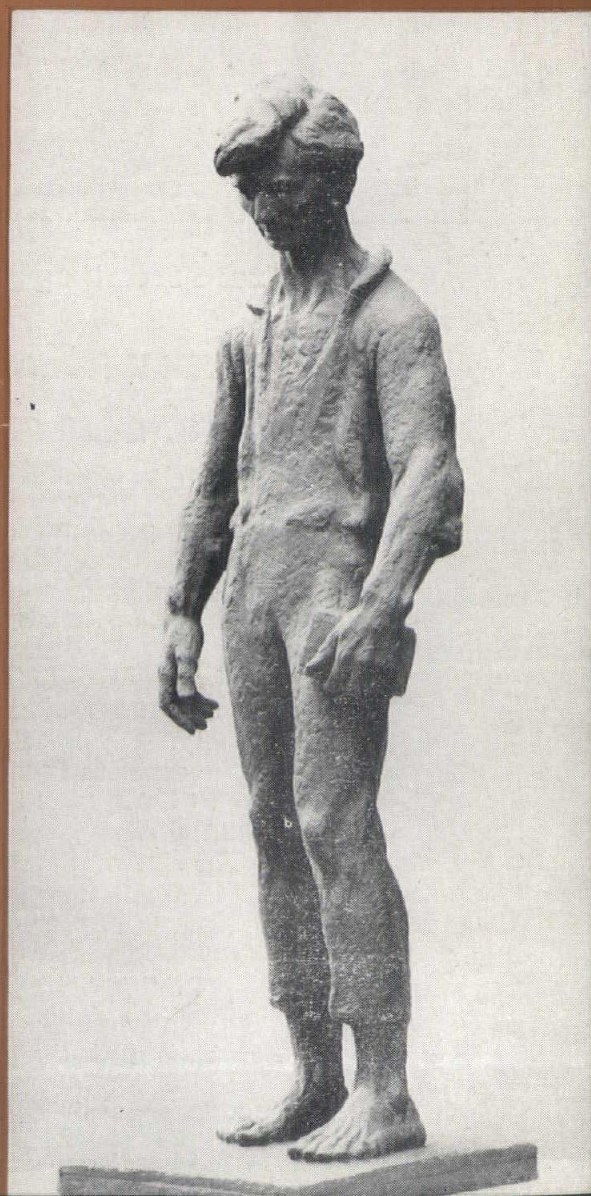
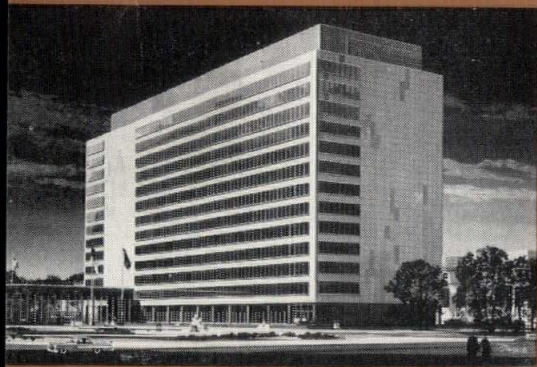
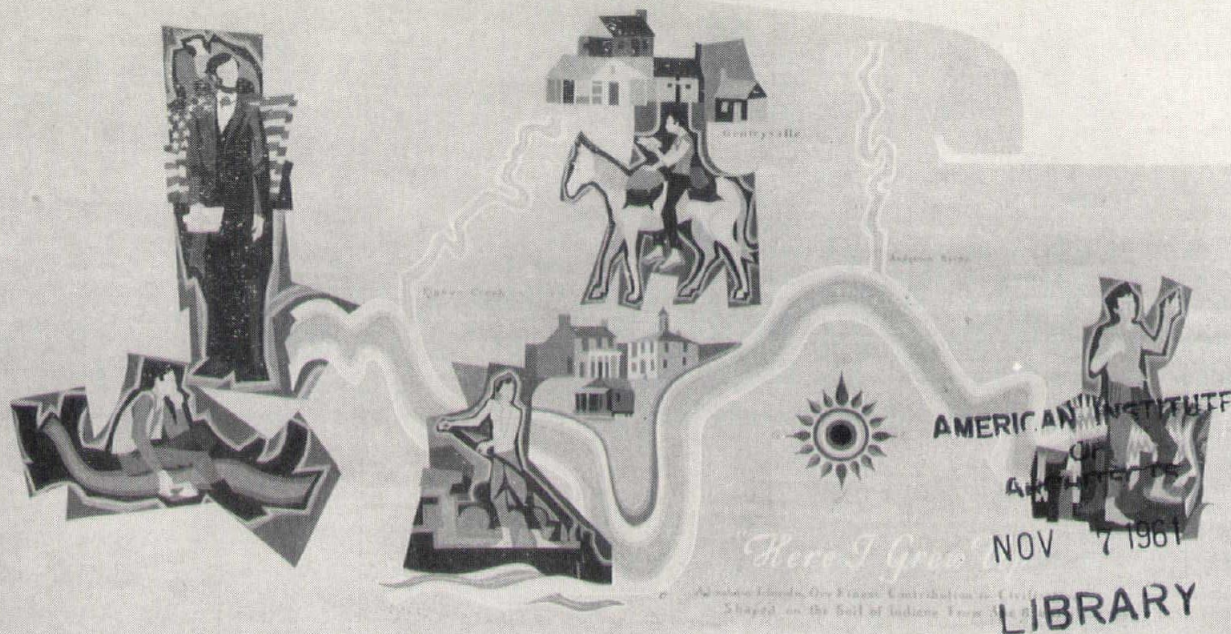


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# Indiana Architect



October  
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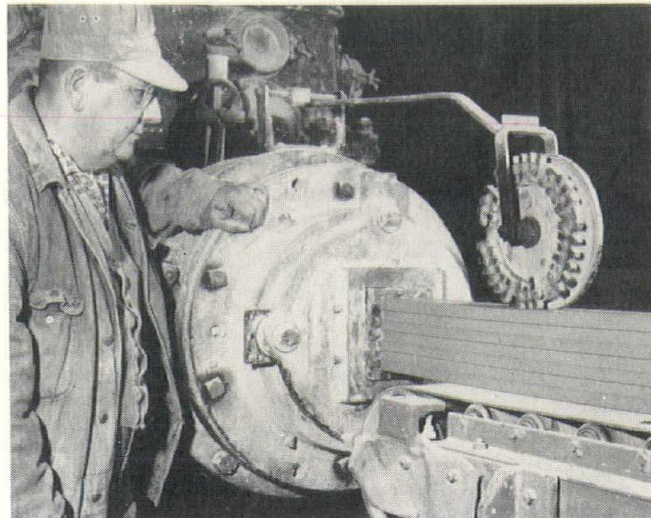
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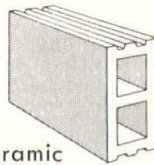
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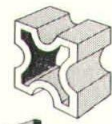
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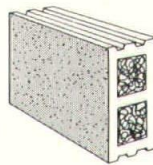
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# Indiana Architect

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A Chapter of The American Institute of Architects

Vol. V

October, 1961

No. 6

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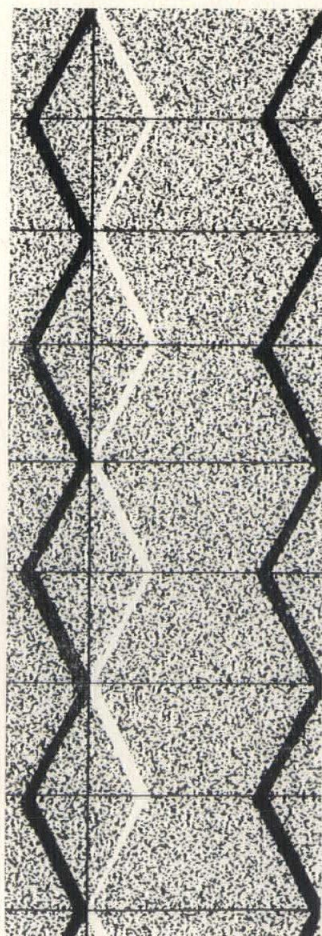
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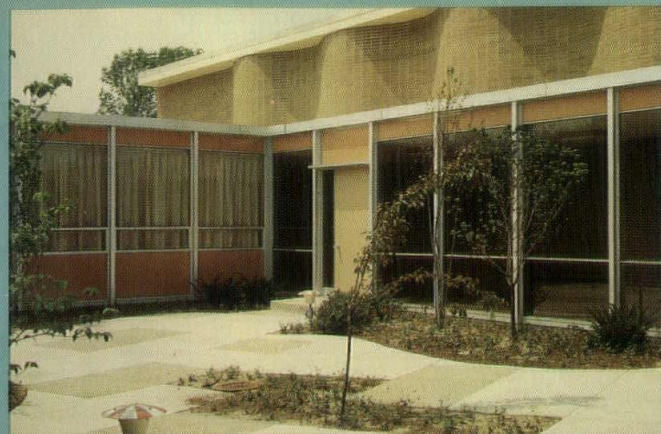
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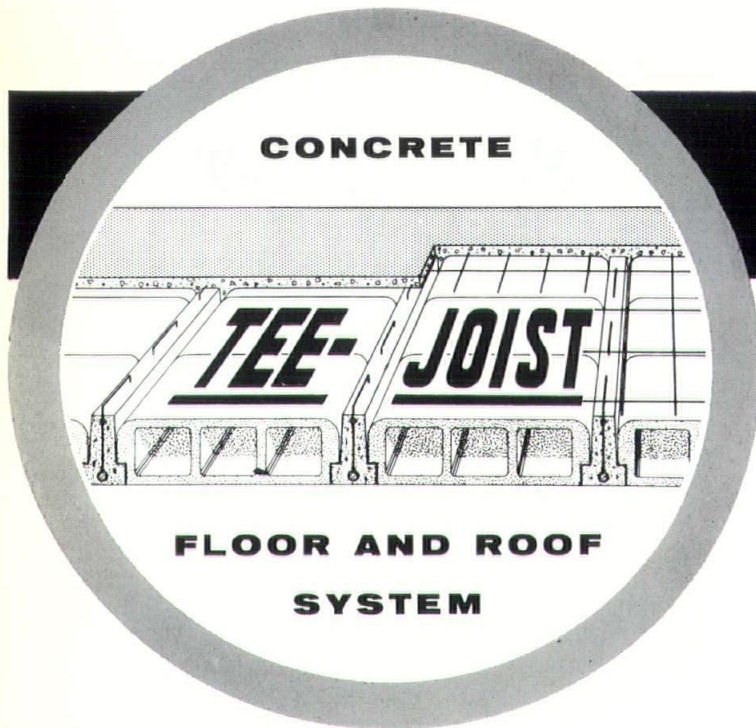
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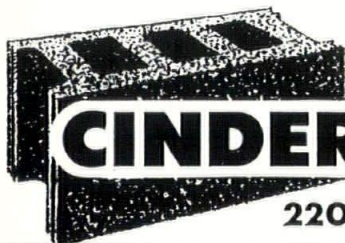
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By **WALTER SCHOLER, JR., AIA**  
*Chairman,  
ISA-AGC Joint Committee*

# Improving Relations With The Construction Industry

A joint committee made up of representatives of the Indiana Society of Architects and the Indiana General Contractors Association are holding a series of meetings to consider ways and means of obtaining improvement of specifications and of bidding and construction practices. In these meetings frank discussions are held of the matters in which the contractors believe the architects can make improvements, and also the matters in which the architects feel that the contractors can do a better job. By thus becoming more fully aware of each others problems it is believed that both groups will be able to make improvements that will have the end result of a better building at the lowest possible cost to the owner.

