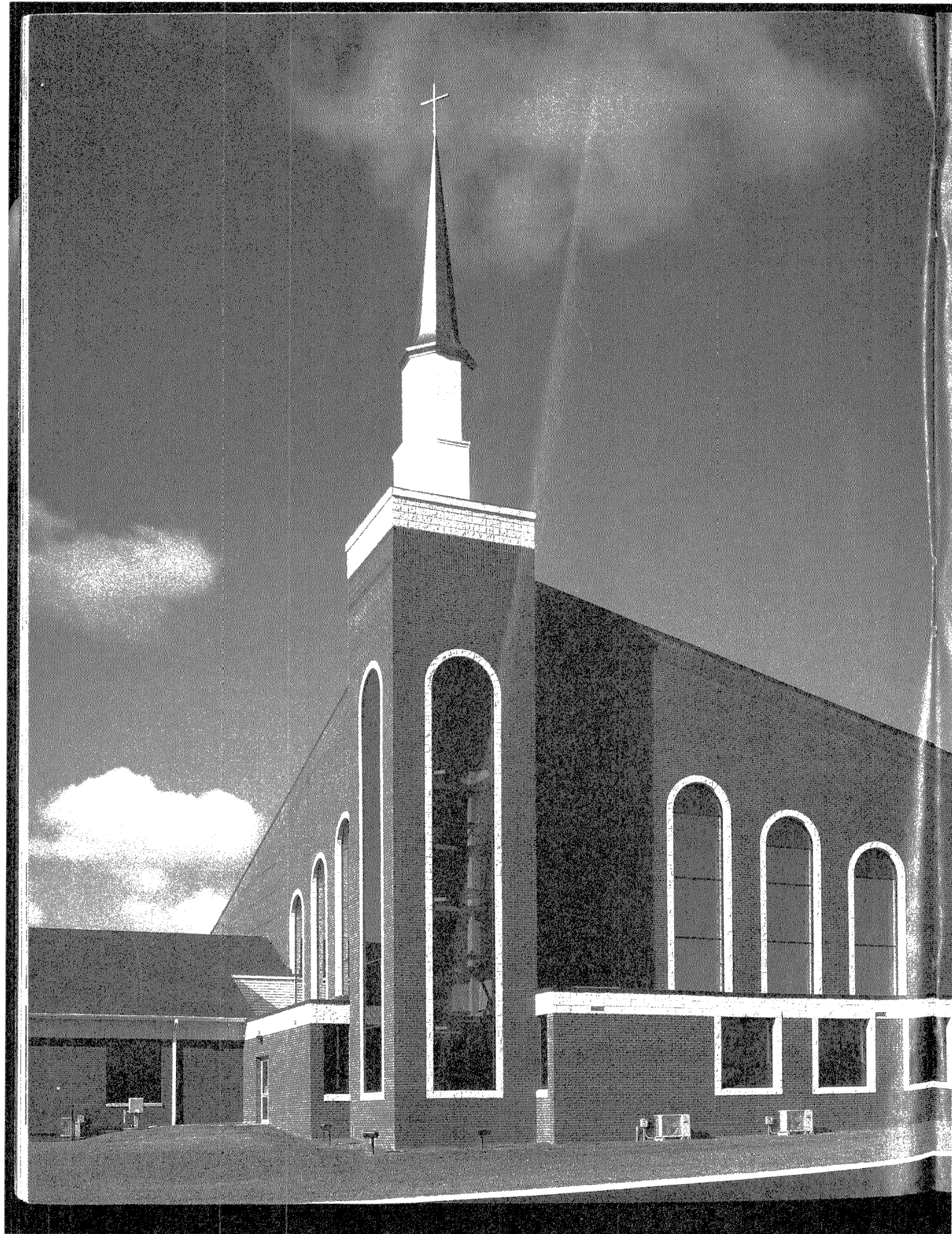
■ Safety OSHA creates office to aid small business

The Occupational Safety and Health Administration is seeking to help small businesses wade through the regulatory process. OSHA's creation of an Office of Small Business is part of a broad restructuring, launched Aug. 27 at the agency. "This reorganization realigns our resources and functions around proven strategies that will produce the best results in reducing workplace injuries and illnesses," says OSHA chief John L. Henshaw.

The small business unit is under a new Directorate of Cooperative and State Programs, which will coordinate compliance assistance. It's the first time OSHA has an organization for this work.

OSHA also set up a unit to develop all safety and health standards. Henshaw says the move will streamline rule-making. OSHA's restructuring doesn't affect its Directorate of Construction.

—Compiled by Sherie Winston

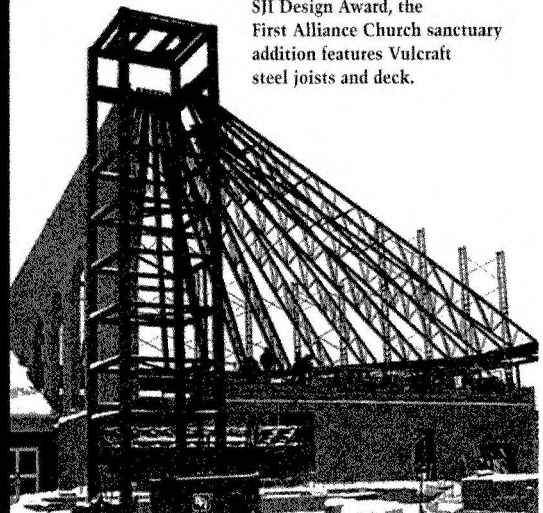


Vulcraft Helped Raise A Church And Lower Its Cost.

When planning a sanctuary addition to the First Alliance Church in Erie, Pennsylvania, both glue-laminated timber and steel joists were considered for the structural system.

Cost analysis showed a 30 percent advantage for Vulcraft steel joists, thus saving the congregation approximately \$600,000.

Winner of a prestigious SJI Design Award, the First Alliance Church sanctuary addition features Vulcraft steel joists and deck.



This was enough to pay for the building fit-out including pews, floor coverings, sound system, stage lighting and custom woodwork.

Steel joists also created greater headroom throughout the building by allowing both the catwalk and mechanical, electrical and plumbing systems to exist inside the structural envelope.

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Unions

LABORERS OPEN A CHARTER SCHOOL

With the Sept. 4 opening of a new school year in Cranston, R.I., high school students will be able to choose more than just extra curricular activities. The city's first charter school will open its doors to a freshman class with an interest in construction.

The New England Laborers-Cranston Public Schools Construction Career Academy is a partnership between the laborers' union and the Cranston Public Schools. It will offer students a "project-based integrated system" that merges a construction-specific curriculum with required classes in math, science, English, reading and social studies.

A math lesson might require students to calculate how many cubic yards of concrete need to be poured for a specific project, says Armand E. Sabitoni, general secretary treasurer of the Laborers' International Union of North America and also its New England regional manager. All aspects of construction and environmental remediation will be taught in the school, the union's first. Graduates from the accredited program will earn a high school diploma and be able to enter the job market at the apprenticeship level or go on to college.

The laborers have a mandate from members to become an apprenticeable craft by 2004. This goal, coupled with continuing labor shortages, was key to starting the charter school. The number of qualified recruits was shrinking, says Sabitoni. Recruiters from the union's training centers were having difficulty finding candidates who were drug free and had a high school education. "Our goal was to replace some of the graying journeymen," he says.

Union officials got the idea of a construction-oriented charter school from one started two years ago in St. Louis. The Cranston public school system was a willing partner. The third-largest city in Rhode Island with a population of 76,000, Cranston was home to two public high schools and a vocational program that taught home and interior building skills as part of its curriculum.

By teaming with the union, the school



SCHOOL DAYS Construction curriculum will merge with traditional studies.

district is able to "bring international industry experience, innovation and the additional resources necessary to expand and improve opportunities for a currently underserved population," says the city. "We saw it as a golden opportunity," says



SABITONI

laborers' General President Terence M. O'Sullivan, a former high school teacher. Lining up local and state approval and initial funding took about a year to complete, much quicker than the typical 18 months to three years often required to start a charter school, says Sabitoni.

Funds for the school come from the federal and state government and from the union. The feds and the state allotted \$9,000 per student in start-up costs and the state kicked in an additional grant of \$130,000. The laborers' union is contributing \$500,000. It will be spent on computers, desks and other equipment, and about \$75,000 will go for salary and benefits to three union instructors who will work with five teachers in the classroom. The teachers, four entry-level and one experienced, will be paid the standard teachers' union scale.

The expected freshman class of 42

boys and 10 girls will attend classes in a five-year-old, 22,000-sq-ft building that formerly housed a jewelry manufacturer. The school system and the union contributed funds, building materials and labor to renovate the building. The site is near one of the traditional high schools, allowing students to participate in sports and hobbies. "All those things were on the plus side for us not going solo," says Sabitoni.

The school is governed by a seven-member board of directors, which includes two union representatives, a union contractor, the head of the local teachers' union, a parent and two school district officials. All governance and financial decisions are funneled through the board, says Sabitoni.

"We got to the finish line," Sabitoni says with a sigh of relief. "I'm sure we're going to have some growing pains." Sabitoni says the union also is launching a pilot program in the Medford, Mass., public school system. An instructor from the union's regional training academy will teach in the local vocational school, possibly as a precursor to starting another charter school. □

By Sherie Winston

Alternative Fuels

TIRE-FIRED PLANT SET FOR NEVADA

A PATENTED GENERATION TECHNOLOGY that produces salable by-products from combustion of waste tires with ultra-low levels of harmful emissions will give new meaning to "burning rubber." Castle Rock, Colo.-based Nathaniel Energy Corp.'s proprietary "thermal combustor" will be the core of a 25-Mw prototype tire-fueled powerplant in Tonopah, Nev.

Under a memorandum of understanding signed last month, the Science and Technology Regional Development Corp., Nye County's development entity, will provide land and grant assistance in exchange for economic development by Nathaniel Energy. The \$25-million project, scheduled to start construction in January, will become the anchor tenant of a 3,100-acre industrial park.

"We're working on a master plan to include similar environmentally minded industrial facilities," says Dennis Chavez, Nye County manager. Industrial Systems Inc., Delta, Colo., will perform as engineering, procurement and construction contractor. The facility will consist of five combustors, five 85-million-btu-per-hour boilers and a 25-Mw steam turbine.

Tires shredded into 2-in.-minus chunks are to be combusted in a two-stage gasification process, with temperatures reaching 3,000° to 4,000°F. The vendor says that high heat, nearly double that of a standard burner, helps bring harmful emissions 8 to 10 times below current Environmental Protection Agency requirements. The process also has a 40% fuel efficiency and uses under 1,000 gal of water per day. Salable byproducts include carbon black, CO₂ and sulfur.

"We have made a large effort to make it as clean as possible," says Brian Culvey, Nathaniel Energy's vice president of engineering. "[The process] was originally developed in the early 1980s and the design has been modified over time. We can now meet EPA regulations through at least 2010."

"Since tires are made mostly from oil, they have a high energy content," says CEO Stan Abrams. "It's a cheaper kilowatt per hour than gas or coal, because people pay us to take tires from them—so it's a cost-negative fuel."

