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MODERN STEEL CONSTRUCTION

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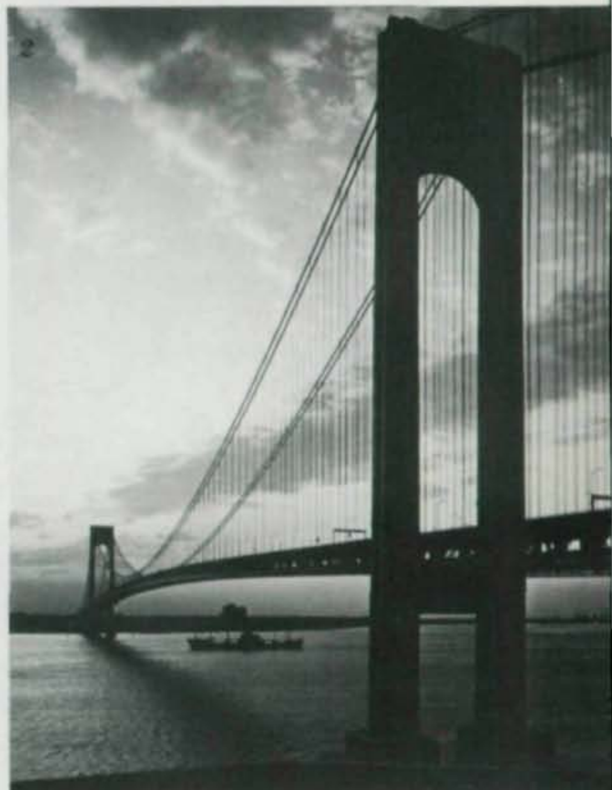

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MODERN STEEL CONSTRUCTION

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101 Park Avenue, New York, N. Y. 10017

VOLUME V / NUMBER 4 / FOURTH QUARTER 1965

CONTENTS

National Engineering Conference in Boston

The 18th annual AISC National Engineering Conference will be held on April 14 and 15, 1966 at the Sheraton Boston Hotel, Boston, Massachusetts. Leading authorities on design, construction and research will gather to exchange ideas and information in the fields of engineering and architecture.

Innovations and new developments in the field of steel structures will be announced and discussed. This Conference is a **must** *for anyone who designs structures.*

Among the topics to be discussed are:

New Concepts In High Rise Apartment Design — Architectural, Mechanical, Structural.
Plastic Design for Multi-Story Buildings.
Economics of Short Span Bridges.
Fabrication of the San Mateo-Hayward Orthotropic Bridge.
Model Analysis for Steel Research.
Design of Curved Steel Girder Bridges.
The St. Louis Arch.
Reports on Current Steel Research.

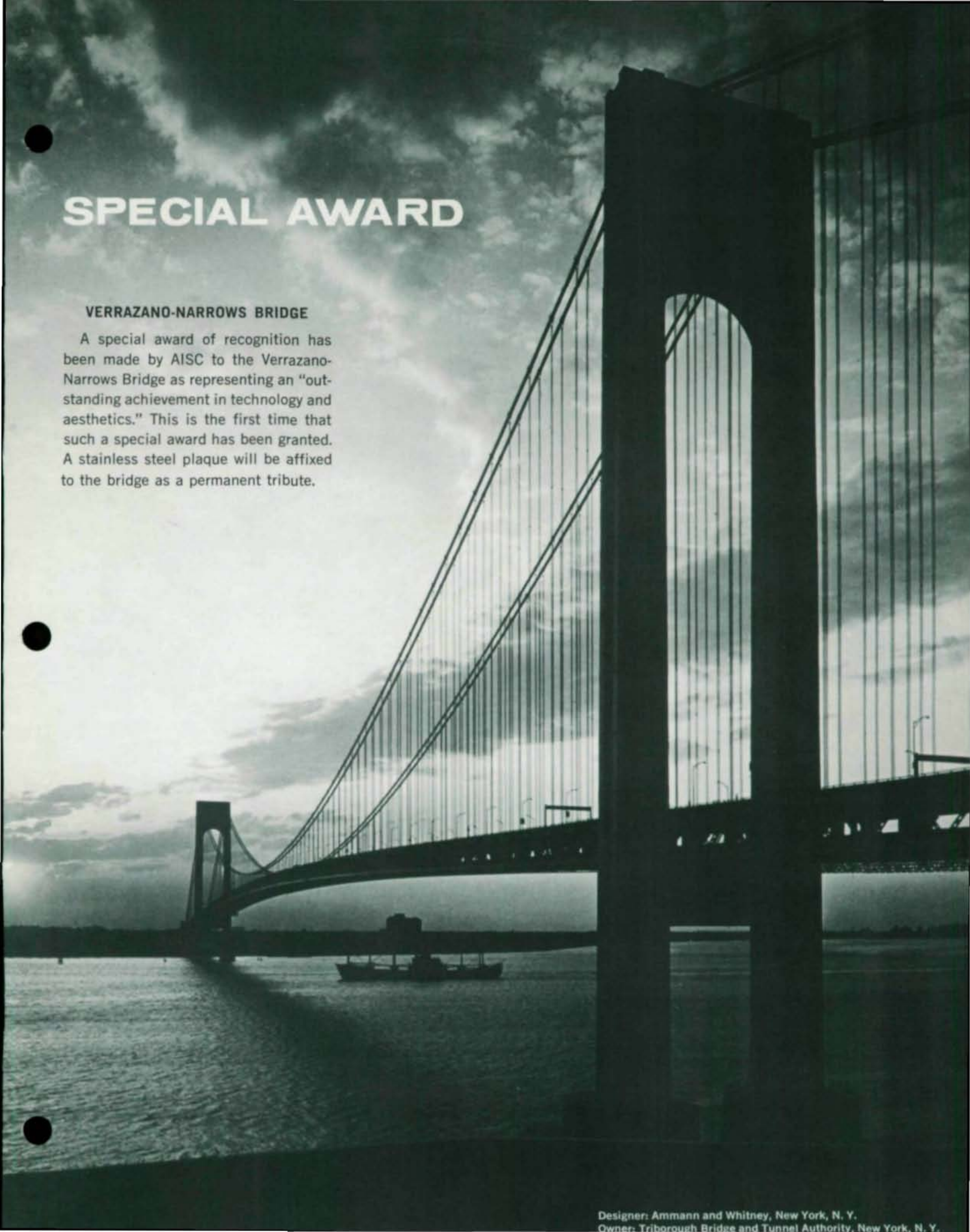
For information about registration contact AISC, 101 Park Avenue, N. Y. 10017.