These meetings are scheduled for the second Thursday of odd months at 2:00 P.M. Central Daylight Time at the Construction League, 1456 N. Delaware Street, Indianapolis, Indiana. This works out for future meetings on November 9, 1961, January 11, March 8 and May 10, 1962. All interested architects and contractors are encouraged to attend any or all of these sessions.

Committee members from the Indiana Society of Architects are William E. Davis, Rockville; John C. Fleck, Indianapolis; John P. Guyer, New Castle; Ralph R. Knapp, Evansville; Alfred J. Porteous, Indianapolis; Walter Scholar, Jr., Chairman, Lafayette; Ralph O. Yeager, Jr., Terre Haute, and ex-officio Wayne M. Weber, President of Indiana Society of Architects, Terre Haute, and Don Gibson, Executive Secretary of Indiana Society of Architects, Indianapolis.

Members from the Indiana General Contractors Association are Alden L. Irmscher, Chairman, Fort Wayne; Max Null, Indianapolis; John L. Petch, Indianapolis; Harold Reinke, South Bend; C. W. Schrader, President of Indiana General Contractors Association, Indianapolis; R. J. Vonspreckelsen, Indianapolis; Robert A. Stackhouse, Indianapolis, and Marshall D. Abrams, Executive Secretary of Indiana General Contractors Association, Indianapolis, secretary.

After considerable discussion the joint committee has unanimously agreed upon the following matters and these plus those that are agreed upon in later meetings will be presented to the membership of the Indiana Society of Ar-

chitects at their annual convention next May for approval and adoption.

**1. Single Contract vs Separate Contracts:** It was agreed that the letting of a single contract for building construction is the preferred method. This recommendation is based on the conclusion that a single supervising agency makes for greater efficiency. However, it is recognized that some owners prefer the letting of separate contracts for the mechanical and electrical work. Where it is the desire of the owner to let separate contracts it is recommended that the following procedure be followed: Bids for the mechanical and electrical work be received in advance of the general construction bids and tentative awards made on this work with the provision that the successful general contractor will act as the owner's agent and the person to whom said mechanical and electrical contractors will be directly responsible and it will be a part of the obligation of the general contractor to serve as such agent in supervising and coordinating the work of the mechanical and electrical contractors and in approving all payments made to such contractors. Bids then be received for general construction with the general construction bidders knowing in advance who the successful mechanical and electrical contractors will be. It is recommended that the time interval



**WALTER SCHOLER, AIA**

between receiving mechanical and electrical bids and receiving general construction bids be one day although this could be reduced to a few hours if necessary.

**2. Retainages:** The system of retainage approved by the AIA and AGC at the national level was approved. This changes the amount of retained percentage on construction contracts from a straight 10% until the project is completed to the following:

"To insure the proper performance of the contract, the Owner shall retain 10% of the amount of each estimate until final completion and acceptance of all work covered by the contract: Provided: That the Owner, at any time after 50% of the work has been completed, if he finds that satisfactory progress is being made, may make any of the remaining partial payments in full."

**3. Receiving Bids—Returning Late Bids:** Where competitive bids are requested on either public or private work, bids should be opened at the time for receiving bids and in the presence of the bidders. All bids received after the due time should be returned unopened.

**4. Alternates:** Alternates should be kept to a minimum.

**5. Selection of Bidders on Private Work:** The architect and owner should be selective when inviting bids on private work. Selective in the sense that they should only request responsible contractors to bid (contractors to whom they would be willing to award the contract if low). Six responsible bidders will produce a good competitive result.

**6. Time for Bid Openings:** Bids should not be taken on Monday or on any day following a holiday. The preferable time during the day is between the hours of 2 and 5 P.M.

**7. Insurance Provisions of Specifications:** Documents 1, 2 and 3 of insurance clauses heretofore approved by both the Indiana Society of Architects and Indiana General Contractors Association should be included by architects in all insurance provisions of the General Conditions of the Specifications. These documents have been previously sent to all architects and have been previously published in the Indiana Architect.

**8. Furnished Drawings and Specifications to Bidders:** For bidding purposes the contractors who are invited to bid should be provided with at least two complete sets of drawings and specifications either at no charge to the contractor or for a stipulated deposit, which deposit should be wholly refunded upon the return of the drawings and specifications in usable condition, provided a bid is submitted. If no bid is submitted, then the contractor should not only return the drawings and specifications in usable condition, but should also pay the cost of printing.

**9. Furnish Drawings and Specifications after Bidding:** Architects should furnish free of cost sufficient copies of plans and specifications to all prime contractors for the construction of the building.

**10. Time for Issuing Addenda:** No addenda to the plans and specifications should be issued within five days of the due date without extending the due date.

A number of architects are currently following most of the above practices and it is hoped that all members of the Indiana Society of Architects will adopt them whenever it is feasible to do so.

Subjects which are to be discussed in future meetings with the hope of working out agreeable solutions are:

1. **The "or equal" Clause and Voluntary Alternates:** Considerable discussion has already been had on these controversial subjects and it is hoped that the committee will be able to come up with some constructive recommendations at its next meeting.

2. **Listing Subcontractors with General Bid:**

3. **Minor Revisions after Bidding:**

4. **General Contractor's Responsibility for Work Shown on Mechanical and Electrical Drawings and not on General Construction Drawings:**

5. **Standard Specification Outline:**

6. **Unit Prices:**

7. **Methods of Computing Cost for Changes:**

8. a. **Responsibility for Temporary Wiring and Power:**

b. **Responsibility for Temporary Heat:**

c. **Responsibility for Temporary Water Connections:**

9. **Subcontractors Responsibility for Backfill, etc.**

10. **Completion of Contract—The Final Check:**

If anyone desires to express himself on any of the above or related matters and is unable to attend any of the scheduled meetings, the committee will appreciate hearing from him in writing and all suggestions will be given consideration.

## Spectrum of Steel For Building

The United States Steel Corporation will be the host for the October 30th Information Dinner of the Indianapolis Chapter, Producers' Council. The first of the newly-reorganized PC informational meetings will open at 5:30 P.M. in the Green Room of the Indianapolis Athletic Club. Following the cocktail hour, dinner will be served at 6:30, and the program will start immediately after dinner.

Speaking on "Structural Designing with High Strength Steels" will be Dr. John B. Scalzi, for fifteen years Professor of Structural Engineering at Case Institute of Technology, Cleveland, Ohio, and currently with the Market Development Division of U.S. Steel. Dr. Scalzi is a graduate of Worcester Polytechnic Institute and the Massachusetts Institute of Technology.

Mr. Fred T. Comee, also with U.S. Steel's Market Development Division, will speak on "Steels for Today's Architecture." Mr. Comee is a graduate of Harvard University, Cambridge, Massachusetts, and had fifteen years' experience with national manufacturers of architectural metals and other building materials prior to joining U.S. Steel.

Mr. Roger Grimshaw, Assistant to the Manager of Sales for U.S. Steel in Indianapolis, will moderate the 90-minute program, which will also include a showing of "Stainless Steel in Architecture," a film produced by a Canadian subsidiary of the Union Carbide Metals Corporation.

Additional information on the meeting can be obtained by contacting the Indianapolis Sales Office, U.S. Steel Corporation.

# Scholarship Fund Racing Ahead?

Your Indiana Society of Architects Scholarship Fund is moving—but not racing ahead. The committee reports a total of \$740.00 received into the Trust Fund to this date. These gifts include a sizeable one from outside the profession, five from architects or architectural firms and one from the womens' Architectural League of Indiana.

Every member of the Society should support this project. We believe that \$1.00 to \$5.00 gifts from all of us will go a long way to insure the success of the Scholarship. Larger contributions are welcome and will undoubtedly be received as the results of this program become a reality.

The Womens Architectural League of Indiana at their October meeting at the home of Mrs. Theodore L. Steele devoted their program to the Scholarship Fund. Mrs. Richard

K. Zimmerly is chairman of their recently-formed committee to consider the Scholarship Fund. Mrs. Edward E. Simmons, President, indicated that their group is interested in this activity and made a fine gift to it. The invaluable future support and publicity which this important group can give the Scholarship Fund may depend on the extent to which the architects themselves support it.

The first announcement of the Scholarship Program is being sent to approximately 800 high school principals this month.

The Federal Income Tax status of the Scholarship Fund is explained by the accompanying letter from the I.S.A.'s legal counsel. They have indicated a willingness to advise on any further tax questions relating to specific gifts to the Scholarship Fund.

Dear Mr. Porteous:

It is not possible to obtain a ruling from Internal Revenue Service determining exemption from federal income tax of the Scholarship Fund until it has been in operation (not mere existence) for twelve months. It is our considered opinion, however, that the fund will be ruled exempt when the necessary period of operation has expired, and that donors may properly claim credit for their payments thereto as a charitable contribution.

