National Roofing Contractors Association

ROOFING SPEC

JUNE
1986
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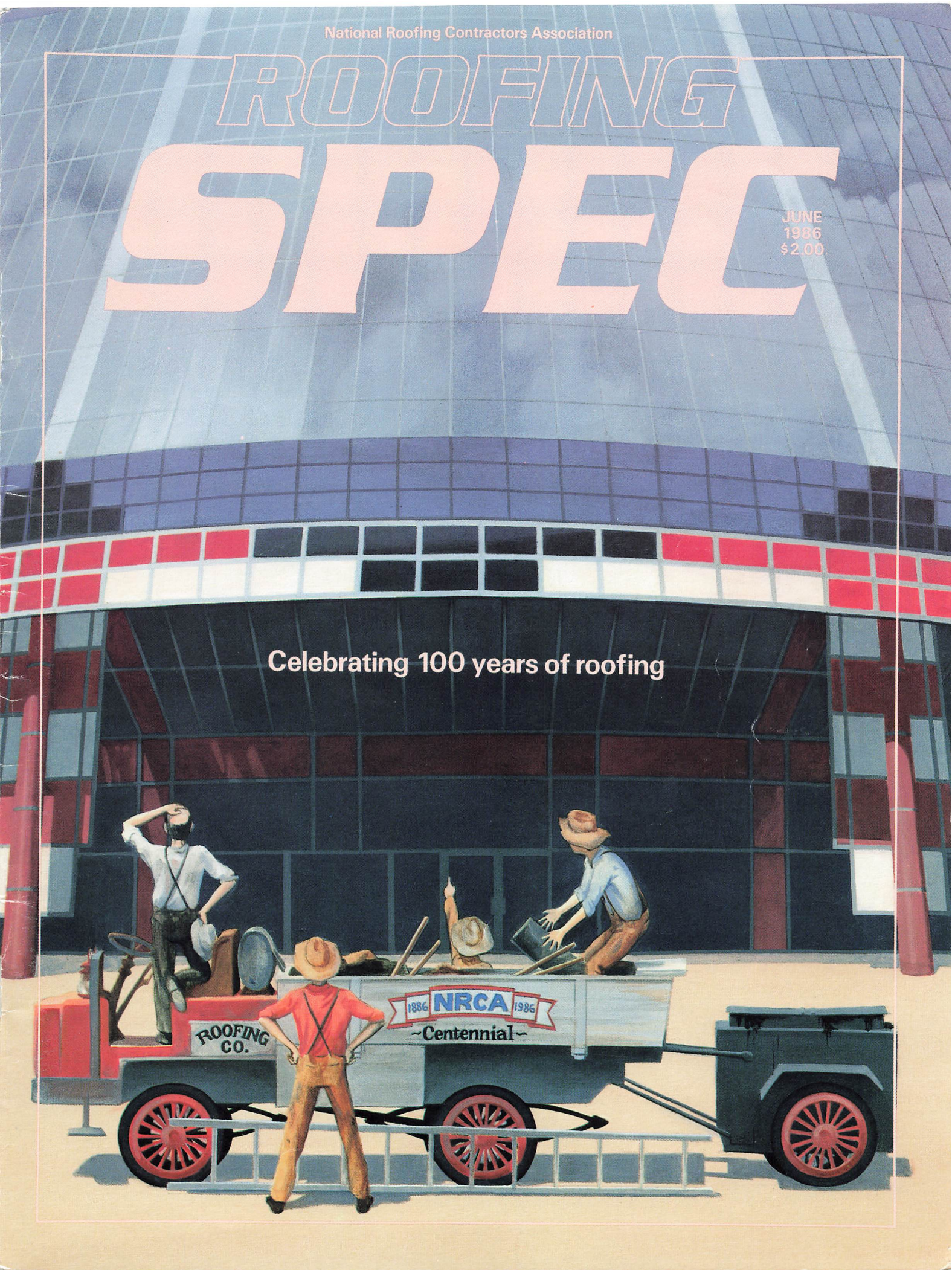
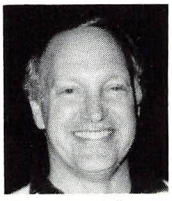


Industry Leaders Recommend ARC Modified Bitumen Roofing Material

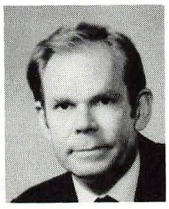


George S. Moeller

George S. Moeller
A.J. Shirk Roofing
Company, Inc.
Kansas City, Missouri

"All modified bitumens are not the same. I prefer to use ARC material because it is the best all-weather product we have applied."

George Moeller



Wm. E. Kugler

William E. Kugler
United Roofing &
Waterproofing, Inc.
Denver, Colorado

"In our climate, we need roofing material to withstand extremes of heat and cold. We like ARC modified bitumen."

Bill Kugler

Cy Tilsen

Cy Tilsen
Tilsen Roofing Company, Inc.
Madison, Wisconsin

"We recommend ARC modified bitumen to our customers because of its cold weather qualities."

Cy Tilsen

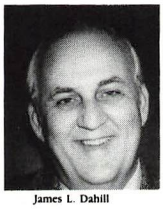
All Modified Bitumens
are not alike—
just as
all Roofing Contractors
are not alike.
The best
Roofing Contractors use
the best
Modified Bitumen.

Mike Alcock

Mike Alcock
M.W. Powell Company
Chicago, Illinois

"We use ARC modified bitumen. The M.W. Powell Company was founded in 1847. A very important reason that we have endured all these years is our commitment to use only the best roofing material available. ARC is unquestionably the finest modified product on the market. I liked the product so much that I bought stock in the company."

Mike Alcock

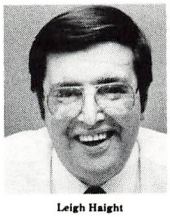


James L. Dahill

James L. Dahill
F. J. Dahill Company, Inc.
New Haven, Connecticut

"I recommend ARC modified bitumen because the management and officers of the American Roofing Corporation are all contractors with a combined total of over 250 years of roofing experience. They know what is required for a good, sound roof, and they are delivering a great product."

James L. Dahill



Leigh Haight

Leigh Haight
Haight Roofing Company, Inc.
Seattle, Washington

"We have completed several jobs with ARC modified bitumen, and our customers are very pleased with the results. We are pleased with the ease of installation."

Leigh Haight

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American Roofing Corporation
3100 S. California
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ROOFING
SPEC

Vol. 14, No. 6 June 1986

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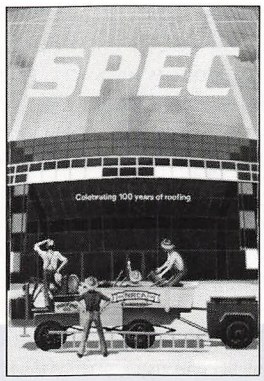

COVER

This month's Centennial Edition cover art spans NRCA's growth by juxtaposing archaic roofing techniques with contemporary roofing challenges like Helmut Jahn's One Illinois Center in Chicago. The artist was James Raddatz of Clown Studios, Chicago, Ill.

FEATURES

DEPARTMENTS

NATIONAL ROOFING CONTRACTORS ASSOCIATION
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(312) 693-0700

SOCIETY OF NATIONAL ASSOCIATION PUBLICATIONS

ROOFING SPEC (ISSN 01997742) is published monthly for an annual price of $20 for NRCA members, $15 for additional copies for member firms and $20 for non-members, $65 outisde United States (excluding Canada) by the **NATIONAL ROOFING CONTRACTORS ASSOCIATION**, 8600 Bryn Mawr Ave., Chicago, Ill. 60631. Second-class postage paid at Chicago, Ill., with additional mailing offices. **POSTMASTER:** Send address changes to ROOFING SPEC, 8600 Bryn Mawr Ave., Chicago, Ill. 60631.

Mortgage rates continue to decline for seventh straight month

For the seventh consecutive month, mortgage rates fell in April, although the rate of decline was not as much as in March, according to government sources.

The rates fell on both fixed-rate loans and adjustable-rate mortgages, according to the Federal Home Loan Bank Board, which has been tracking rates separately since the fall of 1983. Both rates hit their lowest recorded levels in April.

For fixed-rate conventional mortgages, lenders were offering a 10.57 percent average effective interest rate, a drop of 0.26 percentage points in April, said the Board.

But April's drop is only half the decrease recorded in March, when rates fell to 10.83 percent, half a percentage point from February's 11.36 percent rate.

The adjustable-rate mortgages that restrict rate increases fell to 9.68 percent in April, a drop from the 9.84 percent rate in March. Meanwhile, variable-rate mortgages with no limitation on increases dropped to 9.51 percent from the 9.62 rate in March.

The decline in mortgage rates, which began in October and has been accelerating since the first of the year, can be attributed to the dramatic plunge in oil prices, which has eased inflation concerns in financial markets.

This decline has created a boom in housing sales and construction, and a rush by homeowners to refinance their existing mortgages. By refinancing, many homeowners are hoping to reduce the mortgages they purchased in the early 1980s when rates were over 18 percent.

Meanwhile, the popularity of adjustable-rate mortgages declined to a 29 percent share of total loans in April, the lowest level since May 1983. Just a year ago, these mortgages had 50 percent of the market.

These statistics are based on a Bank Board survey taken in early April for loans on new homes where the mortgage covers at least 75 percent of the purchase price.

A more recent weekly survey done by the Federal Home Loan Mortgage Corp. found fixed-rate loans averaged 9.9 percent for the first week of May. This was a slight increase from the 9.86 percent average the week before, but considerably lower than the 13.07 percent rate of a year ago.

Contractor Dumar, Inc., and AIDS victim settle discrimination suit out of court

A lawsuit filed by a former employee who claimed he was unfairly fired against Dumar, Inc., a Somerville, N.J., roofing company and NRCA member, was settled out of court for an undisclosed amount in May. The suit was filed by George Postel, a former employee who said he was illegally fired after Dumar discovered he had tested positive for Acquired Immune Deficiency Syndrome (AIDS) antibodies.

The company admitted no wrongdoing, according to Dumar lawyer Michael Rubino, but rather they "settled it strictly for business purposes" due to the unwieldy cost of litigation.

Postel filed a discrimination lawsuit against Dumar and Donald Somma, saying they wrongfully fired him after a blood test revealed the AIDS antibody. The presence of the antibody means Postel had been exposed to the AIDS virus, not that he was necessarily infected with it.

The American Civil Liberties Union (ACLU) sued on behalf of Postel. According to ACLU Executive Director Jeffrey Fogel, a company supervisor "freaked out" when he heard the results of Postel's blood test. The supervisor fired Postel in December after telling him, "I've had enough of your personal problems."

Dumar officials say they knew nothing of the presence of the AIDS virus in Postel's blood until they were notified they were being sued.

Patricia Breuninger, a lawyer representing Somma, added that officials don't care whether someone carries the virus so long as they can do the work. She also noted that Postel was one of a number of house painters laid off in December, followed by the company's decision in February to get out of the painting business entirely.

Controversial Grace ad banned from prime time

The rejection of a W.R. Grace & Co. commercial has embroiled the three television networks in a censorship controversy. The conflict began in January when the networks refused to broadcast in prime time Grace's ad that suggests the federal deficit could bankrupt America, reported Ronald Alsop in *The Wall Street Journal*.

Lowe Marschalk, Grace's ad agency, responded to the decision by chastising the networks in letters mailed to the congressional committees that oversee the Federal Communications Commission (FCC). It also sent videotapes of the ad to 115 corporate executives, asking them to watch it and write protest letters to the networks. To date, Hicks Waldron, chairman of Avon Products, Inc., and Michael Gallagher, senior vice president of Sterling Drug Inc.'s Lehn & Fink business, have complied with the request. Grace is also considering filing a formal complaint with the FCC.

The provocative commercial, which is running on some cable and independent TV channels, shows an elderly man being cross-examined at "the deficit trials" in the year 2017. As a group of urchins looks on, he asks whether they will ever forgive his selfish generation for not cutting the deficit.

