

constructor

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JANUARY 1977

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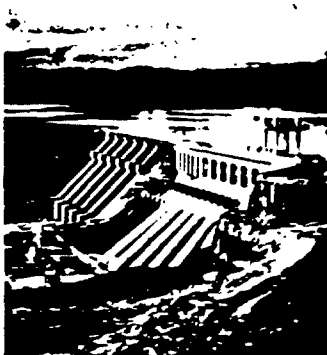
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CONSTRUCTOR



COVER: THE MIDDLE EAST MAY BE the focal point for international work, but American contractors are busy in other parts of the world as well. Kaiser Engineers, Division of Kaiser Industries Corp. (AGC) of Oakland, California is at work on the \$198.7 million hydroelectric project at Salto Osorio, Brazil. The dam is 2461 feet long and 180 feet high. Maximum spillway capacity is 988,680 cfs. Full details on the project are in this issue.

Picture Credits: Our cover is courtesy of Kaiser Engineers. Photos on pages 38, 39, 41 are courtesy of Caterpillar Tractor Co.

AGC RATES CONGRESS Our annual "report card" on Congress provides a vote by vote account of how the Senators and Congressmen have voted on issues of vital concern to the construction industry.

SALTO OSORIO: NEW POWER FOR SAO PAULO Brazil's big hydroelectric project began in July 1970 with one of the largest concentrations of construction equipment ever assembled in South America. Located on the Iguacu River, the project is already producing 700 megawatts. Full production of 1050 megawatts is scheduled for 1979.

MIDDLE EAST CONSTRUCTION CONSIDERATIONS The significance of the Middle East as a construction market is dependent on many complex factors.

SAUDI ARABIA A KALEIDOSCOPE The medieval and the ultramodern live side by side as Saudi Arabia undertakes a giant leap into the 20th Century with all the construction such a jump entails.

TETON AFTERMATH... HEROIC RECONSTRUCTION On June 5, 1976 at 11:57 am, the Teton Dam broke, sending 250,000 acre-feet of water and over 3 million cubic yards of earth and rock down the Canyon. Within hours, contractors from six states were mobilized and working.

IMPLEMENTING MANAGEMENT SYSTEMS (PART 1) Contractors have an ever-growing interest in management systems for cost accounting, scheduling, equipment maintenance, etc. Such systems can be invaluable or worse than worthless. The difference between success and failure is in the design and implementation of the management system.

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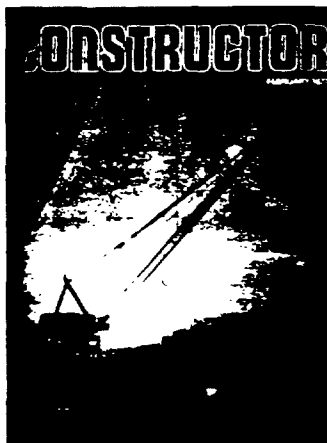


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COVER: CRANES ARE A NECESSITY to many construction operations. In this issue, a leading crane producer discusses the evolutionary development of crane technology. Crane engineering has become so refined that capacities today are not limited by crane design but rather by the strength of the component materials.

Picture Credits: Our cover photo was produced by Doug Combs and Sterling Silver and is courtesy of Blount Brothers Corporation (AGC). The scene is Commonwealth Edison's Byron Nuclear Power Station in Illinois. Photo, page 29 is by Richard L. Rich and is courtesy of Dravo Corp. (AGC); page 30 is by Martin C. Mooney.

CRANES — CONSTRUCTION'S WORKHORSES Crane technology has progressed at a tremendous pace since the early days of the rail-mounted models. FMC's Crane and Excavator Division traces the evolution of cranes in general and highlights some of the firm's products in particular.

IMPLEMENTING MANAGEMENT SYSTEMS (PART TWO) Here are some of the more important aspects of designing or selecting a management system.