There were 5.6 billion tons of tires discarded last year, containing 32 million Btu per ton, says the Rubber Manufacturers Association, Washington, D.C. The Tonopah plant will burn about 10 million tires, or 100,000 tons, annually. □

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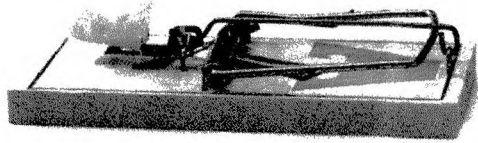
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CONSTRUCTION ECONOMICS

COST INDEXES



CONSTRUCTION COST INDEX
Lower lumber prices pulled the CCI down 0.1% this month. Inflation also dipped 0.1%, to a 3.1% annual rate.

20-CITY: 1913=100	SEPT. 2002 INDEX VALUE	% CHG. MONTH	% CHG. YEAR
CONSTRUCTION COST	6588.70	-0.1	+ 3.1
COMMON LABOR	14003.42	0.0	+ 4.5
WAGE \$/HR.	26.61	0.0	+ 4.5

BUILDING COST INDEX

The BCI's year-to-year increase climbed from 1.2 to 1.6%, powered by a 0.4% jump in the index's labor component.



20-CITY: 1913=100	SEPT. 2002 INDEX VALUE	% CHG. MONTH	% CHG. YEAR
BUILDING COST	3654.99	+0.2	+ 1.6
SKILLED LABOR	6264.38	+0.4	+ 4.0
WAGE \$/HR.	34.92	+0.4	+ 4.0



MATERIALS COST INDEX

The MCI has come within 2.5% of last year's level. Last month, it was down 4.8% from a year ago.

20-CITY: 1913=100	SEPT. 2002 INDEX VALUE	% CHG. MONTH	% CHG. YEAR
MATERIALS	2044.19	-0.3	- 2.5
CEMENT \$/TON	82.34	0.0	+ 0.9
STEEL \$/CWT	26.81	-0.1	- 2.5
LUMBER \$/MBF	463.48	-0.6	- 3.0

Baltimore



Inflation Remains Low

Building costs in Baltimore are up just 0.2% more than the national average, according to the city's BCI. Cement prices in the city are up 3.2% for the year but lumber prices remain 8.2% below 2001's level. Wages for skilled workers show a 5.8% annual increase.

COST INDEXES BY CITY

1913=100 CITY	CONSTRUCTION COST SEPT. '02 INDEX	% CHG. YEAR	BUILDING COST SEPT. '02 INDEX	% CHG. YEAR	COMMON LABOR SEPT. '02 INDEX	% CHG. YEAR	SKILLED LABOR SEPT. '02 INDEX	% CHG. YEAR	MATERIALS SEPT. '02 INDEX	% CHG. YEAR
ATLANTA	4226.07	+ 4.5	2979.57	+ 1.8	7826.32	+ 6.8	4551.95	+ 3.6	2019.46	- 0.6
BALTIMORE	4633.42	+ 1.2	3178.24	+ 1.8	9026.32	+ 3.2	5203.60	+ 5.8	1941.00	- 4.2
BIRMINGHAM	4722.35	+ 3.2	2784.34	- 0.7	9300.00	+ 6.3	4205.41	+ 3.0	1916.70	- 5.2
BOSTON	7586.82	+ 7.3	3992.00	+ 0.8	17052.63	+ 9.8	7602.40	+ 3.3	1785.19	- 5.2
CHICAGO	8013.01	+ 2.9	4269.73	+ 0.6	17394.74	+ 5.1	7553.75	+ 4.4	2262.92	- 6.4
CINCINNATI	6031.56	+ 3.1	3239.46	+ 1.8	12657.89	+ 3.7	5317.12	+ 2.3	1970.26	+ 1.1
CLEVELAND	7097.55	+ 2.1	3705.58	+ 0.2	15265.79	+ 3.5	6347.75	+ 2.4	2091.21	- 3.6
DALLAS	3888.89	+ 1.0	2677.74	+ 0.1	7057.89	+ 2.1	3875.68	+ 1.5	1946.60	- 1.6
DENVER	4881.35	+ 4.4	3062.20	+ 2.1	9521.05	+ 6.7	4739.94	+ 4.9	2037.65	- 1.7
DETROIT	7663.81	+ 3.7	4151.63	+ 3.2	16715.79	+ 4.3	7482.88	+ 4.3	2115.82	+ 1.1
KANSAS CITY	6791.96	+ 3.8	3617.62	+ 1.0	14315.79	+ 6.5	5969.97	+ 5.6	2180.58	- 5.8
LOS ANGELES	7415.76	+ 2.6	3800.77	+ 2.9	16131.58	+ 3.6	6627.03	+ 5.4	2073.80	- 1.8
MINNEAPOLIS	7673.93	+ 4.8	3913.65	+ 4.1	16821.05	+ 5.4	6934.53	+ 5.4	2067.63	+ 1.5
NEW ORLEANS	3948.81	+ 1.0	2645.18	+ 0.1	7273.68	+ 4.0	3848.05	+ 4.9	1910.98	- 5.3
NEW YORK	10087.27	0.0	5516.42	+ 3.3	23176.32	0.0	11162.16	+ 5.0	2064.96	- 1.8
PHILADELPHIA	8231.51	+ 5.7	4533.96	+ 4.3	17736.84	+ 7.3	8016.82	+ 7.2	2405.65	- 1.2
PITTSBURGH	6424.77	+ 1.6	3652.70	+ 0.8	13589.47	+ 3.0	6302.70	+ 3.4	2033.50	- 3.7
ST. LOUIS	7226.52	+ 2.1	3552.10	- 0.6	15973.68	+ 3.2	6312.31	+ 1.0	1865.36	- 3.6
SAN FRANCISCO	7656.86	+ 3.4	4076.43	+ 1.2	16752.63	+ 4.6	7339.94	+ 2.8	2082.03	- 2.1
SEATTLE	7571.73	+ 3.3	3750.44	+ 1.2	16478.95	+ 3.8	6431.23	+ 1.4	2112.47	+ 0.8
MONTREAL	6994.17	+ 5.2	3921.18	+ 2.1	14168.42	+ 8.4	6089.49	+ 7.1	2597.04	- 4.3
TORONTO	8125.07	+ 0.4	4163.98	+ 2.1	17405.26	0.0	6990.39	+ 2.0	2437.20	+ 2.2

SEWER, WATER AND DRAIN PIPE

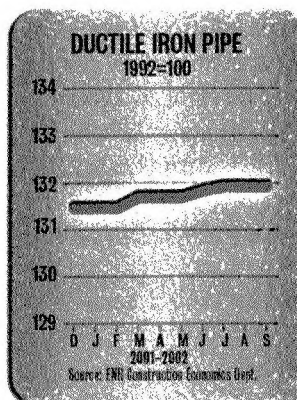
ITEM	UNIT	ATLANTA	BALTIMORE	BIRMINGHAM	BOSTON	CHICAGO	CINCINNATI	CLEVELAND	DALLAS	DENVER	DETROIT	KANSAS CITY
REINFORCED CONCRETE PIPE (RCP) 12"	ft	8.56	15.85	8.45	-5.99	5.74	8.50	7.00	14.00	9.57	10.95	8.90
24"	ft	18.00	27.50	21.97	-13.80	12.20	18.55	17.00	27.25	13.35	33.25	24.50
36"	ft	36.20	50.85	35.24	-29.30	28.00	36.40	35.00	56.50	40.10	68.10	38.00
48"	ft	52.30	91.00	57.51	-49.00	43.00	58.60	57.00	91.00	57.06	102.40	66.00
CORRUGATED STEEL PIPE												
12"	ft	4.58	6.36	4.80	+5.12	6.57	4.99	6.30	5.72	5.10	4.82	10.26
36"	ft	15.05	18.51	14.20	+16.08	23.63	16.05	18.24	19.50	17.12	20.25	28.62
60"	ft	32.64	38.04	32.50	+37.73	53.05	38.00	53.00	27.87	50.02	62.00	77.92
VITRIFIED CLAY PIPE (VCP) premium joint												
12"	ft	—	—	—	—	—	—	11.52	—	—	11.43	7.63
24"	ft	—	—	—	—	—	—	43.12	—	—	38.56	33.39
POLYETHYLENE PIPE (PE), underdrain 4"	ft	0.40	—	0.32	0.35	0.79	0.34	0.27	0.35	0.44	0.23	—
POLYVINYLCHLORIDE PIPE (PVC), sewer												
4"	ft	0.85	1.20	0.88	0.98	0.82	0.69	-0.82	0.90	0.57	1.30	0.90
8"	ft	2.24	3.35	3.01	2.90	2.61	4.22	2.50	1.33	1.77	3.85	2.70
water 6"	ft	3.10	2.56	2.90	3.35	3.03	4.70	3.85	3.09	2.25	4.60	2.20
8"	ft	4.45	4.10	4.54	6.80	5.23	7.73	6.66	4.62	3.84	8.55	5.00
12"	ft	9.11	5.85	8.87	12.85	11.20	15.50	14.25	9.23	8.10	16.40	11.10
DUCTILE IRON PIPE (DIP) 6"	ft	8.00	9.80	5.15	8.79	8.07	6.10	8.25	8.10	6.40	10.35	5.05
8"	ft	10.56	12.30	7.05	12.08	13.82	10.00	11.25	10.90	8.58	13.30	6.95
12"	ft	16.80	20.78	12.15	19.98	22.67	12.95	18.75	17.60	13.94	21.20	+11.90
COPPER WATER TUBING, type L 1/2"	ft	0.80	-0.39	0.91	+0.50	2.30	0.71	0.63	0.54	0.67	0.60	+0.95
1 1/2"	ft	2.59	1.58	3.55	+1.94	4.85	2.79	2.43	1.77	2.25	2.31	+3.70

+ or - denotes price has risen or fallen since previous report; a=meters, includes federal tax; b=meters, excludes tax; c=1.5 meters. Monthly market quotations by ENR field reporters Sept. 2, 2002. All prices are spot prices quoted from a single source. Quotes are delivered prices unless noted. Some prices may include taxes or discounts for prompt payment, etc. Product specification may vary, depending on what is most commonly used or most accessible in a city. All quantities are truckloads unless noted. Quotes for Montreal and Toronto are in Canadian dollars and metric units. RCP pipe is ASTM C76; 12-in. and 24-in. are rubber-gasket jointed, others are nongasketed. Corrugated steel pipe is plain galvanized; 12-in. is 16-gauge, 36-in. is 14-gauge, 60-in. is 12-gauge. (continued on p. 44)

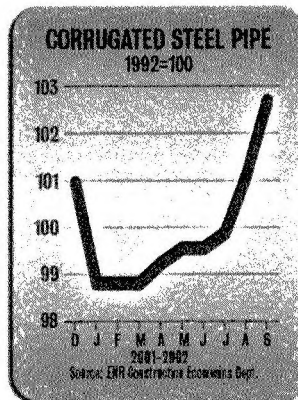
For a complete history of cost indexes, visit our Website, enr.com.

CONSTRUCTION ECONOMICS

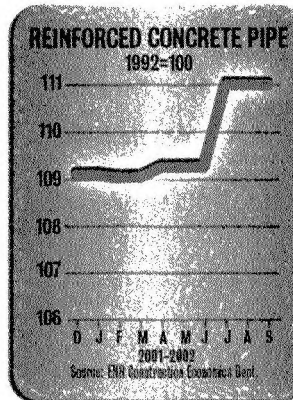
ENR'S MATERIALS PRICE INDEXES



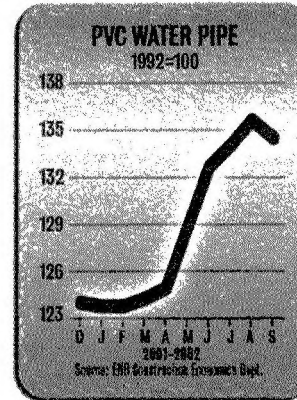
Prices have increased just 0.3% since last December.