Yours very truly,

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MAIL TO: Indiana Society of Architects, P.O., Box 55594, Indianapolis 5, Indiana.

# Architecture in the News

The Indianapolis architectural firm of **Daggett, Naegele and Daggett** has announced a reorganization and change in name. The new firm will be known as **Daggett, Naegele and Associates**, with offices still located at 567 W. Westfield Boulevard, Indianapolis.

Principals in the reorganized firm are **Harold F. Naegele, AIA, Robert F. Daggett, Jr., AIA, Harry I. Reynolds, ISA Associate Member, and Kenneth H. Mendenhall.**

★ ★ ★

**Mr. Robert N. Kennedy, AIA**, who recently entered into the personal practice of architecture, has been joined by **Mr. John R. Trueblood** in the formation of an architectural partnership under the firm name of **Robert N. Kennedy and Associates**. Offices of the firm will remain at 4167 N. College Ave., Indianapolis.

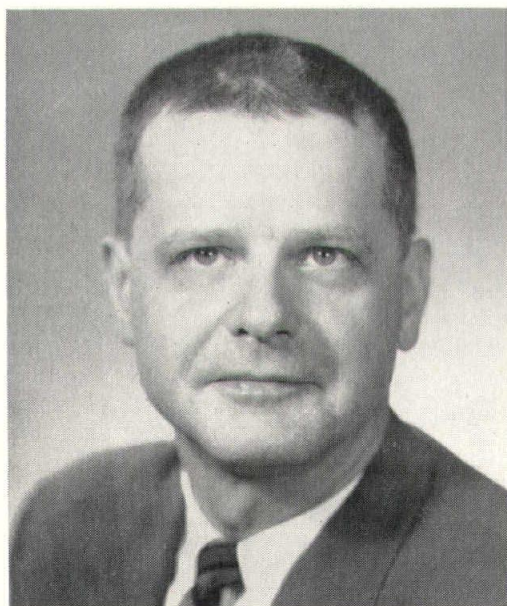
★ ★ ★

**Mr. Harold (Hal) E. Peters** has been elected president of the **Producers' Council, Inc., Indianapolis Chapter** for this year. Mr. Peters represents the **Owens-Corning Fiberglass Corporation**.

Other officers for the year are: **Mr. Robert J. Clay, Stewart-Carey Glass Company**, vice-president; **Mr. Keith Guthrie, Portland Cement Association**, secretary; and **Mr. Lou Leonard, Spickelmier Industries, Inc.**, treasurer.

Mr. Peters is a graduate of the University of Cincinnati and a registered architect in Ohio; he came to Indianapolis in 1956. He and his wife and three children live at 4717 N. Illinois Street in Indianapolis.

The Producers' Council is a national organization of manufacturers of quality building materials and equipment.



**HAROLD E. PETERS, P. C. President**

**Mr. Harry E. Cooler, AIA, Mr. Don B. Fisher, AIA, Mr. Robert E. Lakin, AIA, and Mr. William C. Schubert, AIA**, have announced the formation of a new architectural firm, **Architects Coordinate**, located at 4845 N. College Ave., Indianapolis. Mr. Fisher, Mr. Lakin and Mr. Schubert each began their private practice of architecture recently after resigning their positions with larger architectural offices. Mr. Cooler has been established in private practice for several years.

★ ★ ★

**Mr. Corwin T. Geyer** has been appointed executive secretary of the **Mechanical Contractors' Association of Indianapolis, Inc.** A resident of Indianapolis for many years, Mr. Geyer is a graduate engineer with more than twenty years experience in business management and has been active in many civic groups and trade associations locally.

Offices of the Mechanical Contractors' Association are located at 621 East Thirty-Eighth Street, Indianapolis; the phone number is WALnut 5-1817.

★ ★ ★

**Mr. Ilyas Binler**, formerly chief structural engineer with the architectural firm of **Walter Scholer & Associates, Lafayette**, has announced the establishment of his private practice as a consulting structural engineer, with offices at 2902 N. Meridian St., Indianapolis.

Mr. Binler received his B.S. Degree in Civil Engineering at Robert College School of Engineering, an American college located in Istanbul, Turkey, and his M.S. Degree in Civil Engineering at Purdue University, where he majored in Structural Engineering.

Included in the list of outstanding buildings for which Mr. Binler was responsible for structural design are the Memorial Center, Veterinary Science building, Life Science building and Recreational Gymnasium, all at Purdue University, and Pittenger Student Center, Noyer Residence Halls, and Physical Education Buildings for Men at Ball State Teachers' College, Muncie. All buildings were designed by Walter Scholer & Associates.

Mr. Binler is married, and he and his wife have one son.

★ ★ ★

The 5th annual competition, in 1962, of the **Evangelical Church Plan Awards** has been announced by **CHRISTIAN LIFE Magazine** and the **National Association of Evangelicals**, according to Dr. George Ford, Executive Secretary of NAE, and Robert Walker, President of Christian Life Publications, Inc., co-sponsors.

Purpose of this competition is to stimulate the interest of architects and designers in the building needs of conservative and evangelical churches of all denominations. The competition is open to all designers of Protestant churches with evangelical or conservative emphasis.

Winners in the competition will be announced at the annual NAE convention at the Denver-Hilton Hotel in April, 1962.

Rules for the competition may be secured by writing the National Association of Evangelicals, Box 28, Wheaton, Ill., or CHRISTIAN LIFE Magazine, 33 South Wacker Drive, Chicago 6, Ill.

# State Office Building Art

Pictured on this month's cover are the two main works of art which were created for the new Indiana State Office Building. At the top is the artist's conception of the Lincoln mural which will adorn the south wall of the entrance lobby, and at the lower right is pictured the model of the young Lincoln statue which will stand at the west end of the reflecting pool in the entrance plaza.

The mural was created by Mr. Garo Z. Antreasian, Indianapolis artist and advanced painting instructor at John Herron Art School.

The young Lincoln statue was conceived by Mr. David Rubins, well-known sculptor and instructor at John Herron. Both works of art were selected through a competition conducted in 1959 to consider and select appropriate works of art for the new building which houses virtually all State governmental offices and agencies.

This competition was judged by a jury composed of Mr. Wilbur D. Peat, Director of John Herron Art Museum; Mr. Henry Hope, Chairman of the Art Department at Indiana University; Mr. A. Reid Winsey, Chairman of the Art Department of DePauw University; representatives of the architectural firms who designed the office building, Graham, Anderson, Probst & White and Raymond S. Kastendieck & Associates; and representatives of Associated Indiana Architects, architects for the Employment Security Building which also overlooks the entrance plaza in front of the office building.

The choice of a Lincoln theme for these works of art was suggested by the State Office Building Commission, and was a natural selection since the project coincided with the Indiana Lincoln Centennial. Lincoln's relationship with the State of Indiana often has been overlooked, and it was deemed proper that our new State Office Building commemorate the fact that Lincoln had spent his entire formative life on Indiana soil.

With this general theme in mind, it was then necessary to create works of art which would be in harmony with the architecture of the State Office Building and the Employment Security Building.

The entrance lobby of the State Office Building is majestic in scale, and requires the drama and richness of a major work of art to furnish a culminating focal point. The south lobby wall of travertine marble was the logical setting for such a point, and the artist chose a mosaic mural to respect and magnify the marble surface while relating the mural to the mosaic used on the "drop" ceiling running the length of the lobby on the west side.

Ornateness of style was avoided as being inappropriate to the theme, and the mural was designed with a free-flowing pattern vignetted against the travertine wall, thereby avoiding a ponderous effect which would have been detrimental to the expansive and airy character of the architecture.

A stylized map of the area of Lincoln's boyhood forms the framework for this pattern, and the conformity of the Ohio River in the region was chosen as the unifying element. The key geographic spots (such as Gentryville, Pigeon Creek and the Anderson River) are simply depicted and serve as terminal points of Lincoln's environment.

Within this locus, significant episodes of Lincoln's youth are depicted:

1. The Pensive Student (lower left): Lincoln sitting on recently-felled logs, pondering a passage from a book he is reading. (The head-and-shoulders' detail on the front cover is taken from this episode).

2. Taking Grain to the Mill (Upper center): Lincoln pictured riding his horse, with sacks of grain tied across the horse's back.

3. Flat Boat Trip to New Orleans (center foreground): Lincoln's first venture into the outside world, and his first close contact with slavery.



4. Backwoods Stump Speaker (far right): Practicing the oratory for which he would later become famous.

5. The Statesman (Upper left): This larger figure of Lincoln as an adult overshadows the youthful episodes, and implies the fulfillment of his youth.

Under the mural is the quotation, "Here I Grew Up," from Lincoln's brief autobiography describing his Indiana environment. This is followed by a commemoration, "Abraham Lincoln, Our Finest Contribution to Civilization, Shaped on the Soil of Indiana From Age 8 to 21."

The mural will be executed in Bysantine Smalti, brilliantly-colored opaque glass particles measuring approximately  $\frac{3}{8}$ ths by  $\frac{5}{8}$ ths of an inch by  $\frac{1}{9}$ th of an inch thick. This is the traditional mosaic material, and is the same as that employed in the famous mosaics of Bysantine times.

A full scale sketch in detail will be executed, reversed on special paper and cut into appropriate-sized squares for easy handling. Each square will be coded for coloring and positioning, and then the particles of smalti, laboriously hand cut, will be applied to the reversed design with a water soluble adhesive. This process will take approximately one year, and will be fabricated by Mr. Ralph Peck of Contemporary Art Studios, Indianapolis.

A duplicate full size sketch will be used as a guide to rout out the marble, accomplished by sand-blasting to the proper depth, and for setting in the mosaic units. The completed mural will be roughly forty-four feet long and twenty-two feet high. Eighty-seven different hues and shadings of the glass smalti will be employed, and over 300,000 individual pieces of glass will be incorporated in the execution.

The statue of Lincoln, to be located in the entrance plaza to the east of the State Office Building lobby, will be executed in bronze and will stand nine foot, three inches in height upon a pedestal of dark granite.

In discussing the creation of this statue, Mr. Rubins stated: "The thoughts that concerned me most in making this statue were the necessities of representing a vital energy, lean physical strength, and a tree-like growth suggestive of the strong roots of character that were growing and manifest as early as his Indiana years. In the rather knotty and active forms of the body, I have tried to express that, as well as the rough warmth of his frontier humanity and the ungainliness of his boney frame.