At least one network has responded to Grace's protests. In a letter to Grace's ad agency, Alfred Schneider, vice president of policy and standards at ABC-TV, said "There is no clear-cut consensus about how harmful the current deficit is or how harmful a continuing large deficit would be in the future."

continued on page 7

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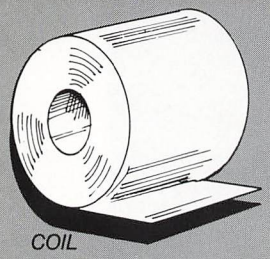
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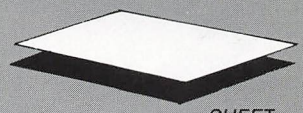
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General Contractor: Luther Stone Construction, Henderson, KY
Architect: Charles Zawsch & Assoc., Henderson, KY

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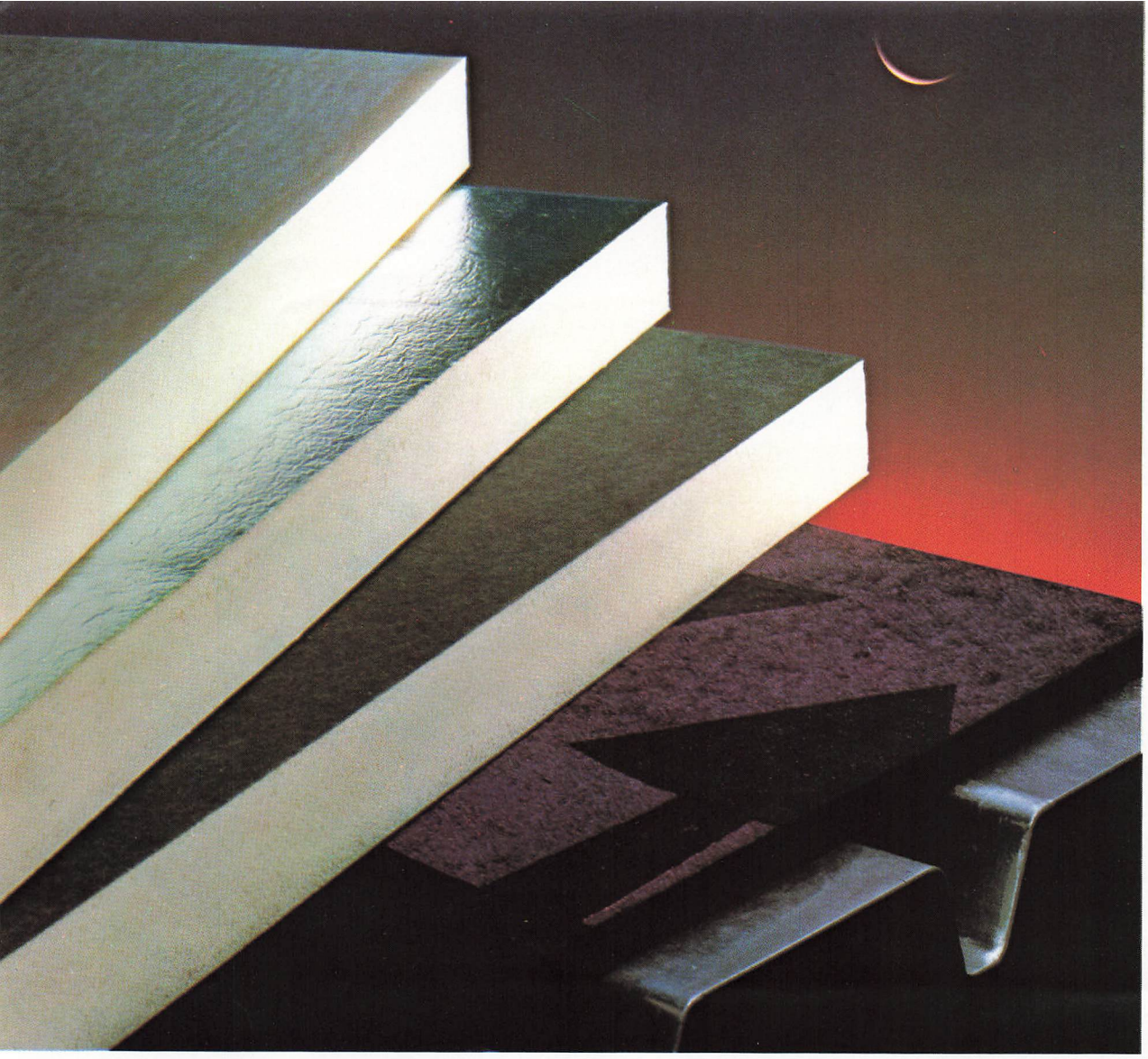
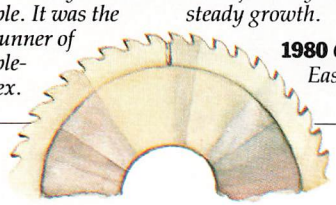


For 90 years, Temple-EasTex has made history. Staying on top of things is one reason why.

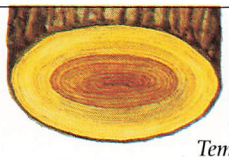
When you need the most efficient insulation product you can get for your roofing application. Temple-Eastex has it. ■ With Fiber Base roofing substrate, you get high compressive strength and durability in an economical asphalt-coated fiberboard. It's ideal for retrofit built-up roofing and single-ply systems. ■ When you want the energy efficiency of a polyisocyanurate core, choose TemPro Standard. It comes with non-asphaltic facers and can be used in all types of roofing systems. Or for single-ply ballasted and mechanically fastened systems, go with TemPro SP, the polyisocyanurate insulation with the fiberglass reinforced foil facers. These products provide maximum R-value with minimal thickness, and are Factory Mutual and Underwriters Laboratories approved. ■ *Temple-Eastex will keep you on top of all your roofing needs.* Call toll free: 1-800-231-6060. In Texas, 1-800-392-2872.

Temple-EasTex
INCORPORATED
Diboll, Texas 75941

1893 *A new forest products supply company was formed in East Texas by T. L. L. Temple. It was the forerunner of Temple-Eastex.*

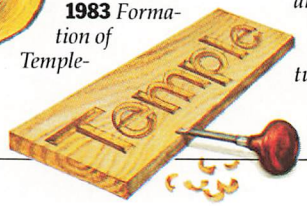


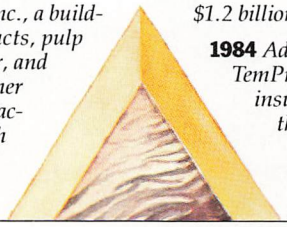
1958 *Expansion into the manufacturing of fiberboard products after 60 years of steady growth.*



1980 *Opening of the Temple-Eastex rigid foam insulation plant in Diboll, Texas.*

1983 *Formation of Temple-Inland, Inc., a building products, pulp and paper, and container manufacturer with $1.2 billion in sales.*





1984 *Addition of TemPro roof insulation to the company's product line.*

Check #38 on Reader Service Card

March construction spending lowest since February of 1985

Spending on construction fell 1.2 percent in March, the largest decline in 13 months, according to a government report released May 1. The decline was noted in a wide variety of construction categories.

The Commerce Department said construction spending totaled a seasonally adjusted annual rate of $354.6 billion in March. This follows a 1.1 percent rise in February and constitutes the biggest decline since February 1985's 2 percent drop.

Spending on residential building fell 0.5 percent in March to a seasonally adjusted annual rate of $154.3 billion. This is the result of a 1 percent drop in construction of single-family homes, offset by a 3 percent gain in multi-family residential construction.

Non-residential construction fell 2.2 percent to a seasonally adjusted annual rate of $90.4 billion. A dramatic 11.7 percent drop in industrial construction was the major contributor to this decline. Construction of shopping centers and other commercial buildings fell a comparatively modest 1.9 percent, while spending on office construction remained constant.

Government construction spending fell 0.9 percent to an annual rate of 68.1 billion. Housing project spending fell 14.3 percent, and hospital construction was down 13 percent.

The $354.6 billion overall construction rate is a 6 percent increase from a year ago, before adjusting for inflation. The biggest change occurred in the government category, where spending increased 15 percent over the February 1985 level.

continued on page 9

Rooftop Evangelical draws 200

Those who believe a roof's only attraction is the protection it offers, should perhaps have their eyes opened and uplifted by the Rev. Jim Costello in Little Rock, Ark.

In an effort to inspire people to attend services at his two-month-old church, Costello promised a rooftop sermon if the crowd at church exceeded 100. So when 107 people showed up on the first Sunday in May, he, with his sound equipment in hand, climbed a ladder to the roof.

"I kept my word. I preached the whole sermon from the rooftop for about an hour and 15 minutes," said Costello, pastor of Prayer House Tabernacle Pentecostal Church of God.

He said the rooftop sermon was divinely inspired, adding that he told the crowd "it's no gimmick. It's something God told me to do." However, Costello does admit that there were possibly a few attendees who just wanted to see and hear a rooftop sermon.

As to the future of rooftop sermons, Costello has planned for 200 people to attend the next such event, and he hopes to reach an eventual goal of 3,000 churchgoers.

A century of achievement
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TIMBERLINE® ROYAL SOVEREIGN® SENTINEL®
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MCAA's 97th annual convention in Hawaii draws largest crowd since 1982 meeting

The Mechanical Contractors Association of America's (MCAA) 97th annual convention attracted more than 1,550 people, making it larger than the Association's last three annual meetings. The 1986 convention was held Feb. 2-6 in Maui, Hawaii.

Convention attendees represented approximately one-third of the MCAA member contracting firms, as well as 102 contractors who had never before attended an MCAA convention.

The Hawaii meeting, titled "A Rainbow of Educational Opportunities," offered nearly 100 workshop sessions. Among the seminar topics were customer service, union shop success, the U.S. economy, the professional image, pricing, tax strategies, personal financial planning, and today's difficult insurance market.

Three special guest speakers addressed general sessions at the convention. They were former Soviet ambassador Arkady Schevchenko, returned Viet Nam prisoner of war Captain Gerald L. Coffee and author Nancy K. Austin.

MCAA members also elected new officers and directors at the Hawaii meeting. The new officers are: president, Jerome H. Reyer, AFGO Engineering Corp., Great Neck, N.Y.; president elect, Charles H. Carlson, Industrial Piping Co., Marquette, Mich.; treasurer, Kenneth M. Coffman, Downey, Inc., Milwaukee; assistant treasurer, Donald A. McKay, Tougher Industries, Inc., Albany, N.Y.

The three persons newly elected to the Association's Board of Directors are: Gerald L. Egan, The Egan Cos., Minneapolis; Foster McCarl, Jr., McCarl's Inc., Beaver Falls, Pa.; and Robert D. Taylor, Taylor Plumbing, Inc., Omaha.

The following four contractors were reelected to the MCAA Board: Charles W. Killingsworth, Hill York Co., Miami; Edwin J. Kwiatkowski, Natkin & Co., Miami; B.J. Winger, Winger Contracting Co., Ottumwa, Iowa; and George A. Wyatt, L.C. Kohlman, Inc., Chicago.

The next MCAA convention will be held Feb. 1-5, 1987, in San Francisco.

ROOFING SPEC

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Kopper's insulation receives 2-hour fire rating

A roof/ceiling assembly using Kopper Co.'s Rx™ phenolic insulation has received 1-, 1.5- and 2-hour fire ratings. Rx insulation is the first plastic foam insulation with direct applied fire protection that can be installed directly over a metal roof deck.

In tests conducted by Underwriters Laboratories, Inc., (UL), the underside of the roof was exposed to fire. A maximum load simulation was used on top of the roof to test its strength. Even after two hours, the P-715 roof assembly with Rx insulation sustained the applied load and kept heat transmission on its unexposed surface to an average of 92F.

With this new rating, Rx insulation will receive preferential insurance consideration compared to a non-rated insulated deck, according to Koppers.

Rx insulation has an R-value of 8.33 per inch. It has flame-spread and smoke development ratings of less than 25, as determined in the American Society of Testing and Materials (ASTM) test method E-84. It is the only plastic foam insulation to provide a smoke development rating of less than 25, and its smoke toxicity is the same as that of ordinary wood.

Goodyear introduces Europe to Versigard line

Goodyear's Versigard Roofing System line entered the European market at the International Waterproofing Association Conference in London on April 30.

Goodyear plans to serve the European market through a network of independent roofing distributors. By installing multiple branch locations, Goodyear hopes to serve entire nations. Sales administration functions will be centered at Goodyear's Luxembourg Technical Center.

"The European rubber roofing market compares to the U.S. market 10 years ago," said Ned G. Kendall, vice president and general manager of Goodyear's Roofing Systems Division. "Until now, there has been no serious commitment to serving European customers with single-ply rubber membrane products."

The total European commercial and industrial roofing market is estimated at 2 billion square feet for 1986, compared with 2.6 billion square feet in the United States. Germany is the largest market, followed by the United Kingdom, France and Italy, and the lowest market penetration by single-ply rubber roofing is in the U.K. and France, Kendall said.

Initially, Versigard membrane will be produced in the division's main roofing manufacturing facility in New Bedford, Mass., and exported to Europe.

"Approximately 80 percent of our European installations will be retrofit projects. This compares with 50 to 60 percent reroof projects in the United States," Kendall said.

ASSOCIATE NEWS

Dow renews contract with American Hydrotech

Chicago-based American Hydrotech, Inc., has renewed its marketing contract with Dow Chemical to buy and sell Dow's Styrofoam™ brand insulation.

American Hydrotech has been the exclusive marketing agent for Styrofoam insulation board since 1981. David F. Spalding, president of American Hydrotech, Inc., confirms this, adding, "Dow has some promotional activities with other selected firms, but we are the only membrane supplier licensed to sell Styrofoam brand insulation board."

American Hydrotech and its representatives have the ability to sell Styrofoam to approved applicators for use with other American Hydrotech membrane products.

ARC publishes free technical letter

The American Roofing Corp. (ARC) has announced the publication of the *ARC Tech Letter,* which will be distributed quarterly to architects, building owners, public works officials, roofing contractors and other professionals who are interested in roof design, roof construction and roof maintenance.

ARC manufactures modified bitumen roofing materials and distributes its products in all 50 states.

The *Tech Letter* will include roof job profiles and detailed specification drawings as well as technical data taken from a variety of sources.

Persons wishing to receive the free *Tech Letter* can do so by contacting Bud Jansen, American Roofing Corp., 3100 S. California, Chicago, Ill. 60608.

continued on page 13

The Siplast product line has evolved over nearly three decades of designing systems to satisfy the critical demands of specific roof conditions.

A key discovery in this evolution was our development of SBS Modified Bitumens in 1968, as a response to increased stresses imposed by modern roof construction. Modifying asphalt with SBS produces an elastomeric blend with exceptional elongation/recovery properties over a wide range of temperatures. We combine this blend with appropriate reinforcements and surfacings to create a full line of systems, each engineered for a specific use.

Our systems also provide the right application method for varying job requirements, allowing you the practical advantage of choosing hot asphalt, cold adhesive or torching. Plus we offer one of the largest varieties of colors and finishes available in the roofing industry. And every one of our systems is fully tested and guaranteed.

This ability to provide the *right* product for each application, rather than one product for all uses, is a cornerstone of the Siplast philosophy.

Engineered products, a choice of application methods and a variety of finishes all contribute to the ultimate performance of Veral, Paradiene and our other roofing materials.

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For more information on any of our roofing systems, call 1-800-922-8800. In Texas, call collect 214/869-0070. Siplast, Xerox Centre, Suite 1840, 222 West Las Colinas Blvd., Irving, Texas 75039.

Some manufacturers expect one roofing product to do everything.

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Roofing Systems

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Grace launches program to promote product

W.R. Grace & Co. has designed a new "Team Up for Profit" program to help increase distributor sales of its Ice & Water Shield™ waterproofing membrane. During the year-long program, Grace will offer distributors a full range of promotional support including sales incentive programs, merchandising and sales aids, early-buy specials and national advertising support.

