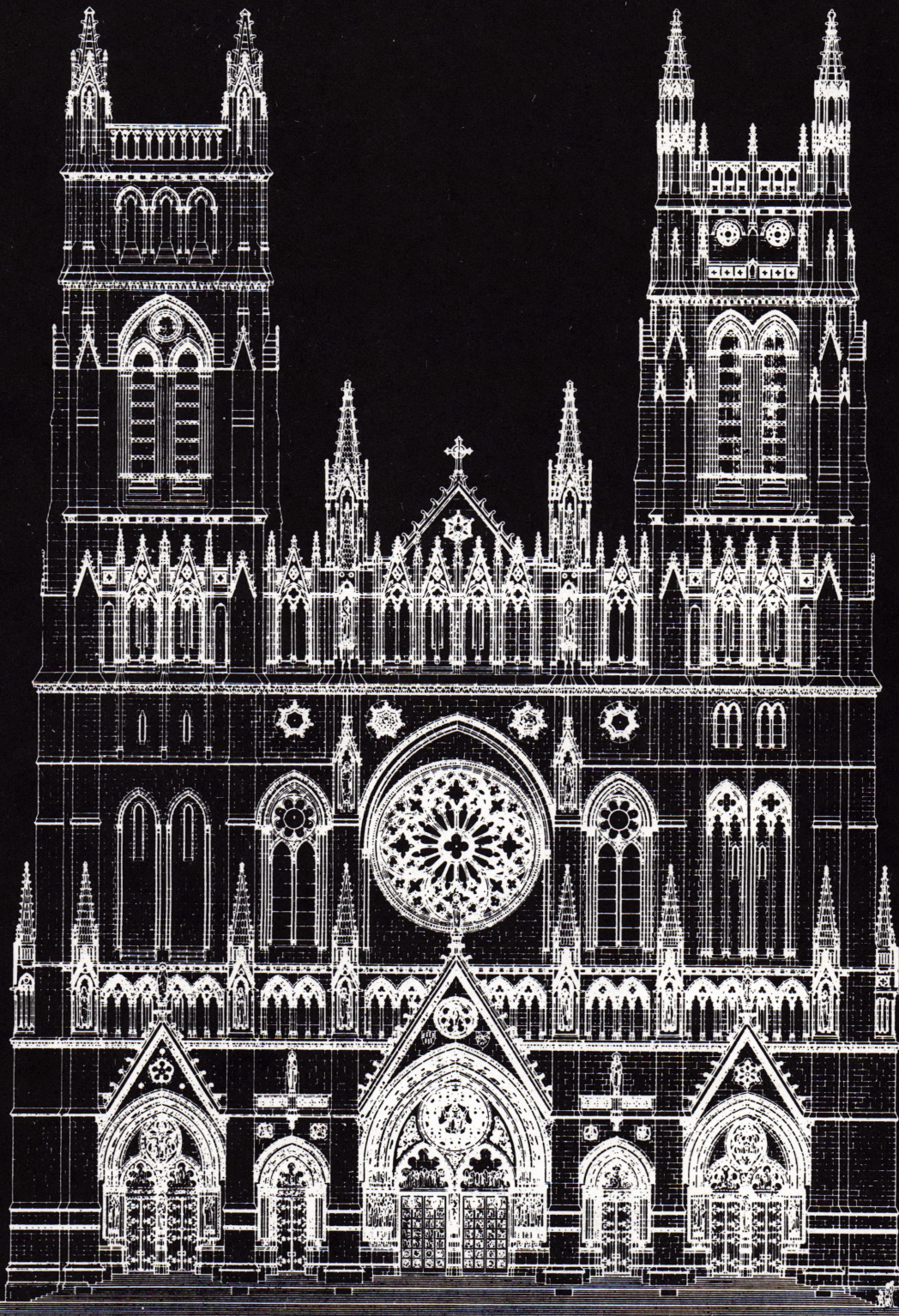


OCULUS

on current new york architecture

The New York Chapter of the American Institute of Architects

Volume 47, Number 2, October 1985



Cathedral of St. John the Divine: Ralph Adams Cram's 1929 design.

OCULUS

FINISHING A GOTHIC CATHEDRAL

Volume 47, Number 2, October 1985

Oculus

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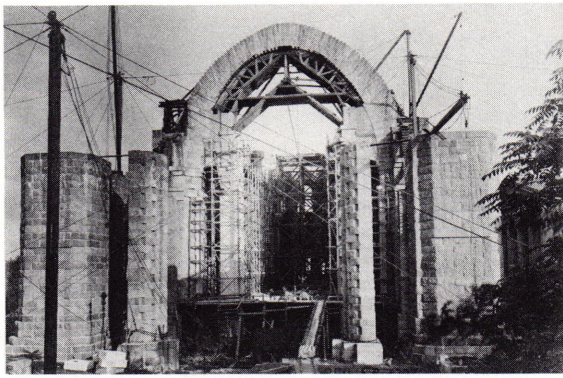
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The new construction on the South West tower.



The Romanesque crossing which was finished in 1911.

The South West tower rises in 1985.

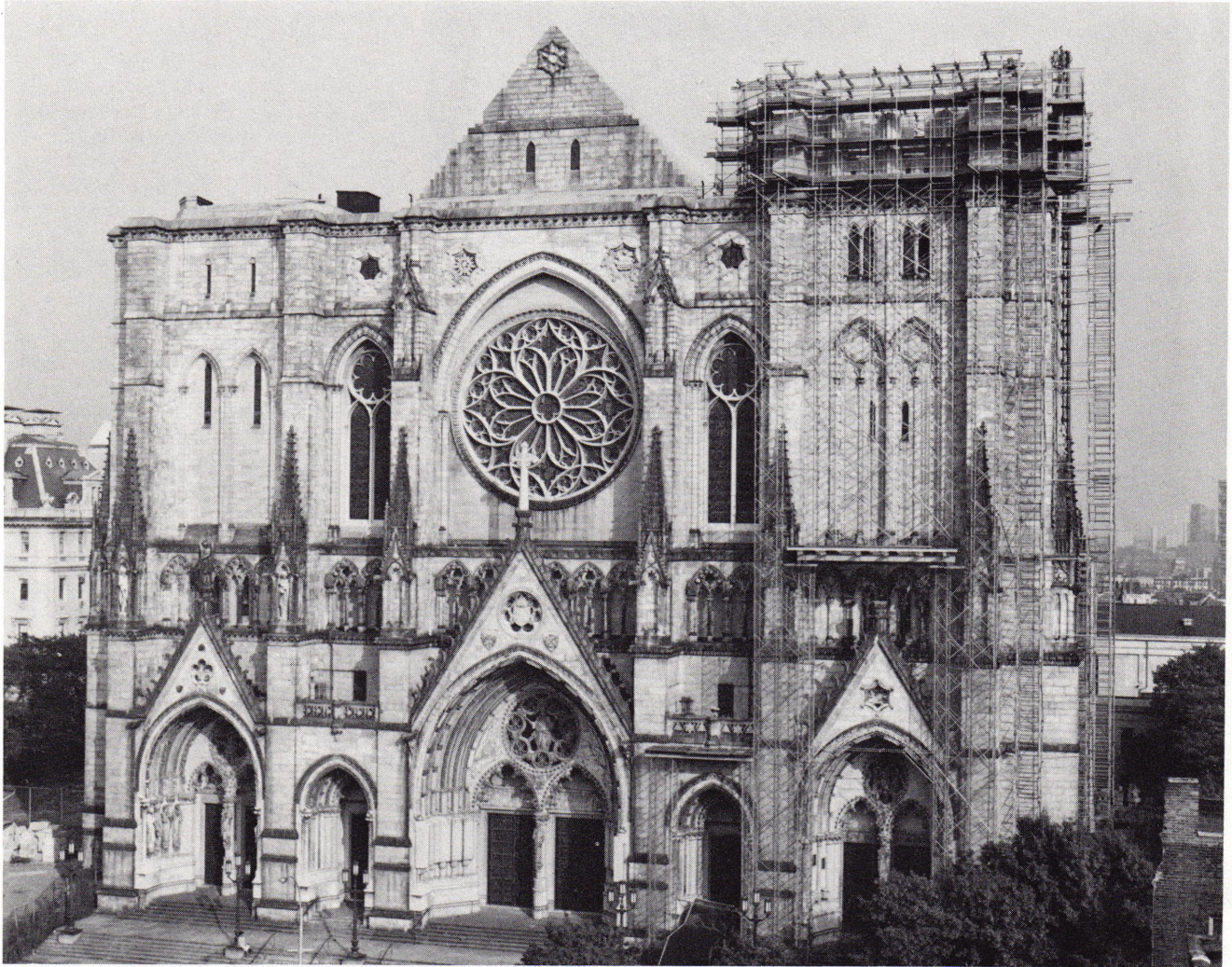


Photo: Stan Ries

The day after the Chapter's Annual Meeting last June, a Chapter-organized tour of the Cathedral of St. John the Divine, at 112th Street and Amsterdam Avenue, attracted several dozen members interested in seeing the recent progress of building the West Front towers. The Very Rev. James Parks Morton, Dean of the Cathedral, who has master-minded the program of completing the building, led the tour. He said again, "Not to build is to indicate that you cannot build."