"In the simple but rough-surfaced pedestal, and in the quiet, shadowed, thoughtful head, I wanted to suggest the very simple, classic character of his mind—as well as the loneliness and tragedy of his life.

"In the hair, I tried for boyishness and humor. I felt it unimportant to invent a purely imaginary portrait of how Lincoln might have looked at twenty-one years. Our knowledge of his appearance, on which the popular symbol of Lincoln is based, is from photographs taken after his fortieth year; my face, therefore, is a compromise between the unknown Indiana youth and the pre-presidential Illinois lawyer.

"The true look of Lincoln during his Indiana years is as unimportant as the historical accuracy of his clothing. In favor of representing his character and his contemporary

significance to the best advantage, I have subordinated every literal element except the book. In the light of Lincoln's whole life, the axe is unimportant in comparison to the book.

"The placement of the figure was chosen for two reasons: I felt that Lincoln should be placed back among the trees on the plaza, since the forest was his Indiana experience; and it would be difficult to compete in scale with the open plaza and building were the figure to be placed in the open. Too large a figure in sculpture produces an inhuman and unreal effect."

Mr. Rubins created the thirty-two inch plaster model which was selected by the jury. This model must now be enlarged to full size by using a three-dimensional pantograph (two synchronously rotating turntables connected by swinging arms which are proportionate in length to the amount of the enlargement). The full-size model will have a hollow framework of wood with a surface layer of oil-base, non-hardening clay. After the rough modeling is obtained on the pantograph, the final handworking will be completed.

Next, a plaster mold is placed over the clay figure and allowed to dry. This model is then removed, and a positive plaster cast made from this mold; this cast is an accurate replica of the clay figure.

The bronze figure will be cast by the "lost-wax" method, a process as old as Egypt. Each piece of the full-size plaster model is covered by a mold of pliable gelatin glue, the shape of the gelatin retained by an outer layer (or "mother") of plaster. Into this pliable mold, a layer of molten wax is applied with a brush, of a thickness desired for the bronze casting. When the wax has hardened, the glue mold is removed and the seams in the wax worked over and obliterated.

By now, the original clay model has been reproduced in plaster and in a hollow wax form. Into this wax form is poured a liquid composition of plaster and silica, which forms the core, and wax rods for gates and air vents are then attached to the outer surface of the wax.

Next, the outer surface of the wax, gates and vents are covered with a thick mold of the same material used for the core. The core and mold are anchored together by bronze tie pins, and the entire assembly is baked to harden the mold and core and melt away the wax.

Molten bronze is poured through the gates, filling the void left by the melted wax. After hardening, the mold and core are crumbled away, leaving the bronze cast with gates and vents attached. These are sawed off and the points of attachment worked over with chisels and chasing tools.

The final cast, cleaned and colored by heat and acid, will weigh over 1,500 pounds, and the entire process will take over five months to complete.

Work on the art projects has been delayed for some time, due to a desire by State officials to secure private funds to pay for the works of art. Originally it was planned to include the cost of the two projects in the total cost of construction of the State Office Building, but the State Office Building Commission now prefers to use private funds, and a fund-raising campaign is being planned.

# First Lift-Dome Raised

The Honorable Richard O. Ristine, Lieutenant-Governor of Indiana, last week pushed the button that started the world's first lift-slab dome on its 24 foot journey upward. More than 5,000 sidewalk superintendents gathered at Anderson, Indiana, to observe the lifting operation which was marred by a series of mechanical problems which severely prolonged the lifting process.

Major troubles were blamed on the weatherman, who provided unseasonably warm weather which thinned the hydraulic lifting fluid and caused the entire system to overheat. Extra long hydraulic lines added to the problem, and heavier oil and packs of dry ice and cooling coils were needed to complete the lift.

Despite the delays, the three million pounds of concrete and steel was successfully lifted and welded to the thirty-six steel support posts.

Architects and engineers for the 268 foot diameter, domed Warner Auditorium were Jim Johnson, AIA, and Ken Ritchhart, partners in the firm of Johnson, Ritchhart and Associates of Anderson. The unique structure was designed and built for the national headquarters of the Church of God.

Three modern-day techniques were employed in creating this majestic, column-free auditorium. First of all, thin shell concrete design permitted the thickness of the dome to taper down to four inches, and consequently, considerably reduced the overall weight of the structure.

Secondly, through post-tensioning, the entire dome was held together by a compression ring formed along the outer edge of the dome. This compression ring held the dome together just as a barrel is held together by its hoops.

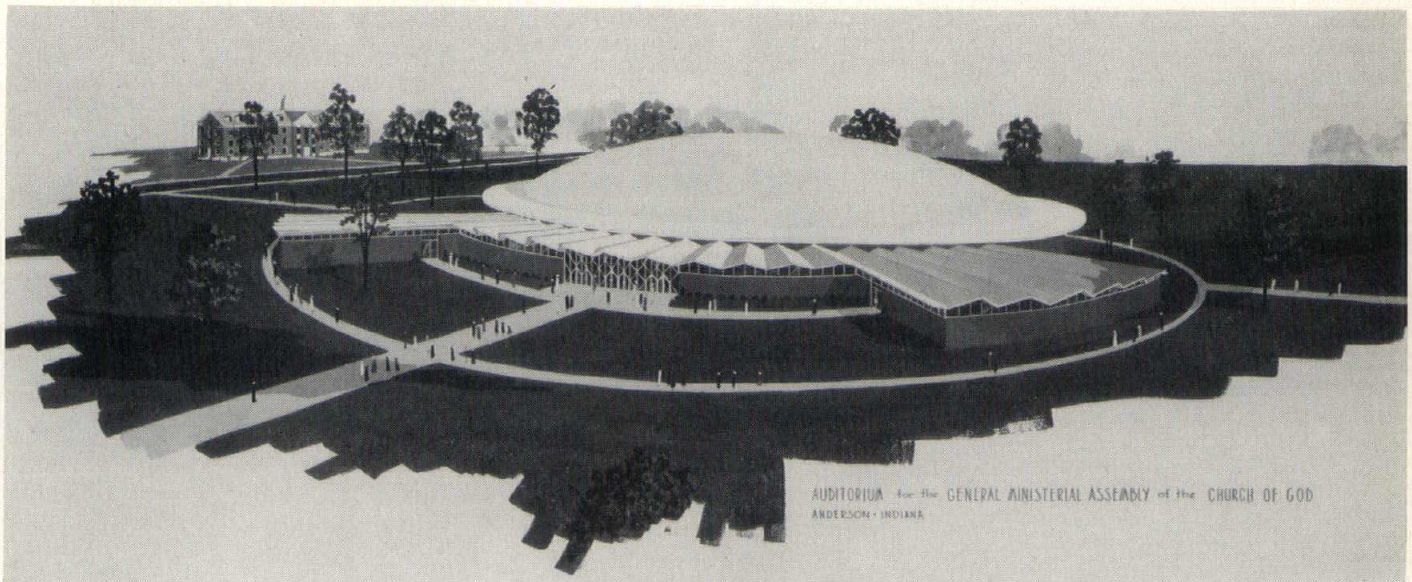
And finally, the entire structure was built on the ground and hoisted into place by 36 hydraulic jacks, embodying the same principles used in the lift-slab method of construction invented in this country.

These three techniques combined to produce an inspiring circular auditorium, covering a square city block and six stories in height, for less money than would be spent building a bleak warehouse of similar size under conventional construction methods. Total cost of the completed building was \$400,000, or \$6.50 per square foot, roughly half the cost of a similar, conventionally-built structure.

When completed next Spring, the 7,200 seat auditorium will house the annual International Convention of the Church of God.

Footings for the dome were placed in February, 1961; 36 concrete footings extend 10 feet into the ground and are spaced 20 feet apart. The steel support columns were then anchored to the tops of the footings.

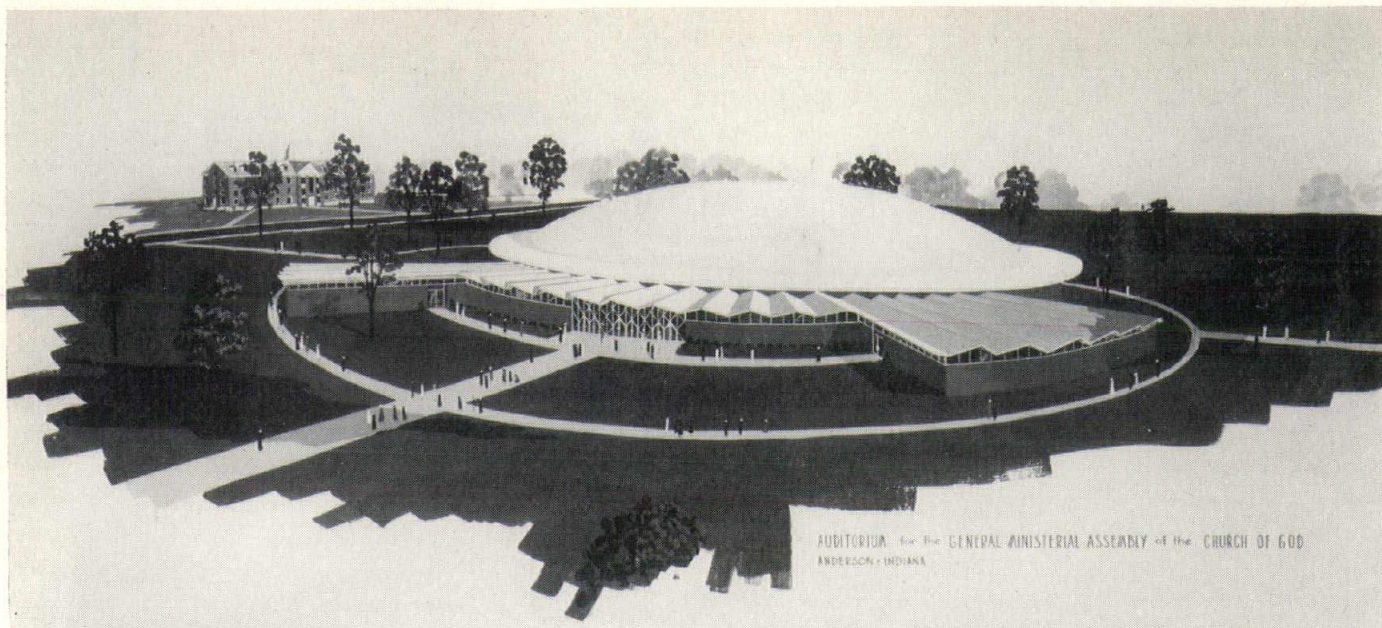
Next, 38,000 cubic yards of dirt (approximately the amount of dirt that would have to be excavated to provide basement space for 850 average-sized homes) was trucked in and placed in layers sixteen feet wide, forming a mound



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Architects: Johnson, Ritchhart & Associates

Contractor: Lewis Construction Co.