Despite a strong rebound, prices remain below 2001.



July's 1.6% price increase appears to be holding.



A 0.9% decline checked an 8% rebound in prices.

RCP and PVC Prices Decline

Prices for reinforced concrete pipe and PVC water pipe both slipped this month. RCP prices fell 0.1% but remain between 1.7 and 3.5% higher than a year ago. A 0.9% monthly decline in PVC water pipe prices checked a strong rebound that saw prices climb 8% between May and August. PVC prices have now almost fully recovered from last year's collapse and are just 0.4% below September 2000.



20-CITY AVERAGE

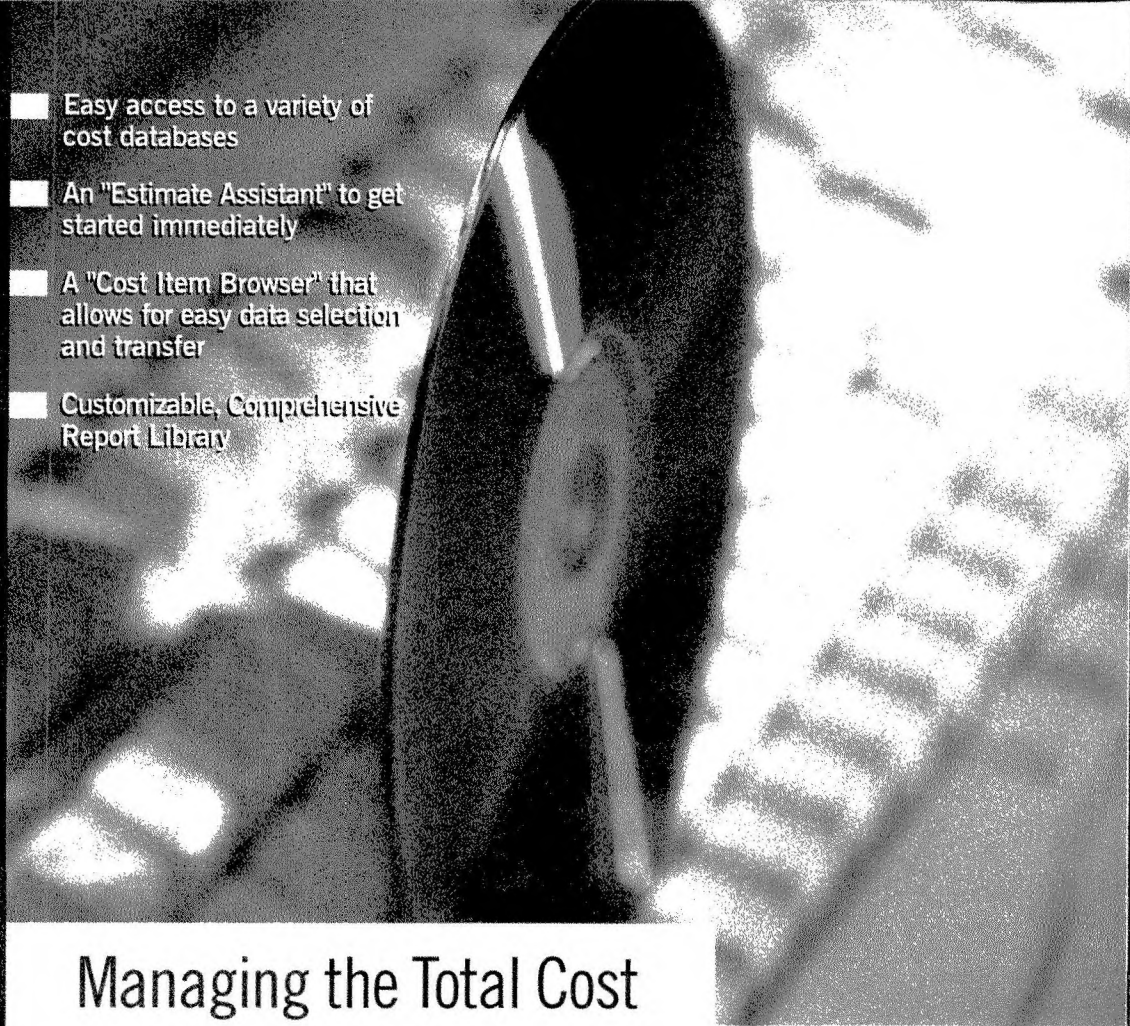
ITEM	UNIT	PRICE	% CHG. MO.	% CHG. YEAR
REINFORCED CONCRETE PIPE (RCP) 12"	ft	9.64	0.0	+3.5
24"	ft	19.75	-0.1	+1.7
36"	ft	39.46	-0.1	+2.3
48"	ft	64.77	-0.1	+2.7
CORRUGATED STEEL PIPE 12"	ft	5.90	+0.3	+3.8
36"	ft	18.54	+1.6	+0.2
60"	ft	46.80	+0.4	-5.7
VITRIFIED CLAY PIPE (VCP), premium joint				
12"	ft	10.97	0.0	+2.2
24"	ft	43.86	0.0	+2.1
POLYETHYLENE PIPE (PE), underdrain 4"	ft	0.42	0.0	+4.3
POLYVINYLCHLORIDE PIPE (PVC), sewer				
4"	ft	0.88	0.0	+4.9
8"	ft	2.87	0.0	+6.4
water, 6"	ft	3.41	-0.8	+6.0
8"	ft	5.84	-0.9	+5.2
12"	ft	12.20	-0.9	+6.2
DUCTILE IRON PIPE (DIP) 6"	ft	8.26	0.0	+2.9
8"	ft	11.50	0.0	+1.5
12"	ft	17.97	+0.1	+2.0
COPPER WATER TUBING, type L, 1/2"	ft	0.77	+0.6	+1.6
1 1/2"	ft	2.60	+0.9	+6.5

SEWER, WATER AND DRAIN PIPE

ITEM	UNIT	LOS ANGELES	MINNEAPOLIS	NEW ORLEANS	NEW YORK	PHILADELPHIA	PITTSBURGH	ST. LOUIS	SAN FRANCISCO	SEATTLE	MONTREAL	TORONTO
REINFORCED CONCRETE PIPE (RCP) 12"	ft	9.20	14.00	9.70	10.36	7.90	9.00	9.05	9.26	10.80	47.50a	43.62a
24"	ft	20.67	25.30	18.58	16.24	12.90	16.00	15.34	22.42	20.10	144.15a	84.83a
36"	ft	37.79	60.90	36.87	35.20	24.50	30.00	29.25	38.52	42.40	294.75a	226.94a
48"	ft	62.74	106.00	64.00	56.36	40.30	51.00	49.14	63.01	78.00	492.25a	375.58a
CORRUGATED STEEL PIPE												
12"	ft	5.78	4.95	5.88	4.98	4.47	6.95	6.87	5.81	7.64	—	30.18a
36"	ft	18.65	17.60	15.74	20.03	14.50	19.77	11.91	18.71	26.69	—	104.27a
60"	ft	48.72	48.76	38.26	45.85	37.50	57.00	46.42	49.01	61.78	159.90	231.59a
VITRIFIED CLAY PIPE (VCP), premium joint												
12"	ft	10.48	8.93	—	15.75	12.10	8.66	7.49	11.01	15.62	—	—
24"	ft	42.39	41.11	—	—	60.75	43.35	40.40	42.36	53.20	—	—
POLYETHYLENE PIPE (PE), underdrain 4"	ft	0.44	0.65	0.62	0.37	0.29	0.25	0.58	0.47	0.32	—	0.35a
POLYVINYLCHLORIDE PIPE (PVC), sewer												
4"	ft	0.91	0.95	0.75	0.82	0.82	0.71	0.80	0.95	0.90	6.69 b	-3.27a
8"	ft	2.78	3.40	2.83	3.20	3.20	2.64	2.74	2.94	3.10	22.56b	16.90a
water 6"	ft	3.10	4.70	3.36	4.34	4.34	-2.59	3.82	3.26	3.10	33.58b	25.10a
8"	ft	5.48	7.80	5.60	7.50	7.50	-4.47	6.61	5.54	4.85	64.81b	41.00a
12"	ft	11.39	16.46	11.14	16.08	16.08	-9.58	20.29	11.52	8.90	102.33b	76.45a
DUCTILE IRON PIPE (DIP) 6"	ft	8.10	7.85	8.30	13.17	8.34	8.83	13.76	8.12	4.70	27.10	27.04a
8"	ft	11.33	11.30	11.40	17.83	11.03	11.42	18.93	11.99	8.00	39.33	38.40a
12"	ft	16.20	18.60	18.80	28.88	17.64	18.64	18.42	16.48	17.10	64.96	63.35a
COPPER WATER TUBING, type L, 1/2"	ft	0.72	0.53	0.68	+0.50	0.50	-0.49	0.96	0.73	1.19	3.45	0.96
1 1/2"	ft	2.41	2.08	1.90	+1.94	2.11	-1.99	4.27	2.43	3.20	4.22	5.71

CANADA

(Continued from p. 43) 12-gauge. VCP pipe is ASTM C700, ES. PE pipe is M252, perforated and corrugated. PVC sewer pipe is ASTM D-3034, SDR-35. PVC water pipe is C900, CL 150. DIP pipe is CL 150 with a push-on joint. Copper water tubing pipe is hard and i.d. The above prices are not intended to represent the prevailing or average price in a city but are designed to track price movement from a single source for a given product quantity and specification over time.