Actual construction began in September 1983, when the first courses of stones were laid for the South tower (see photo). It had been

the first construction of the Cathedral fabric in over 40 years. And the stones had been cut by Black, Hispanic, and other local Harlem community apprentices.

Suddenly, this long-seeming anomaly — the 20th century Gothic Cathedral — was at the center of community action, like its medieval predecessors.

Long a-building

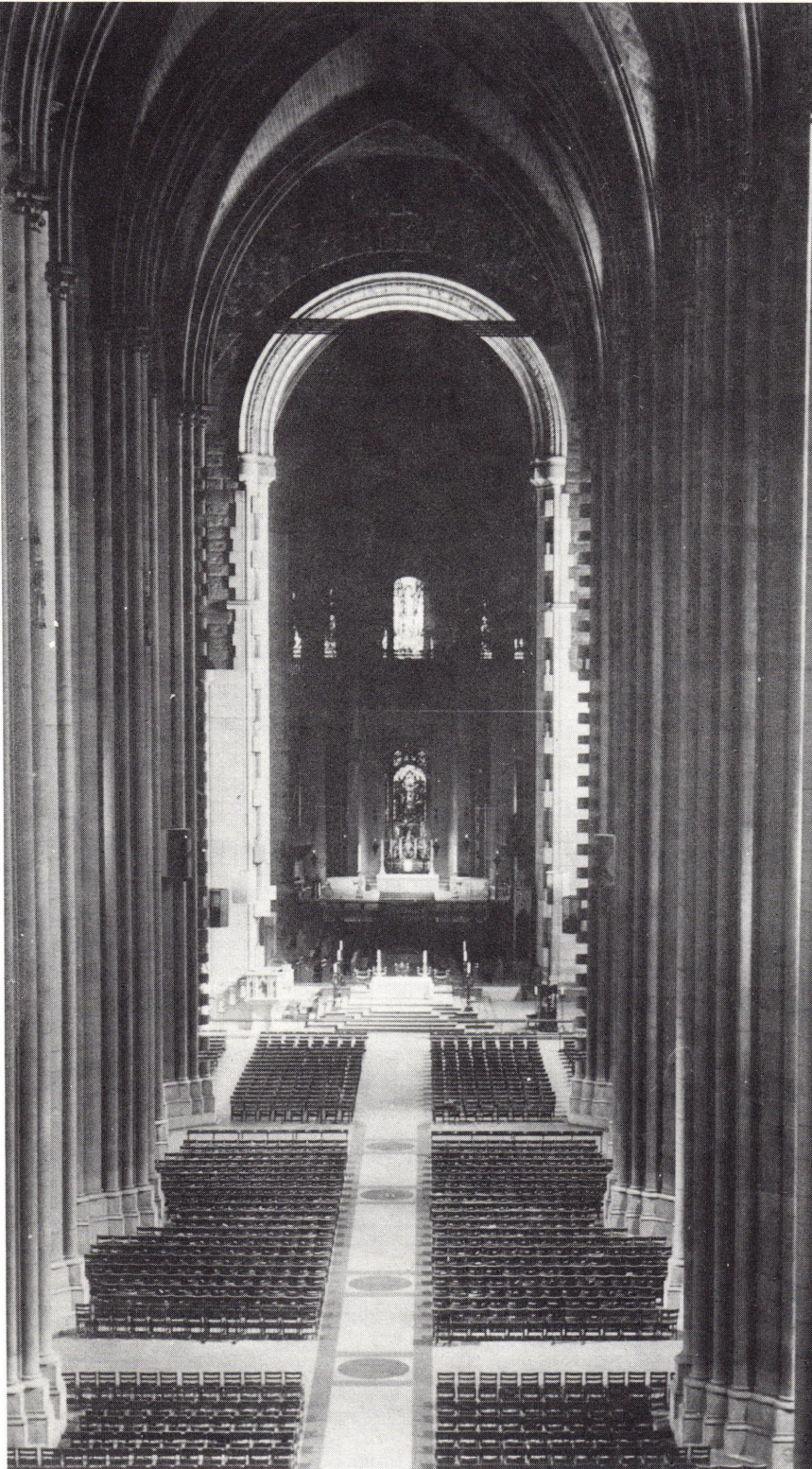
Also like the first Gothic cathedrals, St. John the Divine has been long a-building through different stylistic periods. Following the competition won by Heins and LaFarge's Romanesque design in 1889, construction on the 13-acre site began

in 1892 and continued to 1911, when the crossing and choir were consecrated. But in 1911, following the revival of interest in Gothic (Bertram Goodhue began working on St. Thomas's in 1906), the Cathedral appointed a new architect — Ralph Adams Cram — and after World War I, construction resumed from 1916 to 1941 in his High Gothic design.

In 1941 (when this editor was a choirboy there) Cram's new 124-ft. high nave was dedicated and, as Bishop Manning parted a temporary blue curtain between nave and crossing, the entire length of the Cathedral was opened for the first time. That interior view (see photo) is

*From the Gothic triforium to the
Romanesque apse—more than 600 ft.*

Photo: A. Hansen, NYC



more than 600 ft. long—a tenth of a mile—making St. John's the largest Gothic Cathedral in the world and twice the size of Notre Dame in Paris. (The still larger St. Peter's in Rome is not only not Gothic but also not a cathedral; it is technically a basilica, since the Pope, as Bishop of Rome, has his cathedra in St. John Lateran.) Ten thousand people were said to be in attendance at the opening of the full length.

One week later, however, Pearl Harbor interrupted construction, and Cathedral building stopped again, for 38 years till 1979. Then, with the opening of the Cathedral's stoneyard, stonecutting shed, and apprentice program, the current phase of completing the Cathedral was initiated.

Now the first construction goal is to finish the towers of the West Front—twin 294-ft. high towers. But there were a few minor delaying factors to contend with first—no architect, no documents, no stones, no stonecutting equipment, and no stonecutting craftsmen.