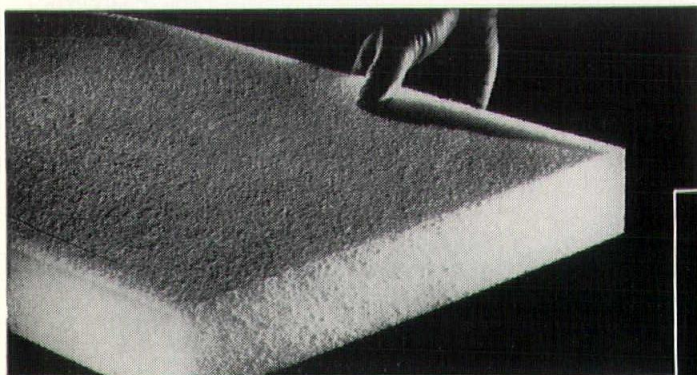
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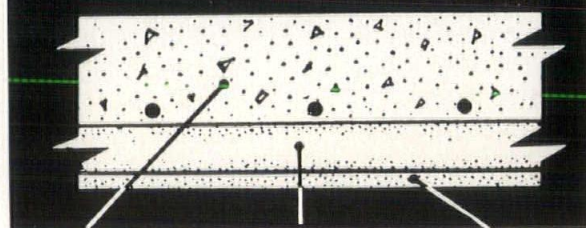
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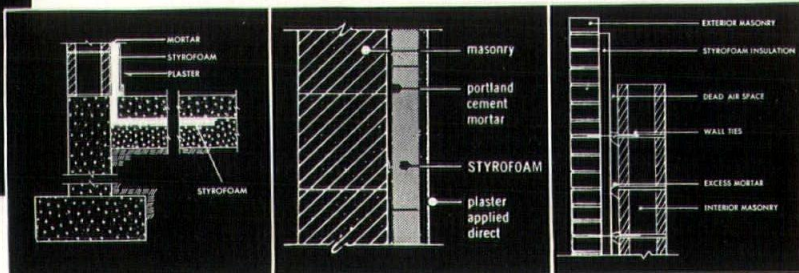
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forty feet high. Constant forming checks by surveyors kept the final surface within  $\frac{3}{8}$ ths of an inch of the desired contour.

Over this earth mound, eight foot by two foot slabs of Dow Chemical's Styro-foam, each one inch thick, were laid over the dirt, and 200 tons of steel reinforcing rods and wire were placed atop the Styrofoam (a foamed polystyrene).

Next, 900 cubic yards of Haydite lightweight concrete, weighing 100 pounds per cubic foot (compared with the usual 150 lbs. per cu. ft.), was trucked in and placed in layers sixteen feet in length. Concrete trucks were driven up onto the earth mound and poured the concrete down over the Styrofoam and reinforcing.

After the concrete had cured, the post-tensioning process was started, and took place between September 29th and October 2nd. A force of 720,000 pounds was applied to the steel cables placed in three conduits located in the compression ring. The compression ring, itself, is 36 inches wide and 24 inches deep and contains approximately 300 cubic yards of concrete. Inside the ring are the three layers of high tensile wire, each layer composed of forty steel wires one-quarter inch in diameter.

Before raising, the concrete dome received a base coat of asphalt sprayed on; a full coat of asphalt clay emulsion sprayed on, with glass fiber brushed into it while still wet; a second full coat of the asphalt clay emulsion; and two final coats of white asphalt paint.

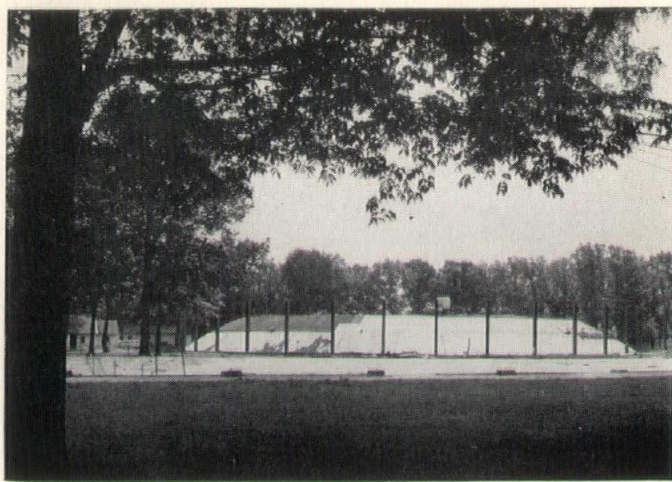
The Skyhook Lift Slab Company of Overland Park, Kansas, was in charge of the lifting operation. Hydraulic jacks were mounted on top of each of the 36 steel support columns and connected by steel rods to lifting collars embedded in the compression ring. Pneumatic tubes attached to each jack led to a master electronics control console which synchronized the entire five-hour lifting operation.

After the dome was raised to its final position, the lifting collars were secured to the support columns, and the jack mechanism removed. During the next six months, the exterior walls will be constructed, the dirt mound hauled away, and the interior finishing completed.

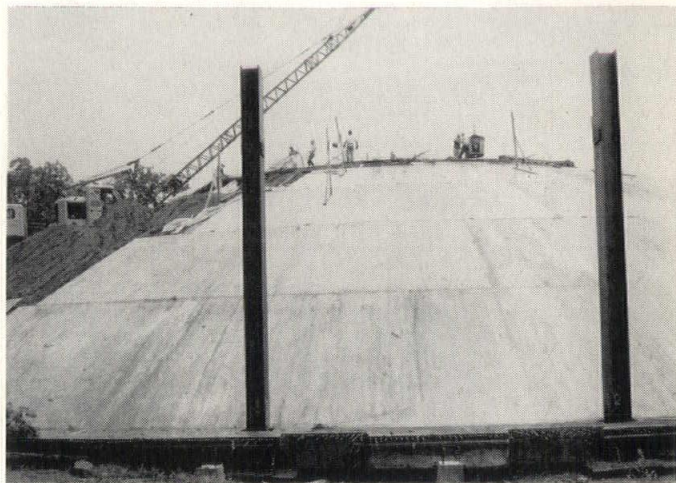
General contractor for the auditorium project is Lewis Construction Company of Anderson.



Workmen pour the concrete into one of the sixteen-foot long form sections. 900 Cubic yards of concrete are contained in the dome structure, and the entire dome (including reinforcing steel and compression ring and cords) weighs more than three million pounds.



First concrete pour on the thin-shell, lightweight concrete dome called for a sixteen-foot high earth mound covered with one inch of Styrofoam. Concrete trucks were driven to the top of the form, and the cement poured down over the form and reinforcing.



Final sections of concrete were placed by crane and bucket. To pour the cap, the crane was positioned half way up the earth mound. The open section was closed after the crane had been repositioned on the ground. Note the retaining ring at the base.



With all concrete in place, the entire dome assembly was allowed to cure and then the five step roofing process began. When lifted into final position 24 feet above ground (at the base of the compression ring), the dome was fully roofed and insulated.

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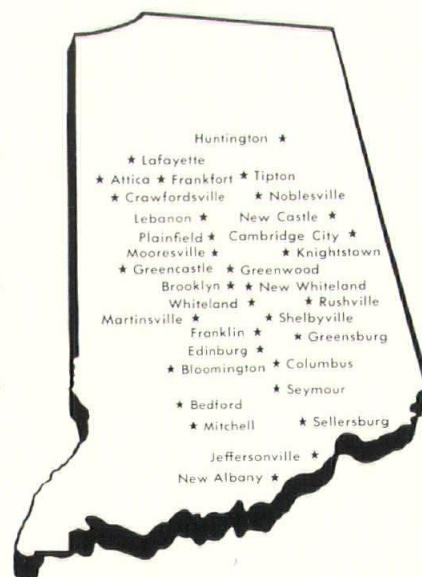
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# The Open Competition Clause

On Thursday, August 17th, the Indianapolis Chapter of the Construction Specification Institute met to discuss the "Open Competition Clause" of all public works contracts in Indiana. Meeting with CSI members were Mr. Otto Jensen of the Indiana State Board of Accounts and Mr. Robert McNevin, with the Indiana State Attorney General's office. Other speakers (who are CSI members) included Mr. John C. Fleck, AIA, president of the Indianapolis Chapter, CSI; Mr. Al Porteous, AIA; and Mr. John Petch, general contractor.

The following is a condensed transcript of the meeting, presided over by Mr. Fleck.

**Mr. John Fleck:** The paradox in the construction industry in Indiana today between private industry and State law has become so great that a careful study of causes must be made in order for private industry to survive. The laws governing construction in public work may be out-of-date with actual construction practices; the construction industry has developed into such a complex field that steps must be taken to insure that the State actually receives full value for every dollar spent in construction.

Recently it has been intimated that the construction professions and crafts are guilty of improper construction, design, supervision and control. This sentiment on the part of certain individuals is actually the result of the basic laws governing the agencies and their construction.

The purpose of this meeting is to establish a basic understanding and a familiarization of the problems which exist from the State level and from private industry. The membership of the Indianapolis Chapter, CSI, represents the membership of the entire construction industry. We all are taxpayers, and we represent the largest single element of the State Gross Product. Therefore, it is mandatory that we arrive at a firm understanding in order to insure that every dollar is used properly.

A spirit of total cooperation must be instilled in all concerned in order to develop a constructive program, and I wish to offer the total resources of the construction industry to assist in this improvement program.