Rx for a Hospital

The name of Bernard McMahon, AIA, Clayton, Mo., architect of the St. John's Mercy Hospital, in Creve Coeur, was inadvertently omitted from the article on that project in the last issue of MSC.

We take this opportunity to salute Mr. McMahon for his vital role in the conception, design and construction of this outstanding hospital complex.

SPECIAL AWARD



VERRAZANO-NARROWS BRIDGE

A special award of recognition has been made by AISC to the Verrazano-Narrows Bridge as representing an "outstanding achievement in technology and aesthetics." This is the first time that such a special award has been granted. A stainless steel plaque will be affixed to the bridge as a permanent tribute.

Designer: Ammann and Whitney, New York, N. Y.
Owner: Triborough Bridge and Tunnel Authority, New York, N. Y.

PRIZE

PRIZE BRIDGE – MEDIUM SPAN LOW CLEARANCE

Tompkins Street Bridge, Binghamton, New York

Designer: New York State Department of Public Works
Owner: State of New York
Fabricator: Cumberland Bridge Company
General Contractor: S. J. Groves & Son Company

PRIZE BRIDGE – MEDIUM SPAN HIGH CLEARANCE

Devils River Bridge, U.S. Highway 90 West of Del Rio, Texas

Designer: Bridge Division, Texas Highway Department
Owner: Texas Highway Department, Austin, Texas
Fabricator: Mosher Steel Company
General Contractor: H. B. Zachry Company

PRIZE BRIDGE – SHORT SPAN

Bridge Over Cayuga-Seneca Canal, Seneca Falls, New York

Designer: New York State Department of Public Works
Owner: State of New York
Fabricator:: American Bridge Division-U.S. Steel Corp.
General Contractor: Dalrymple Gravel and Construction Company

PRIZE BRIDGE – LONG SPAN

Robert Moses Bridge, Fire Island Inlet, New York

Designer: Modjeski and Masters
Owner: Jones Beach State Parkway Authority
Fabricator: Fort Pitt Bridge Works
General Contractor: Karl Koch Erecting Co., Inc.

Classifications

Long Span Bridges—Bridges having one or more spans of over 400 ft in length.

Medium Span Bridges, High Clearance—Bridges with vertical clearances of 35 ft or more, costing over $500,000, and having no single span (as measured by the supporting foundations) longer than 400 ft in length.

Medium Span Bridges, Low Clearance—Bridges having vertical clearances of less than 35 ft, costing over $500,000 and having no single span (as measured by the supporting foundations) longer than 400 ft in length.

Short Span Bridges—Bridges having fixed spans and costing less than $500,000.

Highway Grade Separation Bridges—Bridges whose basic purpose is highway grade separation as contrasted to the above categories.