EEO UPDATE Since the late 1960s, the employment practices of both large and small employers have been the subject of governmental scrutiny under a variety of equal employment laws, Executive Orders, local ordinances, and administrative regulations. From the outset, the construction industry has been one of the focal points of enforcement activity.

VE OPPORTUNITIES IN HIGHWAY CONSTRUCTION An additional source of profit is available to contractors from the expanding Value Engineering activities in federally aided highway programs.

WHAT YOU MUST KNOW ABOUT LIABILITY INSURANCE Professional Liability is a concern for all general contractors and a special worry for those engaged in design/build or construction management. An expert gives the vital facts and some sage advice.

PEACHTREE PLAZA HOTEL, BUILDING THE TALLEST J.A. Jones Construction Co. (AGC) built the world's tallest hotel in 37 months.

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COVER: SAN FRANCISCO IS EVERYONE'S favorite city. Those lucky people who attend AGC's 58th Annual Convention will come home convinced that all the wonderful things they've heard about San Francisco are absolutely true. There really is no other place quite like it. To help you get acquainted with this marvelous city, we've got a special feature in this issue. Our cover photo is courtesy of EXXON Company USA.

Picture Credits: Pgs. 35 and 36 Stan Jennings, pg. 39 B. Paul, Pg. 37 Sandor Balaton, pg. 40 Ted Needham, pg. 41 John Glosso, all courtesy of San Francisco Convention and Visitors Bureau. Pgs. 47 and 48 Al Holzinger, pg. 48 Paul Sequeira

IMPLEMENTING MANAGEMENT SYSTEMS (Part III) The final article in the series deals with the ways to avoid pitfalls in making a management system operational. **29**

THE 1976 TAX ACT (Part I) The latest tax legislation affects every US taxpayer in one way or another. Here is a comprehensive guide to the changes in income taxes for individuals and businesses. **30**

CARTER . . . THEN AS NOW Jimmy Carter's 1971 address to the Atlanta Midyear Board Meeting has a curiously current ring. **34**

SAN FRANCISCO . . . EVERYONE'S FAVORITE CITY AGC Convention-goers will find the City By the Bay a wonderful place to be. **37**

SITE SECURITY . . . SHOULD YOU BE ALARMED? The unwary thief who tampers with the property of J.A. Jones Construction Company at the Richardson Hospital site is in for an unpleasant surprise. **42**

BUFFALO: COPING WITH CRISIS No one knows why, but Mother Nature does not like Buffalo, N.Y. Fortunately, the embattled city is not without good friends including several AGC contractors who have put forth an heroic rescue effort. **45**

AGC CONSTRUCTOR EXPOSITION Here's a showcase of products produced by exhibitors at this year's show. **48**

ISSUES PENDING IN THE 95TH CONGRESS AGC presents a thorough overview of some crucial issues which could surface in the 95th Congress. **56**

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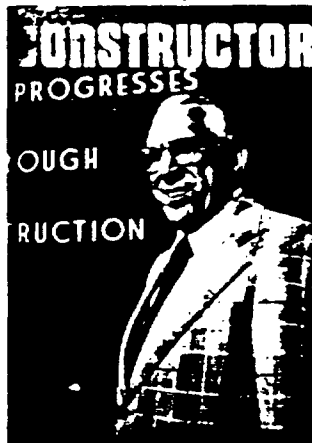
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COVER: S. PETER VOLPE IS AGC'S new President. In this issue, he details his ideas on Common Situs Picketing, the repeal of Section 14(b), EPA red tape and a host of other vital industry issues. In this exclusive interview, Mr. Volpe also provides some insights into the type of leadership he intends to provide over the course of his year in office.