Design Documents

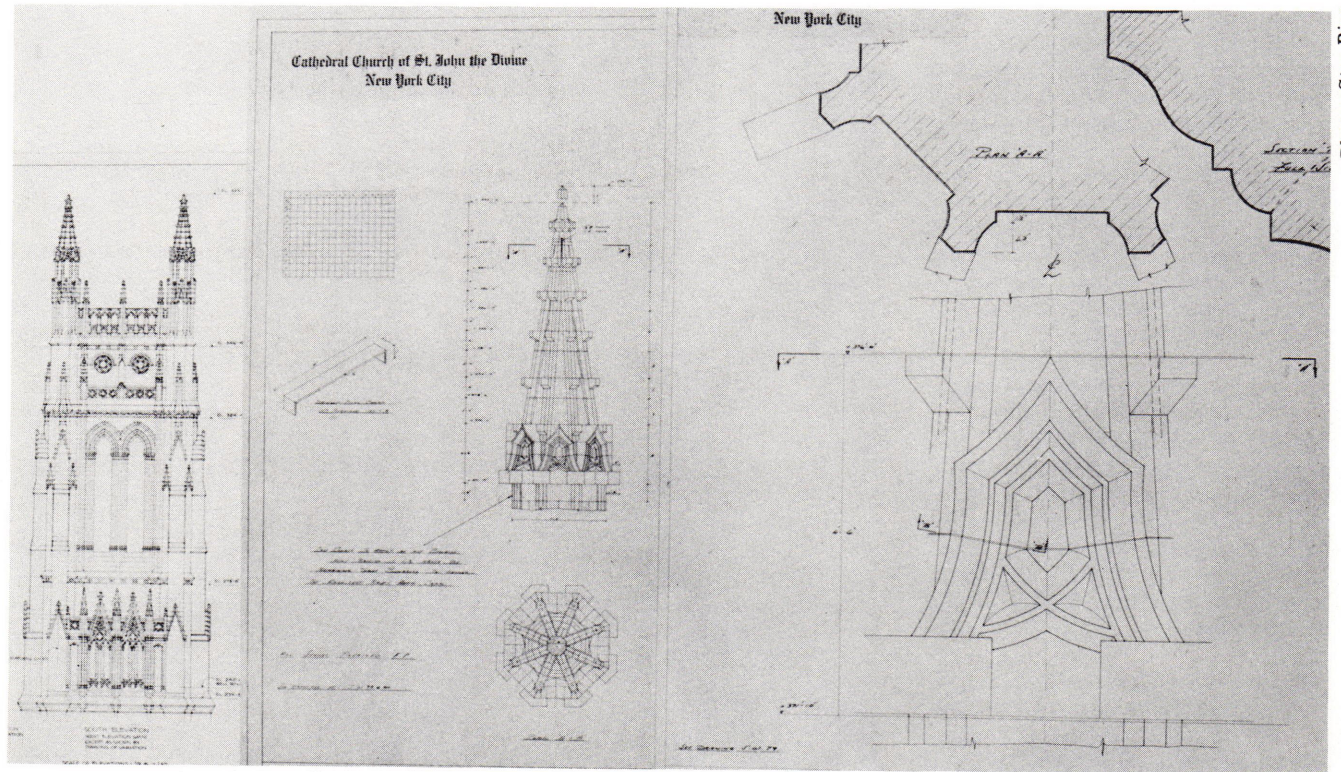
Ralph Adams Cram had long since died (in 1942), and the sole survivor of his firm, the late John Doran, could find only $\frac{1}{8}$ in. scale drawings of the West Front towers, dated 1925, 1928, 1929, and 1930. The question posed was, which of the preliminary designs was to be the guideline? The Fabric Committee selected the 1929 scheme as Cram's preferred design (see cover). (The 1930 towers, reflecting the Depression, were 38 ft. lower.)

The Cathedral engaged English master builder James R. Bambridge to direct the overall project. Bambridge has been cutting stone for 35 years, most recently at Liverpool and Wells Cathedrals. Here he oversees management, the execution of drawings, the stone cutting, and the construction. Among his first tasks was converting the $\frac{1}{8}$ in. original 1929 blueprints of Ralph Adams Cram to $\frac{1}{2}$ in. working drawings (see photo).

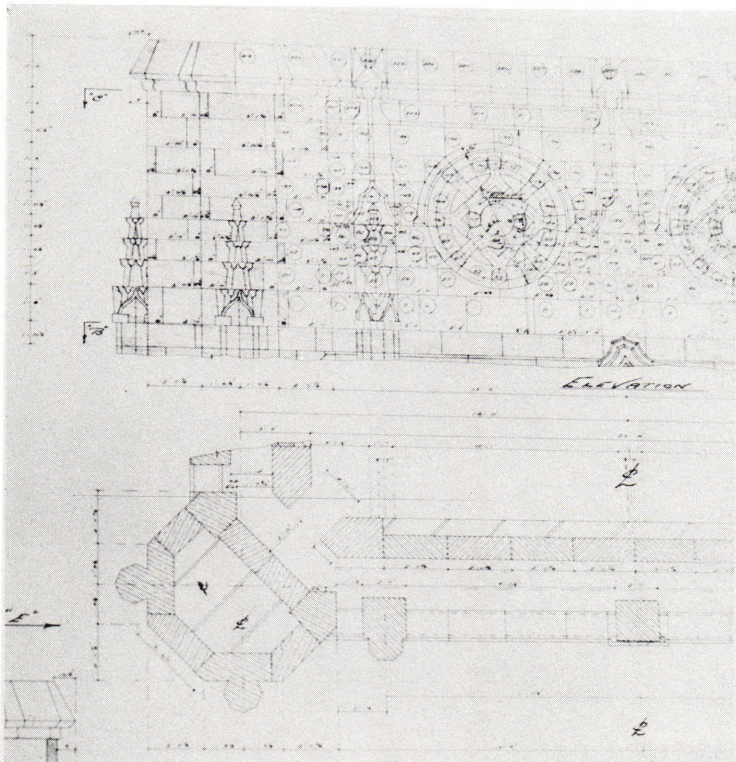
Three stages of the drawings: the $\frac{1}{8}$ -in. scale original, the $\frac{1}{2}$ -in. scale conversion, and an actual-size detail.

Working drawings show each stone numbered.

Master builder James R. Bambridge converting to $\frac{1}{2}$ in. working drawings.



Photos: Stan Ries



*Examining the templates.**Working drawings are color coded to show which stones are cut.*

On the working drawings, each stone is individually numbered (see photo). Stones are also indexed by a card file, each card describing the stone's number, location, dimensions, and cubic volume. This is the job-ticket system: it gives each stone a 'job ticket' that tells the stonecutter what moulds to use to shape the stone, that follows the stone's progress through the production schedule, and that provides a tally for foot-cubage produced versus wastage.

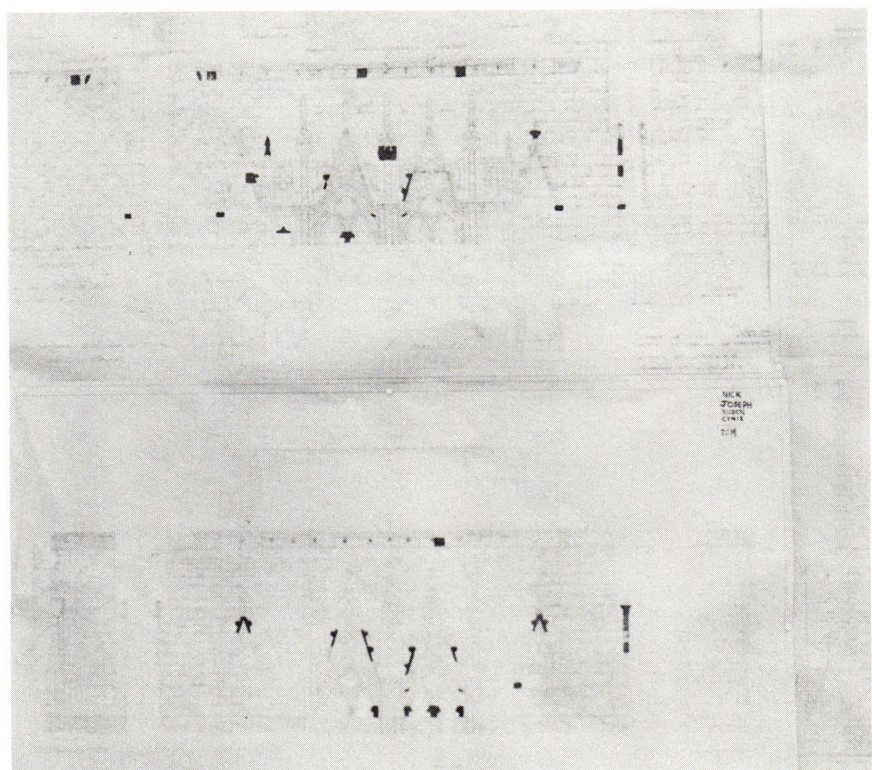
After making the working drawings, the master builder's next task is cutting full-scale marked zinc templates of each stone (see photos). The templates provide the footprint or face and bedmoulds as well as sections for each stone; they are patterns for the stonecutters. Now, Bambridge is training an apprentice to assist him in this transfer.

The Program of Stonecutting

The master builder also coordinates the delivery of stone from the quarry, the stone's progress through the yard including the sawing schedules and the stonecutting that is done by apprentices. He had initial help in teaching the apprentices in the person of the late Christopher Hannaway, who worked with him in developing a similar program during the construction of Liverpool Cathedral. Hannaway was succeeded by Alan Bird, who had worked for Bambridge at Wells Cathedral.

The apprentice program has received more notice to date than the design and construction program. Apprentice stonecutters, in the tradition of cathedral building, are trained in a stoneyard adjacent to the Cathedral. That stoneyard with its two-story stonecutting shed is also in the tradition of ancient cathedral building — with some modern help from new equipment and from electricity.