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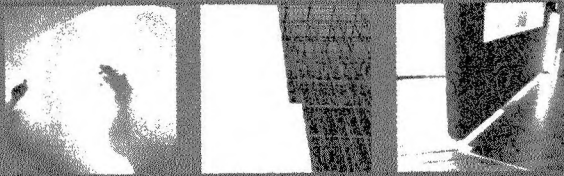
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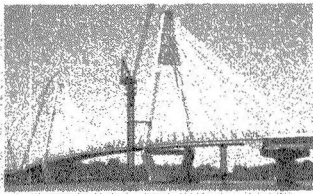
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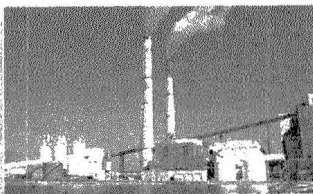
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PRODUCTS



DUMP TRUCK Fully Hydraulic Brake System

The newly designed HD465-7 dump truck replaces model HD465-5. It is fitted with a Tier II compliant Komatsu engine that provides the 217,820-lb haul truck with 715 fwhp, allowing up to a 61-ton capacity payload. The HD475-7 also has a new airtight, fully hydraulic front brake system, a new two-door, walk-through cab as well as a large automatic retarder that enables the operator to select the maximum safe operating speed on downhill travel while fully loaded. KOMATSU AMERICA CORP.; 847/970-4100; www.komatsuamerica.com

WALK-BEHIND LASER SCREED Internal Laser Control Box

The S-9210 CopperHead is a 10-in.-wide x 82-in.-long x 41-in.-high walk-behind laser screed weighing 660 lb. It automatically cuts and screeds concrete to a finished grade with just a two-person crew, one for guidance and one for raking. The machine is highly maneuverable providing multidirectional screeding action. It also has an internal laser control box that allows the unit to continue screeding in column block situations. SOMERO ENTERPRISES; 800/419-0790; www.somero.com

CRANE Aerial Work Platform Capabilities

Crane model ECL-5-135 is equipped with a large 500-lb capacity, 30 x 54-in. work platform that can accommodate two workers and accessories. Its fully powered telescoping boom, with no jibs or extensions, reaches its maximum working tip height of 135 ft. The unit has a narrow 16-ft outrigger spread and can be mounted on a standard tandem-axle truck chassis. ELLIOTT EQUIPMENT CO.; 402/592-

4500; www.elliottequip.com

DIAMOND BLADE See-Through View

Power Twister diamond blade is used to cut quickly and accurately through both metal and concrete at the same time. Users can watch the cutting process from either side of the blade by looking directly at the cut or looking through the blade as it turns. Applications include steel guard rails, steel, iron, ductile iron, rail road tracks and more. FIRST EDITION PRODUCTS; 877/276-7300; www.firsteditionproducts.com

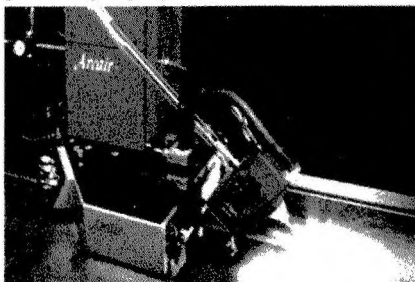


HALF-MASK Respiratory Protection Solution

Cirrus limited use half-mask is designed for short-term construction projects. It is available in two sizes. The mask is made from thermo-plastic elastomer material and can withstand physical and chemical exposure. DRAEGER SAFETY INC.; 800/922-5518; www.draeger.net

METAL REMOVAL SYSTEM Automatic Controller

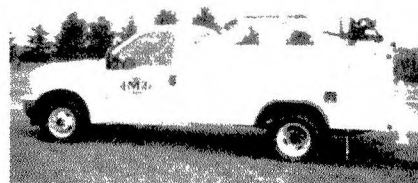
Arcair-Matic N6000 provides a versatile combination of control, uniformity and productivity in automated air carbon-arc process gouging. The system features an



advanced automatic controller, 1,600-amp contractor and the latest Arcair torch head, with a nozzle assembly designed to reduce air turbulence for better metal removal efficiency. Tweco Arcair; 800/231-9353; www.tweco.com

MIDSIZE CRANE BODY Small to Midsized Lifting Tasks

The DSC20, a new crane body rated for up to 20,000 ft-lb, provides a solution for users who require less lifting capacity but



still need durability and strength in a lighter, midsize body. The crane body has the ability to employ the maker's popular 2020 telescopic crane. It complements the Dominator series used for larger equipment. IOWA MOLD TOOLING CO. INC. (IMT); 515/557-2062; www.imt.com

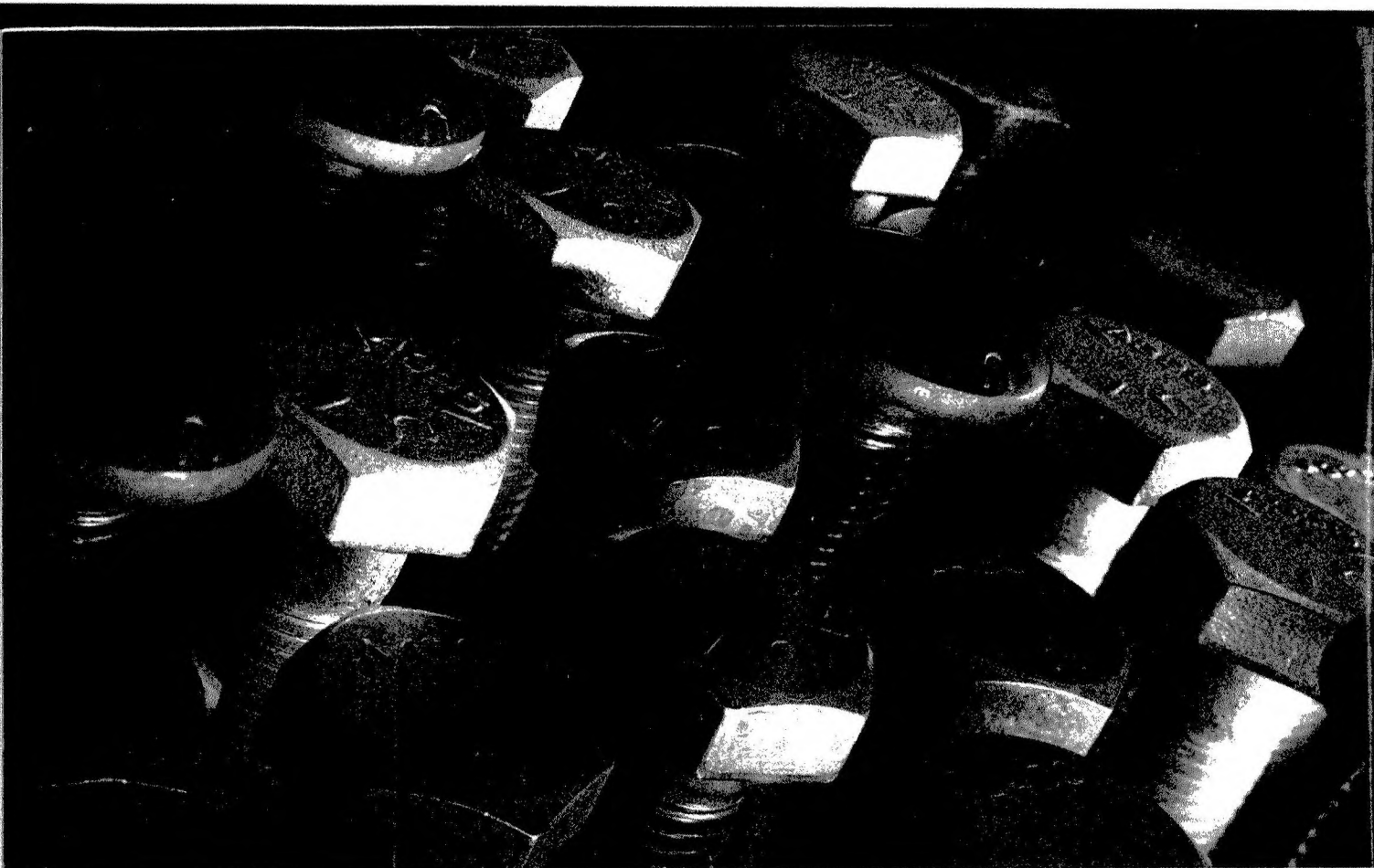
COUPLER SYSTEM Universal Unit

Hardrock coupler withstands rugged abuse from tough jobs and is the only pin grabber that is hammer guaranteed, the maker says. It helps speed up workflow by allowing the user to change attachments in seconds from within the cab. It also works with attachments for every brand of excavator within its weight class. KENCO CORP.; 724/238-3387; www.kencoattachments.com.



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Select the product information you want and contact the manufacturer at either the Website or phone number provided.



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- ASTM A490 structural bolts (plain only)
- ASTM A490 Tru-Tension Assemblies (nut, bolt, washer)
- ASTM grades C, DH, heavy hex nuts (plain, M.G., H.D.G.)
- ASTM grades 2H, C3, DH3 heavy hex nuts (plain)

METRIC PRODUCT

- ASTM A325M structural bolts (diameters M20, 22, 24 in plain, M.G., H.D.G.)
- ASTM A563M class 10S nuts (plain, M.G., H.D.G.)

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PULSE

PLANNING

ALASKA URS Corp. has been awarded a contract by the U.S. Forest Service to provide a wide range of **environmental engineering services** at the Tongass National Forest. Most of the work in this three-year contract will be associated with investigations at former mine sites and logging camps. *URS Corp., 2700 Gambell St., Anchorage 99503.*

CONNECTICUT-MASSACHUSETTS- NEW HAMPSHIRE-NEW JERSEY-NEW YORK-OHIO-PENNSYLVANIA-RHODE ISLAND Gulf Interstate Engineering Co. has been awarded a contract by Tennessee Gas Pipeline to provide design services for their **2002 Drawing Currentization Project**, which consists of 322 meter stations in its northern district. The scope will include site visits to each of the meter stations located throughout the above-mentioned states, updating drawings with collected field information, then submitting final, updated drawings to Tennessee Gas Pipeline and inputting the current information

into their system. *Gulf Interstate Engineering Co., 1700 West Loop South, P.O. Box 56288, Houston, Texas 77256-6288.*

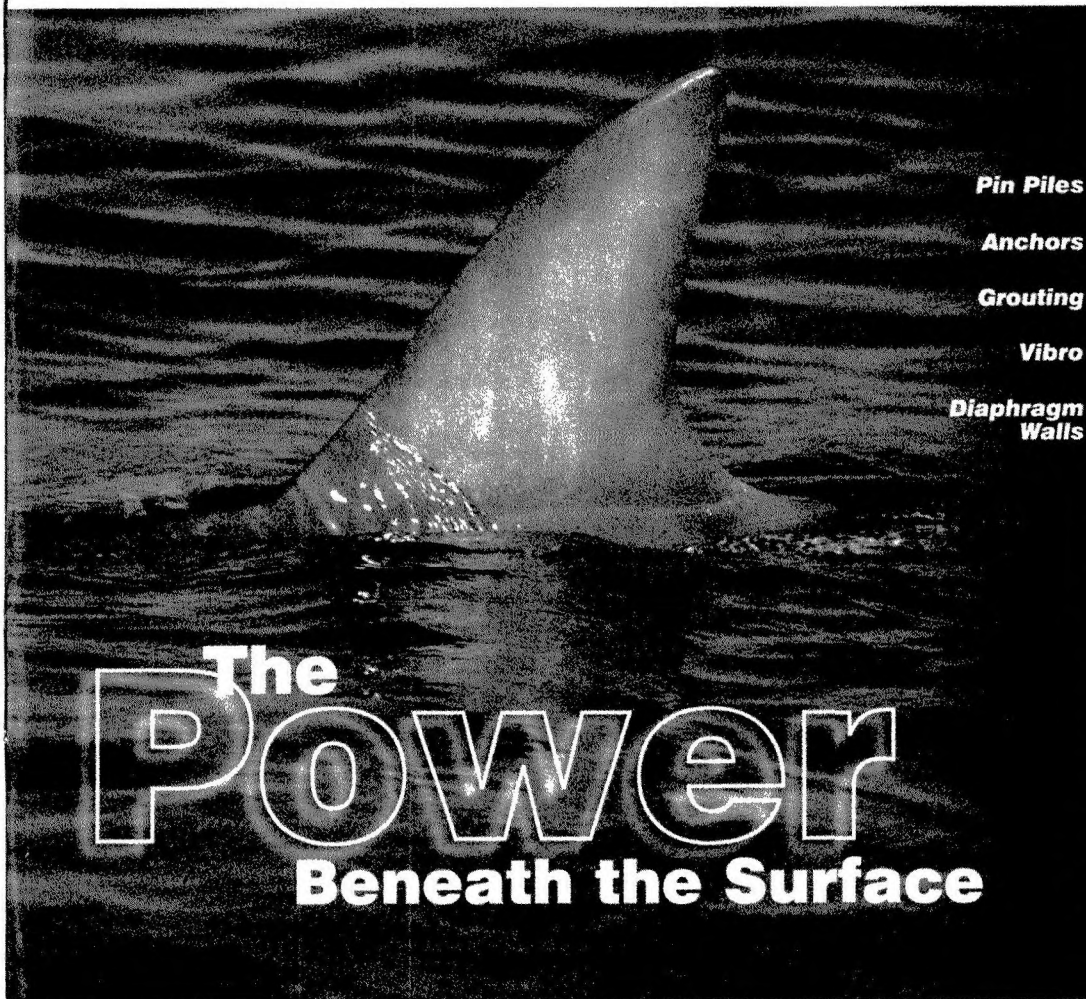
ILLINOIS-NEW JERSEY-PENNSYLVANIA Washington Group International is one of two firms selected by Exelon Nuclear as engineer of choice to provide engineering services for its **17 nuclear power generating units** at 10 sites located in the states listed above. The value of this contract for over the next three years is estimated between \$20 million and \$30 million. It will also include two options for one-year extensions that could bring the total period to five years. *Washington Group International Inc., 720 Park Blvd., Boise, Idaho 83729*