Picture Credits: Cover and pages 16-20 by George Mikitzki

PETER VOLPE His name conjures up visions of success and yet every success AGC's new President has had has come only one way — through hard work. There is one bottom line on the Peter Volpe success story — he's a man who has worked diligently to realize his personal potential. He is determined that this association do likewise. 16

THE CHANGING BUILDING INDUSTRY Forces inside as well as outside the building industry are having tremendous influence. Despite the many factors affecting the industry, the general contractors are adapting and thus assuring themselves a continuing role of leadership. 21

IMPROVING YOUR FINANCIAL STRUCTURE The construction industry is affected by unique external factors that in part dictate the financial structure of the firms. Within these constraints, the construction firm has to strive to build a sound financial structure. 22

PRIME PLUS TWO OR PRIME TIMES TWO? Contractors live or die by short-term financing. In Financeland, many contractors have made the same discovery that Alice makes in Wonderland — things are not what they appear to be. 25

THE 1976 TAX ACT (PART TWO) The Tax Reform Act of 1976 has resulted in sweeping changes to the federal estate and gift taxes. 30

ISSUES PENDING IN THE 95TH CONGRESS This is the second installment in the series of issue summaries of items under consideration in Congress. This one concentrates on International Boycotts, Land Use and Water Pollution. 34

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COVER: WORK CREWS make certain that glulam members are in place on the largest wooden dome in the US. The dome is part of Northern Arizona University's new stadium. The entire project is scheduled for completion in August.

Picture Credits: Cover photo by Tom Jones, Unidilla Laminated Products, pgs. 22 and 23, Robert Charles, Mardian Construction Co., pg. 26, courtesy of WABCO Construction and Mining Equipment Group.

BUILDING THE LARGEST WOODEN DOME Northern Arizona University's new stadium boasts the largest multi-purpose wooden dome in the US. AGC's Mardian Construction Company was the general contractor.

22

FUTURE CONSTRUCTION: AN OVERVIEW What will the industry be like in the coming decade? CONSTRUCTOR takes a look down the road to find some answers.

24

FUTURE CONSTRUCTION: THE CONTRACTOR CONSTRUCTOR asked some AGC members for their ideas on construction in the future. We got their opinions — see if you agree.

FUTURE EQUIPMENT: THE DISTRIBUTOR TV telephones, movie demonstrations of the latest equipment and computer print outs of individual contractor's equipment needs are all in the future.

28

FUTURE EQUIPMENT: THE MACHINE Some leading equipment manufacturers give us their ideas about what changes may come about in equipment in the coming years.

CONTRACTOR'S ROLE IN SPECIFYING INCREASING Sweet's Division of McGraw-Hill finds that increasingly the general contractor's expertise is being called upon in the specification of building materials.

31

ISSUES PENDING IN THE 95TH CONGRESS The Labor Reform Act (HR 77) seeks to expedite unionization activities and to provide greater governmental sanctions against employer resistance to unionization. CONSTRUCTOR provides a detailed analysis of the bill's implications.

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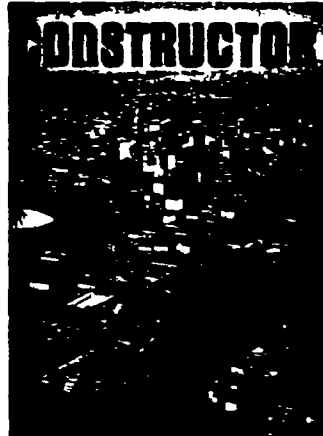
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COVER: AN IMPORTANT PART of America's transportation system is the highway. This month CONSTRUCTOR focuses on highway funding, highway work and highway repairs. Our cover is an aerial view of Interstate Route 5 winding its way through the City of Seattle, Washington. At right center is an incomplete portion of Interstate 90.

Picture Credits: Cover, courtesy Seattle Engineering Dept., photo by Nick Cirelli, pg. 30 courtesy the Albany Times-Union, illustrations on pgs. 32 and 34 by Barnett Danner.

TAKING THE WASTE OUT OF DAVIS-BACON — HR 6100 is a new bill that would simplify the Davis-Bacon Act and make it less inflationary by guarding against abuses of the "prevailing wage" principle. AGC is working hard to drum up Congressional support for this bill.