"Ice & Water Shield is already number one in the marketplace," said Product Manager Jeff Davis. "With 'Team-Up for Profit,' we're working in tandem with our distrubutors to increase their sales—and profits—even more. We offer a wide range of program options, so distributors can tailor programs to their particular needs."

Elements of the program include a national advertising campaign to acquaint distributors' customers with the product. Grace will supplement the national campaign with cooperative newspaper advertising.

The early-buy program allows distributors to buy supplies of Ice & Water Shield now and pay over an extended period. A comprehensive array of point-of-sale materials, including a hanging mobile, contractor stuffers and data sheets, and a counter card with a consumer stuffer, will help stimulate sales both in-store and in the field.

Grace will team up with distributors to hold Counter Day promotions to ensure that the distributor's salespeople and customers fully understand Ice & Water Shield and its many benefits. A Grace sales representative will demonstrate proven sales techniques to sales and counter people and provide distributor support materials. The distributor and the Grace representative will then jointly invite local contractors and builders to the distributor's location for the Counter Day event and an opportunity to order. To provide contractors with a more in-depth exposure to Ice & Water Shield, Grace will help distributors plan a contractor/specifier meeting. This meeting will allow distributors to demonstrate the product and field questions from attendees. For these meetings, Grace supplies an audiovisual presentation and promotional materials.

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NERCA'S convention a smashing success

More than 1,400 members, industry representatives and guests attended the North/East Roofing Contractors Association's (NERCA) 60th Annual Convention and Trade Show at the Sheraton-Hartford Hotel and the Hartford Civic Center, Hartford, Conn., March 5–7, 1986.

Attendees were able to participate in a seminar titled "What Is Happening on the Insurance Scene Today" as well as a panel discussion on "Roof Fastening Systems, Corrosion Standards and Factory Mutual's Forthcoming Standards"

One of the highlights of the Convention was guest speaker Kurt Carlson's tale of his experience as a hostage on board TWA's Flight 847, which was hijacked and flown to Beirut last summer.

NERCA's 1986 survey on single-ply roofing systems was distributed at the Convention. The survey revealed that a great deal of single-ply roofing is being done by non-roofing firms and in-house workers.

NERCA elected the following officers at the Convention: James L. Dahill of F.J. Dahill Co., Inc., New Haven, Conn., as president; Robert F. Shea Jr. of John F. Shea Co., Inc., Mattapan, Maine, as vice president; and Brian C. Hurley, of Hurley Construction & Roofing Co., Inc., Sommerville, Maine, as secretary/treasurer.

Elected to a three-year term on the Board of Directors were: Clark Chase IV of Constructive Collaborative, Inc., Waltham, Maine; Raymond F. Gorman of Gorman Roofing, Inc., Central Falls, R.I.; F. Scott Hall of Valley Wholesale Building Products, Inc., West Springfield, Maine; and James D. Hannah of Karnak Chemical Corp., Clark, N.J.

NERCA's Trade Show featured 155 exhibit booths showing the latest in roofing materials and equipment.

RCA of Texas holds 11th Convention

The Roofing Contractors Association of Texas held its 11th Annual Convention and Trade Show June 4–7 at the Hyatt Regency-Houston and the Albert Thomas Convention Center.

Dick Baxter, Tim McElroy, John Gillan, astronaut Story Musgrave and attorney Steve Phillips were seminar leaders. Topics included standing seam roofing, warranties and guaranties and personnel problems.

Nearly 100 exhibiting firms occupied 200 booths. Prizes given away on Saturday included a full-sized pickup truck.

FRSA fights for liability reform

The Florida Roofing and Sheet Metal Association (FRSA) has assumed a leadership position in a coalition dedicated to tort reform in Florida. The Florida Coalition For Liability Reform is composed of nearly 50 trade and professional associations.

FRSA is also a participant in Project Civil Reform, a coalition of groups opposed to the concept of joint and several liabilty.

FRSA Executive Vice President Bruce Martin, CAE, has been elected secretary/treasurer of the coalition. "We see this broad-based coalition as a means of dealing with a large number of issues in need of attention," says Martin. "While a major focus of the coalition is to place a cap on non-economic damages, there are a number of other areas that directly impact FRSA members, such as who pays legal fees in an unsuccessful lawsuit."

According to current Florida law, each party is responsible for its own attorney's fees, which is a burden for even successful litigants. The Coalition will lobby for legislation to make the loser liable for both sides' legal fees.

The coalition also objects to lawyers accepting cases on a contingency basis. The Coalition members believe that this leads to laywers filing frivolous suits, knowing that the defendant will often settle out of court rather than risk a costly defense. "Another area we'll look at is the idea of punitive damages," says Martin. "It's our opinion that the concept of punishment has no place in a civil framework. It's the responsibility of the criminal court to punish wrongdoers." The coalition will introduce reform legislation during the current session of the Florida legislature.

Ontario contractors elect 1986 officers

Philip Uglow of Provincial Industrial Roofing & Sheet Metal Co., Ltd., of Concord, Ontario, was elected president of the Ontario Industrial Roofing Contractors Association at the Association's annual meeting on Jan. 20, 1986, in Toronto.

E.G. Commeford of Fiberglas Canada, Inc., was elected treasurer. G.W. Lambert of E-D Roofing, Ltd., is the Association's immediate past president.

Four new directors were added to the 12-member Board at the meeting. They are: Jim Hibben of Dean Chandler Co., Ltd., Toronto; Dave Devine of D.R. Devine Roofing & Sheet Metal, Ltd., Stittsville; Seymour Thomas of En-R-Con-6, Ohsweken; and Jim Dalziel of Domtar Construction Materials, Mississauga.

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Recently, we took test cuts from ten and fifteen year old Trocal roofs and gave them to an independent testing laboratory.

The results were impressive. Every sample tested showed physical values *equal to or better than* published minimum standards for *new materials.* We were pleased but our customers were even happier.

Now, without fear of contradiction, we can simply state: Trocal PVC membranes meet all the criteria necessary for long-term performance in the roofing environment. We have the track record. We have the proof. (And, we'd be happy to discuss it with you further.)

To be sure, we don't expect people to stop saying "PVC won't last."

It's nice to know they're wrong. We know Trocal PVC *will* last. And last. And last.

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1886 NRCA 1986

Centennial Celebration

NATIONAL ROOFING CONTRACTORS ASSOCIATION

Roofing Spec celebrates 100 years of roofing

The 19th century saw the birth of the modern commercial roofing industry. In its infancy, the industry experimented with a wide variety of materials, finding most to be too expensive, exotic or ineffective to rely on. But by the end of the 1800s, most roofers had turned from products such as pine tar and sand to the bitumen-felt-and-gravel roof we're familiar with today.

The last century also saw roofing contractors banding together for the first time to solve industry-wide problems. In 1886, a group of concerned contractors united to form the first professional roofing association. Then, as now, membership in the association was seen as a way to distance oneself from the unscrupulous and unskilled contractors who were giving the industry a bad name and share information about new products and practices.

From those first meetings 100 years ago, there grew the organization known today as the National Roofing Contractors Association. To celebrate its Centennial, the Association is planning several promotional events. The festivities will culminate at the 1987 Convention and Exhibit to be held in San Francisco in February.

The articles on the following pages give a brief overview of the people and events that helped shape the Association and the industry during the last hundred years. In these articles, the history of roofing has been divided into five eras: Pioneer Roofing, The Association's First Years, Built-Up's Glory Days, The Post-War Years, and Modern Times. Structures from each era have been chosen to illustrate the predominant roofing styles and practices of the times.

Other facts about the development of the industry that are included in the articles were taken from the book *One Hundred Years of Roofing in America.* The book, which will be published in time for the Centennial Convention, was prepared for the Association by the Mid-American Research Center at Loyola University of Chicago. The book details the history of roofing from Colonial times to the present. Each Association member will receive a free copy of *One Hundred Years* at the Centennial Convention in February.

ROOFING AND SHEET METAL CAROLINAS CONTRACTORS ASSOCIATION

CAROLINAS ROOFING AND SHEET METAL CONTRACTORS ASSOCIATION

Suite 503 A
6512 Six Forks Road
Raleigh NC 27609
(919) 848-9066

Dale Gillis, Sr
President 1986
G. Frank Hackney, Jr.
Executive Vice President

Dear NRCA:

On behalf of the officers, directors and members of the Carolinas Roofing and Sheet Metal Contractors Association, I would like to wish the National Roofing Contractors Association a **very happy 100th birthday.** On such an auspicious occasion, it is well to not only look forward, but also to look back on the many accomplishments of the Association and its members.

The NRCA has been a leader in the roofing industry for the last century and we in the two Carolinas are proud to have been an active part of NRCA for almost half of that century. We are especially proud of the four past presidents of NRCA that have come from our Association as well as the most recent past president, Robert T. Harrison. In addition to five presidents, we are pleased to say that three of the recipients of the J.A. Piper Award have been from the Carolinas. It should also be pointed out that the man for whom the NRCA's highest award is named was also from the Carolinas and one of the founding fathers of CRSMCA in 1943.

Again, **a very happy birthday to NRCA** from your affiliate association in North and South Carolina. May this be the start of another 100 years of outstanding service to the roofing industry.

Very truly yours,

G. Frank Hackney Jr.
Executive Vice President
Carolinas Roofing and Sheet Metal Contractors Association

ASPHALT ROOFING MANUFACTURERS ASSOCIATION 6288 Montrose Road Rockville, Maryland 20852 (301) 231-9050

Dear NRCA:

On behalf of the Asphalt Roofing Contractors Association, I want to congratulate NRCA as you prepare to celebrate 100 years in the roofing industry. Your Association has contributed much to the industry, all of which has resulted in professionalizing roofing application.

Your Annual Convention and Trade Show; your educational programs; your magazine, *Roofing Spec;* and your technical activities are all first class projects deserving commendation for their excellence. All trade associations have as their basic purpose that of providing needed and valued services for their memberships. NRCA excels at meeting that purpose. NRCA's leadership is responsible for a long list of accomplishments.

ARMA and its members are pleased to be a part of your celebration, and we wish you much success over the next 100 years.

Sincerely,

Richard D. Snyder, CAE
Executive Vice President
Asphalt Roofing Manufacturers Association

NERCA

North/East Roofing Contractors Association

148 STATE STREET BOSTON, MASSACHUSETTS 02109 TELEPHONE (617) 227-0220

Dear NRCA:

The officers and members of the North/East Roofing Contractors Association (NERCA) extend their sincere congratulations to the National Roofing Contractors Association (NRCA) in celebration of its 100th year anniversary—a century of commitment to the roofing industry.

NERCA is proud to be an affiliate of NRCA and works closely with NRCA in industry relations and promotion. We have seen NRCA grow in stature and membership over the years. NRCA is a roofing contractors organization on constant alert for new ways to raise standards and improve conditions in the roofing industry.

NRCA keeps its members informed on labor, public and industry relations, governmental and legislative actions, liaison with architects, construction users, and roofing material manufacturers and suppliers. NRCA provides its membership with newsletters and bulletins, keeping them fully informed and up-to-date on their industry.

NRCA's Annual Convention and Trade Exposition is the top show in the construction industry. It fulfills a commitment to provide the membership with the opportunity to learn about new products, equipment, and better business practices to permit its members to share knowledge and acquire additional knowledge.

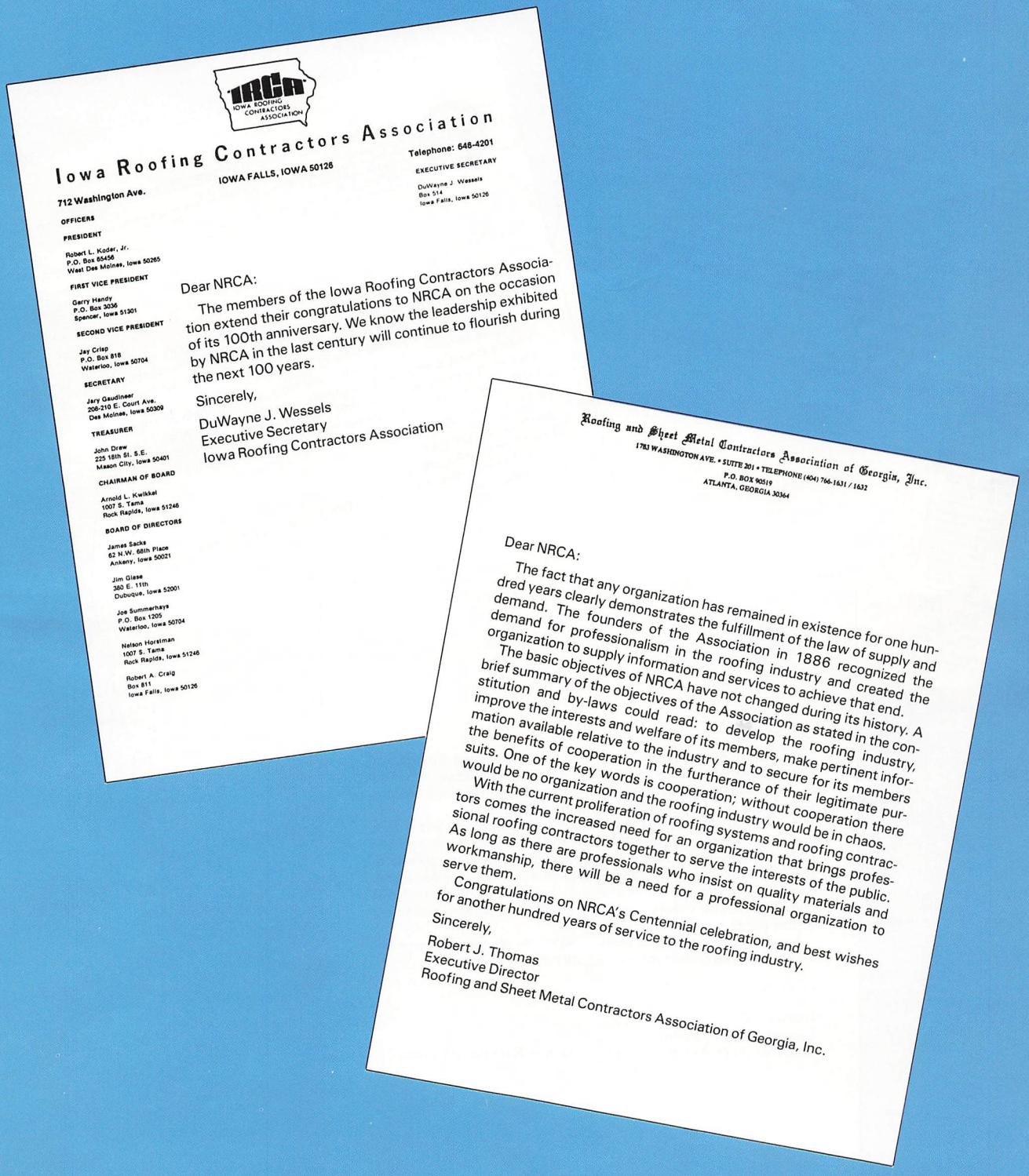
NRCA's officers, Board of Directors, committees and staff provide a number of important activities and functions. Their leadership has been outstanding in helping to improve the performance of the roofing contractor to meet his profit goals.