The first phase of the four-year apprentice program started with five apprentices — most of them Harlem youths. The second phase from
cont'd. p. 11



Chapter Reports

- The Executive Committee at its August meeting took up the 1985-86 Chapter operating budget, and it was apparent that increases in the costs of certain overhead obligations such as occupancy as well as the expanded *Oculus*, and recently undertaken programs which have overburdened the staff, were outrunning the rate of income from increased membership. It was resolved to recommend a 20% dues increase to the membership, and notice of a special Chapter meeting September 10 was sent out. At the meeting, Tom Fridstein, Treasurer, outlined the Chapter's financial situation, and the Executive Committee's recommendation was approved without debate.

Coming Chapter Events

- Saturday, October 5, 9:15 a.m.-3:30 p.m. A bus tour to Primo, Lighting Design Center, South Norwalk, Ct., sponsored by the Interiors Committee. Meet at IDC/NY's Manhattan rental office, 919 Third Avenue (56th Street between 2nd & 3rd Avenues). There will be a \$15 charge; reservations a must—call the Chapter office.
- Tuesday, October 22, 6:00 p.m. The Urban Center. Interiors Education Roundtable Part II. Architectural and Interior Design Schools: The making of an interiors professional. Panelists head architectural firms and interior design schools' interiors departments. Laurie Maurer will be the Moderator. the Moderator.
- Tuesday, October 29, 6:00 p.m. The Urban Center. The first of four seminars sponsored by the Professional Practice Committee, Liability: Responsibility for and of Your Consultants. Barry LePatner, Esq., will be the moderator, as he was in the 4-part series last year.
- Tuesday, November 19, 5:30 p.m. The Urban Center. The Energy & Environment Committee will sponsor a lecture: Energy as Light on the occasion of the opening of a Pratt Institute exhibition by the same name.



Chapter Meeting with Committee Chairmen on September 10

- At the same September 10 Chapter meeting, Paul Segal, President, led a general review of Chapter plans for the year; with nearly all the committee chairmen present, each one explained what was expected to be accomplished, so that everyone had an opportunity to learn what would be going on throughout the Chapter, and where committees could supplement each other.

- At its September meeting the Executive Committee took very strong exception to a proposed change in the N.Y. State Association of Architects' bylaws which would reduce this Chapter's voting strength on the board of directors from a present possible 31% to 25%. There are 12 chapters in the state, with membership ranging from our 60% of the total to the Bronx Chapter's 35 members. Of great concern to us is the procedure through which the two members of the national AIA board from N.Y. State are elected: with our preponderance of the membership, we should be able to play a strong part in how we are represented.

- The Chapter has initiated an Architects-in-Training Course, detailed notice of which has been mailed to the membership. Its purpose will be to offer intern architects and architects-to-be a practical curriculum covering such topics as how a project is initiated, who and what are the various public agencies involved in the building process, codes and approval procedures, design and technical production, and construction phase services. Denis Kuhn of the Ehrenkrantz Group and Jerry Hallissy of Stephen B. Jacobs & Associates are directing the course.

- For the second year Barry LePatner, Esq. will moderate four seminars on professional practice: Oct. 29, "Liability: Responsibility for and of

Your Consultants"; Dec. 10, "Role of the Architect on a CM Project"; Jan. 28, "Preparing a Claim for Additional Time or a Delay"; and Mar. 11, "Ownership, Use, and Copyright of Design Documents".

- The Institute's Fourth Biennial Practice Management Conference, "The Management of Creativity", will be held Oct. 10-11 at the Hotel Inter-Continental here in New York. Members received programs and registration forms with the Aug. 28 AIA Memo.

- The Institute has circulated a draft mandatory Code of Ethics and Professional Conduct, which would replace voluntary Ethical Principles—this in turn replaced a mandatory code in the mid 1970's which contained provisions the Justice Department, as well as certain court decisions, indicated were not consistent with anti-trust legislation. Members of the Executive Committee are reviewing the draft, and comments will be forwarded to Washington.

- The Storefront, Art and Architecture, on Prince Street has been invited by national AIA to organize an exhibit on shelter designs for the homeless, to be shown at AIA headquarters Oct. 14-26.

- At a House of Representatives Task Force on Libraries and Memorials hearing in August, George Lewis testified in support of Congressional funding for the proposed expansion of the Cooper-Hewitt Museum.

Correction

The September *Oculus* (page 7) erroneously identified the firm of naval architects with which Vice Admiral Robert I. Price is associated. The firm name is J.J. Henry Co., Inc.

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CONTINUING EVENTS

Oculus welcomes information for the calendar pertaining to public events about architecture and the other design professions. It is due by the 5th of the month for the following month's issue. Because of the time lag between information received and printed, final details of events are likely to change. It is recommended, therefore, that events be checked with the sponsoring institutions before attending.

Send *Oculus* Calendar information to:
New York Chapter/AIA, 457 Madison Avenue, N.Y. 10022.

EXHIBITION

Three French Architects: Ciriani, Gaudin, Portzamparc. French Cultural Services, 972 Fifth Ave. 570-4400. Closes Oct. 18.

EXHIBITION

Tianjin University, China, Student Work. Columbia Graduate School of Architecture & Planning. Avery Hall. 280-3473. Closes Oct. 18.

TUESDAY 1

EXHIBITION

The Modern Spirit: Glass from Finland, including work by such post-World War II designers as Tapio Wirkkala, Alvar Aalto, Aino Marsio-Aalto. Cooper-Hewitt Museum, 2 E. 91 St. 860-6868. Closes Jan. 5.

LUNCHTIME SERIES

Guy Geoly on "Costumes on the Broadway Stage" in the Municipal Art Society series. 12:30-1:30. The Urban Center. 935-3960.

TUESDAY 8

LECTURE

Mughal architecture discussed by Glenn D. Lowry, Freer Gallery of Art, in 5-Tues. series. 6:15 pm. Cooper-Hewitt. 860-6868.

LUNCHTIME LECTURE

Ming Cho Lee, on "Set Design on the Broadway Stage," in Municipal Art Society series. 12:30-1:30. The Urban Center. 935-3960.

EXHIBITION

"Drawings by Architect Oscar Nitzschke," presented by the Irwin S. Chanin School of Architecture of the Cooper Union. Closes Oct. 31.

EXHIBITION

Chicago and New York: Architectural Interactions. The New-York Historical Society, 170 Central Park West. 873-3400. Closes Oct. 26.

EXHIBITION

The Ten Great Squares of the World. The Municipal Art Society. 457 Madison Ave. 935-3960. Closes Oct. 28.

EXHIBITION

Work from the five New York architectural schools. AIA Members Gallery. 838-9670. Closes Nov. 10.

WEDNESDAY 2

LECTURE

Werner Seligman, Dean, School of Architecture, Syracuse U. on "Frank Lloyd Wright: The Evolution of the Prairie House," in Columbia's Graduate School of Architecture & Planning series. 6 pm. Avery Hall. 280-3473.

PANEL DISCUSSION

Coordinated Transportation Planning for Midtown Manhattan, co-sponsored by APA and Friends of Midtown. 6-8 pm. CUNY Graduate Center, 33 W. 42 St., 3rd Floor.

WEDNESDAY 9

LECTURE

Sam Bass Warner, Jr., William Edwards Huntington Professor of History, Boston University, on "The Awful History and Fresh Promise of Urban Gardens" in Columbia's Graduate School of Architecture and Planning series. 6 pm. 280-3473.

SEYMOUR DURST

Guest speaker at regular monthly meeting, New York Chapter/Construction Specifications Inst. 5:45 pm. Chemist Club, 52 E. 44 St. Philip Ostron 516-935-9100.

EXHIBITION

Henri Cartier-Bresson: Portraits 1930-1984, including Frank Lloyd Wright, Alexander Calder, Henri Matisse. International Center for Photography, 1130 Fifth Ave. (94th St.) 860-1777. Closes Nov. 10.

EXHIBITION

On the Avenue, The Evolution of the Upper East Side. Museum of the City of New York. Fifth Ave. at 103 St. 534-1672. Closes Nov. 17.

THURSDAY 3

STUDY/TOUR

London/Berlin: Forty Years After Urban Reconstruction, sponsored by School of Architecture and Environmental Design, CCNY, with the Polytechnic of South London (Oct. 3-13). For more information: Lance Jay Brown 690-4118/4261 or Norman Shapiro 690-6611.