16

HIGHWAY FUNDING: HOW MUCH, HOW SOON? — The House and Senate are getting ready to draft their versions of new highway legislation, expected to be introduced next year. Will they get through the legislative obstacle course in time to be included in the budget for fiscal 1979? How much money will be authorized?

18

STAGED CONSTRUCTION: IOWA'S EXPERIENCE — Staged construction is a controversial and confusing term. A close look at its use in Iowa will help explain its benefits and drawbacks for highway contractors.

21

HIGHWAYS & BRIDGES: A QUIET CRISIS — The Road Information Program (TRIP) draws public and official attention to the deplorable condition of many of the nation's roads and unsafe bridges. Some startling facts back up their campaign.

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FREEDOM OF INFORMATION: RIGHT OR RIPOFF? — Is the public's right to know more important than your right to keep sensitive financial and business data confidential? Unless you are aware of the facts and the situation, anyone can gain access to your private information.

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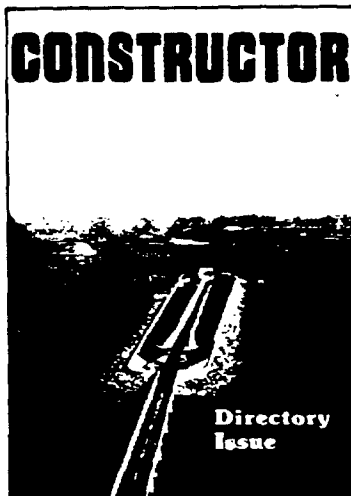
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directory 1977-1978

COVER: CALLED ONE OF THE SEVEN wonders of the modern world, the Chesapeake Bay Bridge-Tunnel consists of 17.6 miles of trestle, tunnel, bridge and man-made islands. Among the design problems to surmount was how to build a vehicular crossing which would not interfere with some of the East Coast's most important shipping lanes. Thus, the highway dips below the Chesapeake Bay into two tunnels and rises far above the bay via two bridges to enable ships to maintain their courses.

Picture credits: Cover photo by Billy D. Williams, photos on pp. 36, 48 (bottom) courtesy Virginia State Travel Service, photos on pp. 37, 38, 39, 40, 41, 47, 48 (top) courtesy Chesapeake Bay Bridge-Tunnel District; photos on pp. 42, 45, 46 courtesy Raymond International Inc.

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BY TRESTLE, TUNNEL & BRIDGE

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THE MANAGEMENT MAGAZINE

AUGUST 1977

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COVER: THE REMODELING OF AN existing Sun Oil unit in Tulsa to produce cyclohexane offered The Sun Company an opportunity to give Range Estimating a try. They were so pleased with the results, they decided to use it on their next project, a major expansion of the Tulsa refinery's lube oil and wax production facilities.

Picture Credits: Cover photo courtesy The Sun Company, Philadelphia, photo on p. 21 by Ben Nash.

SEE NEW CONSTRUCTOR FEATURE ON PAGE 13.

AGC'S MANAGEMENT CONFERENCES GIVE CONTRACTORS THE EDGE — Here is a run down on AGC's new line up of Management Conferences and what they have to offer.

17

RANGE ESTIMATING: AN OWNER'S EXPERIENCE — The Suntech Engineering Dept. used Range Estimating to establish the potential cost overruns in the early stages of the work. It also pointed out what portions of the job could be done for less with various factors taken into account.

20

REDUCE YOUR INSURANCE COSTS — Many contractors are now paying more in insurance premiums than federal income taxes. With proper insurance management, you can reduce your insurance costs. This article provides a checklist of items that can be important cost factors in your insurance program.

27

BUSINESS RECORDS: DISPOSE OF PROPERLY — Problem: many businessmen keep old invoices, cancelled checks and time cards, etc., rather than risk throwing them away too soon.

30

A PROPOSAL FOR THE ELIMINATION OF UNEMPLOYMENT IN THE UNITED STATES — In a letter to President Carter, an AGC member outlines his plan for the total eradication of this national problem.