NEW JERSEY The City of Hoboken has retained Schoor DePalma to design a new synthetic turf **soccer field** at Sinatra Park in Hoboken. This field will replace an existing natural grass soccer field and provide a safer, more durable playing surface. It also will better withstand weather, foot traffic, sunlight, pollution and heavy weight, as well as resist rot, mold, mildew

and microbial attacks. *Schoor DePalma, U.S. Highway 9, Manalapan 07726-3072.*

NEW YORK The Battery Park City Authority has awarded a contract to Parsons Brinckerhoff Power to serve as program manager/owner's representative for the development and implementation of the Battery Park City **energy master plan**. The contract involves managing energy consultants that will develop the energy master plan, implementing the projects recommended in the energy master plan and providing construction management services during construction. Projects under consideration could possibly include combined heat and power, fuel cells, microturbines, and/or solar voltaic. The energy program at Battery Park City is slated for completion in 2007. *Parsons Brinckerhoff Power, One Penn Plaza, New York City 10119.*

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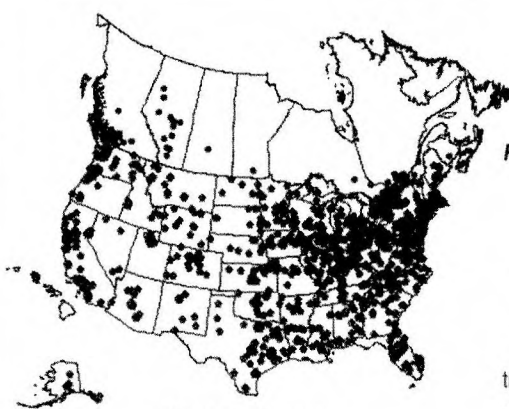
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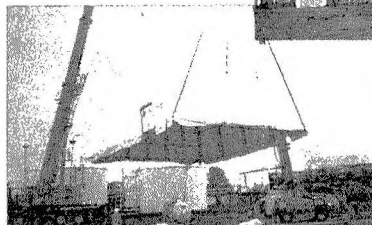
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PULSE

OHIO The Columbus Public School District has selected URS Corp. as executive architect for a \$1.3-billion program to **rebuild and renovate** over 120 school facilities in Columbus. URS is one of three firms that will provide architectural and engineering design services for the school district's construction of more than 50 buildings and the renovation of nearly 70 structures. The initial assignments include development of a comprehensive implementation plan and master planning in anticipation of bond passage in November. *URS Corp., 277 W. Nationwide Blvd., Columbus 43215.*

PENNSYLVANIA East Whiteland Township has selected Schoor DePalma to perform an inflow and infiltration study of the **sanitary sewer system**. The study will combine state-of-the-art flow monitoring procedures with geographic information systems digital mapping technology to create an interactive tool that the township will use to pinpoint areas where ground and surface water may be infiltrating the sanitary sewer system. *Schoor DePalma, Schoor DePalma, U.S. Highway 9, Manalapan, N.J. 07726-3072.*

RHODE ISLAND EDI Ltd. has been awarded a contract valued at more than \$1 million for network design project at Brown University in Providence. The contract calls for a four-phase plan designed to take the university to a new level of data networking capability. It involves **network modeling, infrastructure upgrades, security and redesign**, ultimately allowing the school to use the latest technology and provide consistency across the campus. The first phase, conducting a complete campus survey of infrastructure and system networks, is under way. Total completion of this multiphase design project is expected in 15 months. *EDI Ltd., 550 Kennesaw Ave. N.W., Marietta 30060-6905.*

CONTRACTS/BIDS/PROPOSALS

CONNECTICUT A \$72-million **bakery** is being built by Suitt Construction Co. for Pepperidge Farm Inc. Located in Bloomfield, just north of Hartford, the 265,000-sq-ft facility will meet all Food and Drug Administration regulations for sanitation and safety. Completion is scheduled for June 2003. *Suitt Construction Co. Inc., 1400 Cleveland St., Greenville, S.C. 29604.*

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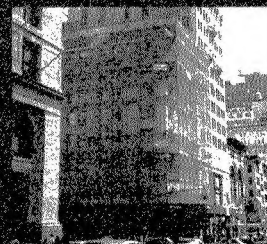
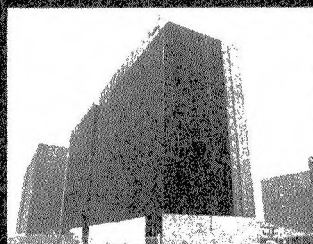
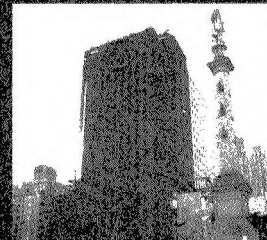
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PULSE

GEORGIA A contract to **renovate and restore** Packard Hall at Spelman College was awarded to Winter Construction Co. Located in Atlanta, the \$3.6-million project includes the renovation of the 22,500-sq-ft historic building to create a more efficient administration complex. The project will involve restoring the building's wainscot and transoms, refurbish the windows, install new mechanical, electrical and plumbing systems, and perform ADA upgrades throughout the facility. *Winter Construction Co., 1330 Spring St. N.W., Atlanta 30309-2810.*

GEORGIA-NORTH CAROLINA-WEST VIRGINIA John S. Clark Co. Inc. has been awarded contracts for projects in the above-mentioned states. These projects consist of a new 10,055-sq-ft free-standing **CVS/pharmacy** located in Fairburn, Ga. Completion is scheduled for December. First Baptist Church West awarded a contract for its new 20,000-sq-ft **multipurpose building and renovation** of existing facility located in Charlotte, N.C. Completion of this project is scheduled for October 2003. A contract for the construction of a new 189,000-sq-ft **Target Store** located at U.S.

Highway 1 and State Rte. 98 in Wake Forest, N.C. Opening of the new store is expected in March 2003. Construction of a 30,000-sq-ft **retail shopping center** is under way in Clarksburg, W.V. Completion is expected in November. *John S. Clark Co. Inc., 210 Airport Rd., Mount Airy, N.C. 27030 and at 4140 N. Cherry St., Winston-Salem, N.C. 27115.*

ILLINOIS Clayco Construction Co. was selected to build a three-story, 176,000-sq-ft **worldwide headquarters building** for Anixter Inc. Developed by Catellus Development Corp., the new \$10-million facility will feature a precast concrete facade over a structural steel frame. Located on the Prairie Glen Corporate Campus in Glenview, construction on the shell was under way early this summer and occupancy is scheduled for March 2003. *Clayco Construction Co., One TransAm Plaza Dr., Suite 400, Oakbrook Terrace 60181.*

ILLINOIS Novak Construction Co. was awarded the contract to build a new two-story, 40,000-sq-ft **building** for the Little Black Pearl Workshop at 1060 E. 47th St. in Chicago. *Novak Construction Co., 3423 N. Drake Ave., Chicago 60618.*

INDIANA A contract for a **major expansion project** for Bethesda Baptist Church & Schools was awarded to S&B Construction. Located on Rte. 650E north of Interstate 74 in Brownsburg, the project consists of a new ministry and athletic center, including a two-story gymnasium with two levels of classrooms surrounding the athletic core of the building. *S&B Construction Co., 201 N. Illinois St., 22nd Floor, Indianapolis 46204.*

KENTUCKY Caddell Construction Co. Inc. was awarded a contract in the amount of \$32,870,000 for phase 3 of the **whole barracks complex renewal project** on a 10-acre site at Fort Campbell, home of the 101st Airborne Division. The 258,000-sq-ft project includes a three-story barracks building which will have capacity to house approximately 400 personnel with an adjacent soldier community-conference facility. It will also include three company operations buildings, a brigade headquarters building and a battalion headquarters. Completion is scheduled for May 2004. *Caddell Construction Co. Inc., P.O. Box 210099, 2700 Lagoon Park Dr., Montgomery, Ala. 36109.*

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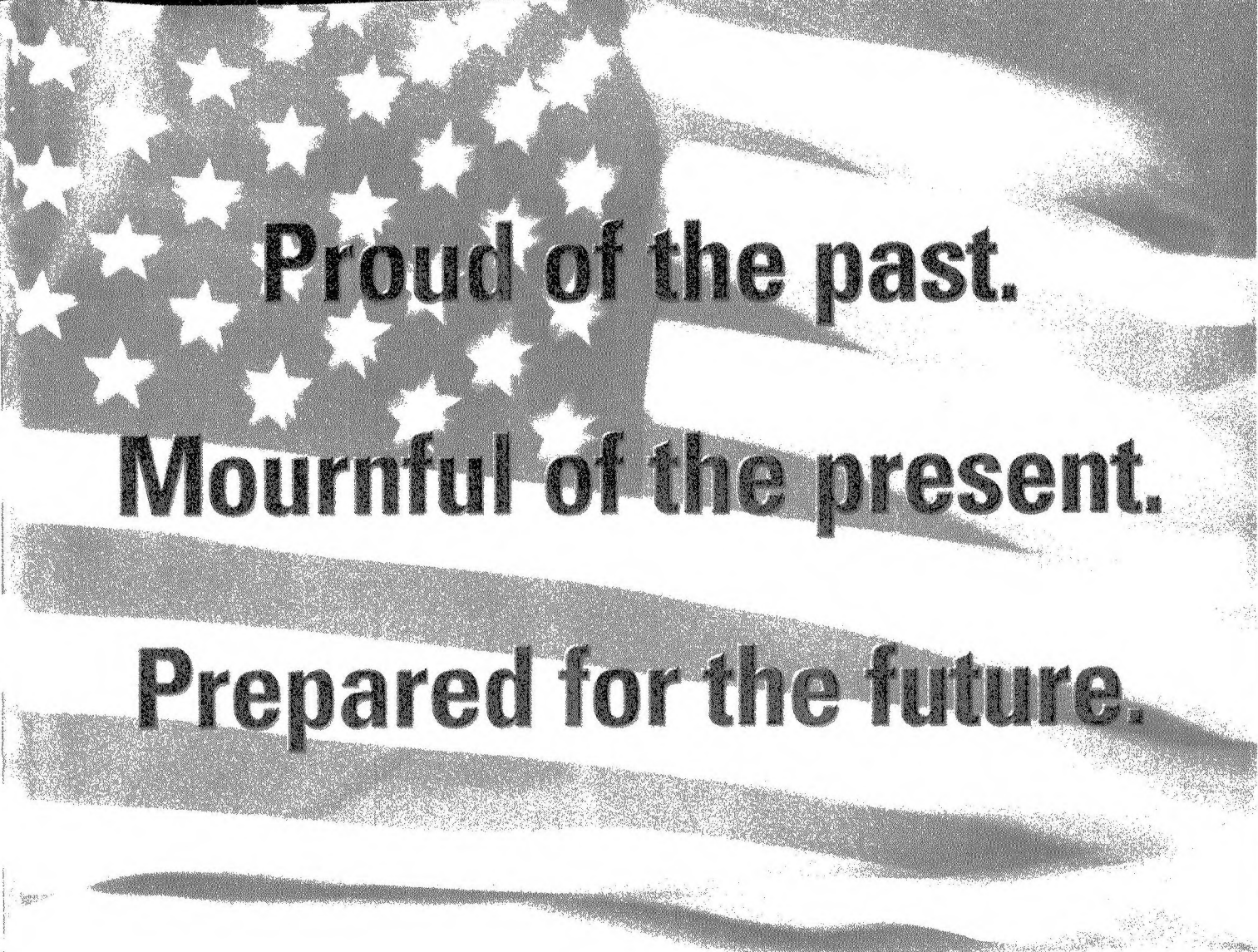
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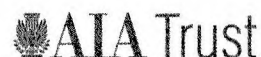