Movable Span Bridges—Bridges having a movable span.

Special Type Bridges—Includes pedestrian overpass bridges, and other special purpose bridges not identifiable to one of the above categories.

PRIZE BRIDGE – HIGHWAY GRADE SEPARATION

Lebec Road Overcrossing, South of Bakersfield, California

Designer: State of California
Owner: State of California
Fabricator: Kaiser Steel Corporation
General Contractor: Matich Constructors

BRIDGES 1965

To promote a more widespread appreciation of the aesthetics of steel bridges and to honor the architectural excellence of modern bridge design, the American Institute of Steel Construction has, since 1928, sponsored an annual Prize Bridge Competition. Each year a distinguished Jury of Awards, composed of leading art directors, architects and engineers, selects the steel bridges which it judges to be the most beautiful of those opened to traffic in the United States during the previous year.

This year the Jury of Awards selected five "Prize Bridges" and ten "Awards of Merit" from 67 steel bridges which had been opened to traffic during 1964. The Jurors were:

☐ Milton Brummer, Partner, Ammann & Whitney, New York, N. Y. ☐ Dr. Robert J. Hansen, Professor of Structural Engineering, Massachusetts Institute of Technology, Cambridge, Mass. ☐ William J. Hedley, President of ASCE and Assistant Vice President of Norfolk and Western Railway Company, St. Louis, Mo. ☐ Allan McNab, Director of Administration, The Art Institute of Chicago, Chicago, Ill. ☐ Max Urbahn, Architect, Office of Max Urbahn, New York, N. Y. and President of New York City Chapter AIA.

In appraising the winners, the Jurors commented that too much emphasis is being placed on economy in bridge design. This should not always be the final goal. They urged that bridge owners allow more money for design considerations and pointed out that a ten percent increase in the budget for the designer would permit him to give a great deal more attention to aesthetics. The proportionate increase in cost of a bridge would be very slight, and amortized over the 75 to 100-year life of a bridge would hardly be noticed. The jurors felt strongly that attention to appearance should be given increased emphasis.

The five Prize Bridges will have stainless steel plaques affixed to them as a permanent tribute to their designers for combining aesthetics and utility. The designers, owners, and fabricators of all 15 winning bridges will receive award certificates.

AWARD OF MERIT – MEDIUM SPAN HIGH CLEARANCE

State Route 39 Over Summersville Reservoir, Nicholas County, West Virginia
Designer: Richardson, Gordon and Associates for U.S. Army Engineers
Owner: The State Road Commission of West Virginia
Fabricator: Fort Pitt Bridge Works
General Contractors: Agnew-Joseph Co., Ralph Burns Paving, Inc., L. S. Coleman Co.

AWARD OF MERIT – MEDIUM SPAN HIGH CLEARANCE

South Fork Eel River Bridge & Separation, Sylvandale, California
Designer: State of California
Owner: State of California
Fabricator: Bethlehem Steel Corporation
General Contractor: Morrison-Knudsen Co., Inc.

AWARD OF MERIT – LONG SPAN

U.S. Route 19 Over Summersville Reservoir, Nicholas County, West Virginia
Designer: Richardson, Gordon and Associates for U.S. Army Engineers
Owner: The State Road Commission of West Virginia
Fabricator: Fort Pitt Bridge Works
General Contractor: Foster and Creighton Company

AWARD OF MERIT – MEDIUM SPAN LOW CLEARANCE

Capital Beltway Bridge (I-495), over Jones Mill Rd. & Rock Creek Forest Glen Park, Maryland
Designer: David Volkert and Associates
Owner: Maryland State Roads Commission
Fabricator: Atlas Machine & Iron Works
General Contractors: Wright Contracting Company
G.A. & F.C. Wagman, Inc.

AWARD OF MERIT — SHORT SPAN

Bridge No. 2 Over Black River, Dexter, New York

Designer: New York State Department of Public Works
Owner: State of New York
Fabricator: Ernst Construction Corporation
General Contractor: H. I. Baughman, Inc.

AWARD OF MERIT — MEDIUM SPAN LOW CLEARANCE

City Park Lake Bridge, Baton Rouge, Louisiana

Designer: Modjeski and Masters
Owner: Louisiana Department of Highways
Fabricator: American Bridge Division, U.S. Steel Corp.
General Contractor: Boh Brothers Construction Company

AWARD OF MERIT — SHORT SPAN

Bridge Over Moose River, Lyons Falls, New York

Designer: New York State Department of Public Works
Owner: State of New York
Fabricator: Gouverneur Iron Works
General Contractor: Thomason & Perry Inc.