THURSDAY 10

OPENING

The International Design Center of New York opens to industry professionals in Long Island City, Queens.

EXHIBITION

Nineteenth and Early Twentieth Century Photographs from the Collection of the Art Commission. City Hall, Broadway & Murry Street. 566-5525. Closes in June 1986.

EXHIBITION

Paris Recorded: The Therese Bonney Collection. Cooper-Hewitt Museum. 860-6868. Closes Dec. 8.

EXHIBITION

Wurts Brothers Photograph New York. Architectural Photographs 1895-1960. Museum of the City of New York, Fifth Ave. at 103 St. 534-1672. Closes Jan. 5.

FRIDAY 4

TOUR/BUS TRIP ON SAT. OCT. 5

A trip sponsored by the Interior Committee to Primo, Lighting Design Center in South Norwalk, CT. Meet at 9:15 at IDC/NY's Manhattan rental office (56th Street between 2nd & 3rd Avenues). Cover charge, \$15; reservations a must. 838-9670.

TRAVEL TOUR, OCT. 5-20

Inside British Design presented by Minneapolis College of Art & Design. For information: Travel by Design. 2260 Market St., San Francisco 94114. 415-864-6604.

FRIDAY 11

1971: Architectural historian Rudolph Wittkower died.

MONDAY 7

COURSE, OCT. 7-9

"Managing Today's Workplace" sponsored by Facility Management Institute, and held in New York. Information: Facility Management Institute, 3971 S. Research Park Drive, Ann Arbor, MI 48104. 313-994-0200.

EXHIBITION

20 artists & architects exhibit new furniture designs, prints, paintings. Novo Arts, 57 E. 11 St. 674-3093.

MONDAY 14

1066: Norman architecture introduced into England.

TUESDAY 15

DEADLINE

To submit entries in 1985 Wood Design Award Program. The American Wood Council, 1619 Massachusetts Ave. N.W., Washington 20036.

LECTURE

Design in Mughal Decorative Arts discussed by Robert Skelton, Keeper of the Indian Dept., Victoria and Albert Museum, in 5-Tues. series, 6:15 pm. Cooper-Hewitt. 860-6868.

LUNCHTIME LECTURE

Vicki Gold Levi on "42nd Street Boulevard of Dreams." Municipal Art Society. 12:30-1:30. 935-3960.

TUESDAY 22

INTERIORS EDUCATION ROUNDTABLE PART II

Architecture and Interior Design Schools: The making of an interiors professional. Panelists head architecture firms and interior design schools in New York City. Laurie Maurer will act as moderator. 6 pm. The Urban Center, 457 Madison Avenue.

LUNCHTIME LECTURE

Lou Stoumen, photographer and author, on his book, "Times Square: 45 Years" in Municipal Art Society series. 12:30-1:30. The Urban Center. 935-3960.

TUESDAY 29

LE PATNER SEMINAR SERIES "Liability: Responsibility for and of Your Consultants" sponsored by NYC/AIA Professional Practice Committee. 6 pm. The Urban Center.

LUNCHTIME LECTURE

Brooks McNamara on the Shubert Archives, in Municipal Art Society series. 12:30-1:30. The Urban Center. 935-3960.

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THURSDAY 17

1668: Cornerstone laid for Perrault's Louvre in Paris.

WEDNESDAY 16

NYC/AIA ARCHITECTS-IN-TRAINING COURSE

Introduction to course by Paul Segal and Alan Schwartzman. 6-8 pm. NIAE, 30 W. 22 St. (See Chapter Reports)

LECTURE

Jonathan Barnett on "The Elusive City: Five Centuries of Design, Ambition, and Miscalculation," in Columbia's Graduate School of Architecture & Planning series. Avery Hall. 280-3473.

FRIDAY 18

NYSAA CONVENTION (OCT. 18-20) Celebrating New York State architecture and architects. Rochester Plaza, Rochester, N.Y. To register: Barbara J. Rodriguez, NYSAA, 235 Lark St., Albany 12210. 518-449-3334.

WALKING TOUR ON SAT. & SUN. OCT. 19 & 20

The Municipal Art Society's Discover New York tour of Fifth Avenue from 78th to 94th Street. 935-3960.

MONDAY 21

EXHIBITION

Three Firms: Steven Holl Architects, NYC; UKZ, Ithaca, NY; Giuseppe Zambonini, NYC. Columbia Graduate School of Architecture & Planning, Avery Hall. 280-3473. Closes Nov. 15.

THE SHAPE OF THE CITY

Charles Gwathmey in lecture series moderated by Paul Goldberger. 92nd Street Y, 1395 Lexington Ave. 831-9603.

THURSDAY 24

SYMPOSIUM (OCT. 24-26)

The AIA's 2nd National "Housing the Homeless" symposium. AIA Building, Washington, D.C. To register: Ravi Waldon, AIA design dept. 202-626-7429.

EXHIBITION

"The Architecture of Abraham W. Geller." Pratt Institute. Higgins Hall, Lafayette Ave. & St. James Place, Brooklyn. Closes Nov. 5. 1-718-636-3405.

FRIDAY 25

1957: Belgian architect Henry van de Velde died.

Oct. 26: Domenico Scarlatti's 300th birthday (1685-1757).

MONDAY 28

UNBUILT PROJECTS COMPETITION

Deadline for Declaration of Intent. See Chapter Reports.

THE SHAPE OF THE CITY

Robert A.M. Stern in lecture series moderated by Paul Goldberger. 92nd Street Y, 1395 Lexington Ave. 831-9603.

THURSDAY 31

LECTURE

"Thoughts on the Current Architectural Scene" by Abraham W. Geller. 6 pm. Pratt Institute, Higgins Hall, Lafayette Ave. & St. James Place, Brooklyn. 1-718-636-3405.

FRIDAY 1 NOVEMBER

EXHIBITION

"Dictionary for Building IV," Siah Armajani's sculptured interpretations of architectural elements. Max Protetch Gallery. 37 W. 57 St., 838-7436. Closes Nov. 30.

SYMPOSIUM (NOV. 1-4)

International Symposium on Earth Architecture, Beijing, China, organized by the Architectural Society of China. Tel: 893868, Beijing, China. Telex: 22477 CSCEC CN.

Names and News

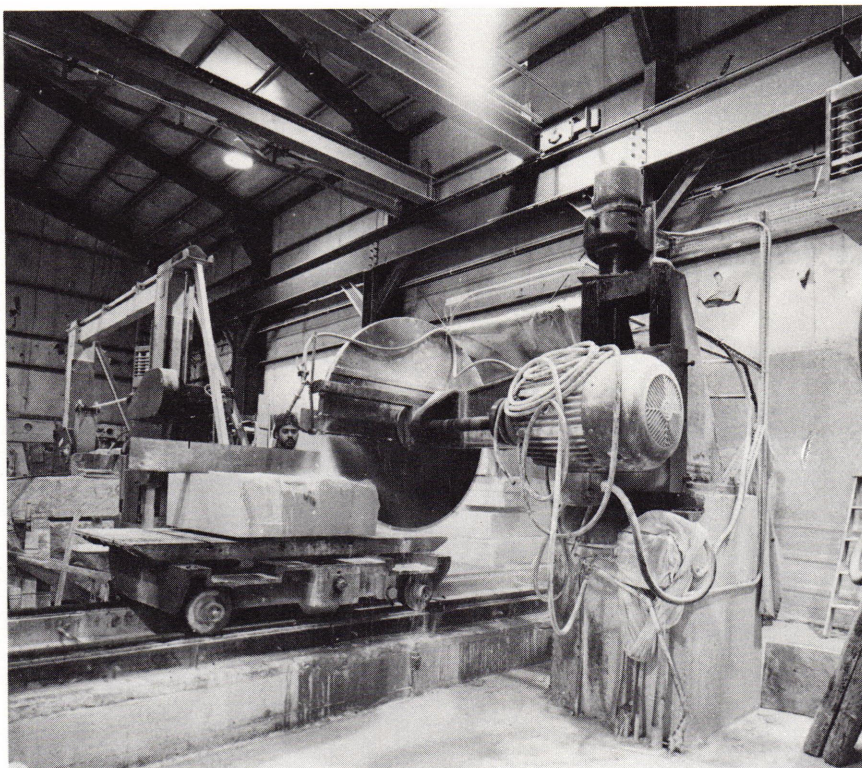
"The Shape of the City" is the title of a five-lecture series moderated by Paul Goldberger to be held Monday evenings beginning October 21 at the 92nd Street Y. Charles Gwathmey, Frank O. Gehry, Eugene Kohn and William Pedersen, and Robert A.M. Stern are among the lecturers . . . Mildred Schmertz has been named Editor of *Architectural Record* to succeed Walter Wagner, Jr., whose death was reported in last month's *Oculus* . . . Bill N. Lacy has been appointed by the Office of Foreign Buildings Operations, U.S. Department of State, to their three-member Architectural Committee. The Foreign Buildings Operations Office is responsible for the selection of architects for all U.S. Government buildings overseas . . . Current projects of Brennan Beer Gorman/Architects include renovation of the 330-room Holiday Inn in Tampa, Florida, and expansion of the meeting and convention facilities of the Buena Vista Palace Hotel in Orlando . . . The New York Society of Architects has announced the publication of its 1985 New York City Building Laws. For more information: 675-6646 or 675-5922 . . . Venturi, Rauch and Scott Brown designed the installation of the Whitney Museum of American Art exhibition, "Highlights of 20th-Century American Design" (see calendar) . . . The American Academy in Rome has announced its 1986-87 Fellowship in Architecture. The one-year Fellowship to work independently in the Academy's community of artists and scholars in Rome includes an annual stipend of \$5,400, an \$800 travel allowance, room and most meals, and studio or study. November 15, 1985 is the deadline. To request application address Fellowships Coordinator, American Academy in Rome, 41 E. 65 Street, NYC 10021 (535-4250) . . . Martin Gallent, vice chairman City Planning Commission, and Sally Goodgold are leading a six-session course on Case Studies in Urban Planning, which began at the New School on September 26 and includes as guest speakers Edward Larrabee Barnes, John Burgee, Alex Cooper, Stan Eckstut, Meyer Frucher, Roberta Gratz, Michael Lazar, Lauren