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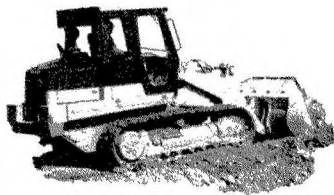
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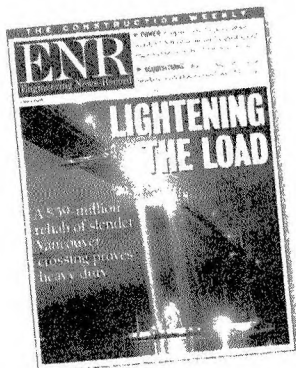
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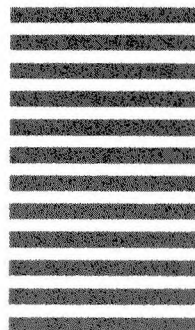
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PULSE

MARYLAND A negotiated contract was awarded to Coakley & Williams Construction Inc. for a new **community support services center** in Gaithersburg. The project involves the renovation of an existing warehouse into a new community center with administrative offices, conference areas and a gymnasium. The roof will be raised to add a second floor, and new MEP and sprinkler systems, elevator and parking lot. *Coakley & Williams Construction Inc., 16 S. Summit Ave., Gaithersburg 20877.*

MICHIGAN C.D. Barnes Associates Inc. has been chosen as the general contractor for the Lakeview Public Schools **athletic complex** in Lakeview. Construction on the \$1.8-million facility is under way and will be complete in fall 2003. C.D. Barnes has also been chosen to construct the \$2-million Heritage Meadows **supportive housing project** in Otsego Township. Construction is expected to be complete by spring 2003. *C.D. Barnes Associates Inc., 3437 Eastern Ave. S.E., Grand Rapids 49508.*

NEVADA Chelsea Property Group Inc. has selected Hardin-Jacobsen, a joint venture composed of Hardin Construction Co. LLC and Jacobsen Construction Co. Inc., to build their Las Vegas Premium Outlets **mall** in downtown Las Vegas, near the strip. The 475,000-sq-ft retail shopping center will house 150 high-end retailers and an enclosed food court. The project, with total contract value of approximately \$40 million, includes approximately 50 acres of site work. Work is under way and is slated to be completed in September 2003. *Hardin-Jacobsen, 505 S. Grand Central Parkway, Las Vegas 89106.*

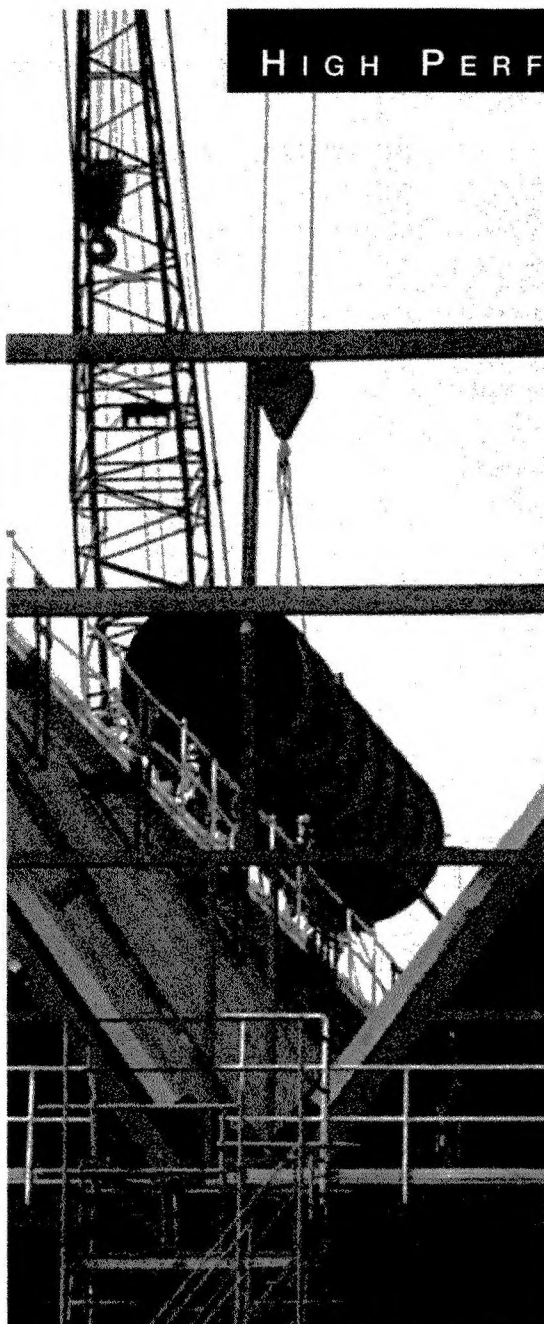
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NEW YORK A contract to build the Arvin Cadet **physical development center** at West Point has been awarded to J. Kokolakis Contracting Inc. Designed by Sasaki Associates, the sports complex will consist of 110,000 sq ft of newly renovated space combined with 350,000 sq ft of new construction. Major elements will include multiple gymnasiums, a natatorium, weights and fitness rooms, racquet courts, sports medicine-training suites, a climbing wall, multipurpose rooms and support spaces. Completion is scheduled for mid-2005. *J. Kokolakis Contracting Inc., 585 Rte. 25A, Rocky Point 11778.*

NEW YORK Bovis Lend Lease was awarded a contract by the Metropolitan Transportation Authority to provide project management services for phase 2 of the Times Square Station Complex **rehabilitation project** in New York City. Phase 2, with an estimated construction cost of \$80 million, is part of a \$250-million, three-phase reconstruction project, which will expand and completely rehabilitate the rail station complex located below Broadway and 42nd St. *Bovis Lend Lease, 200 Park Ave., New York City 10166.*

BID/PROPOSAL DATES

MICHIGAN 9/18 Byron Center Public Schools, 2475 84th St., Byron Center 49315, two-story, 132,000-sq-ft **middle school and gymnasium** at 84th St. and Homerich Ave. S.W. in Byron Center. \$17 million. *Tower Pinkster Titus Associates, architect, 678 Front Ave. N.W., Suite 255, Grand Rapids 49504-5344; Owen Ames Kimball Co., 300 Ionia Ave. N.W., Grand Rapids 49503, is construction manager. DR #01-633725.*

PENNSYLVANIA 9/18 (separate bids)—Pennridge School District, District Education Center, 1506 N. Fifth St., Perkasie 18944, Pennridge **high school and middle school** located at 1400 N. Fifth St. in Perkasie. The estimated \$47-million project consists of an over 200,000-sq-ft addition and renovation of Upper House, a 1970s building, and converting to a high school. The project also includes demolition work, addition and conversion of Freshman Center into a middle school, as well as a swimming pool in Upper House and asbestos abatement. *Diserod Wolff Kelly Clough & Bucher Inc., architect, Eight E. Broad St., Hatfield 19440. DR #00-861879.*

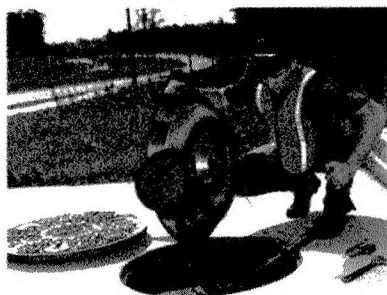
CALIFORNIA 9/19 County of Solano, Architectural Service Dept., 530 Clay St., Fairfield 94533, 90-bed **juvenile detention facility** at 2010 W. Texas St. in Fairfield. \$10 million. *Kaplan McLaughlin Diaz, architect, 222 Vallejo St., San Francisco 94111; Kitchell CEM, 2750 Gateway Oaks Dr., Suite 300, Sacramento 95833, is construction manager. DR #01-887367.*

CALIFORNIA 9/19 University of California Santa Barbara, Design & Construction, Facilities Management Building, 439, Conference Room 130, Santa Barbara 93106-1030, **life sciences building** located on University of California Santa Barbara campus. \$23.7 million. The four-story, 76,581-sq-ft building will house a laboratory, office space and classrooms. Work will include the demolition of two existing structures. *NBBJ Design, architect, 130 Sutter St., Second Floor, San Francisco 94104-4009. DR #97-280207.*

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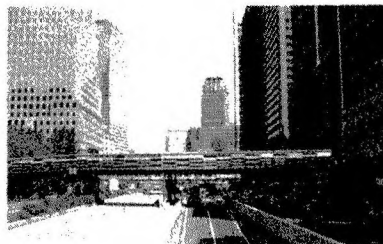


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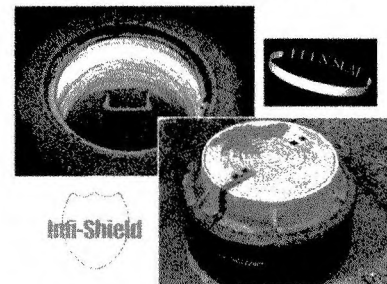
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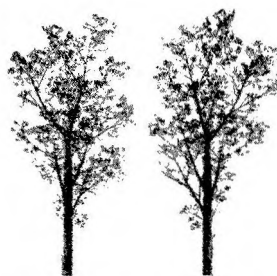
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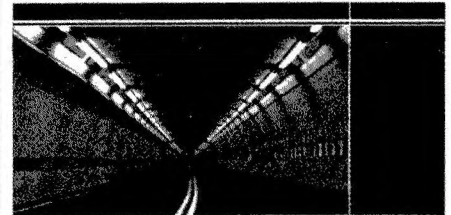
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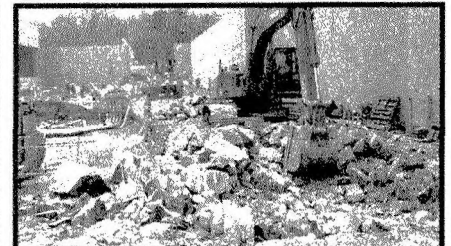
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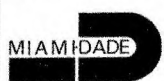
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Ohio University, Civil Engineering Department, invites applications for a tenure track professorship in Construction Engineering Management (CEM). An individual with experience in construction engineering and management is sought to develop and lead a new area in CEM, supported by a significant endowment. The successful candidate will head all facets of undergraduate and graduate CEM education, research and service, including curriculum and laboratory development. Duties will include leading the CEM area, developing and teaching CEM undergraduate and graduate courses, supervising graduate students, recruiting CEM faculty, and developing a strong research program. An earned Ph.D. degree in engineering is desired. Candidates must have relevant construction industry experience, and must possess, or be able to achieve within three years, Ohio Professional Engineering Registration. Collaborative research opportunities are available via the Ohio Research Institute for Transportation and the Environment (ORITE). ORITE has over \$5 million in sponsored research, and research facilities include an outdoor million pound load facility and extensive material characterization equipment. Please submit a letter of intent, a statement describing teaching and research interests and demonstrated expertise in CEM, a detailed resume, and names/addresses/telephone numbers of four references to: CEM Search Committee, Civil Engineering Department, Ohio University, Stocker Center, Athens, OH 45701. Applications will be accepted until the position is filled. See also <http://www.ent.ohiou.edu/ce>. Ohio University is an Equal Opportunity and Affirmative Action Employer.