We are looking forward to NRCA's Centennial Celebration in San Francisco, Feb. 22–25, 1987!

Sincerely,

Thomas S. Gunning
Executive Director
North/East Roofing Contractors Association

Affiliated with NRCA



IRCA
IOWA ROOFING CONTRACTORS ASSOCIATION

Iowa Roofing Contractors Association

712 Washington Ave.
IOWA FALLS, IOWA 50126
Telephone: 648-4201

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Robert A. Craig
Box 811
Iowa Falls, Iowa 50126

EXECUTIVE SECRETARY
DuWayne J. Wessels
Box 514
Iowa Falls, Iowa 50126

Dear NRCA:

The members of the Iowa Roofing Contractors Association extend their congratulations to NRCA on the occasion of its 100th anniversary. We know the leadership exhibited by NRCA in the last century will continue to flourish during the next 100 years.

Sincerely,

DuWayne J. Wessels
Executive Secretary
Iowa Roofing Contractors Association

Roofing and Sheet Metal Contractors Association of Georgia, Inc.

1783 WASHINGTON AVE. • SUITE 201 • TELEPHONE (404) 766-1631 / 1632
P.O. BOX 90519
ATLANTA, GEORGIA 30364

Dear NRCA:

The fact that any organization has remained in existence for one hundred years clearly demonstrates the fulfillment of the law of supply and demand. The founders of the Association in 1886 recognized the demand for professionalism in the roofing industry and created the organization to supply information and services to achieve that end.

The basic objectives of NRCA have not changed during its history. A brief summary of the objectives of the Association as stated in the constitution and by-laws could read: to develop the roofing industry, improve the interests and welfare of its members, make pertinent information available relative to the industry and to secure for its members the benefits of cooperation in the furtherance of their legitimate purposes. One of the key words is cooperation; without cooperation there would be no organization and the roofing industry would be in chaos.

With the current proliferation of roofing systems and roofing contractors comes the increased need for an organization that brings professional roofing contractors together to serve the interests of the public. As long as there are professionals who insist on quality materials and workmanship, there will be a need for a professional organization to serve them.

Congratulations on NRCA's Centennial celebration, and best wishes for another hundred years of service to the roofing industry.

Sincerely,

Robert J. Thomas
Executive Director
Roofing and Sheet Metal Contractors Association of Georgia, Inc.

MIDWEST ROOFING CONTRACTORS ASSOCIATION, INC.
1000 Power & Light Bldg.
Kansas City, MO 64105
(816) 474-8100

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ROBERT P. LYONS, General Counsel
JAMES L. ANNETER, Executive Director
BARBARA D. MYERS, Administrative Manager

Dear NRCA:

On behalf of our member firms, we extend to you our sincere congratulations on the occasion of your Centennial celebration.

As you reflect upon the years since your formation, you can be justifiably proud of the many accomplishments, services and benefits you have achieved and developed for roofing contractors and the roofing industry.

We look forward to continuing to work with you in the years ahead for the betterment of our member firms. Congratulations and best wishes as you embark upon your second hundred!

Sincerely,
Board of Directors
Midwest Roofing Contractors Association, Inc.

FRSA
FLORIDA ROOFING SHEET METAL & AIR CONDITIONING CONTRACTORS ASSOCIATION, INC.
FRSA CREDIT UNION
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305/671-3772

Dear NRCA:

As NRCA's largest state affiliate group, the support of FRSA for NRCA is a matter of record. On behalf of the officers, directors and members of FRSA, we extend our greetings and best wishes on the occasion of the Centennial year of NRCA!

Please extend to the officers, directors and members of NRCA our heartiest best wishes for a prosperous and productive year and our support for the many beneficial and productive programs that NRCA has fostered and nurtured for the betterment of the roofing industry.

Best personal regards,

Bruce G. Martin, CAE
Executive Vice President
Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.

SMACNA

Dear NRCA:

On behalf of the Sheet Metal and Air Conditioning Contractors' National Association [SMACNA], I am pleased to extend our congratulations to NRCA on your 100th anniversary. NRCA's century of accomplishment is a history of which you may be justly proud.

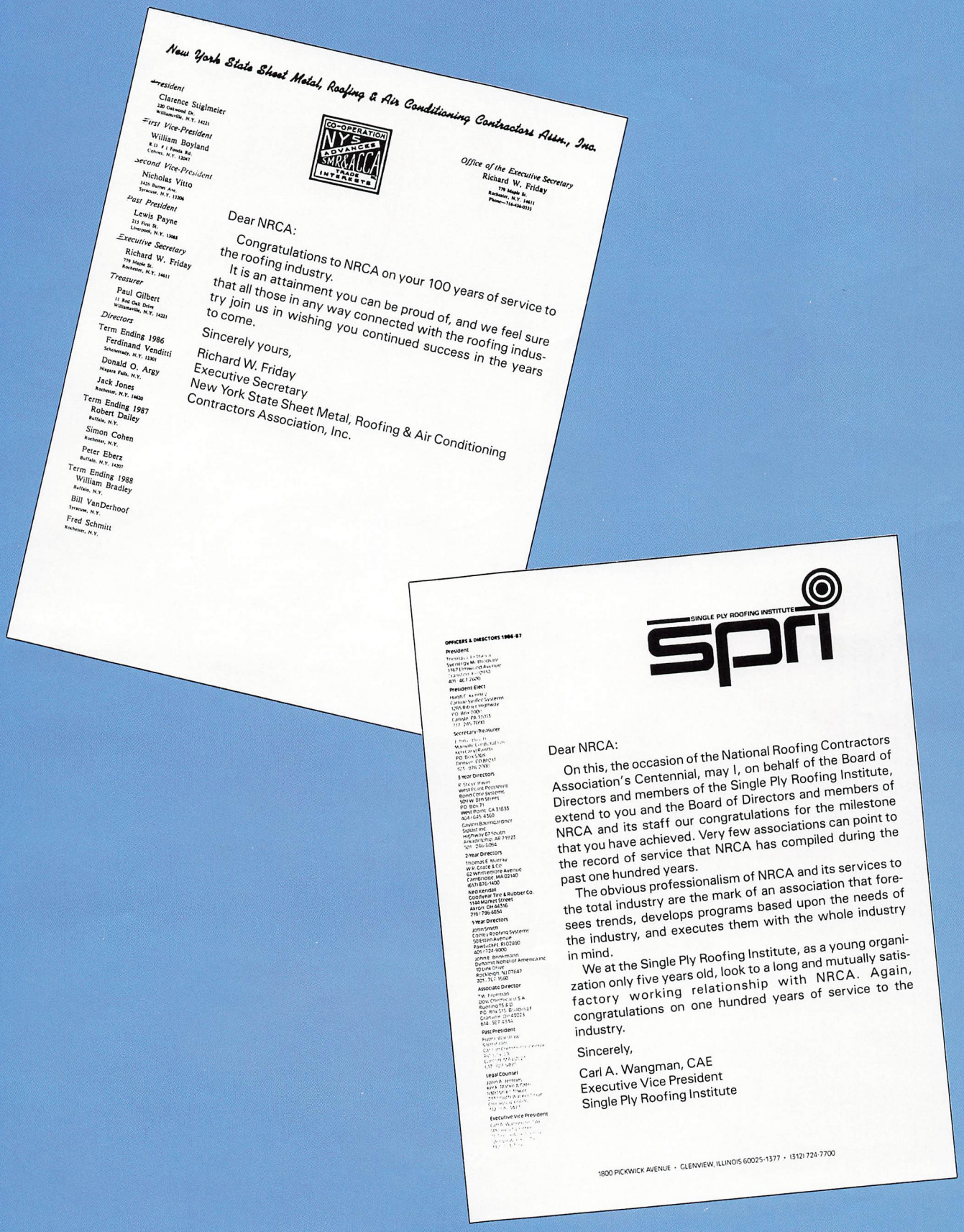
As associations serving the same construction industry and sharing some of the same members, SMACNA and NRCA together have a long history—nearly half a century—of cooperation and jointly sponsored projects. Working singly, jointly and in coalitions such as the Associated Specialty Contractors, our two organizations strive to uphold industry standards of quality workmanship, encourage technical expertise and further our mutual legislative goals.

As you begin your second century, SMACNA pledges our continued cooperation and wishes you another 100 years of success!

Cordially,

Donald D. Clark
Executive Vice President
Sheet Metal and Air Conditioning Contractors' National Association

SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC.
HEADQUARTERS: 8224 OLD COURTHOUSE ROAD, VIENNA, VIRGINIA • 703-790-9890
MAILING ADDRESS: P.O. BOX 70 • MERRIFIELD, VIRGINIA 22116



New York State Sheet Metal, Roofing & Air Conditioning Contractors Assn., Inc.

CO-OPERATION NYS ADVANCE SMR&ACCA TRADE INTERESTS

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Richard W. Friday
779 Maple St.
Rochester, N.Y. 14611
Phone—716-436-0311

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240 Oakwood Dr.
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Cohoes, N.Y. 12047

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Syracuse, N.Y. 13206

Past President
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Term Ending 1988
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Bill VanDerhoof
Syracuse, N.Y.
Fred Schmitt
Rochester, N.Y.

Dear NRCA:

Congratulations to NRCA on your 100 years of service to the roofing industry.

It is an attainment you can be proud of, and we feel sure that all those in any way connected with the roofing industry join us in wishing you continued success in the years to come.

Sincerely yours,

Richard W. Friday
Executive Secretary
New York State Sheet Metal, Roofing & Air Conditioning Contractors Association, Inc.

SINGLE PLY ROOFING INSTITUTE
spri

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President Elect

Secretary-Treasurer

3 Year Directors

2 Year Directors

1 Year Directors

Associate Director

Past President

Legal Counsel

Executive Vice President

Dear NRCA:

On this, the occasion of the National Roofing Contractors Association's Centennial, may I, on behalf of the Board of Directors and members of the Single Ply Roofing Institute, extend to you and the Board of Directors and members of NRCA and its staff our congratulations for the milestone that you have achieved. Very few associations can point to the record of service that NRCA has compiled during the past one hundred years.

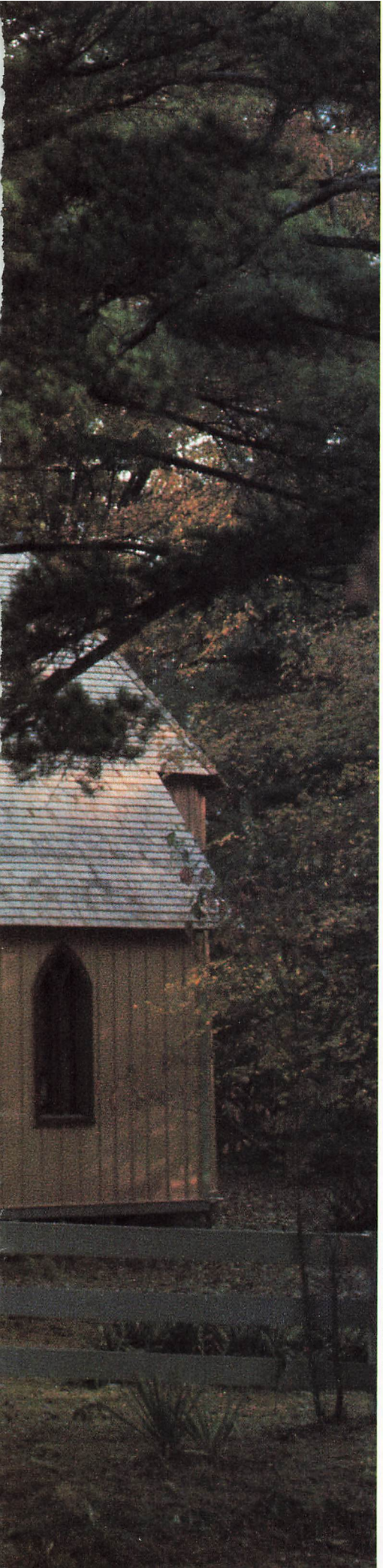
The obvious professionalism of NRCA and its services to the total industry are the mark of an association that foresees trends, develops programs based upon the needs of the industry, and executes them with the whole industry in mind.

We at the Single Ply Roofing Institute, as a young organization only five years old, look to a long and mutually satisfactory working relationship with NRCA. Again, congratulations on one hundred years of service to the industry.

Sincerely,

Carl A. Wangman, CAE
Executive Vice President
Single Ply Roofing Institute

1800 PICKWICK AVENUE · GLENVIEW, ILLINOIS 60025-1377 · (312) 724-7700



Courtesy of The Ehrenkrantz Group

1886 NRCA 1986
Pioneer Roofing

Rugby colony houses reveal past roofing practices

by Tom Hall

The restoration of a northern Tennessee community provides us with an interesting glimpse into roofing's past. The community, called the Rugby Colony, was a short-lived social experiment founded in 1880. The cooperative settlement was designed to reconcile displaced English gentry to manual labor. By 1890, the project disintegrated; from then on, it was known as a well-intentioned failure.