The newly opened Pier 17 Building at South Street Seaport.

Otis, Sal Samperi, Der Scutt, Raphael Vinoly, and Holly White . . . Welton Becket Associates of New York are the architects for an 187-room Mystic Hilton in Mystic, CT . . . The Professional Services Management Journal's Financial Statistics Survey of 334 firms shows design firm profits are increasing after several years of decline, with architectural firms reporting the highest profitability (3.18%), while architectural/engineering firms reported the lowest net profits (1.64%). The survey results are available (\$80) from PSMJ, 126 Harvard Street, Brookline, MA 02146 . . . Fred S. Dubin, president of Dubin-Bloome Associates of New York and East Norwalk, CT, has been re-appointed Andrew Mellon Professor in the School of Architecture, Carnegie Mellon University in Pittsburgh . . . An international competition to design the next growth phase of the University of Miami's 250-acre Coral Gables campus is open to environmental designers in architecture, landscape architecture, and planning. October 15 is the deadline for registering: Professor Ralph Warburton, AIA, AICP, Professional Advisor, Campus Plan Competition, University of Miami, Coral Gables, FL 33124-9178 . . . Robert Gatje of Gatje Papachristou Smith was the designer of the Broward County Main Library in Fort Lauderdale, which has received two awards of architectural excellence: the 1984 Honor Award from the Broward County Chapter of AIA, and the 1984 Community Appearance Award from the City of Fort Lauderdale . . . The Eggers Group are the architects of a mid-block office building being constructed at 110 E. 55 Street, which "owes its distinctive form to a zoning split across its site. The western 16-feet of the 56-ft-wide site falls into the special midtown zoning district created to control the density of new building in midtown" . . . An international workshop on "Heritage

lot and block numbers, who owned the land, who were some of the former occupants . . . A 233-page catalog of films and videotapes presented at FAC-TV, the 4th International Festival of Films on architecture and Planning, and Conservation: Jerusalem as a Laboratory," sponsored by the city of Jerusalem and The Conservation Foundation in Washington, D.C., will be held in Jerusalem, March 16-20. For more information: Phyllis Myers, The Conservation Foundation, 1255 23rd Street, N.W., Washington, D.C. 20037 (202-293-4800) . . . The New-York Historical Society can be helpful in digging up the history of an apartment building or a house by offering non-members, for a fee of \$1, such basics as can be ordered from FACT/USA, 491 Broadway (966-0713) . . . The 1986 Rotch Travelling Scholarship competition is open to U.S. citizens under the age of 35 as of March 10, 1986, with "an accredited architecture degree and one year of professional architecture experience in Massachusetts; or an accredited Massachusetts architecture degree and one full year of professional experience not necessarily in Massachusetts; or have received a certificate from the Boston Architectural Center signifying satisfactory completion of the former five-year program and the required thesis and have had four years of professional experience in an architectural office." January 3 is the deadline for requesting application forms from: Norman C. Fletcher, Secretary, Rotch Travelling Scholarship, 46 Brattle St., Cambridge, MA 02138 . . . Lectures of interest to architects at the Metropolitan Museum of Art this fall include a four-lecture series on "Contemporary Architecture: A Critic's View" with Robert Campbell; and "New York Monuments," a three-lecture series with John Maxtone-Graham. Both begin in November.



One of the circular saws with the reciprocating saw in the background.

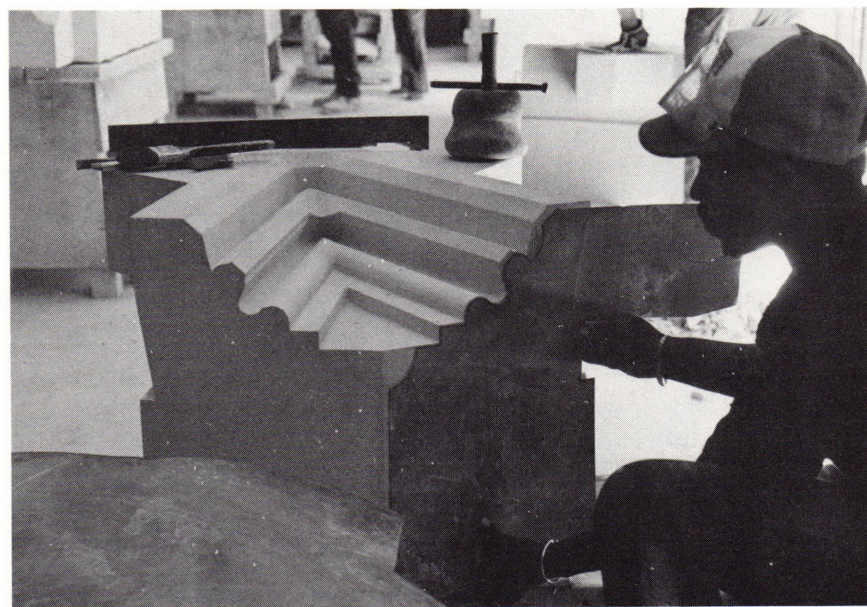
Checking stones with templates.

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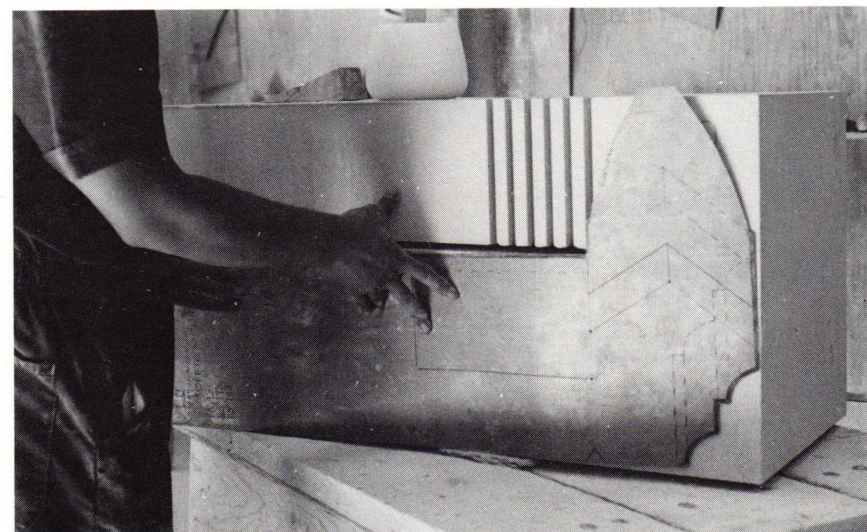
1983-85 saw the program grow to 26 apprentices — still mostly from the surrounding community. They have learned quickly enough to cut 600 stones every 6 months. And after four years, enough stones had been cut for construction of the towers to begin.