Highway Project Manager

Consulting engineering firm seeks NYPE with NYSDOT experience in highway/bridge project management. Responsibilities include project management, supervision, budget and quality control. Position represents a strong growth opportunity with competitive salary/benefits. Please forward resume to: Berger, Lehman Associates, P.C., 411 Theodore Fremd Ave., Rye, NY 10580. Fax: (914) 967-5263. E-mail: careers@bergerlehman.com. Visit our Website at www.bergerlehman.com. EOE

Senior Structural Engineer

EAC Consulting, Inc., is in need of a Senior Bridge Engineer for its Miami Office (Florida). The person must have at least 10 years of experience and a Florida P.E. EAC is a 30+person civil engineering firm with offices in Miami-Dade County and Broward County. For more information on the company please visit our website: www.eac-consult.com. The salary is dependent upon level of skills and experience. Range is \$65,000 to \$85,000 with benefits. EAC Consulting, Inc. is an Equal Opportunity Employer. Please send resume by e-mail to eac@eacconsult.com or fax to 305-264-8363.

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BUSINESS OPPORTUNITY**Business For Sale**

Long established minority structural Engineering firm located in Washington, DC metro area available for sale or merger. Large backlog of institutional, federal and semi-government contracts. Current annual-billings averages in the range of \$2M for the last three years. Principal will help in transition. Respond in strict confidence to Box # 8639, c/o ENR.

OFFICIAL PROPOSALS**Legal Advertisement**

Sealed bids for the following projects will be received in an envelope annotated with project name and number until 10:30 a.m. on October 17, 2002 at the Contract Management Bureau, NYS Dept. of Transportation, Bldg. 5, 1st Floor, 1220 Washington Avenue, Albany, N.Y. 12232 and will then be publicly read. A certified or cashier's check payable to the NYS Dept. of Transportation for the sum specified in the proposal or a bid bond, Form CONR 391, representing "25% of the bid total" as specified in the contract proposal, must accompany each bid. Plans and proposals can be obtained from the Sale of Plans Unit, Rm. 109A, at the above address; the Department of Transportation, One Hunters Point Plaza, 47-40 21st St., Long Island City, N.Y. 11101; and the Regional Offices noted below. The right is reserved to reject all bids.

Reg.3, J. Edinger, Reg. Dir., 333 E. Washington St., Syracuse, NY 13202

D259006, Onondaga Co., F.A. Proj. Q920-3037-256, Q050-3037-256, Q240-3037-256, 2.5 Kilometers of Asphalt Concrete Reconstruction on Route 31, Replacement of Route 31 Bridge over the Seneca River (composite girder) and Replacement of Plainville Road Bridge over the Erie Canal with Dismantled Route 31 Truss Bridge over the Seneca River in the Towns of Clay and Lysander, PIN 3037.56, Bid Deposit \$3,000,000., Plans \$49, plus \$6 Postage. This Contract Requires

NOTICE TO CONTRACTORS

The Washington State Department of Transportation is tentatively scheduled to advertise the following project in late December 2002.

Hood Canal Bridge Retrofit and East Half Replacement Project (Class 6 and 49 bridge and marine work estimated cost under \$175,000,000). This is the world's longest pontoon supported bridge over saltwater. Located on SR 104 in Jefferson and Kitsap Counties, in the Puget Sound Region of Washington State. Work includes: Constructing replacement concrete approach structures, (west and east), replacement steel transition spans, widening bridge superstructure and lift span roadway to include electro/mechanical components, replacement floating bridge structure and anchors, and other work. Project history and information about the existing structure can be found on the following website: <http://www.wsdot.wa.gov/projects/sr104hoodcanalbridgeeast/>

Prequalification of bidders is required. All prospective bidders wishing to receive consideration for issuance of a bidding proposal shall submit a Standard Questionnaire and Financial Statement and/or supplemental information as prescribed. The forms are available on the following website: <http://wsdot.wa.gov/biz/contaa/PRE-QUAL/prequal.htm> or: Interested parties may request more information by contacting:

Mr. Kenneth Walker
Washington State Department of Transportation
POB 47360
Olympia WA 98504-7360
walkeke@wsdot.wa.gov
Phone 360 705 7017/Fax 360 705 6810

REQUEST FOR PROPOSALS ARCHITECTURAL/ENGINEERING DESIGN SERVICES COUNTYWIDE DATA CENTER

The Los Angeles County Department of Public Works is requesting proposals from qualified firms to provide architectural/engineering design service for the design of a new 50,000 to 80,000 square foot, Type IV facility, Countywide Data Center located at the Rancho Los Amigos Campus in Downey, California. Proposals are due no later than 5:00 p.m. October 3, 2002.

Request for copies of the RFP and inquiries regarding the project should be directed to Ms. Grace Stohs at (626) 458-5114, by e-mail at gstohs@ladpw.org or by fax at (626) 979-5311.

Night Time Work. This Contract Contains Special A+B Provisions For Completion Of Work. See Proposal For Details. A Prebid Meeting Is Scheduled. See Proposal For Details. Bidders Are Strongly Advised To Attend.

Reg.10, T. Oelerich, Acting Reg. Dir., NYS Office Bldg., Veterans Memorial Hwy., Hauppauge, NY 11788

D258276, Nassau Co., F.A. Proj. Q100-0756-258, Rehabilitation of Long Beach Boulevard Bascule Bridge over Reynolds Channel in the Town of Hempstead, Long Beach and Island Park, PIN 0756.58, Bid Deposit \$1,500,000., Plans \$49, plus \$6 Postage. A Prebid Meeting Is Scheduled. See Proposal For Details. Bidders Are Strongly Advised To Attend. Bids Must Be Based On The Plans And Proposals Issued For This Letting.

New York City Transit Authority

C-40418: Design and Construction of the Grand Avenue Bus Depot and Central Maintenance Facility, Borough of Queens.

New York City Transit Authority (NYCT) is seeking to retain a Design-Build contracting team to Design and Construct the Grand Avenue Bus Depot and Central Maintenance Facility in the Borough of Queens. The Design-Build team shall provide all architectural/engineering, as well as other required professional or technical services to complete a NYCT provided 10-15% conceptual design, and to design and construct a multi-

storied facility consisting of a bus depot for 200 buses, and a maintenance facility for approximately 27 buses. Both will contain administrative areas and employee facilities, inclusive of rooftop parking.

For additional information concerning this project visit the MTA Web site: www.mta.info

The Port Authority Of New York And New Jersey

Scaled proposals for the following contract will be received by the Chief Engineer of The Port Authority of New York and New Jersey in the office of the Chief Contract Engineer, 3rd Floor, 3 Gateway Center, Newark, NJ 07102, until 2:30 P.M. on the date indicated and will then be opened and read in the Bid Room. Contract documents may be seen at the Contract Desk on the 3rd Floor, 3 Gateway Center, and may be obtained upon receipt of a non-refundable payment of \$100.00 per set. Only company checks or money orders payable to the order of The Port Authority of New York and New Jersey will be accepted. If checks or money orders for documents are mailed, they should be addressed to The Port Authority of New York and New Jersey, Contract Desk, 3rd Floor, 3 Gateway Center, Newark, NJ 07102. For availability of contract documents, call (973) 792-3935. Questions by prospective bidders concerning the contract should be directed only to the person whose name and phone number is listed.

Contract AK-167 - Staten Island Bridges -



NEW YORK CITY
DEPARTMENT
OF TRANSPORTATION
DIVISION OF BRIDGES

INVITATION FOR BIDS

Hand delivered sealed bids for the Project described below will be received by representatives of the Contracts Section, Office of the Agency Chief Contracting Officer, Room 824A, 40 Worth Street, New York, NY 10013 until 11:00 AM on the date indicated when bids will be publicly opened and read in Room 814, same address.

On: **September 25, 2002**

**Reconstruction of the Williamsburg Bridge
Miscellaneous Rehabilitation of Main Bridge
Boroughs of Manhattan and Brooklyn**

Contract No. **BRC253CC**

Federal Aid Project No. **Q100-X757 (653)**

N.Y.S.P.I.N. **X757.65.321**

N.Y.C.P.I.N. **84102MBBR476**

A deposit of \$100.00 made payable to New York City Department of Transportation is required to obtain bid/contract documents. The deposit must be made in the form of a certified check or money order. No Cash Accepted. Refunds will be made only for Contract Bid or Proposal Documents that are returned in their original condition.

Each bid submitted must be accompanied by a certified check for 5% of the amount of the proposal, or alternatively, a bid bond not less than 10% of the amount of the proposal, payable to the Comptroller of the City of New York.

This Project is Federally aided and is subject to the provision of Title 23, U.S. code, as amended, and applicable New York State Statutes. In compliance with these provisions the minimum wages to be paid to laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Disadvantaged Business Enterprises (DBE) will be afforded full opportunity to submit bids and the City of New York hereby notifies all bidders that it will affirmatively insure that any contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the basis of race, color, sex, sexual orientation, national origin, age or place of residence. Prospective bidder's attention is also directed to the requirements of schedule "H" in the proposal concerning DBE participation in the contract. The schedule of proposed DBE participation is to be submitted by the apparent low bidder within 10 business days after the date of opening of bids.

Non-compliance with the 10 day submittal requirement, the stipulations of Schedule "H" or submittal of bids in which any of the prices for lump sum or unit items are significantly unbalanced to the potential detriment of the Department may be cause for a determination of non-responsiveness and the rejection of the bid. The award of this contract is subject to the approval of the New York State Department of Transportation and the Federal Highway Administration.

Contract documents are available from the Contracts Section, Office of the Agency Chief Contracting Officer, at the above address, Monday to Friday, between the hours of 9:00 AM and 3:00 PM, starting **August 5, 2002** and ending **September 12, 2002**. A list of all who have received plans for this contract will be available for review.