32

IS YOUR COMPANY MARKETABLE? — What qualities make a construction company valuable in the event it is to be sold? Examined along with the answers to this question, are the reasons anyone would want to buy or sell a contracting firm or merge with another company.

34

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CONSTRUCTOR

THE MANAGEMENT MAGAZINE SEPTEMBER 1977 VOLUME LIX NUMBER 9

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COVER: ST. LOUIS CATHEDRAL in Jackson Square — the oldest active cathedral in the United States. This is one of many attractions in New Orleans awaiting AGC members during the 59th Annual AGC Convention/CONSTRUCTOR Exposition scheduled March 3-8, 1978.

Picture credits: Cover, courtesy of Greater New Orleans Tourist & Convention Commission.

AGC, NEW ORLEANS... AND ALL THAT JAZZ — Preview of AGC's 59th Annual Convention and CONSTRUCTOR EXPOSITION, March 3-8, 1978. AGC Convention goers will find New Orleans offers the best of everything. 11

THE ROAD TO LOWER HAULAGE COSTS — Certain guidelines based on long-term observations are helpful in achieving efficient (profitable) earthmoving operations. This article deals with some major factors in the efficiency of an earthmoving/hauling operation. 35

TRUCK INEFFICIENCY: CAN YOU AFFORD IT? — The actual cost of material not moved because of lost time can go unnoticed unless management takes the time to discover where the inefficiencies are. Examine how a leading manufacturer approaches this problem. 43

FOREIGN CONSTRUCTION: THE AMERICAN CONNECTION — What was once the foster child of various foreign aid development programs, has developed into the most concentrated and vigorous growth market for construction. This article represents the collective frustration and anger experienced daily by the construction community. 46

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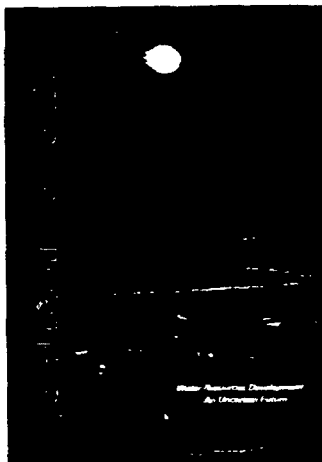
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COVER: CONSTRUCTOR FOCUSES on the heavy/industrial contractors who build everything from dams and factories to railroads. Our cover is an aerial view of the Louisiana Gulf Coast which is prime exploration country for oil wells.

Picture Credits: Cover, photography by David Moore, Black Star, courtesy of The Louisiana Land and Exploration Company.

LOOKING AHEAD TO WATER RESOURCES AND ENERGY DEVELOPMENT — AGC's Heavy Industrial Division reports on two major areas — water and energy flavored by the Carter Administration and ERDA construction programs.

20

NEW DIRECTION FOR AGC LIUNA TRAINING PROGRAM — This joint effort by AGC and the Laborers' International Union (LIU) has been working successfully for eight years. A new course of action is detailed.

24

DIFFERENCES OF OPINION — When *Engineering News-Record* took a swing at AGC's stand against the 10% minority contracting requirement in the Public Works Employment Act of 1977, AGC swung back — with both hands. If you haven't read it yet, don't miss it here.

31

AGC MIDYEAR BOARD MEETING SPECIAL REPORT — AGC reaffirms its commitment to equal opportunity and full equality for Americans but speaks out against "unenlightened bureaucrats... goals, quotas and timetables...."

32

CALIFORNIA SCORECARD ON BROWN ADMINISTRATION — Anticipating another Presidential bid by California's Governor Brown, CONSTRUCTOR presents the views of some of his constituents.