Aside from a few faithful pioneers, the only remnant of the colony was a cluster of buildings that continued to decay for nearly 100 years. Today, the remaining structures are being restored and are providing valuable insights into roofing over the past century.

Aristocrat's cause becomes reality

Thomas Hughes, an English lawyer, author, social reformer and one-time member of Parliament, conceived the idea of the Colony when he adopted the cause of impoverished second sons of aristocratic families.

As victims of primogeniture, the system that awarded a family's entire inheritance to the eldest son, second sons were caught in a dilemma between station and circumstance. They were forced to earn a living, but restricted to the "acceptable" professions of lawyers, doctors and preachers. Unfortunately, there were far fewer openings in these fields than there were second sons.

Hughes developed a plan to rescue these unfortunates by creating a society for them in which the crafts of tradesmen would be elevated to gentry status, and where manual labor would be respected.

Prudently, Hughes chose to establish his Colony in America, far away from England's rigid caste system. He brought the first group of colonists to a large wooded tract he had purchased on the Clear Fork River in Tennessee.

The transplanted gentry seemed to adapt well to manual labor. They learned fast and proved industrious, clearing land and building houses at an impressive rate. In two months, the Rugby Colony had viable shelter for all of its initial 120 settlers.

Built to last

Unlike typical colonial settlements, the Rugby Colony houses were substantial Victorian homes with striking elements of design and decor that reflected the colonist's educational and cultural advantages.

The roofs of the Rugby Colony were either wood shingles or sheet metal. Shingles were the natural choice, because wood was plentiful and shingles were relatively easy to make or purchase. Slate and tiles were out of reach, as they were impractical to transport to such a remote place. Tarpaper was still new technology and not readily available in rural areas; it probably wouldn't have fared well with English aristocrats anyway. Metal roofs appear to have been installed because the Colony established its own sheet metal industry.

◀ **The Rugby Colony's Christ Episcopal Church, built in 1887, receives a new roof during restoration.**

A testimonial to the colonists' high degree of skill as tinsmiths is the fact that all the surviving original roofs are sheet metal. The roof of the Hughes Library is particularly elegant and still in good condition today.

Dream thrives, then fades

In two years, the Colony's population doubled, and eventually there were 65 buildings, including a hotel, boarding house, land office, a church with an organ imported from England and the Thomas Hughes Library with a collection of books that would grow to 7,000 volumes.

Hughes called Rugby "a kingdom of enchanted solitude," and for a brief moment, it seemed to have fulfilled his vision. The work progressed with great energy and high style, with workers adorned in the finest British fashions; the colonists still had time for tea and crumpets each afternoon. They read books and played rugby, football, tennis and cricket. By the end of 1883, the experiment had all the earmarks of an extraordinary success.

Hughes wrote that this society would be one in which "gentlemen would be free to make a living in any manner they chose without disgracing themselves or their families . . . even those living by the labour of their own hands would be of such strain and culture that they would be able to meet princes at the gate without embarrassment and self-assertion."

Rugby's fatal flaw turned out to be the very sense of industry that Hughes had instilled in his colonists. As they realized their capabilities, the colonists began to feel constrained by their communal existence. The lure of the outside world promised greater opportunities.

Fundamental disagreements arose between the colonists and Hughes, who would not compromise the ideals of the Colony. Resentment grew and weakened the spirit of the settlement, even as it appeared most successful.

This spiritual structure collapsed altogether in 1884, when an outbreak of typhoid fever killed many of the colonists and destroyed the morale of the rest. By 1890, nearly everyone had left. Hughes, who had financed the entire project from the royalties of his novel *Tom Brown's School Days,* suffered large financial losses and returned to England, where he died in 1896. Despite the failure, Hughes clung to the conviction that "a good seed was sown there."

Courtesy of The Ehrenkrantz Group

The Hughes Public Library, built in 1882, had a standing seam and stamped sheet metal roof before restoration.

William Walton, who had managed the Colony for Hughes, remained with a small group of believers. These people became farmers, living on in some of the outbuildings and doing what they could to look after the others.

They preserved the library and its collection of books, kept the school open for their children and maintained the houses in which they lived. But there could be no hope of saving everything. The structures inevitably deteriorated. Some burned; others were razed. By 1966, when serious restoration efforts began, only 22 of Rugby's original 65 buildings were salvageable.

Restoring Rugby

The non-profit Rugby Restoration Association now owns 11 of the 22 buildings and has restored or reconstructed eight. The remaining 11 are private residences. Prominent restorations include the church, the library and Kingston Lisle, the house where Thomas Hughes lived. Currently, the conversion of the schoolhouse into a visitor center and museum is the Association's main project. A small building called the Percy Cottage has been completely reconstructed and serves as the Association's office.

Wood shakes and shingles have been installed on all the roofs, as they were originally. This usually required stripping off several layers of asphalt shingles and often even original wood roofs buried underneath. Four buildings—the library, a barn and two houses—retain their original metal roofs. As the restoration progresses, all asphalt roofing will be replaced with wood shingles and shakes.

The Colony site is adjacent to the Big South Fork National River and Recreation Area, which opened in 1979 and now includes 80,000 acres straddling the Tennessee-Kentucky border. There is a plan for the U.S. Army Corps of Engineers to rebuild the Colony's inn to accommodate park visitors. The inn, called the Tabard, burned twice and was not rebuilt after the second fire. Currently, the project is stalled by funding cutbacks, but when the inn is built, it will have a cedar shake roof.

1886 NRCA 1986

The Association's First Years

Chicago is scene of Association's baptism by fire

by Tom Hall

Although they probably never met, Richard Bellinger and Samuel Barrett shared something in common. The two, living in Chicago in the late 1800s, both showed the same spirit and initiative in the face of adversity.

Bellinger met the challenge of the Chicago Fire. His cottage, one of the few to survive the disaster, stands as a memorial to his foresight and resourcefulness. Barrett's legacy is the National Roofing Contractors Association (NRCA), the direct descendant of the organization Barrett founded in 1886 to combat the unscrupulous contractors who were damaging the reputation of the fledgling roofing industry.

Bellinger Cottage, one of the few structures to survive the Chicago Fire, as it looks today.

Bellinger, a Chicago policeman, built his cottage in 1870 in what was then a rather remote area of truck farms at the city's far northern edge. (It is now a gentrified urban neighborhood considered to be no great distance from downtown. The city has spread seven miles past.) His building costs amounted to $3,856 for materials, a considerable sum for that time. Records indicate that Bellinger paid $587 for labor, a figure low enough to suggest that he did much of the work himself to offset his investment in materials.

Bellinger worked from plans bought through a mail order catalog, which was how most small houses were built in those times. By coincidence, the cottage's architect, William W. Boyington, also designed the Chicago Water Tower, the Fire's most famous survivor.

Although no documents exist to indicate what roofing material Bellinger chose, a contractor who installed a dormer on the structure in 1976 claims to have discovered cedar shingles buried beneath three layers of asphalt shingles. If these are, in fact, the original shingles, it would suggest that Bellinger followed the common roofing practices of his day. In the late 1800s, wood shingles were the roofing material used most widely in residential construction.

Bituminous roofing is born

Other Chicago builders at the time weren't so traditional. The city was becoming a center of the emerging bituminous roofing industry. Tarpaper was readily accessible and being used increasingly.

It was the rise in the popularity of bituminous built-up roofing that led to Barrett's success. The lineage of Barrett's business could be traced directly to the Cincinnati inventor-entrepeneur who developed bituminous built-up roofing technology, Samuel Warren. Warren had revolutionized the built-up roofing industry some years before by substituting low-cost coal tar for the more costly pine tar that many roofers used at the time. His roofs proved so successful that his business flourished.

Warren eventually turned his business over to his brothers and dedicated himself to Bible studies. The brothers expanded the business into Philadelphia and St. Louis. In a plan to generate income for their church, they established a roofing company in Chicago under their pastor, the Rev. Benjamin Barrett. Barrett departed from his clerical duties long enough to get the company off to a modest but promising start in the city's building boom. Then, he put a close relative, Samuel Barrett, in charge of the firm.

Samuel Barrett was driven and energetic. He set upon a vigorous program of building and expansion, taking on partners and setting up the capacity to manufacture pitch from coal tar. In half a dozen years he had the company growing mightily with the city.

With his company in good health, Barrett left to serve in the Union Army in the Civil War. When he returned, he found the city grown to twice its size but his business suffering. Barrett set about revitalizing and reclaiming the reputation of his company's products and services. By the time of the Chicago Fire, Barrett's company had become the area's leading roofing supply manufacturer.

Colonel Moses W. Powell, the Gravel Roofers Protective Association's first president.

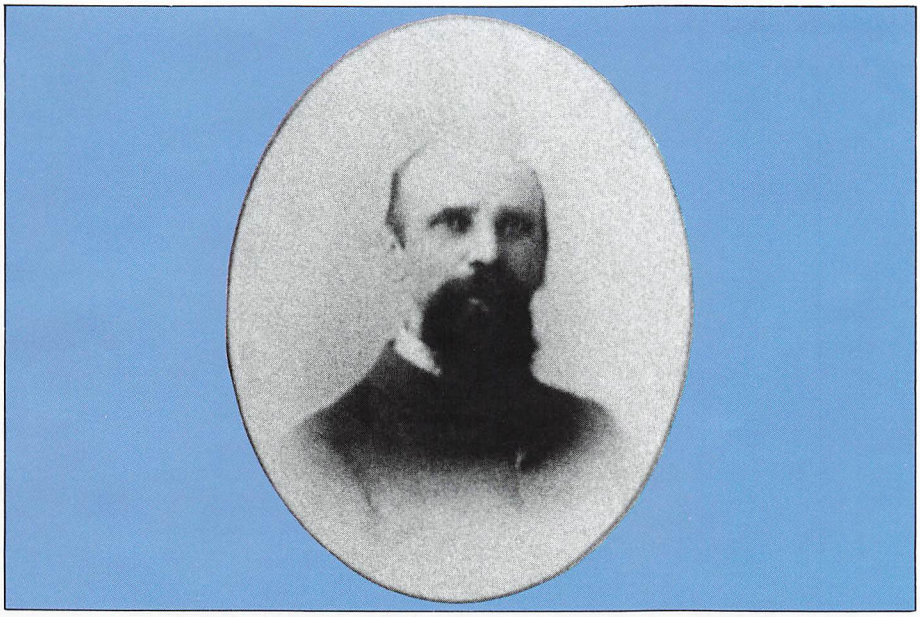
Bellinger's triumph

The fire that was to change both Barrett's and Bellinger's lives began on the night of Oct. 8, 1871. By the next morning, it had destroyed much of the present downtown and Loop areas. Because many of Chicago's buildings were roofed with combustible materials, the fire was able to spread from roof to roof, jumping over streets, rivers and other barriers. Each fresh fire sent more embers and burning debris into the air. When it landed, the flaming material ignited a new blaze and the cycle would begin again.

As Bellinger watched the fire crawl slowly toward his home on the edge of the city, he realized that protecting his roof was the key to saving his cottage. The cottage actually stood a better chance against the flames than did most buildings because it was quite distant from other houses. In fact, in the entire block it was the only house on its side of the street.

Bellinger knew for two days that the fire was burning toward his cottage, and he made good use of that time to get ready. With his brother-in-law's help, he tore up the wooden sidewalk in front of the house, tore down his front steps and wood fence, raked up and burned all the dead leaves in a wide area around the house, and covered his roof with wet rugs and blankets. Then, he laid in a large reserve of buckets filled with water and took a stand on the roof, ready to douse the cottage wherever it began to smolder.

By the time the fire reached Bellinger's cottage, it was dying, though it was still dangerous. Its firestorm force had abated, quelling the updrafts of superheated air that had sent whole balloon frame cottages soaring aloft like real balloons. But the fire still spread as sparks and flying debris—mostly flaming wood shingles—fell to earth.



Samuel Barrett, who was so distressed by his unscrupulous competitors that he founded an association to protect his industry's name.

At Bellinger's cottage, the flaming fallout was heavy. He and his brother-in-law fought the flames for hours, both suffering exhaustion and burns, but they saved the cottage—structurally intact, though noticeably singed—while all the houses near them burned to the ground. That night, Bellinger and his wife gave shelter to 21 homeless neighbors. The fire finally was extinguished in a belated rainstorm less than a half mile north.

Barrett was distressed to see the proliferation of ineffective materials and applications damage the reputation of his bituminous roofing products. To help separate the professionals from the opportunists, he joined forces with Colonel Moses W. Powell, the area's premier roofing contractor, to form the Gravel Roofers Protective Association. Powell became the Association's first president and Barrett served as vice president.

Three years after the Association was formed, it was reorganized and the name was changed to the National Association of Composition Roofers (also known as the National Association of Master Gravel and Slag Roofers).

After the Fire, there emerged a story that Bellinger had run out of water and doused the sparks with cider. The story was probably a newspaper fabrication, but it persisted and was even printed in children's schoolbooks. Nearly 45 years later, Bellinger's widow finally would say that the cider story wasn't true—that he did run out of water, but got more from a pond across the street.

Association rises from ashes

Unlike Bellinger, Barrett was not able to save his holdings; he lost his manufacturing plant to the fire. But by quickly reassembling his roofing firm, the roofing manufacturer was able to post record profits in the years following.

Barrett's recovery was helped by the city's vigorous efforts to rebuild itself after the disaster. New buildings quickly filled in the burned-out spaces, then expanded into new neighborhoods. The surge of construction spread to areas the fire had never reached. For example, brick townhouses soon filled Bellinger's street.

But the post-Fire building boom had its down side. The Chicago construction industry became increasingly competitive as builders and contractors flocked into the city to satisfy the demand for new construction. Many of those that entered the roofing market were long on ambition but short on skill. Their shoddy workmanship was giving built-up roofing a bad name.