AWARD OF MERIT — HIGHWAY GRADE SEPARATION

Interstate 71 Under Gravel Pit Rd., Median County, Ohio

Designer: J. E. Greiner Company
Owner: State of Ohio, Department of Highways
Fabricator: The Burger Iron Company
General Contractor: The Harry Miller Excv. Co. & National Engineering & Contracting Co.

AWARD OF MERIT — HIGHWAY GRADE SEPARATION

Northbound Route 280/17 Separation, San Jose, California

Designer: State of California
Owner: State of California
Fabricator: Herrick Iron Works
General Contractor: Gibbons & Reed & Dan Caputo

AWARD OF MERIT — HIGHWAY GRADE SEPARATION

Linden Lane Over Capital Beltway (I-495), Forest Glen Park, Maryland

Designer: Maryland State Roads Commission
Owner: Maryland State Roads Commission
Fabricator: Atlas Machine & Iron Works
General Contractors: Wright Contracting Company
G.A. & F.C. Wagman, Inc.

Salute to a MASTER BRIDGE BUILDER

With the death of Othmar H. Ammann, the world of engineering has lost one of its most distinguished members. The internationally famous bridge designer, senior partner in the New York firm of Ammann and Whitney, died on September 22nd of this year at age 86. His career as a bridge engineer spanned more than 60 years and left a legacy of monumental and beautiful bridges that stand as his most eloquent tribute.

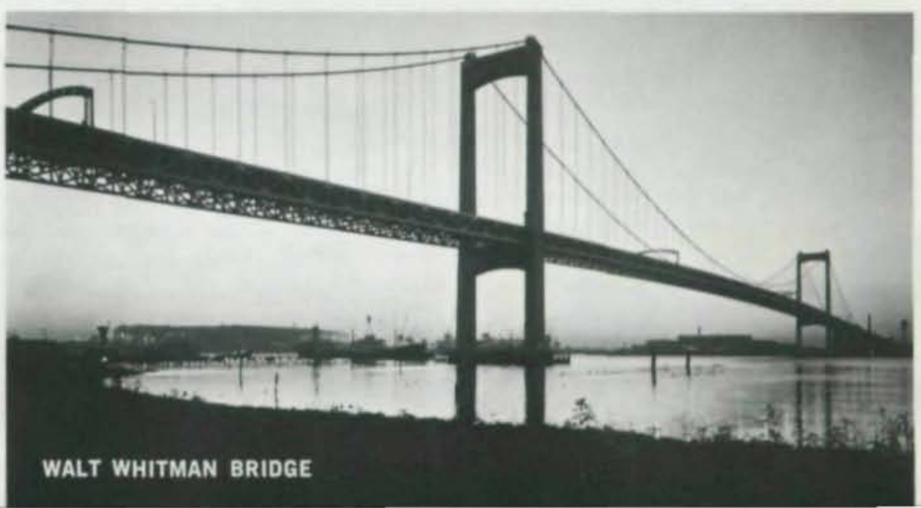
Among his most famous achievements are the George Washington Bridge across the Hudson River, the Walt Whitman Bridge across the Delaware River, the Throgs Neck Bridge over the East River, the Bayonne Bridge across the Kill van Kull, and the Verrazano-Narrows Bridge at the entrance to New York Harbor **(see page 3).**

In 1964 AISC awarded Mr. Ammann its J. Lloyd Kimbrough Medal, only the fifth time the medal had been awarded in its 25 year history. The award was made for "distinguished service in the advancement of bridge engineering" and the "design and construction of bridges of record dimensions and outstanding beauty."


GEORGE WASHINGTON BRIDGE


THROGS NECK BRIDGE


BAYONNE BRIDGE


WALT WHITMAN BRIDGE

To Fit the Need

By Alfred Busselle, AIA
Chief Architect, State of New Jersey

The care and treatment of mentally retarded children takes a giant step forward in the Woodbridge State School, owned by the State of New Jersey, Department of Institutions and Agencies. Designed to have the character of a residential community, this Institution provides facilities for the care and treatment of 1,000 mentally retarded male and female residents, five years old and up. They will be long-term if not lifelong residents, and will include those who are ambulant, non-ambulant, blind and emotionally disturbed. The site is an irregularly shaped, 65 acre tract of land in Woodbridge, New Jersey. The wooded, pleasantly rolling site is screened by trees on two sides from adjoining properties.

The Institution is intended to be principally a home, treatment center and training school, rather than a general hospital for intensive care. The principal design considerations were comfort for the residents, close and constant supervision by the staff, and a facility which could be built and operated efficiently.