To start our discussion, we will hear first from Mr. Otto Jensen, then Bob McNevin, Al Porteous and John Petch.

**Mr. Otto Jensen:** The State Board of Accounts, as you know, is primarily an auditing agency, examining every

public officer from the Governor to each Justice of the Peace. We are also required by law to prescribe the forms that are to be used by all State agencies.

In 1916, we had a scandal in school house construction, pertaining particularly to heating and ventilating. The services of Professor Beal of Purdue University were employed to make an unprejudiced and unbiased report. As a result of this, rules were adopted by the State Board of Accounts on this matter of open competition.

Upon the basis of a 1907 law dealing with restraint of trade, the Board of Accounts adopted a rule requiring free and open competition and the naming of at least three brand names or trade names so as to secure this competition.

Dealing with a public agency is entirely different than dealing with individual concerns. As former President Stone of Purdue University has written: "Anyone who has had to do with public business is soon made to realize the pressure brought to bear by those who wish to sell their apparatus or supplies, regardless of appropriateness or usefulness. When public servants lack the technical information necessary to their guidance in meeting these questions, it is absolutely necessary that

(to Page 22)



John C. Fleck, AIA  
President, Indianapolis C.S.I.

drafting

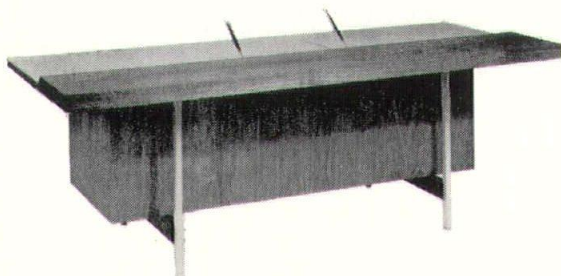
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## Conference on Structural Welding

A Conference on Structural Welding will be presented on the Purdue University campus Thursday and Friday, November 30th and December 1st. The conference is for architects, structural engineers and contractors and is co-sponsored by the Division of Adult Education and School of Civil Engineering of Purdue University and the Indiana Steel Fabricators' Association.

The educational conference has been designed to enable architects and structural engineers to obtain a better understanding of structural welding, including current construction, problems and possibilities.

The program of the two-day conference will include:

"Details of Structural Welding Design," Mr. Omer Blodgett, Design Consultant, Lincoln Electric Co.

"Techniques and Procedures of Structural Welding," Mr. LaMotte Grover, Welding Engineer, Air Reduction Sales Company.

"Modern Applications of Structural Steels," Mr. John B. Scalzi, Industrial Representative for Construction and Structural Designs, United States Steel Corporation.

"Panel Discussion of Welded Bridges"; Mr. W. A. Milek, Research Engineer, American Institute of Steel Construction; Mr. R. H. Wood, Hazelet and Erdal, Consulting Engineers; Mr. A. E. Lofquist, Chief Engineer, Structural Steel Division, R. C. Mahon Co.; Mr. G. C. Bailey, Erection Manager, John F. Beasley Construction Co.; and Mr. J. M. Hayes, Professor of Structural Engineering, Purdue University.

"Possibilities for Welded Building"; Mr. J. J. Stetina, Senior Regional Engineer, American Institute of Steel Construction; Mr. R. E. Coblenz, Chief Structural Engineer, A. M. Strauss, Inc.; Mr. Arnold Bennhoff, Chief Engineer, Fort Wayne Structural Steel Company; Mr. Don Fruchey, President, Don Fruchey, Inc.; Mr. P. E. Soneson, Professor of Architectural Engineering, Purdue University.

Complete information on the conference can be obtained by contacting Professor J. M. Hayes, School of Civil Engineering, Purdue University, Lafayette, Indiana.

## Plan Ahead

The 1962 Annual Convention of the Indiana Society of Architects, AIA, will be held Thursday through Saturday, May 24th to 26th, at the Marott Hotel in Indianapolis.

Plans for the three day convention already are underway, and it is hoped that the convention will be the largest and best yet. Coinciding with this year's convention will be the second I. S. A. Triennial Honor Awards program. Details of this program will be sent to all registered Indiana architects by the first of the year.

# Environmental Planning For the Elderly

Housing for men and women in their retirement years will be the theme of an unusual conference at the University of Illinois Oct. 31-Nov. 2.

Presented as the Eighth Planning Conference for Architects, the meeting on "Environmental Planning for the Elderly" also is open to those interested in geriatrics, family living, health, and housing and building.

Experts on problems of aging from the fields of social work, medicine, and government, will appear on the program with architects specializing in the planning of homes for elderly people.

Each of the three days of the meeting will be devoted to a specific topic.

On Oct. 31, when the discussion centers on "Social Relationships, Economic Status, and Health of the Elderly," Dr. Wilma Donahue, chairman of the Institute for Human Adjustment of the University of Michigan's Division of Gerontology will be keynote speaker.

"Government's Role in Housing for the Aged" will be the general topic until noon, Nov. 1, while that afternoon and Nov. 2, will feature "Presentation of Specific Projects by Architects." Among those presenting projects in housing for the elderly will be Bo Boustedt, internationally known architect from Kungälv, Sweden.

Other major speakers, in addition to Boustedt and Donahue, will be Dr. Cecil G. Sheps, professor of medical and hospital administration, University of Pittsburgh; Dr. Maurice E. Linden, director, Division of Mental Health, Philadelphia.

Dr. Lenore Epstein, assistant director, Program Research, and Dr. Clark Tibbitts, Chief Program Planning, Special Staff on Aging, both Department of Health, Education, and Welfare.

Dr. Sidney Spector, acting assistant administrator, Housing for the Elderly, U.S. Housing and Home Finance Agency; Arthur Holst, administrator, Forest Park Foundation, Peoria; Prof. Walter Vivrette, Department of Architecture, University of Minnesota.

Robert F. Hasting, president, Smith, Hinchman and Grylls Inc., Detroit; Prof. Frederick D. Miles, Department of Architecture, and Dean Allen Weller, College of Fine and Applied Arts, both University of Illinois; and George E. Kassabaum, partner, Hellmuth, Obata, and Kassabaum Inc., St. Louis.

The conference, which will be conducted by the U. of I. Department of Architecture and Division of University Extension, will close with a tour of a special exhibit of projects by 30 representative United States and foreign architectural commissions on housing for the elderly.



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# The Open Competition Clause

(From Page 19) the disinterested and impartial guidance of technical experts be brought into the picture."

And that is where architects and engineers are brought into the picture.

Also, I want to speak for just a minute on the forms used in public works. We have prescribed Form 96, the construction proposal; Form 95, for making a proposal for the furnishing of equipment not installed (Form 96 must be used when labor is required for the installation of equipment); and Form 96-A, the experience, financial and equipment questionnaire required under a special statute.

I would like to clear up one point on Form 96-A; in any project costing more than \$5,000, all bidders on any part of the project must submit a Form 96-A, regardless of the size of the individual bids.

There are also two bond forms; one is a combination bid bond and performance bond for construction, and the other is simply a performance bond for construction. I am somewhat surprised that not more architects and engineers require this combination bond; we would like to see it specified more often.

**Mr. Robert McNevin:** The Attorney General, as you may know, is charged with the responsibility of examining the legality of public contracts and, in many instances, the legality of payments made under these public contracts. Obviously, each of you is concerned with the legality of payments made pursuant to some contract in which you're interested, but I should add, that in no instance is the Attorney General in a position to award a contract or to influence the awarding of any contract.

The Department of Public Works and Supply, in most instances, has the initial duty of examining or perhaps writing the specifications, requesting bids, examining these bids, etc., and then the Attorney General's office checks into the legality of the bonds, the various specifications, the instructions to bidders and practically all the legal phases of that contract which is ultimately approved and awarded to the successful contractor.

One of the areas of concern to us is "Open Competition"; what is open competition, and how should specifications be written in order to conform with the existing statutes on open competition? Later, in answering your questions, I intend to read to you some statutory provisions dealing with restraint of trade, and I think some of you will be surprised at the extent to which this statute on restraint of trade will go.

Next, of course, you're all concerned with the problem of ascertaining who is the lowest and best bidder of the various bids submitted on a public contract. Included here are the problems of alternate bids and substitute bids, as well as other related problems with which you are more familiar than I, but I feel these should be covered in responses to specific questions later.

**Mr. Al Porteous:** Everyone looks at this problem of open competition from their own angle. I, personally, feel that the worst thing architects think could happen to them would be to be told in our private work that we had to accept bids from everybody who chose to submit. We would be faced with a far more difficult problem in wisely spending our clients' dollar than we now are when we can select the people from whom we will accept bids.

There is no one answer to the open competition question; there are various schemes, but each probably has certain loopholes. Currently the Indiana Society of Architects and the Indiana General Contractors' Association are studying this problem, meeting for hours at a time in an attempt to resolve the difficulties.

In a way, it's a game, a game in which we're trying to set the ground rules as we go to get the most for our clients' money, to be fair, to leave competition open, but still to avoid spending all our time trying to eliminate all those so-called "or equals" which aren't.

**Mr. John Petch:** Speaking on behalf of my own company, we like the State's open competition clause just the way it is; we don't like to see it misinterpreted or subverted, we don't like to see it monkeyed with. The life of the construction business is based upon competition; without it, owners wouldn't get their buildings at the lowest prices.

General contractors, subcontractors, material suppliers—all have to compete for their business; we all spend long hours estimating a lot of work to get a little work. No better method has been found to arrive at the proper cost of a building, and every qualified party who is interested should have an opportunity to get some work; he should have an opportunity to compete. And I say that he should be qualified.

Now, we feel that it is the responsibility of the architect to determine who is qualified; that is one of his functions. In our opinion, we think that he should be the sole judge of who is qualified, of what product is to go into a building—providing he is fair about it. And he has a tremendous responsibility to be fair.

I am of the opinion, perhaps I'm wrong, that when products are named in a specification, there should be at least three names. No one particularly wants a closed specification, and on public work, there certainly shouldn't be one. I'm very much against, and I question the legality of, voluntary alternates—the naming of one item by name and requesting voluntary alternates or substitution sheets or whatever they are called.

In closing, all I want to say is that I don't think that any attempt should be made to change or evade the State's Open Competition clause. We, as general contractors, welcome legitimate competition, and we'll take our chances in bidding against any reputable bidder.