36

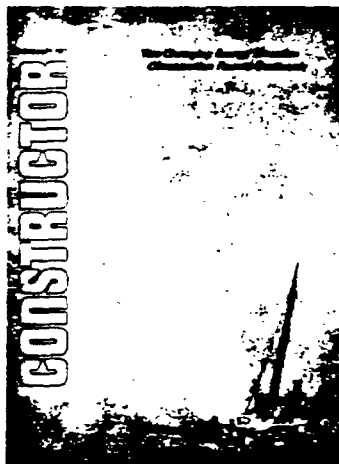
THE AGC OF JAPAN — The Japanese have long been masters of duplicating successful products and services. They have done it again — emulating another successful original.

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NUMBER 11

CONSTRUCTOR



COVER: Floating crane setting steel piles for oil loading facilities at Valdez, Alaska suggests the double edged dilemma facing the construction industry.

Picture credits: Cover, Williamette-Western Corporation. Page 16, US Department of Energy.

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ENERGY FACILITIES . . . COMPLEX BUT PREDICTABLE — In spite of a background of growing complexity, the field is not as unpredictable as it may seem. Energy facilities construction is on the upswing, and it must stay that way for many years to come. 16

DAILEY FOR DETROIT — CONSTRUCTOR interviews Thomas E. Dailey, Detroit general contractor and AGC activist, who recently campaigned for the office of mayor of Detroit. Recognizing the need for business leaders to become involved in the political process, Dailey shares the knowledge gained in his effort. 18

ENERGY — TIME TO REASSESS VALUES — Experts say petroleum demand will outstrip supply by 1985. However, the construction industry reacts cautiously to calls for revolutionary changes in energy use patterns. 22

PRECISION BLASTING IN CANADA — An American company demonstrates the technique of precision blasting on a Canadian project. Fifty years ago it took 175 men two years and \$1 million to build St. Mary's Academy in Windsor, Ontario. Earlier this year, seven men completely demolished it in eight seconds with \$5000 worth of explosives. 25

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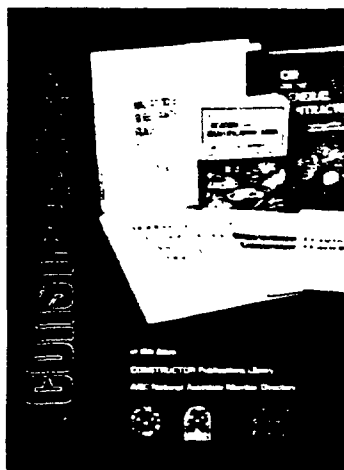
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CONSTRUCTOR



COVER This issue includes CONSTRUCTOR's first directory of AGC's growing national associate membership and also features a presentation of the resources contained in AGC's publications library.

Picture Credits Cover, pgs. 26-27, and pgs. 33-56 by G. Richard Booth. Pages 17, 19 and 21, EPA Documenta.

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WHAT THE NEWS MEDIA IS SAYING . . . About the so-called Labor Law Reform Bill — Editorial writers across the nation from *The Chicago Tribune* to *The Dallas Morning News* and from *The Washington Star* to *The Arizona Republic* are alerting their readers to the dangers of "pushbutton unionism" contained in the bill now before the Senate. 12

DIVERSITY AND CHANGE — BYWORDS IN M-U — This report presents the who, what and where of construction's most rapidly changing field. 16

AGC NATIONAL STAFF — The members of the AGC national staff are actively involved in all aspects of construction/industry services. Their work parallels, on the national level, the activities and services provided by more than 800 chapter employees in 113 chapters nationwide. 22

HIGHLIGHTS OF 1977 CONSTRUCTION PRODUCTS — CONSTRUCTOR highlights construction products introduced in the New Products department during 1977. Products featured include equipment, materials and supplies. 28

CONSTRUCTOR PUBLICATIONS LIBRARY — A comprehensive presentation of the resources contained in AGC's publications. These publications range from small items like emergency telephone number paste-ups (required by OSHA) to complete training curriculums for various trades. 33

AGC NATIONAL ASSOCIATE MEMBER DIRECTORY — The first complete directory of AGC's growing national associate membership. National associate members are listed alphabetically, by state and category of business. 65

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