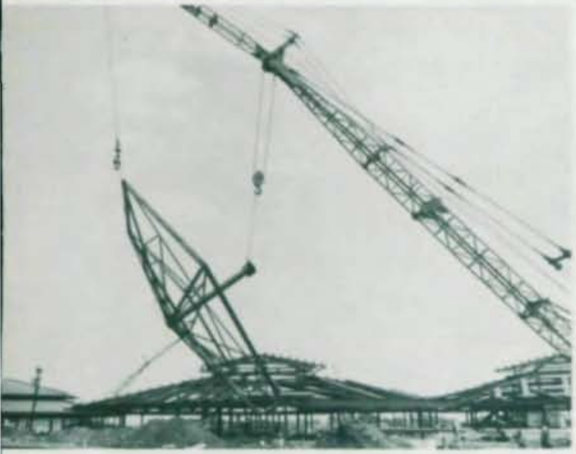
Carefully Planned Campus

Associated Architects Vincent G. Kling, FAIA, of Philadelphia, Pa. and Diehl & Stein, AIA, of Princeton, N.J. created a campus of small, low buildings arranged to create a closely knit, low profile, human scale community taking full advantage of the natural terrain of the site.

The campus is composed of 19 residential cottages, each housing 50 residents, a group small enough to allow the staff to exercise close, personal supervision; a central clinic; an administration building; an activity-recreation building; a food service building; a power plant, and a service building containing maintenance shops and a garage for fire-fighting equipment.

The complex has been divided into two major sections: a cluster of nine residential cottages for ambulatory residents on the western half and a cluster of ten cottages for non-ambulatory residents grouped around the clinic on the eastern half, so non-ambulatory residents requiring greater medical care can be moved easily for treatment. The power plant and food service building are at the extreme north end of the tract and screened by a stand of trees from the remainder of the campus.

All the residential cottages, the administration building and activity building are designed in hexagonal plan with pyramidal roofs — a design which acts as a unifying element, tying together all



Welded sun sheds were "flipped" in mid-air after being assembled upside-down on ground. High roofs of cottages were also assembled on ground, then lifted on to low roofs.

the separate buildings of the campus. The unusual hexagonal plan permits a highly efficient arrangement of cottage interiors into six triangular segments, all radiating from a compact central core containing washroom and toilet facilities and a corridor from which the staff can maintain close supervision of all resident areas. Complete dining, living and classroom facilities, a small infirmary, and service areas are provided within each cottage. A playground-recreation area is adjacent to each cottage.

A 100-bed clinic-hospital serves as a diagnostic center and is equipped with all medical services except major surgery. This facility also contains laboratories, research facilities and classrooms as well as living quarters for medical students who assist the staff.

The activity building serves as a chapel, school and recreation center for the residents, and as a general social and recreation center for the staff.

All buildings in the project except the hospital are steel framed with brick cavity walls. All pitched roofs are of asphalt shingles with copper trim at the eaves. Interiors throughout the resident areas utilize maintenance-free terrazzo floors, glazed structural tile walls, and exposed metal deck ceilings. Approximately 2,000 tons of structural steel framing were utilized in the project.

Steel Sun Sheds

An interesting feature on the campus are the "sun sheds" located near the residential cottages to provide shade in the recreation areas. Each shed is hexagonal in plan, has a sloping roof, and is supported by a single central column to which are attached benches at the base. The roofs of the sun sheds span 36 ft at the widest points of the hexagon. They are 14 ft high to the top of a hexagonal cap (5 ft maximum width) which repeats the shape of the roof in miniature. Framing for the sheds is rectangular structural steel tubing except for the column which is a 10¾-in. o.d. steel pipe, concrete-filled.

The shelters, each of which weighs 3 tons, were assembled upside-down on the ground, then lifted and flipped in the air, and finally lowered on to footings by a 35-ton truck crane. High-roof units for the cottages and other buildings were also assembled at ground level, then lifted in one piece and lowered on to low-pitched roofs.

Structural Engineers for the project were Severud-Elstad-Krueger Associates; steel fabricator was Bethlehem Steel Corp., and Frank Briscoe Co., was General Contractor.

Slayter Center of Performing Arts

Joseph Baker, AIA, Joseph Baker and Associates, Newark, Ohio

The donor, a philanthropist who once played tuba in the school's band, asked us to design a "band shell" that he could present to his alma mater, Purdue University, Lafayette, Indiana. It was to accommodate at least 150 musicians, plus rehearsal room, dressing rooms and toilet facilities. It was to be situated at the foot of a gentle up-sloping lawn, upon which the audience, estimated at 6,000 persons, would view open-air performances. The university asked that the design not copy existing campus styles, but that a new and lighter theatrical appearance be undertaken.