**Mr. Fleck:** We will open the floor for discussion after the members of the panel have had the opportunity to comment upon remarks by their fellow panelists.

**Mr. McNevin:** I would like to read the statutes dealing with competition and restraint of trade and the State Board of Accounts' rule relative to manufactured articles.

The open competition clause was passed by the Legislature in 1907, and still exists in its original form:

"Any and all schemes, designs, understandings, plans, arrangements, contracts or combinations to limit, restrain, retard, impede or restrict bidding for the letting of any contract for private or public work are hereby declared illegal; and any person who shall directly or indirectly engage in any scheme, design, understanding, plan, arrangement, contract, agreement or combination to limit, restrain, retard, impede or restrict bidding for the letting of any contract for private or public work, or in any manner combine or conspire to stifle or restrict free competition for the letting of any contract for private or public work shall be deemed guilty of a misdemeanor, and upon conviction shall be fined in any sum not exceeding \$5,000, to which may be added imprisonment in the County jail or workhouse for a term of not more than one year, in the discretion of the Court trying the case."

That is the statutory provision which controls free competition, and whether there is an open competition clause in the instructions or notices to bidders is immaterial as far as the law is concerned because it is superimposed over all contracts entered into and is considered in conjunction with each contract entered into.

Pursuant to this statute, the State Board of Accounts some years ago made the following open competition clause, which is included in all notices or instructions to bidders, if I'm not mistaken:

"Where in these specifications one or more certain materials, trade names or articles of manufacture are mentioned, it is done with the purpose of establishing a basis of durability and efficiency, and not for the purpose of limiting competition. Other materials, equipment, fixtures or products may be used if they are equal in durability, efficiency and appearance to those mentioned, of a design in harmony with the work as outlined and the architect and the owner give written approval of a substitution before the article and material are ordered by the contractor."

Within the framework of that statement is mention "articles of manufacture," which has been further defined by rule of the Board of Accounts as follows: "It seems that the best method of having open competition in this class of supplies is by establishing a standard which may be done by naming at least three or more such manufactured articles, by giving the name of the manufacturer and the catalog number, providing that other articles similar in design and equal in quality may be specified by a bidder in his bid and used if approved by the architect or engineers and officers having charge of the construction of the work."

**Mr. Fleck:** I think that there you have the variety of loopholes which have crept into this thing; it has developed really into a matter of *who* shall be the judge, and at what point the ruling can be made. The burden of proof has been placed upon the architect and the engineer, not to determine what is equal, but what is *not* equal.

Recently "best bidder" has come to mean low dollar bidder, purely and simply. To lead off, I would like to ask Mr. Petch to elaborate on his sentiment that he would not like to change any of the restraint of trade clause, and

then relate that to his reference to qualified bidders.

**Mr. Petch:** I can't be too specific as to how you would determine who is the lowest and best bidder, other than to say that the State Highway Department has a prequalification system in effect that is working very well. Prospective bidders must file a financial statement and other information with the Highway Department, and those have to be revised and constantly kept up to date. Then an impartial board makes the decision as to how much volume any one contractor can take on, a decision based on his financial ability, his current work load and his past performances. A contractor can build up his bidding capacity, starting fairly small and growing as he performs.

I think something of this sort could be worked out with respect to the building industry.

**Mr. Joseph McGuire:** Architectural firms unfortunately do not have sufficient employees to factually determine what contractors should be invited to bid a particular job. We don't have the machinery or the time to investigate each contractor, to be able to find out what his work load is or what his financial picture really is. Often we just have to invite a few bidders we trust, and let it go at that.

Perhaps right here in CSI we have the organization that some day can be able to help in this field.

**Mr. Petch:** I agree that the burden of deciding who is the lowest and best bidder should not be borne by the architect alone. Such a burden would take up a great deal of very valuable time, and I think that it would be a welcome thing to most architects if some impartial, non-political board were set up to help make that decision. Of course, this would apply only to public works, and you have to keep politics out of it. If it works in connection with highway work, it could work in the general building field.

**Mr. Robert Kennedy:** I can't see the reason for comparing highway work with building construction, since highways are 90% constructed by the bidding contractor, and buildings are 80% constructed by sub-contractors.

We, as architects, basically are interested in designing buildings; we have to be interested in writing specifications which govern the work of the sub-contractor, telling each contractor specifically what we expect. Now, since most of the items that go into a building are manufactured items, why can't we mention all the manufactured names that will do the job? Would this practice be in conformance with the law?

**Mr. McNevin:** I think that Mr. Jensen would agree with me that it is good practice, and certainly in keeping with the requirements of open competition, that the architect name as many manufactured articles as possible that will do the job, thereby in effect prescribing those things as the standard of efficiency and durability.

**Mr. James Cunningham:** There is one word that has been left out of our discussion so far—"aesthetic." In determining what is equal, is it not necessary to consider the aesthetic value of the products?

**Mr. Petch:** Quite often this can be handled by specifying one type of material and construction, and then specifying an alternate type. As long as this is not done on every point covered by the

(to Page 25)



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# Open Competition

(From Page 23) specifications, it is a good means of letting the architect select what he specifically wants and lets him compare it with the alternate choice as far as cost is concerned.

You can also establish a cash allowance for certain items, letting the architect make the final selection himself. The contractor includes this allowance in his bid, and after selection, the allowance can be adjusted up or down, if needed.

**Mr. Jensen:** It is stated in our suggested open competition clause: "Other materials, equipment, fixtures or products may be used if they are equal in durability, efficiency and appearance to those mentioned and of a design in harmony with the work as outlined."

**Mr. Fleck:** I would like to ask Mr. Jensen three questions:

1. How do you differentiate between "or equals," substitutions or voluntary alternates as we know them?

2. Do you think that naming, say, six brand names would eliminate the need for the "or equal" clause?

3. Do you feel Indiana State Industry products developed and sold by the State in any way restrain trade when used in opposition to privately produced products?

**Mr. Jensen:** Of course, Indiana Industry has a monopoly; the purchase of Indiana Industry goods can be made without even the receiving of bids.

In this 1917 report, we suggested the use of three brand or trade names with the open competition clause we have suggested. Voluntary alternates are something that have come into the specifications in the last few years, and we frown upon their use.

I would choose not to answer as to your question concerning the equal or direct competition of State Industry as opposed to private industry.

**Mr. Walter Scholer, Jr.:** I would agree with the naming of three products or three manufacturers wherever possible. I also feel that the current State laws cover the pre-qualification or qualification of bidders, since the laws charge the State board concerned with the responsibility of determining that the award is made not to the lowest bidder, but to the lowest and **best**.

The best bidder is that one who has had the experience and who has the financial background and the staff and equipment to perform. In recent years, this permissive discretion might not always have been utilized, but the law certainly provides for it and this is the reason contractors are required to submit the Form 96-A.

One question I would like to raise concerns the alleged delays in completing State construction projects. Is it legal and acceptable to include a "liquidated damages" clause in the specifications, requiring the contractor to pay specific damages to the owner if a project is not completed on schedule?

**Mr. McNevin:** Personally speaking, it is my own opinion that it is perfectly legal, and advisable, to include a provision of this type in your specifications. So far as I know off-hand, no ruling has been made on this question, but I feel it would be legal.

Relative to some statements made concerning lowest and best bids, I would like to read two cases concerning the awarding of contracts to bidders considered lowest and best; in each case, the lowest bidder was passed over in favor of a higher bidder and suits were brought to enjoin the payment of public money on the contract.

The first is a 1932 case, which is still the law unless it has been overruled very recently: "The Advisory Board is composed of three resident freeholders and qualified voters of the township. At any session of such Board, any taxpayer of the township may appear to be heard as to any other matter being considered and be heard by the Board.

"Therefore, three qualified resident freeholders and voters of the township acting (to Page 27)

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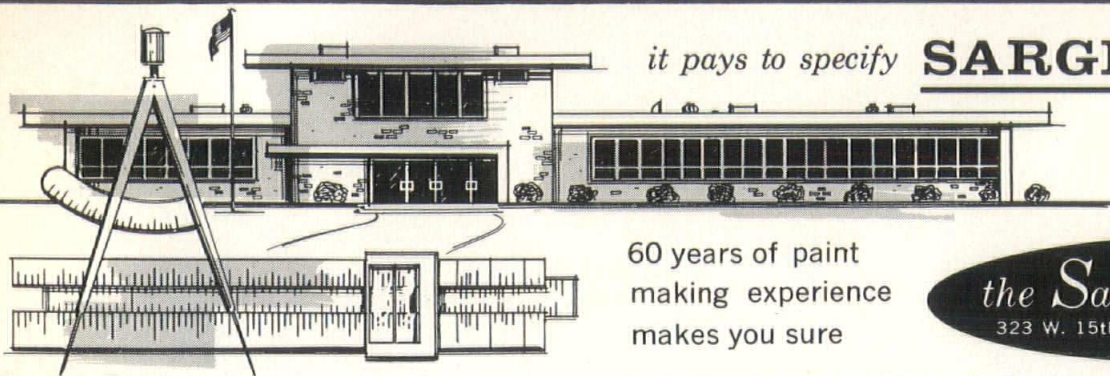
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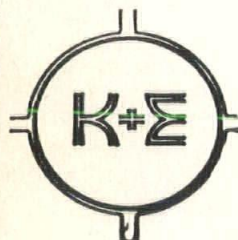


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# Open Competition

(From Page 25) with the township trustee must award the contract to a resident of the township, if awarded, who in their judgment is the lowest or best responsible bidder.

"It takes no exercise of discretion to determine who is the lowest bidder; that is a simple mathematical calculation. Here the contract was not awarded to the lowest bidder; hence, it was necessary for them to award it to the best responsible bidder if an award was made.

"There may have been several bidders who were responsible, and it was their duty to award it to the best. In arriving at who was the best responsible bidder, the body is not limited to a definition of responsible which limits it to pecuniary ability; of course, that must be taken into consideration even though a bond is given for performance. A contract does not necessarily have to be awarded to a bidder because a good bond is furnished; here, a bond is demanded of all bidders.