The Stone-Cutting Process

Some 24,000 limestone blocks are required to build the two towers. The modern equipment used in the stone shed supplements traditional handwork. A giant gang saw, 10-ft. high, cuts through massive blocks of Indiana limestone, variable from 8 tons to 10 tons (from the same Indiana limestone area as the original stones for the Cathedral, as well as those for the Empire State Building). This 8-ft. diamond-toothed reciprocating saw, the only piece of new equipment in the stoneyard, was made in Carnoustie, Scotland, to Bambridge's specifications. Other equipment was purchased from Liverpool Cathedral, and two important machines were found in abandoned quarries and along roadsides, and then restored.



An old giant planer, which removes excess stone from complex pieces, was found beside an abandoned railroad track near the quarry. Over the whole operation, an overhead crane tracks back and forth along the stonished ceiling. The crane was found in a pasture in upstate New York.



As an 8- to 10-ton block of stone from the Indiana quarry's flatbed truck progresses through the stoneyard, it is first lifted by the overhead crane and moved to a tracked table under the reciprocating saw. The 8-ft. blade glides back and forth across the stone, cooled by jets of water, and slices the block into smaller slabs. It takes three to four hours to cut through the huge blocks.

Once cut, the smaller slabs are tracked to one of the two circular saws, which cuts it roughly into stones of working-drawing dimensions. These stones, if destined to be column bases or other column components, are then carried by the crane along to the giant planer.

Stonecutters working on their blocks.

Stonecutting tools have descended from the Middle Ages.

There, on a platform, the stones are planed of the excess stone between high contours at a rate of a quarter of an inch per five-seconds.

Next, the stones go to the stonecutters for hand tooling with such instruments of medieval descent as boosters, wasters, punches, cockscombs, points, quirks, pitchers, and lewising tools. Boosters produce the tooled finish on the visible side of the stone that is the personal signature of each craftsman. These different textures enrich the construction finish and give it the mark of the individual.

Mistakes in stonecutting — and there have been few that were irretrievable — end up as smaller stones for other building elements — or as salvage for community sculptors.

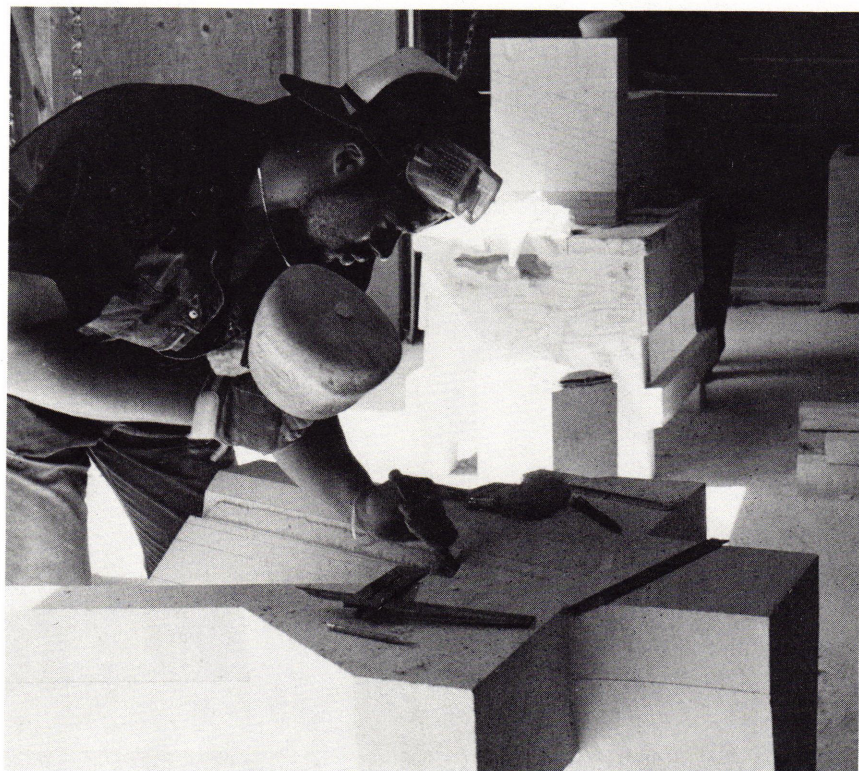
The Construction Process

Scaffolding has been erected up to the South West tower, and a rack and pinion hoist has lifted the cut stones for the first courses up to the previously finished level of the tower. Bambridge has specified bonds and joints, and deliberately incorporates random length ashlar and quoins here and there so that the construction will look ad hoc and individual, in the manner of the Middle Ages, rather than prefabricated of identical units.

The stonecutters who have been trained as masons have laid 1622 stones in the past 24 months. No steel is used in the construction. Stones are designed to fit almost as dry-wall construction, in the medieval manner, but mortar and some collars are used.

The Stone-Carving Process

Up to now, master builder Bambridge has made the working drawings and templates for each stone for the lower third of the tower, and then has moved up to the upper third to continue where the blocks are of the same complexity as the lower ones that apprentice stonecutters have already cut. He skipped work on the complicated gablets with crockets, on the capitals and cornice stones with their carved bosses (see drawings),



Gable stones with crockets and capital and cornice stones with carved bosses.

Newly carved gable stones with crockets—part of a finial.

Stonecarving instructor and carver-in-residence Nicholas Fairplay.

Stonecutter and carver trainee D'Ellis Kincannon at work.

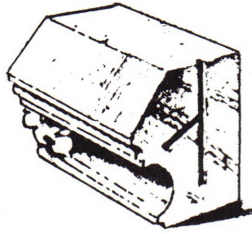
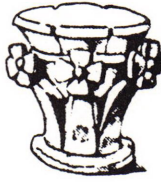
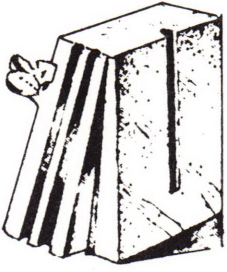