The Problems

Our acoustical consultants advised that to project sound to so large an audience, the structure (or shell) should approximate the form of a shoe box with one end open, with all surfaces being dense and heavy. To cover so many performers required a ceiling measuring 70 ft wide by 60 ft deep and, for acoustics, set at 35 ft above the floor!

As it would be permanently exposed to the elements, both inside and out, concrete and corrosion-resistant ASTM A242 steel were selected to minimize maintenance.

The structure described by the acoustical requirements seemed forbidding: a masonry fortress without the guns! A steel and concrete roof as big as a basketball floor "floating" 35 ft high, fighting the wind loads through the open end and without interior supports.

The Solution

In the effort to give relief to this great mass of masonry, we conceived splitting the enclosing walls into vertical segments somewhat suggestive of England's Stonehenge. For strength and durability, we designed a steel armature, over which was applied concrete under spray pressures to produce not less than 6,000 p.s.i. material.

These free-standing segments of walls measure 5 to 8 ft wide by 20 to 28 ft high, and the turning moment from wind load is great.

To further lighten the visual effect of the structure, the acousticians agreed that we could lift the roof off the walls by as much as 4 ft. The lifting of a ½-million-pound steel and concrete roof 70 ft x 60 ft, and holding it there securely — and even delicately at 35 ft in the air — is not a simple task. To do it with conventional posts and girders would have resulted in giant sections, diagonal bracing, and a general clutter or loss of simplicity.

Our solution to this problem was to design an A242 steel tripod of 30WF108 beams, the longest leg of which is almost 99 ft. One flange was burned off each of the three beams comprising the legs of the tripod. The three resultant Tee forms were positioned at 120-degree intervals to each other, and continuously welded together. A tapering cut was used in burning off the flanges so that each of the three members begin at less than 6-in. width, increasing evenly to a full 30-in. at midpoint, and then decreasing to 6-in. again. Stiffening plates were installed at regular intervals.

There is no connection of the roof to the tripod legs except for a light telescoping pin designed to absorb the 5,000-pound sidesway from wind pressures.

The gridwork of WF beams framing the roof was completely shop-fabricated; all meetings were coped into each other and then welded on the ground at the site. By use of several cranes, the entire steel roof assembly was lifted as a unit and held until the 60 pre-cut and pre-stretched stainless steel wire ropes were attached. By careful positioning, each wire supports an equal amount of the 500,000-pound finished load, even though their angle of incidence to the roof varies from 40 to 90 degrees.

With the welded roof grid in place, precast, reinforced, polyundulant, domed concrete trapezoids — measuring up to 100 sq ft in area — were raised from below, temporarily clamped and permanently welded in place to form the ceiling. A cellular steel deck was then welded to the grid as roof decking.

The entire exposed superstructure will be left without paint and allowed to assume the brown patina typical of corrosion resistant structural steel, which forms its own protective coating.

Since structure is an inseparable element in architecture, the powerful or aggressive tripod form was used. We believe design unity was achieved through unity in the exposed framework.

Structural Engineer for the steel superstructure was United States Steel Corp., Applied Research Laboratory, Monroeville, Pa. Consultant on acoustics was Bolt, Beranek and Newman, Inc., Boston, Mass. General Contractor was Kemmer Construction Co., Lafayette, and the Steel Fabricator was American Bridge Division, U.S. Steel Corp., Gary, Ind.

Steel Kept This Job On Schedule

"We would have been on the job an extra two months if we had specified concrete instead of steel for the framing."

This is Herbert D. Phillips, AIA, commenting on what is almost assuredly the first dodecagon, high-rise hotel in the resort areas north of New York City. Mr. Phillips, the architect, elaborated: "The structure is the latest addition to the complex of buildings at the Nevele Country Club in Ellenville, New York. Two job restrictions gave us the final nudge into the steel camp. First, the owners didn't want any construction to begin until after their normal booming summer season. That meant after Labor Day. Second, they wanted the addition ready for guests by the next convention season – around October 1.

"Had we decided to frame in concrete, winter would have closed in before construction could have progressed much beyond the first or second tier. We would then have had two choices: winterize and continue (at considerable extra expense), or wait until spring and begin again. Steel framing offered the more practical solution, and we took it. As a result, the crews went ahead and placed the foundations soon after Labor Day, and just got them in before the snow began to fly. Meanwhile, steel detailing and fabrication were progressing. Then, in February, although temperatures were still below freezing, the steel work commenced. All framing for the 10-story structure was finished in exactly 22 days.