In 1921, the directors of the National Association of Gravel and Slag Roofers voted to join with the Associated Roofers of America, an organization that had been formed to help its members select the proper materials and learn the application techniques for unfamiliar systems. The coalition was christened the United Roofing Contractors Association of North America (URCA). For the first time, an association represented the combined interests of tile, metal and composition roofers, as well as siding and waterproofing contractors.

URCA underwent some changes following World War II. One significant event was the decision to change the Association's name. At the suggestion of James McCawley, executive secretary of URCA, the name was changed to the National Roofing Contractors Association (NRCA). The name United Roofing Contractors Association, McCawley argued, had made sense in 1921 when the old National Association of Master Slag and Gravel Roofers joined with the Associated Roofers of America. But since that time, URCA had grown to become a truly national organization. It was believed that a name change would recognize this fact and help the Association gain more prestige in the construction industry. The change was put into effect at the Dallas Convention in 1949.

1886 NRCA 1986

Built-up's Glory Days

76-year-old BUR receives passing grade

The year was 1910. William Howard Taft was president, gasoline cost less than a nickel a gallon, and two elementary schools were built in New Brunswick, N.J.

A lot has changed in the 76 years since President Taft's administration, but the roofs atop the Lord Stirling and Lincoln elementary schools have endured.

The roofs were installed with the standard procedures and techniques of the day. Four-ply coal tar bitumen BUR was applied directly to the concrete decking. With only normal maintenance, the roofing systems have remained serviceable.

How it all began

When the architectural firm of Bircher & Sidel designed the Lincoln School in 1910, coal tar had already established itself as the industry's premier roofing material. However, just 70 years earlier, coal tar was unheard of in the roofing business.

Before coal tar came along, sand and pine tar were the preferred materials in composition roofing. Square sheets of heavy stock paper were coated with pine tar and pine pitch and then sprinkled with sand. This practice left much to be desired.

In the mid-19th century, pine tar, the most widely used material in composition roofing at that time, was increasing in cost and demand. The Southeast pine belt was pressed to supply materials for the printing industry, rubber product manufacturers, lamp oil makers, paint manufacturers and the traditional naval stores market. Clearly, an alternative material was needed.

The industry was flooded with would-be inventors who, judging from the bizarre specifications they concocted, more closely resembled witch doctors than roofing contractors. In 1845, William Chase patented a process that coated roofs with a composition of mineral tar, crushed red sandstone and clay. Instead of felt or paper, some roofers advocated flax, kaolin, cattle hair and even horse manure! Boiled fish oil, palm oil and liquid glass were offered as adhesives.

As a surfacing, sand was most often proposed, though some of the more exotic inventors advocated marble dust, china clay, sawdust and even ground oyster shells. Others experimented with beef tallow, boiled rice and bullock's blood, but fortunately for the history of roofing, they never saw the inside of a patent office!

It took the combined efforts of a Massachusetts mechanic's two sons to bring order to a floundering industry. In 1847, after only two years in the business, Samuel and Cyrus Warren revolutionized roofing through their experiments with coal tar.

Samuel Warren had learned composition roofing from a roofer who claimed to have invented the technique. The roofer offered to teach Warren the trade and later give him the rights to it in return for his labor.

But Warren was skeptical. Years on the road had taught him to be leery of a good deal. While he was learning the techniques of composition roofing, he did a little research on the side and discovered that composition roofing had been in use years earlier in Boston. Rather than confront his

◀ **The four-ply coal tar bitumen roof installed on the wing of this New Jersey school in 1918 is still in serviceable condition today.**

employer with this fact, Warren shrewdly continued to learn the trade, biding his time before striking out on his own.

That opportunity came early in 1845 when he met Nicholas Longworth, a wealthy Cincinatti merchant. Longworth had encountered Warren in Newark while on a business trip. Impressed by Warren's zeal and initiative, Longworth offered him the initial capital necessary to begin a composition roofing company in Cincinatti. Warren moved to Cincinatti in 1845.

To take advantage of this incredible opportunity, Warren believed he needed a financial partner. He wrote his family, then living in Glens Falls, N.Y., to invite his younger brother Cyrus to join him. Cyrus was only too happy to leave his father's stagnant plough shop for the promise of a dynamic frontier town and a growing new industry. After several months, a partnership was formed: S.M. & C.M. Warren.

With Longworth's connections and the advantages of the composition roofing system, the Warren's business thrived. But after nearly two years in the business, they had done nothing to improve upon the system.

Instead of felt or paper, some roofers advocated flax, kaolin, cattle hair and even horse manure!

The Warrens' bright idea

The material that was to dramatically change the roofing industry began as a by-product of the gas industry. Cincinatti, like most industrial cities, adopted gas street lamps in the 19th century. Gas for the lamps was provided by the Cincinatti Gas Light and Coke Co., which was established in 1843 to produce gas from coal and pipe it throughout the city.

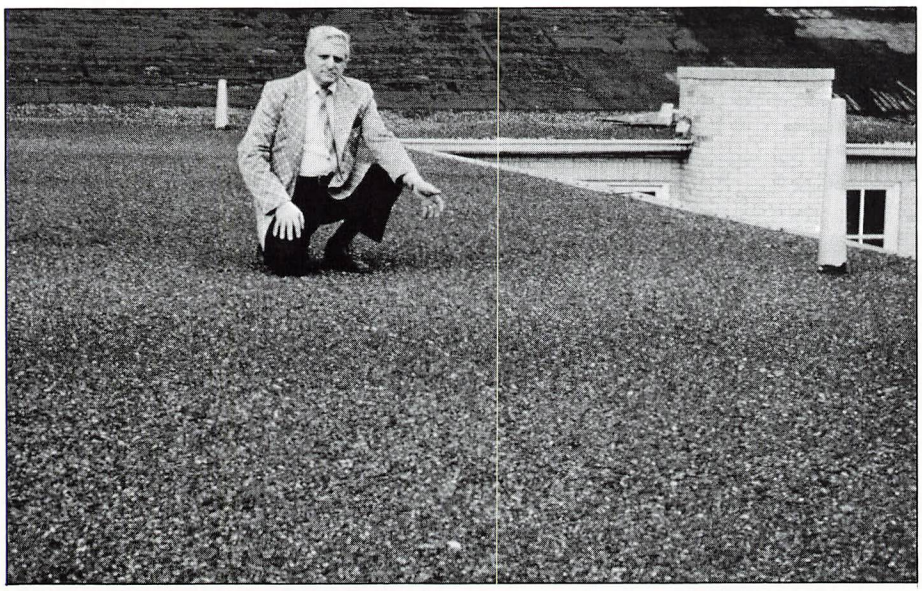
A bothersome by-product of this process was a sticky, black substance known as coal tar. It was a common practice to dispose of this waste material by dumping it into the Ohio River, which served as the waste disposal system for many of Cincinatti's industries. On just about any day, black globs of coal tar could be seen floating downstream.

Samuel Warren had an idea. Why not incorporate this abundant coal tar into his roofing business and alleviate his dependence on pine tar? When he asked the Gas Light & Coke Co. for permission to relieve them of their messy burden, they were no doubt surprised, but all too happy to oblige. The Warrens were given exclusive rights to haul the coal tar away at no cost! Thus, in one ingenious stroke, roofing history was made and one of the most profitable contracting businesses of the era was launched.

The brothers then focused their energies on the materials that actually comprised the roofing system. Based on experiments with different types of gravel, the Warren's settled on a very fine gravel to serve as the roof surfacing.

The gravel worked particularly well with sheets of felt fabric, which the Warren's used to replace the wasteful and messy sheets of ship sheating paper that had been in use. The felt rolls were saturated with tar and then passed through a ringer to press out the excess adhesive.

In just two years, the Warren brothers had launched a successful roofing contracting business and pioneered the use of new materials that were to make composition systems the heart of the roofing industry.



Al Rotundo, supervisor of grounds and buildings for the New Brunswick public school, inspects the 76-year-old four-ply coal tar roof on Bayard Elementary School.

N.J. schools prove Warrens right

The remarkable longevity of the New Brunswick roofs illustrates the durability that has been composition roofing's hallmark for well over a century. What's the secret behind this

remarkable longevity? Preventive maintenance, according to Al Rotundo, supervisor of buildings and grounds for the New Brunswick Public School District.

"We get occasional roof leaks, but we repair them as they occur to stay ahead of the game," says Rotundo. "These four-ply roofs were designed to last, and our people are very conscientious about maintaining them. My theory is that if a roof needs fixing, fix it. If it doesn't, don't mess with it. That's the only practical approach to maintaining buildings as old as these."

Rotundo also cites coal tar's self-preservative qualities. "During hot weather, coal tar tends to flow, sealing any cracks and splits as they develop."

Four other buildings in the district are more than 60 years old and, like the Lincoln and Lord Stirling schools, their original coal tar BUR installations are still in serviceable condition.

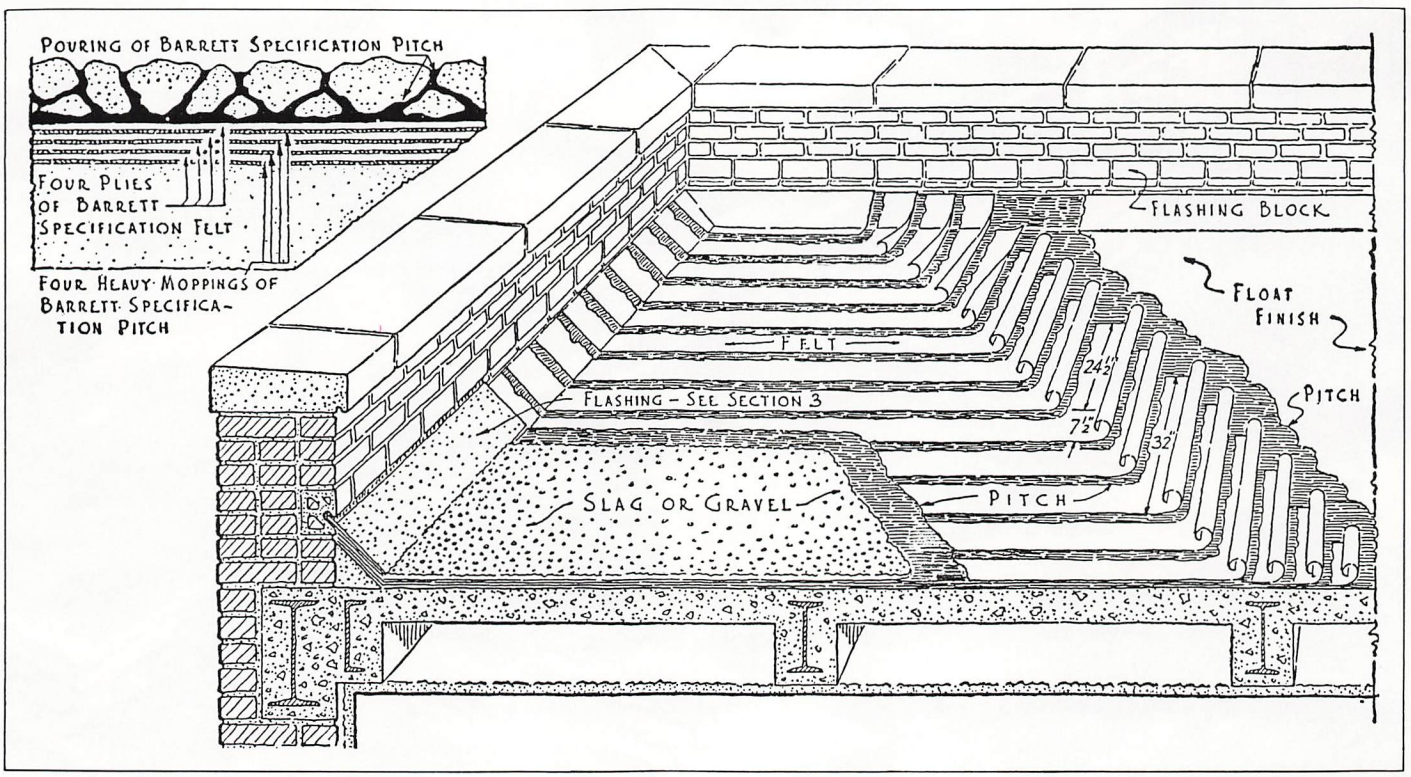
The oldest building, Bayard Elementary School, dates to 1797, the year John Adams began his tenure as our second President. Built as a jailhouse, it was converted to a school in 1853. Today, the building houses the Board of Education's administrative offices.

The remarkable longevity of the New Brunswick roofs illustrates the durability that has been composition roofing's hallmark for well over a century.

Bayard's original low-sloped roof consisted of slate tile on timber decking. In 1925, two 11,000-square-foot wings were added, the tile was removed from the original roof and four-ply coal tar roofing was installed on all three sections. This coal tar replacement is still intact today.

Another of New Brunswick's public school buildings was built when "Remember the Maine" was the rallying cry behind America's entry into the Spanish-American War. Completed in 1898, the Washington School's original sloped roof consisted of slate tiles that were later treated with emulsion sealant. Four-ply bitumen roofing was used on additions built in 1918 and 1920. All these roofs are working today.

Coal tar application has changed little since President Taft's days. Today's coal tar BUR consists of alternate layers of coal tar bitumen and tar-saturated fiber glass or organic felt surfaced with a top pouring of bitumen and aggregate. The materials are marketed by Koppers Co., Inc., Pittsburgh, Pa., the largest supplier of coal tar products in the nation.



This specification from a 1939 Barrett Co. reference manual shows a typical four-ply bituminous roof's construction.

Courtesy of General Motors

1886 NRCA 1986

The Post-War Years

General Motors plant fire changes roofing practices

General Motors' 35-acre transmission manufacturing plant in Livonia, Mich., stood as a testament to America's love affair with the automobile, and the post-war prosperity sweeping the land. The plant's devastation in a fiery holocaust in August 1953 would also become a testament—to the need for fire walls, sprinkler systems and a fresh approach to building a roof and attaching it to a deck.