A Pre-Bid meeting (Optional) has been scheduled for **September 5, 2002** at 10:00 AM in the Conference Room (8th floor) 2 Rector Street, NYC. All prospective bidders are requested to attend.

Mr. Walter Kulczycki, P.E., Project Manager
Division of Bridges

New York City Department of Transportation
2 Rector Street, 5th Fl., New York, NY 10006
Tel: **212-788-1928** Fax: **212-788-1811**

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The screenshot displays the redesigned enr.com website. At the top, the McGraw-Hill Construction logo is visible alongside navigation links for WorkCenters and Our Sites. The main header features the enr.com logo and the tagline 'Engineering News-Record'. Below this, a horizontal navigation bar includes links for home, news, features, projects, products, people & firms, opinions, and resources. The main content area is divided into several sections: 'headline news' with a list of recent articles, 'Cover Story' featuring a large article about airport construction, 'technology' and 'economics' sections with sub-links, 'special events' with information about upcoming conferences, and 'survey announcements' including the 'Top 600 Specialty Contractors Survey'. On the right side, there is a search bar and a list of sponsored content from various construction-related companies like BENTLEY, PRIMAVERA, and EMCOR. The bottom of the page includes a footer with contact information for advertising.

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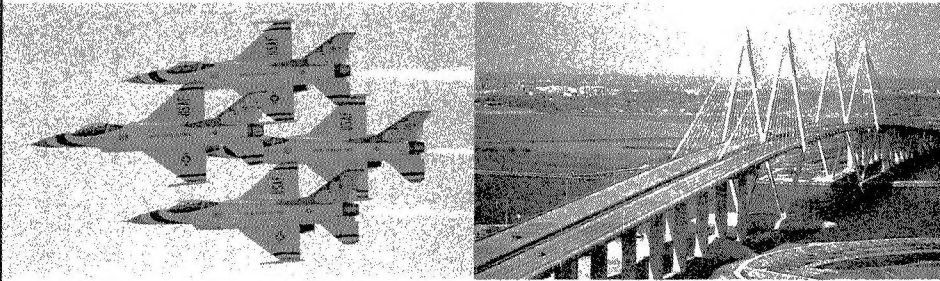
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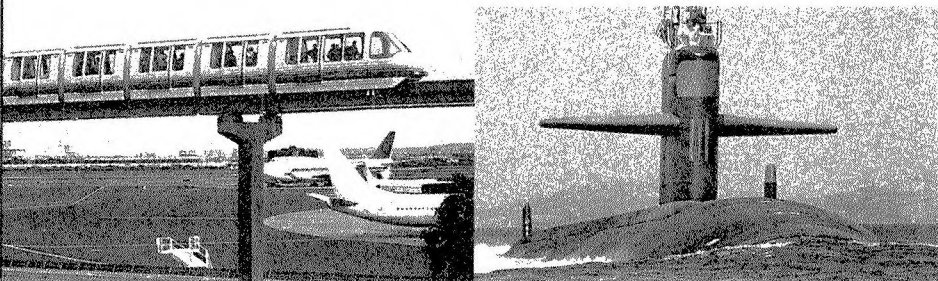
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URS

Maintenance Pavement Repairs Via Work Order. Estimate Range: \$500K to \$1M. Bids Due Thursday, October 10, 2002. The work under this contract consists generally of the performance of asphalt and concrete pavement repairs and related Work at the Bayonne Bridge, Goethals Bridge and Outerbridge Crossing in New York and New Jersey. For questions, call Nellie Popper at (973)792-3921.

Nevada Department of Transportation Contractor Prequalification Notice

The Nevada Department of Transportation will require an additional prequalification of contractors for construction of the Galena Creek Bridge on the I 580 Freeway Extension project. This bridge prequalification will be In Addition To The Standard Prequalification Requirements For Prime Contractors. Currently, it is expected the prequalification process will be initiated August 29, 2002.

Through this prequalification, NDOT will ensure the Contractors on this project will have the necessary experience, knowledge and skill to construct the stay supported or pilot truss option of the Galena Creek Bridge properly and efficiently. The following is a tentative schedule of the prequalification process:

- Prequalification packages are available upon request beginning August 29, 2002.
- Return prequalification packages by October 18, 2002.
- A committee will evaluate prequalification packages with recommendations to the Director. Upon the Director's review, Contractors will be notified of their status. This review and notice will be completed in 5-6 weeks.
- Contractors who wish to appeal the initial decision must notify NDOT within two (2) days of receipt of NDOT's decision. Additional information for the appeal must be submitted within fourteen (14) days of the initial decision.
- Appeal review and final determination by the Director will be made within fourteen (14) days. Previous stay support or pilot truss construction experience will be a key requirement for prequalification; complete details must be outlined in the prequalification package.

If there are any questions, regarding this process, please contact Todd Montgomery at (775) 888-7318.

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On October 21, 2002 ENR will publish the first ever, ENR Job Fair PLUS! magazine. Within this special recruitment advertising section, you will have an opportunity to post a Position Wanted advertisement. For only \$5.00 per line you can put yourself in front of the industry's most influential audience, our readers! You can post your resume for free on our Career Center, www.construction.com/CareerCenter and we will include your resume # in your ad at no extra charge. These ads can be confidential if necessary. Fax or email your ad to us today: Fax: 212-904-2074 Email: enr_careers@construction.com.

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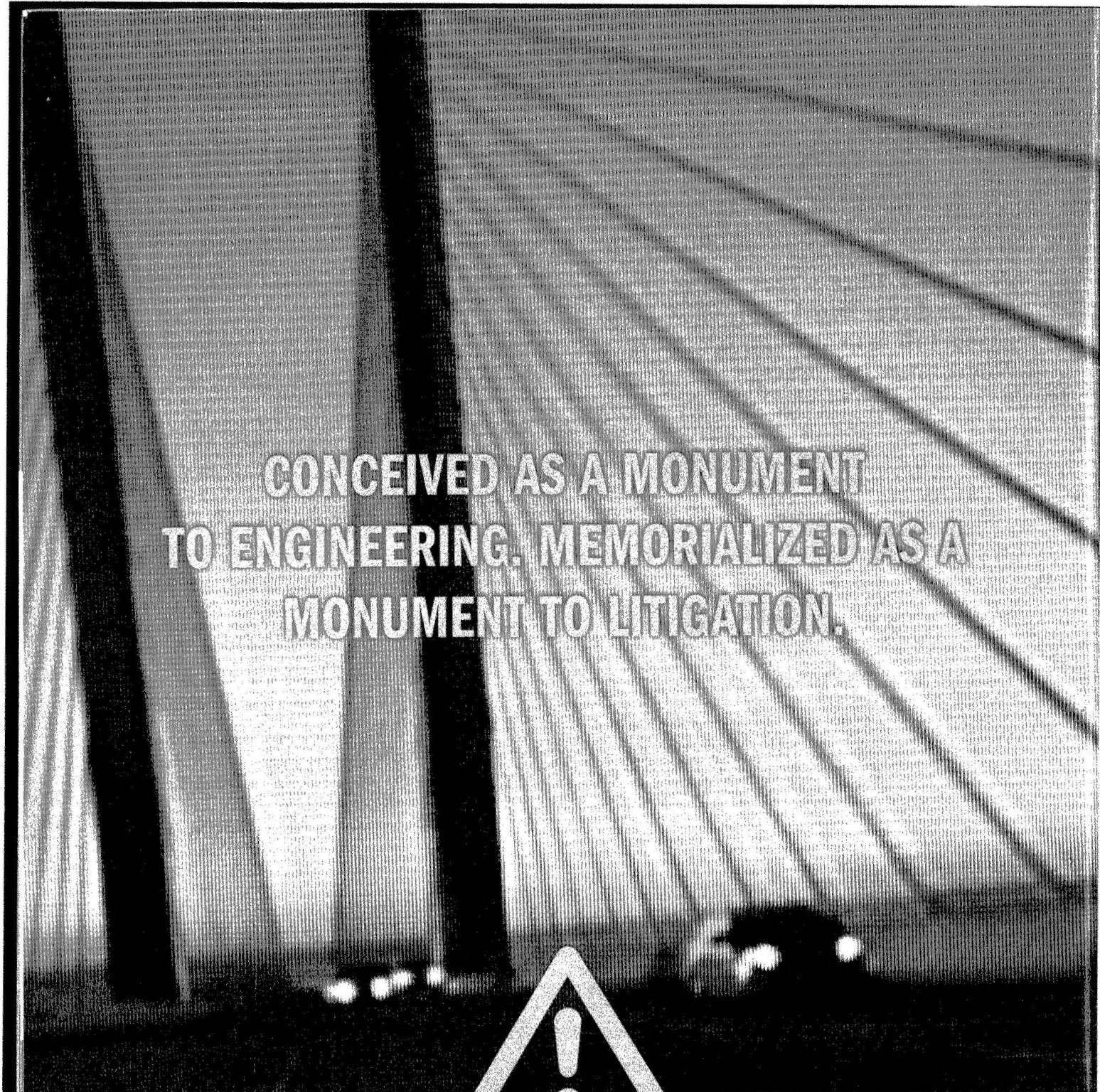
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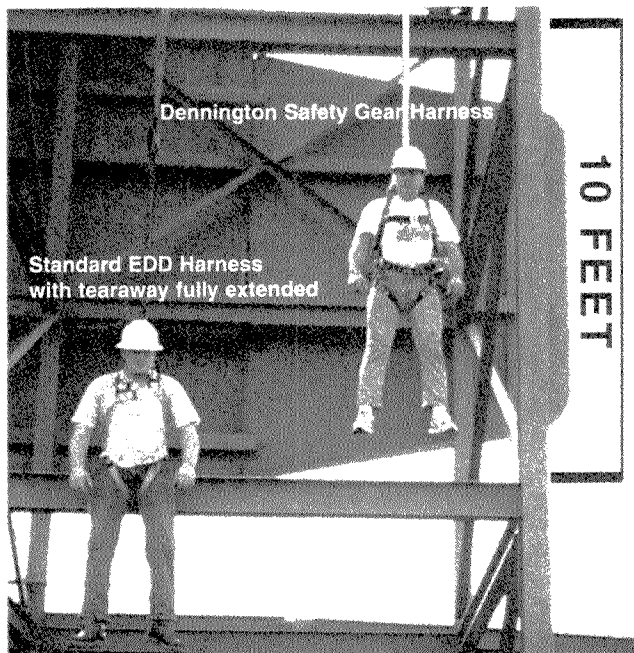
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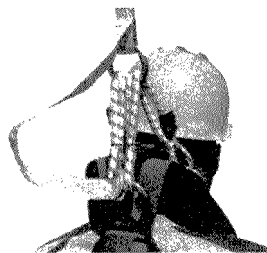
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Close-up look at the patented Dennington Safety Gear Shock-Absorbing System



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OSHA regulations state in 29 CFR 1926.502 (d)(16)(iii) that Personal fall arrest systems, when stopping a fall, shall: "be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;"

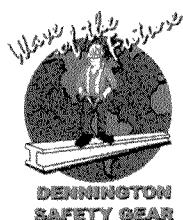
THE GENERAL DUTY CLAUSE, 29 USC 654, states that: "Each employer shall furnish to each of his employees, employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

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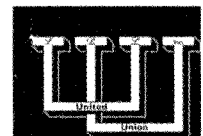
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