Photo: Robert Rodriguez

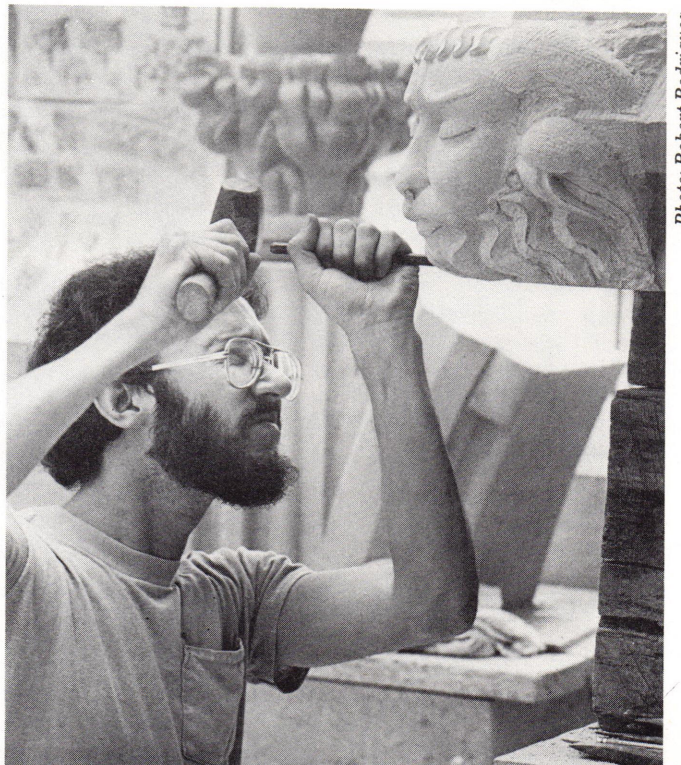
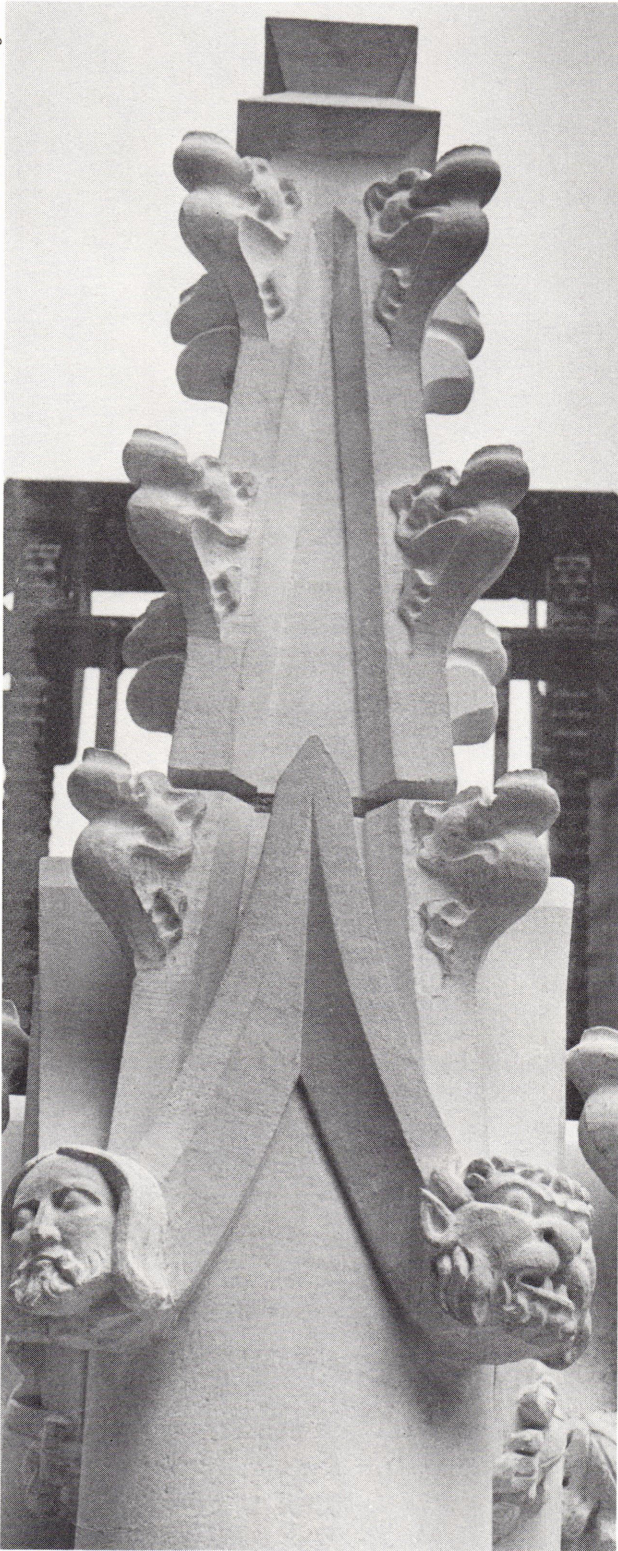


Photo: Robert Rodriguez

Stonecutter and carving trainee Cynthia Linton.

Stonecutter Angel Escobar boasting a stone.

Stonecarver trainee Rubin Gibson at work.

and on other carved stones in the middle level until the apprentices had grown in their skills.

Apprenticeship in stone-carving is the newest phase of the Cathedral's training program. Beginning in September 1984, a two-year program of NEA/Stoneyard Institute Fellowships provides \$40,000 for four fellowships in a 42-week course of advanced academic and technical training for stoneyard apprentices to be taught by a stone carver from Westminster Abbey — Nicholas Fairplay. In the second year of these NEA fellowships, a 6-week summer program will, in 1986, provide training for 20 to 30 senior architecture students from American university Schools of Architecture.

According to Dean Morton, "Such training will provide not only knowledge of a craft vital to the restoration and preservation of the stone buildings and monuments of America, it will, in time, provide an entire generation of architects with a new vocabulary."

Master builder Bambridge, who acts as a consultant on other stone buildings also, has said, "I want to try to assure a future livelihood for the young stonecutters and carvers who work here. The only way I know is to encourage more architects to specify stone. Telling the apprentices' story to architects is a hopeful sign."

An expanded Carver's Shop is the next of the stoneyard's needs to facilitate this program. As Dean Morton says, "You are always building, just as you are always praying." — CRS

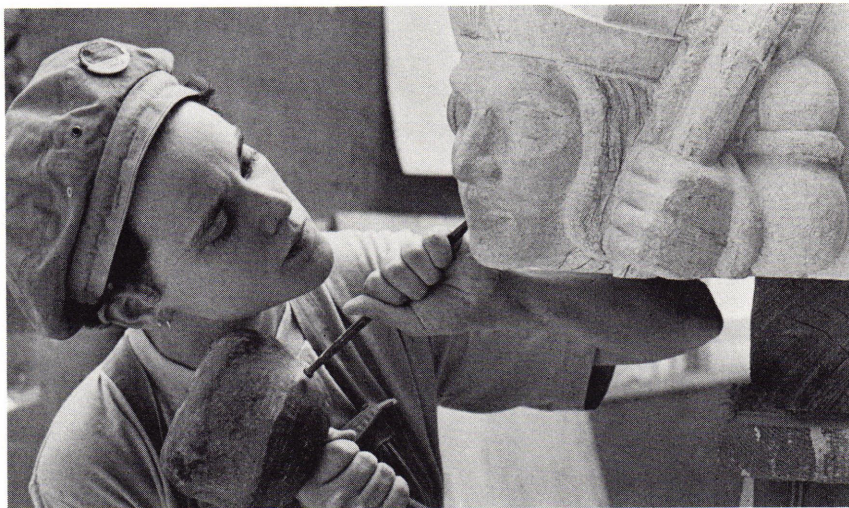


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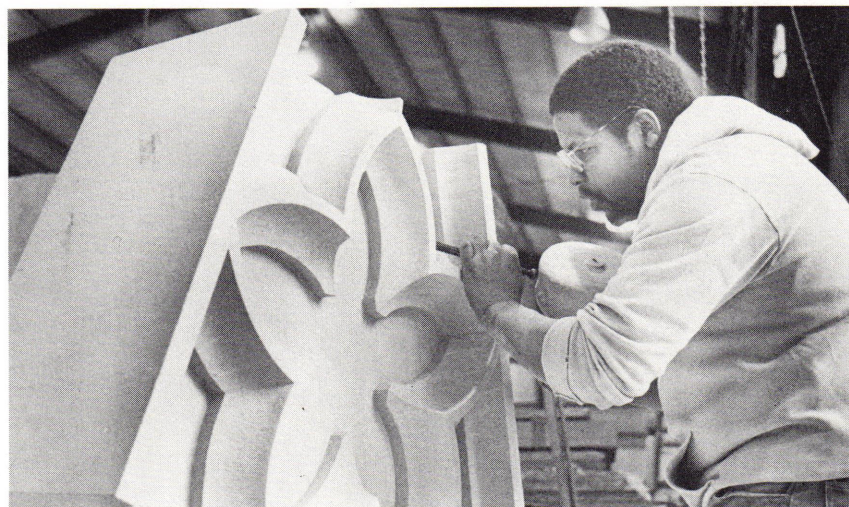


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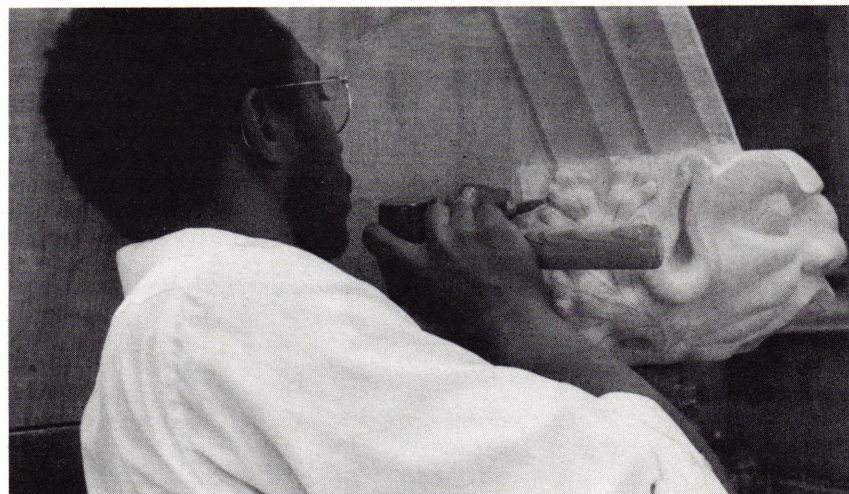


Photo: George Lewis

*Newly cut stones at the Cathedral of St.
John the Divine.*



Photo: Stan Ries

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