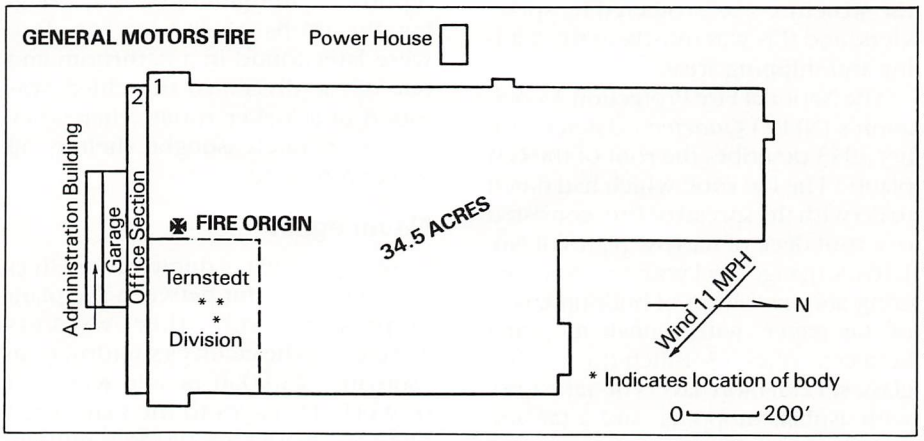
Happy days

It was 1953, and Dwight David Eisenhower, who was to describe himself as "a soldier" until the day he died, summed up the prevailing sentiment eight years after World War II: "There is nothing wrong with America that the faith, love of freedom, intelligence and energy of her citizens cannot cure."

The country was enjoying the most explosively bullish economic period it had experienced since the 1920s. Demands for housing, household goods and automobiles, effectively dammed during the war, had finally burst onto American society, and manufacturers' cups were running over.

More than 20 million American homes were built between 1946 and 1956. In 1950, 9 percent of those homes had television sets. By 1960, this would climb to a whopping 87.1 percent. Construction expenditures, holding at $80 million in 1940, shot up to $733 million by 1950. From 1945 to 1947, 747,000 more construction firms entered the market than left it.

The number of roofing workers climbed from 33,000 in 1940 to 50,000 in 1950. The two biggest concerns of the roofing industry were an appalling shortage of apprentices and a critical need for more felt. In 1946 alone, construction on 50,000 new homes was delayed because there wasn't enough roofing felt to go around. The forerunner of NRCA, the



Courtesy of the National Fire Protection Association

A diagram of the plant showing where the fire began.

The General Motors Hydra-Matic transmission plant in Livonia, Mich., during the fire that destroyed the structure and changed roofing practices in the 1950s.

United Roofing Contractors Association, was busy working with the union on designing apprenticeship programs and lobbying Washington for help with the materials shortages.

Danger zone

The Baby Boom years also marked the beginning of suburbia as we know it. As people moved farther and farther away from the city, but still needed access to it, the car became an integral part of the American dream.

The General Motors Hydra-Matic plant in Livonia was built in 1949. It churned out automatic transmissions for Cadillacs, Oldsmobiles, Pontiacs, Nashes, Hudsons, Kaisers and Lincolns—the only facility making the transmissions these cars needed. It was a monster of a building, exemplifying the type of structures industry needed after the war. Under its roof was 1,502,500 square feet, or 34.5 acres, of space, housing 4,200 employees every shift.

The structure housed 3,000 metalworking machines, many of which contained lubricating, cutting or cooling oils. Heat-treating departments scattered throughout the plant contained small quench tanks. There were three 400-gallon wash tanks and three 450-gallon dip tanks of rust inhibitors; drums of various solutions were scattered throughout the facility. In all, several thousand gallons of flammable liquids were confined in a building devoid of roof vents or interior fire cut-offs; only 20 percent of the structure was protected by sprinklers, and this was mostly in the loading and shipping areas.

The National Fire Protection Association's (NFPA) *Quarterly* dated October 1953 describes the roof of the GM plant: "The flat roof, which had much to do with the spread of fire, consisted of a roof deck of narrow plates of No. 18 (U.S.) gauge steel with exterior covering and insulation of built-up layers of 'tar paper' with asphalt mopping between plies, 3/4-inch-thick fiber glass, several more layers of 'tar paper' with asphalt mopping, and a tar and gravel surface. There were more than 3 pounds of tar and asphalt per square foot, or more than 2,000 tons on the entire roof."

"It was raining fire"

Sometime before 3:50 p.m. on Aug. 12, 1953, sparks from a plumbing contractor's oxyacetylene torch ignited a fire in a drip pan beneath a conveyor that ran just beneath the lower chord of the roof trusses; the contractor's crew had been working on ladders and immediately tried to extinguish the fire with standby carbon dioxide extinguishers handed up to them. The extinguishers were emptied before the blaze was under control, while the lack of sprinklers and roof vents contributed to its spread. The NFPA *Quarterly* relates the horrifying scene that resulted.

"While employees were making an ineffective attack, the drip pan, roof trusses and roof deck were gradually becoming hot. At about the time the drip pan warped and spilled its flaming contents on the floor, the oily condensate on steel roof members in a nearby heat-treatment area ignited, adding fuel to heat the roof deck.

" . . . Soon hot tar and asphalt were flowing through cracks between strips in the heat-warped roof deck and igniting. The fire then spread laterally behind the increasing area of melted tar that oozed through the roof and simultaneously several fires broke out on machinery, in flammable liquid containers and on the wood floor as hot tar dropped down."

"It was literally raining fire all over the building," John Stinson, then a construction superintendent for GM, reported. Firefighters bolted, dodging the drops of flaming tar. Two were later found in a bathroom and one of the divisional fire chiefs was found in a locker room where they had desperately sought shelter; all three were dead.

Never again

Actually, it was a miracle more lives were not lost. But between the plant employees and other workers affected by the facility's shutdown, an estimated 250,000 people were out of work. Damages to the plant itself were estimated to be $60 million. And *Business Week* reported: "The fire at Livonia has changed the course of the entire automobile industry. As a result of the Livonia production stoppage, the industry may turn out 300,000 fewer cars in this model year than it had planned. The loss: about $750,000,000 in sales."

GM immediately appointed a task force to investigate the fire and recommend improvements in future construction. John Stinson was a member of that team; he would go on to be head of General Motors' roofing operations for 30 years. He has now formed his own corporation and works as a consultant for the Roofing Industry Promotion Fund in Detroit.

"The major change in the national building codes was the demand for smoke and heat vents," he relates. "The metal deck industry faltered, because within six months, neither GM nor any other manufacturer was using metal decking; we were specifying cement or concrete tile. And the major industrial plants would no longer put combustible materials *under* combustible insulation; it was the asphalt under the insulation mopped to the metal deck that began to melt.

"And the fire was entirely responsible for the creation of the polyvinyl chloride vapor barrier. Originally, that's what PVC was intended for: a vapor barrier," he reports.

Factory Mutual noted the amount of asphalt present on the metal deck at Livonia, and began advocating strip, or serpentine mopping to attach insulation to the deck. Strip-mopped roofs did not present adequate wind resistance, however; now FM requires the first layer of insulation to be mechanically fastened to a steel deck rather than strip-mopped.

The NFPA *Quarterly* valiantly attempted to find the silver lining in a devastating industrial accident: "It is almost fortunate in some respects that this tremendous fire occurred in the property of a company that is financially well-equipped to withstand such a loss . . . The one beneficial effect of this is the general awakening of industrial management to the potentially disastrous results of fire on production."

Ice arena roof heralds modern roofing era

In 1957, famed architect Eero Saarinen was faced with a distressing dilemma. There wasn't a roofing contractor anywhere who would take on his new project, Yale University's Ingalls Ice Arena in New Haven, Conn., with an assurance of longevity. Supposedly, one contractor was willing to give a five-year warranty, but only at a price equivalent to two roofs because he expected to replace the first roof in two to three years.

The problem was the arena's dynamic design. A large concrete arch spanned the rink lengthwise. It was connected to the oval concrete structure with steel tension cables suspended from the arch and spaced 10 feet apart. Heavy wood decking had been attached to the cables with U-bolts, forming the curved surfaces of double hyperbolic parabaloids. At each end, the arched spine extended outward in a reverse curve to form a cantilevered beam supporting entrance canopies. This structure floated over the entire rink, allowing an unobstructed view from every seat in the 50,000-square-foot arena.

Courtesy of Stanley Warshaw

The graceful curves of architect Eero Saarinen's design for the roof of Yale's Ingalls Ice Arena made it necessary to use innovative roofing products and techniques.

Saarinen had to act quickly. The building was nearing completion, but construction couldn't proceed further without a roof. Saarinen had previously visited the headquarters of E.I. Du Pont Co. to investigate the feasibility of a rubber-like skin that could be applied to a roofing deck. He had heard about the weatherability of Du Pont's proprietary rubber, neoprene, and he thought this might be the solution to his problem. Thus, the single-ply revolution was launched, and a new industry was created.

The single-ply era

When Saarinen was designing the Ingalls Ice Arena, built-up roofing was the world's dominant roofing technique, and it had been for more than a hundred years. However, Saarinen's design was far too advanced for a traditional BUR. The movement and play of the arena's deck would have ripped apart a traditional built-up roof. Saarinen knew that his innovative design would require a roof unlike anything in use at the time. What he didn't know was that choosing a single-ply of neoprene to protect his structure placed him on the cutting edge of a roofing revolution.

When the Ingalls Arena was built, the idea of using a single layer of an impermeable material to roof a building was almost unheard of. Even as recently as a decade ago, single-plies were responsible for only 1 percent of the market. But today, nearly 30 percent of all roofs applied are single-ply systems. Never in roofing's history has a process grown so rapidly.

Contractors began to seriously consider single-ply systems in the 1970s. Single-plies were seen as a means to offset the rising cost of asphalt production, which had skyrocketed due to the worldwide oil crisis. Single-ply systems, which weren't inexpensive, became more affordable as oil prices continued to climb.

The simplicity of many single-ply systems has also contributed to their popularity; only one layer of a watertight, weatherable membrane, sealed at the seams and edges, is needed to protect a building. For intricate projects, like Yale's hockey arena, single-plies' ease of application is preferable to BUR's often cumbersome and time-consuming installation.

Single-ply sheets have been made from synthetic rubber, plastic or bituminous material modified by synthetics. Neoprene, Saarinen's choice, has been joined by several other elastomeric formulations, the most popular being EPDM. However, when Saarinen was considering roofing alternatives, neoprene was one of the few products available.

Saarinen had heard about the weatherability of DuPont's proprietary rubber, neoprene, and he thought this might be the solution to his problem.

Neoprene became first single-ply

The architect wasn't the only one who believed neoprene was the right choice for his innovative roof. After Stanley Warshaw and Blair Lamont, partners in the firm of Technical Coatings, Inc., visited the New Haven construction site, they also realized neoprene's potential. Warshaw and Lamont proposed to adhere a 1/16-inch-thick coating of neoprene directly to the wood planking, just as Saarinen had been contemplating.

In theory, the neoprene roof would work because the material would stretch to accommodate the movement of the structure and deck while adhering firmly enough to resist wind damage. Neoprene had enjoyed notable success as a coating for telephone cable, which, like Saarinen's roof, must withstand the elements while hanging freely between two fixed points. Technical and Saarinen were also hoping neoprene would be fire-resistant enough to meet building codes and weather-resistant enough to last for at least 10 years.

However, after inspecting the deck surfaces, it became apparent that Technical's proposal would not work. The wood decking had been fireproofed and was covered with a dusty copper sulfate residue, which made an adhesive application impractical. Complete sanding of the deck would have been required, but the prospect of sanding 75,000 linear feet of floating 4x8 timbers ruled this out.

There was little doubt in anyone's mind that neoprene would work; the problem was how to attach it. Warshaw and Lamont had been developing an expansion joint that they believed could be adapted to suit Saarinen's needs. Substituting 48-inch-wide rolls of neoprene for the narrow strips usually used in expansion joints, they proposed to adhere metal strips to the edges of the neoprene, making it possible to nail the joint nailed into the roof deck.

Courtesy of Stanley Warshaw

Workmen inspect a piece of the neoprene they used to roof Yale's Ingalls Ice Arena.

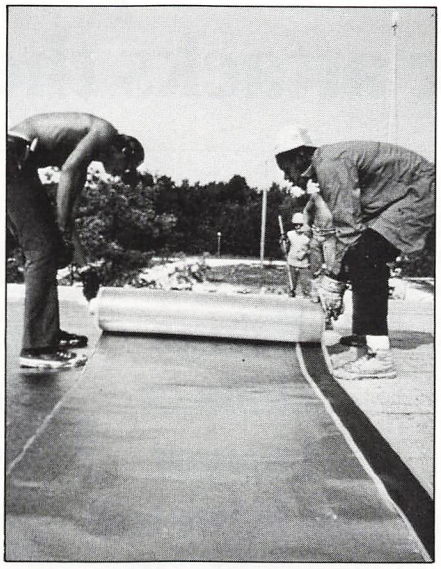
Saarinen accepted the proposal but requested that the joints be disguised to simulate a batten-seamed metal roof. This was easily accomplished by adhering the strips over a trapezoidal cross section of wood.

By the time the roof was finished, new machinery had been created to accommodate the more than 15,000 linear feet of aluminum strips that had to be adhered to the neoprene. Machinery was also developed that enabled expansion joint covers to adjust continuously to a bellow's width varying from 1 inch to the maximum.

The roofing contractor of record, Technical Coatings, Inc., subcontracted the roof installation to Hefco, Inc., of Lewiston, Maine, who provided the installation labor and the prefabricated aluminum/neoprene assembly. The installed cost in 1957 was $28,000.

Problems and maintenance

Although some maintenance was necessary, the world's first single-ply membrane held up remarkably well. However, there were some problems.



The simple installation of most single-plies has made them increasingly popular in today's roofing market.