"There were other reasons we chose steel. The Nevele stays open all year. The owners fretted about potential inconveniences – not to say downright annoyances – to guests during construction. The thought of churning concrete trucks, noisy form construction and fine dust sifting over the surrounding lawn was anything but appealing. They were pleased, however, when they saw how quietly the steel went up. Some of the steel had been shop welded, and some was field welded. But the biggest portion was made fast with high-strength bolts. The operation proved not the least bit annoying to the guests. In fact, to the hotel social program director's consternation, the steel erection drew a sizeable daily quota of sidewalk superintendants away from volleyball games and other assorted amusements.

"Moreover, we were pleased that steel adapted itself so easily to the circular construction. The dodecagon design was inspired primarily by our desire to plan a building with 'no back door.' We wanted to do this because the site is directly in front of existing hotel structures and overlooks one of the golf course fairways (as well as striking views in all directions.)

"The 12-sided tower gives every guest a chance to enjoy the view. And, of course, the shape cut down on waste corridor space. The circular corridor also gives guests the feeling that their room is only a few steps away – a pleasant change from standard tunnel-like corridors. In the core, we included two high-speed elevators, a pair of scissor stairs, and housekeeping storage. White and green glazed brick make up the skin, and the elevator penthouse is sheathed in aluminum panels with a baked-on gold finish. The building is fireproof and practically maintenance-free."

The guest tower has a maximum diameter of 90 ft, and contains 108 wedge-shaped bedrooms. On the ground floor, in addition to the lobby and administration offices, there is a 250-seat column-free convention hall. The clear span is provided by three pairs of steel girders.

Steel frame was completed in 22 days despite freezing weather. Five tapered girders fan out from single column to frame canopy.

So that large exhibits can be moved into the hall, an opening 12½ ft high and 14 ft wide was erected with specially-designed steel tube and glass doors.

One interesting bit of construction occurred at the canopy. There, five tapered steel girders fan outward from a single column within the building, cantilevering 20 to 25 ft from the frame. The taper was made by cutting off portions of the web on each 27WF beam, then bending the flange gradually from 27 in. at the face of the building to 12 in. at the end of the canopy.

Mr. Phillips designed the tower during his association as partner in the New York architectural firm of Viola, Bernhard & Phillips. Owners are Ben and Julius Slutsky. Structural Engineers were Greenhut & Taffel, New York; General Contractor was Perlstein Builders, Inc., of South Fallsburg, N.Y.

Prospect House on the River

Prospect House in Washington, D.C. occupies one of the most imposing sites available anywhere for an apartment house. Situated on a high promitory at the western end of the axis of the Federal Mall, it forms the fifth element in a line beginning at the Capitol, including the Washington Monument, the Lincoln Memorial and the Marine Statue of Iwo Jima.

The Architect, Donald Hudson Drayer, AIA, when asked to develop plans for this site stated that he was "both pleased by the opportunity and sobered by the responsibility of providing a back drop for the Mall". The problem was to plan the building to give every living room a 12 ft x 12 ft picture window view of the Capitol City and provide a pleasing silhouette to the skyline. The scheme immediately suggested a skip-level, but the usual schemes did not provide for studio living rooms or face them all on the view. What was achieved was what might be called a skip-split design allowing for three levels of dining rooms, kitchens, and bedrooms to each two levels of living rooms. Even the kitchens and dining rooms share the view through the 12 ft high living room windows.

Rooms with a View

The elevators stop only at each third level. From the corridor, each apartment door opens on a generous foyer and closet arrangement. From this foyer, in apartments on an upper level, tenants walk up a half-flight into the 1½ story living room. Then up another half-flight to a mezzanine dining room, which overlooks the living room and the whole City of Washington as well.

In apartments on a lower level, a stair leads down from the foyer into the studio living room with bedrooms, kitchen and dining room on this same level. The corridor also serves efficiency units on the same level. Each living room is provided with a private balcony 20 ft wide by 9 ft deep at the center.

Underground parking is provided for 195 cars on three levels. The garage roof is used as a private promenade for tenants. And the roof of the main building contains a 1600 sq ft enclosed lounge that is air conditioned. Beyond this is a covered roof terrace and an open sun deck.