"The awarding body may take into consideration the liability and possibility of collecting under the bond and the cost of so doing as well as the probability. Aside from financial responsibility, it has been held that ability and capacity, capital, character and reputation, competency and efficiency, energy, experience, facility, faithfulness and fidelity, fraud or unfairness in previous conduct, honesty, judgment, promptness, quality in previous work and suitability to the task are proper elements to be taken into consideration in determining the responsibility of the bidder on a public contract."

Another case decided by the Courts in 1941 had the following to say: "In the last analysis, therefore, the question presented by this appeal is whether or not this record discloses such a factual background as warrants the interposition of a Court of equity to sanction or null the action

of the Board of the County Commissioner in awarding this contract

"Generally speaking, Courts of equity are not endowed with visatorial power to approve or disapprove the manner in which County Commissioners exercise the powers conferred upon them:

"So long as the Commissioners are acting honestly and in good faith, and keep within the limits of the powers given to them by the law, the Courts have no authority to interfere with or control their legitimate discretion. The Courts may, however, in proper cases, compel the Board to perform the proper duties imposed upon it by law. They may also inquire whether an action or proposed action of the Board is within its lawful authority and intervene to prevent illegality or fraud or gross abuse of power. In order to secure the intervention of equity in a matter involving the review of an action of County Commissioners, the requisite jurisdictional facts of fraud, etc., must be alleged."

"Stated more broadly, the rule as deduced from a long list of authorities collected from many states is: 'The general rule as deduced from the cases is that in awarding contracts of this nature, public authorities are vested with discretion in determining who is the lowest and best bidder, and their decision will not be interfered with by the Courts even if erroneous, provided it is based on a sound and reasonable discretion, founded on facts and exercised in good faith, in the interest of the public, without collusion or fraud, nor corruptly, nor promoting as a personal favoritism, or illwill, and not abused'."

**Mr. Wayne Weber:** I feel that the Form 96-A does not supply sufficient information, and that a financial statement certified by a Certified Public Accountant should be required.

**Mr. Jensen:** Well, I think to do so would require a change in the statute which specifically authorizes the State Board of Accounts to prescribe this form. I believe the State

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**Mr. Tom Carlino:** Would competition be restrained if an architect names only three specific manufacturers in his specifications and further would accept only one of those three manufacturers?

**Mr. McNevin:** Of course, the purpose of naming three or more brand names is to establish a basis of efficiency and durability upon which the various contractors will submit their bids, permitting the architect to select the final product.

**Mr. Carlino:** It would appear to me that an architect, if thought to be competent to design a building, should be given the opportunity to decide which of three, or four, or five, manufactured products will be acceptable to him in performing a given function for his building.

**Mr. McNevin:** Certainly some discretion must be given, and some consideration given, to the aesthetic nature of the whole project; the architect designs what he considers to be a final, completed building and each individual part is something that goes to make up the whole. Perhaps some of those parts are not as important as others, but he has one final product in mind.

I think there should be some leeway and some discretion in selecting some of the various products that go into that final, completed building. Certainly, within the framework of discretion the architect would be permitted, in my opinion, to choose certain items, if it is done fairly and honestly.

**Mr. Carlino:** But if the letter of the law were to be carried out, he does not have this privilege. The "or equal" clause in the building materials business has become the great equalizer. Manufacturers no longer are striving for quality; they are striving for price. It is a tragic situation when manufacturers predicate the quality of their goods on how low they can be sold for.

Further, manufacturers who manufacture a product inferior to that specified are actually selling their product at a higher margin of profit than if they had been specified initially. They raise their prices to just under the fair price for the product specified.

**Mr. McNevin:** This problem has been recognized in some State Courts, though not in Indiana, to the best of my knowledge.

But I assume, and I hope rightfully so, that the awarding agency, such as the State of Indiana, in awarding a building contract might look and rest its discretion, and heavily so, on what the architect might think about the various products used in the specifications. I think that within that framework, the architect, then, has a certain amount of discretion in choosing which of the products actually would carry out his full intent in designing the building and producing the plans and specifications.

**Mr. Fleck:** We really are just beginning to scratch the surface, and with the permission of the panel, I would like to work a further discussion on this subject into a future meeting.

In closing, I would like to read from an opinion rendered by the Attorney General's office in answer to questions submitted by Mr. B. B. MacDonald, State Examiner, Indiana Board of Accounts:

"Are voluntary alternates permitted under our statutes when the specifications and the drawings are not permitted or adopted covering the materials or equipment for which the voluntary alternate is submitted? (Answer) It is my opinion that alternates and substitutes cannot be considered unless they are within the specifications as determined and distributed to bidders by the awarding agency. It is my further opinion that when acceptable alternates or substitutes are submitted pursuant to the specifications, it is the duty of the bidder to properly inform the awarding agency as to the durability, efficiency, etc., of the alternates, in order to enable the awarding agency to properly determine whether the alternate is within the specifications, and further to determine the lowest and best bid.

"If the specifications name three or more brand names of equipment or materials, would that eliminate the need for the open competition clause in the specifications? (Answer) It is my opinion that you may properly determine that the need for the open competition clause could be eliminated by the use of three or more makes or brand names of equipment or materials in the specification. However, it is my opinion that the open competition clause is a good statement of policy, and if used, would tend to set forth the State's position relative to unrestricted competition.

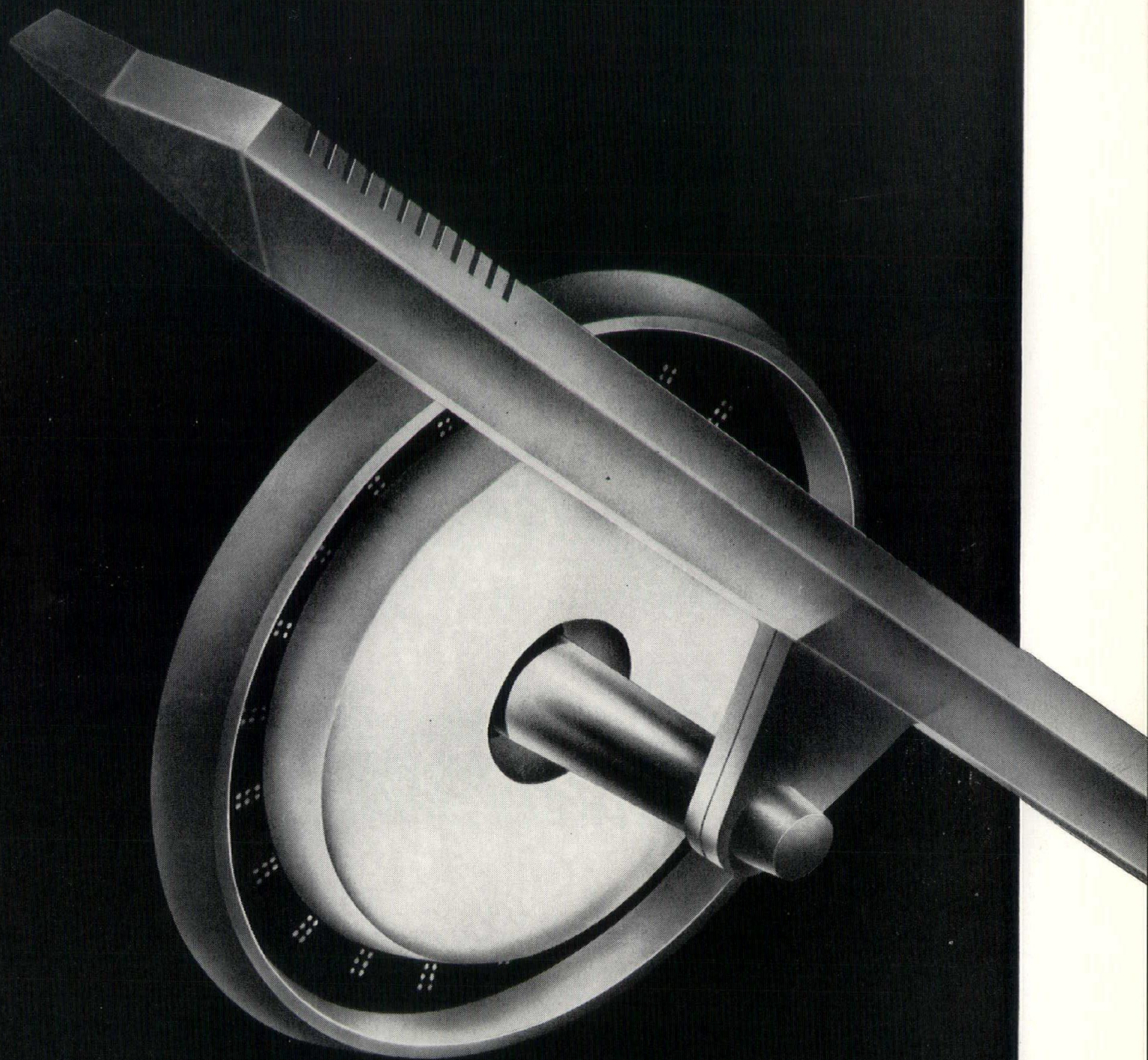
"Is it within the authority of an awarding agency to require a mechanical or electrical contractor to assign his contract to the general construction contractor? (Answer) It is my opinion that the awarding agency does have the authority to require a mechanical or electrical contractor to assign his contract to the general construction contract, provided the specifications gives such contractors notice that this procedure may be followed at the option of the owner or the awarding agency. By providing clear and adequate notice of this, the bidder bids his bid knowing that such assignment may come to pass, and has indicated his acceptance to this procedure by submitting his bid.

"Does the owner, such as the school board, have the authority to insist upon certain materials or equipment for service standardization throughout their buildings? (Answer) Such an owner would have the right to insist upon standardization, but whether his justification for such insistence upon the use of a particular article of a manufacturer or brand name is valid or amounts to a plan to stifle free competition is a question that cannot be answered herein."

It has only been in the last twelve to eighteen months that we have overcome our apathy in the construction industry and have realized that we are losing money and are not getting our full dollar's worth of construction. This is the first step.

I think that the emphasis now being placed upon this area, in the AGC-ISA Joint Committee, in the Legislative Study Committee, here in CSI, and in the other industry groups, will result in an overall improvement of the construction industry. This will require a great deal of work, and it will not be accomplished overnight.

I do want to thank the members of the panel; we appreciate their time, and look forward to their return. Good-night.



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