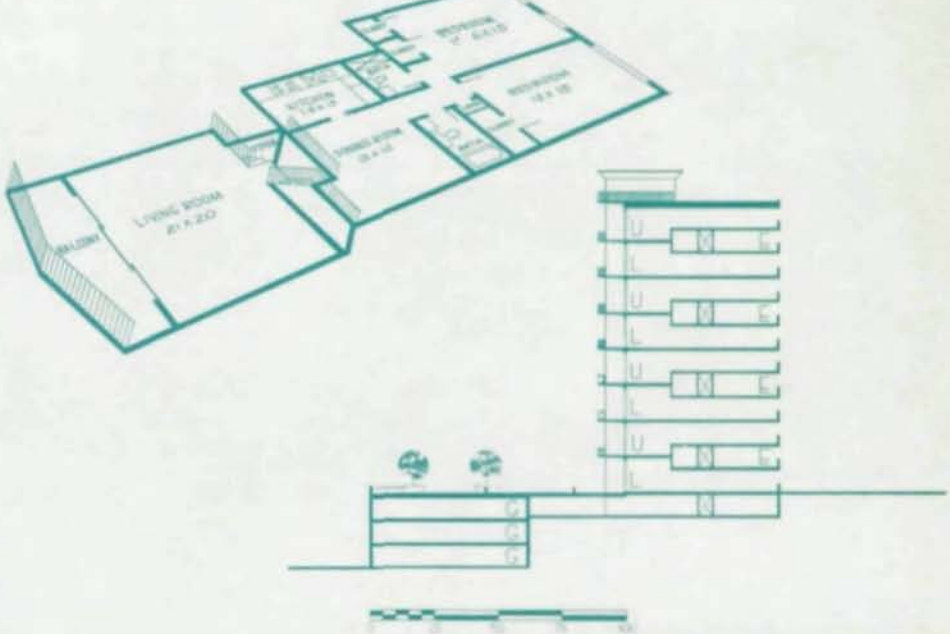
Steel Frame Chosen

Structural steel was the logical fram-

Photo Credit: Robert Lautman

ing material for the building. The interior layout required unusually long spans for an apartment building. This, plus framing problems inherent in the split-level design, made steel the most economical choice.

A 20 ft module was used for the building. Wind beams were installed transversely to the building and doubled as beams to support the steel joists topped with a 2½-in. concrete slab. Columns in the structure, up to the 8th-floor level, are 50 ksi yield steel. The remaining five floors are framed in A36 grade structural steel. This use of high-strength steel significantly reduced the weight on the lower levels. The 8-in. wide flange columns, 120 ft long, which support the balconies and are outside the building and left exposed except for paint, give the structure a crisp vertical linear module contrasting with the broken horizontal line of the balconies.



Architect: Donald Hudson Drayer, AIA
Structural Engineer: Heinzman and Clifton
General Contractor: Landow and Brandt Construction Co.
Fabricator: Montague-Betts Co.

steelnotes

Steel and Glass Columns

A unique feature of the new International Headquarters of the American Flint Glass Workers Union is the use of 16 exterior columns to provide light as well as structural support for the roof. Loads are transferred through a 5-in. section of extra heavy pipe to four 2½ by 2½ by ½-in. angles and then back to another pipe section at the base. The angles slenderize and lighten the appearance of the column in a manner similar to flutes in a classic column. A 4½-in. section of frosted glass tubing is inserted into the column structural assembly. Fluorescent tubes with a lamp life in excess of 9,000 hours will light the column at night. Architects and Engineers are Richards, Bauer and Moorehead, Toledo. General Contractor is Comte Construction Company, Toledo.

Interior Flexibility

Location of interior columns within corridor walls, and 4-ft spaces between windows provide unusual internal flexibility in the Yale Wilshire Medical Building, Santa Monica, California. On the exterior, the structural steel frame is surfaced with blown white cement plaster, providing a sculptured look in the upper levels of this four-story structure. Two underground parking levels, together with first-level exterior parking, are capable of accommodating 113 cars. Architects are Richard Dorman, AIA, and Associates, Beverly Hills, California. Structural Engineer is Joseph Kinoshita, and McNeil Construction Company is the General Contractor.

Municipal Office Tower

Posing for its first formal portrait is the Norfolk Civic Center's 14-story Municipal Office Tower, which stands with four other structures in a complex that was designed in two phases by Philadelphia architect Vincent G. Kling. The steel-framed Office Tower employs a unique system of double windows to cut solar glare and air conditioning costs, while providing attractive views of Virginia's tidewater region. Structural Engineers were Fraioli, Blum and Yesselman, New York; General Contractor was Blake Construction Company, Washington, D.C.

Competition-Winning Design

Denver's new Convention Center will be based on a competition-winning design in steel, the joint effort of three Denver architects — James Terrill Ream, W. C. Muchow Associates, and Haller & Larsen Architects. The roof will be a steel space frame, comprised of four steel members, each 180 by 180 ft, on 10-ft modules. Steel inverted pyramids will taper from 40 ft sq at the roof trusses to 10 ft sq at ground level piers.

Perimeter walls will hang by steel rods from the edges of the space frame. 320,000 sq ft of space will be provided on three levels: a lower parking level, a main exhibition level, and a mezzanine area of offices, lounges and concessions. Construction is expected to begin in the Summer of 1966.