After two years, it was evident that the neoprene compound did not have sufficient ozone resistance. Also, at points where local stress was highly concentrated, cracks were forming. This was especially true at the juncture of the random lengths of trapezoid-shaped battens. Small neoprene patches were applied to each crack. Later, the entire roof surface was coated with a liquid Hypalon, using a red neoprene primer (which led the Yalies to believe that Harvard pranksters had painted the rink crimson). This application was repeated twice in 25 years.

Another significant problem arose that had not been anticipated. Condensation formed on the underside of the freely floating membrane. Cool, humid air rising from the ice coming in contact with the sun-warmed black neoprene surface resulted in the formation of icicles that posed a threat to skaters.

Once these problems were corrected, the roof survived nearly 25 years. Yale chose EPDM to recover the arena about five years ago. The new roof was laid over the original.

The endurance of the Ingalls Ice Arena is a testimonial to the weatherability and strength that made single-ply the fastest growing roofing trend of all time.

Courtesy of Stanley Warshaw

Workmen hold on to ropes to keep from falling off the ice arena's roof as they pull neoprene membrane into place.

As NRCA's new president, Big Mac attacks the issues

Brings skills of lawyer, contractor and CPA to job

by Christine Nolen Taylor, NRCA associate executive director

Barbara Taylor Bradford's sprawling novel *A Woman of Substance* tells the story of a girl born into penury who ultimately claws her way to the top of a hugely successful business using her only resources: an iron-willed resolve, a fiercely competitive spirit, an ability to focus intensely on a single goal, and an intolerance for people or activities that fail to produce.

If Bradford had chosen to write *A Man of Substance* instead, she might have committed to paper a startlingly accurate portrait of NRCA's new president, Don McNamara. He even *looks* substantive—6 feet 4 inches tall, with broad shoulders, big hands, immaculately groomed almost-white hair and a let's-get-on-with-it-I've-got-work-to-do expression in his piercing blue eyes. He speaks articulately and in complete sentences; the playback of this taped interview reveals absolutely no "ums," "uhs" or "you knows." The word "results", however, creeps into the conversation frequently.

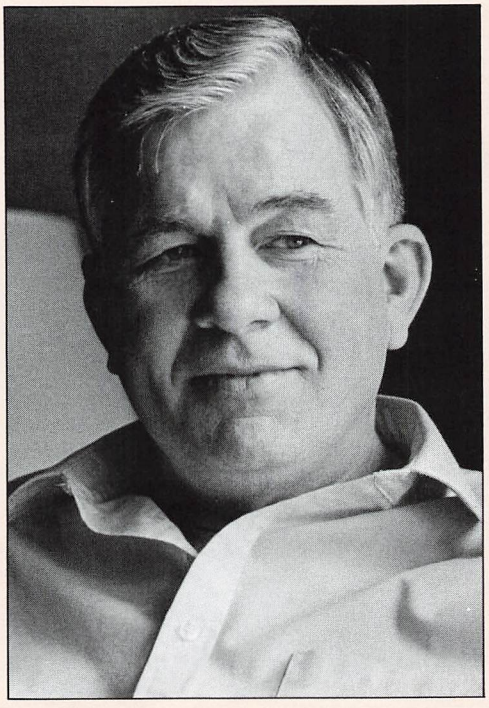
The only hint of nervousness he displays is a tendency to play energetically with a pencil, rolling it back and forth, picking it up, putting it down. After he loses interest in this, he starts fussing with his glasses, rearranging them on the table a dozen times. He has been known to grip a podium so firmly when he's delivering a speech that it looks as though it's his sole means of support, and he admits he still has an occasional spasm when he has to address a group. (When asked to describe his most embarrassing moment, all he can think of is the excruciating experience of having to speak to the Wisconsin Bankers Association on a tax matter; he remembers his knees knocking so badly he thought it might be audible.)

Donald J. McNamara began his one-year term as president of the National Roofing Contractors Association on June 1. He is president of F.J.A. Christiansen Roofing Co., Inc., in Milwaukee.

A discussion with him will confirm that McNamara (or "Mac" to a select group of friends) has the same approach to his business that he has to his personal life—strive for excellence, be proud, and don't waste time with the meaningless and the mundane.

A time to grow

His values began to take shape when he was growing up in Ferndale, Mich., in the '40s. There were four boys, and although the family was close, there often wasn't enough of everything to go around. "I still remember the Salvation Army coming around with a food basket on Thanksgiving," McNamara says quietly. When McNamara was seven, his father contracted turberculosis and was sent to a sanitorium to die. McNamara was shipped to his great-uncle's ranch in Montana for the summer. "My uncle left me that piece of land when he died in 1949," McNamara says fondly, "and I still go back there to work it. I enjoy that." During the school year, he sold newspapers on the streets of Ferndale.



"We'll continue to explore subjects and especially technical matters appropriate to this Association."

Although two of his brothers attended the University of Detroit ("Four boys in the family, and three of us are CPAs," he chuckles), McNamara decided to attend Marquette University in Milwaukee. "I was glad to get out of Detroit," he says with characteristic bluntness. "Everything there is controlled by labor." He received his bachelor's degree in 1958, his JD in 1961, earned his CPA, and went to work for Touche Ross. In the meantime, he had met and married Valerie Gonia, and together they began raising a family.

The call of the roof

"And then in 1967, Christiansen approached me. It looked like something could be put together, but I was very concerned about going into a small business. The company was doing less than a million dollars a year. I said, 'Will I have the challenges there that I have here [at Touche Ross]? I'm advising major corporations on tax matters.' Then I decided that we really make our own challenges."

McNamara joined F.J.A. Christiansen Co., Inc., as its president and began applying the same energy and concentration to its operation that he devoted to the other activities in his life. "The company has been in a period of steady growth," he reports. "We have had satisfactory and unsatisfactory years, of course, but we've never operated at a loss."

The casualness of McNamara's statement about the health of his company in no way reflects the complexity of the roofing industry, the tenuous nature of it as a business and consequently the stress many contractors feel as they attempt not only to grow, but just to survive. McNamara has several principles to which he adheres in running his organization.

"When I came out of college and started working, I recognized immediately that you could almost guarantee your success if you surrounded yourself with quality people. So I immediately tried to build a staff of highly qualified individuals.

"I also insisted on very realistic financial information used in our day-to-day operations. I am still troubled today by contractors who are continually misinformed about costs, financial results, and all of the details that fall into this area."

Accentuate the positive

McNamara struggles to describe the ineffable satisfaction he derives from installing a quality roof; it is the same problem many contractors have when they are asked to explain what it is about the business that they like.

"It goes along with my personality to take care of details," McNamara says thoughtfully, "to provide a service of good value to someone; a service that is absolutely necessary in this complicated world we live in. That's why we tend to be primarily a reroofing business. There's an appreciation for services in the reroofing market that doesn't exist elsewhere. It's different than filling a need for the general contractor, who just wants to get the damn roof on so he can get the drywall up."

When he is asked what he would do if someone handed him a million dollars, McNamara does not hesitate for a moment. "I'd invest it," he states. He adds with a touch of irony, "Then I'd keep on roofing 'till I lost it, because I enjoy it so much." A huge grin makes his eyes crinkle up and disappear, and his laughter explodes for the first time. The effect is that of switching on a klieg light in a pitch-dark cubicle.

Safety first

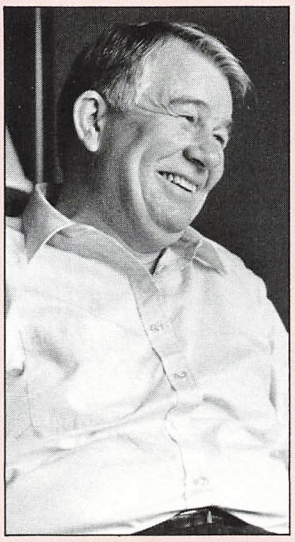
Of course, roofing isn't exactly a bowl of cherries. Sometimes it's just the pits. What does McNamara consider to be the down side? The answer, surprisingly, is not related to tax shelters or turnover.

"Our biggest concern is over the safety of our personnel," he says with a sigh. "That is the thing I am most apprehensive about, every day. This is a dangerous business. It's difficult to convince the guy on the roof that he has to think as hard as the guy flying a 747, because he has just as much in jeopardy."

A high point in Christiansen's history came when the company landed the McCormick Place Convention Center job in Chicago. Recently, two roofers fell while working on the Center's annex; both died.

"It's horrifying," McNamara says with immense sadness. "We have an extensive two-way radio communications network for the people in our company, connected to maybe 20 or 25 trucks. I can hear that radio all the time. The thing that just scares the hell out of me is when I hear anything that concerns a safety matter. It just sends chills through you." His eyebrows knit and his eyes begin to look suspiciously moist. "You think of his family, his kids and what it does to people in your organization . . . ," he finishes lamely.

A high point in Christiansen's history came when the company landed the McCormick Place Convention Center job in Chicago.



"When I was in law school, I had a professor tell us that there were two businesses that needed watching more than any others: banks and insurance companies."

It is not surprising to learn that McNamara describes himself as a religious man. A practicing Catholic, his life is so imbued with his faith that he finds it difficult to isolate it as a factor in his behavior. "It has brought to me an awareness that people have to be treated with dignity and care," he says slowly, trying to articulate his religion's role in his dealings with others. He pauses, then sums it up by saying, "I do not exploit people."

A legacy of pride

Perhaps it is this respect and sensitivity that contributes to McNamara's enviably low staff turnover rate. In a business characterized by itinerant workers and constantly shifting crews, Christiansen claims roofing mechanics that are third-generation employees.

"I think the roofing industry is represented by some of the most productive people in this economy, in this country. And we're seeing increasing numbers of people coming into the field with more education. They should be very proud," he concludes.

At Christiansen, McNamara is viewed as well-educated and managerially adept, but he says his workers might be surprised at his level of roofing knowledge, too.

"I'm largely an administrator in the company, so I don't spend a lot of time on the roof, but from a technical standpoint I feel I'm in the upper percentile of people who have a knowledge of the industry. Sometimes during our early morning meetings, the guys get this surprised look on their faces when I start talking about exactly how a mop pulls. You have to speak their language," he says earnestly.

Putting a premium on insurance

McNamara is beginning his term of office amid a flurry of recriminations and debate about the current state of the insurance industry. NRCA has placed a high priority on addressing the insurance crunch over the next few months. McNamara has first-hand experience with the crisis; his premiums have increased dramatically in the last two years. And he is in the rather unusual position of being both the head of a business inextricably tied to liability insurance, and an attorney.

"When I was in law school, I had a professor tell us that there were two businesses that needed watching more than any others: banks and insurance companies. If any business could border on being unscrupulous, it was them. And he's dead right," McNamara says bluntly.

"I am upset with the insurance industry," he admits. He does not raise his voice, but he speaks forcefully. "I think it lacks credibility. How anybody can run a company the size of CNA [the carrier that underwrites NRCA members] and tell you that you've got to pay $40,000 one year and $200,000 the next is ludicrous," he says disgustedly. "I think it borders on total incompetence."

Like other small businesses, roofing contracting firms were unprepared for skyrocketing insurance payments. "We bid contracts now for performance two years from now," McNamara states. "We try to reasonably forecast what costs might be; we don't have the kind of flexibility that allows us to meet these payments.

"But we might be able to get this insurance problem under control if we begin to manage our risks better," he says. Risk management is often suggested as a weapon against spiraling premiums, but its effects won't be felt overnight. McNamara is asked if he also supports tort reform, a proposed method of addressing the proliferation of accident- and injury-related lawsuits. Although he's not sure that tort reform per se is the answer, he firmly believes the American judicial system needs fine tuning.

"I've suggested that if plaintiffs or their lawyers had to pay defense costs in some of these cases—and in the majority, the defense costs are much greater than the settlement for the complaint—things would be a hell of a lot different.

"I've maintained over the years that if we had an insurance company that said, 'We are never, ever going to settle a case out of court; if you start this lawsuit, Mr. Plaintiff, understand it's going to a jury,' that we would have a lot fewer lawsuits. Plaintiffs would be afraid of that. Right now, the average lawyer representing the property owner that starts a lawsuit knows damn well that some time during the course of the proceedings he is going to get a pretty attractive settlement . . . we have all been victims of those kinds of lawsuits where the damages against us are really not the issue. I think that's terrible," he concludes.

Knowledge for knowledge's sake

McNamara is no less frank about the Academy of Roofing Contractors (ARC), the one NRCA program he has been known to openly criticize. ARC, established in 1983, was designed to foster improved roof installations by encouraging and recognizing the education of company employees. ARC status is attained by submitting proof that a company's personnel has spent a prerequisite number of hours in educational and training sessions.

"I don't want to take anything away from the *principle* around which ARC was designed," McNamara says quickly, "but I think we pursued the program and not the results. We talked too much about obtaining a certain status, and not enough about the benefits. I can tell you that in Milwaukee contractors are afraid that another contractor is going to pursue it; if they do, these people are thinking they may have to go after it themselves . . . not to educate their people, just to maintain their status."

Currently, 43 NRCA members have been inducted into the Academy, and 40 more are in various stages of their candidacies. With these people, McNamara stands a chance of being about as popular as a leak at a roofing convention if he decides to lead a charge against the program. He's thought about that.

"I'm not as concerned about the candidates as I am about those who have already achieved their ARC status. But the real recognition for this education should not come from their peers; it should not simply be something they can put on their letterheads. The real recognition comes in their day-to-day activities, where they're going to be better contractors because of this involvement. *That's* what we should be emphasizing," he explains.

We've only just begun

Pride, professionalism, performance—these are topics that crop up frequently in speaking with McNamara. It is appropriate, then, for him to serve NRCA as its president in its 100th year. The theme for the Association's year-long celebration is "One Hundred Years of Roofing Excellence."

"But it's going to be business as usual," he hastens to add. "This is not just one big party. We'll continue to explore subjects and especially technical matters appropriate to this Association. We've got to keep advancing," he states.

"One of my major objectives this year is to be sure that this industry receives the honor it deserves," he says firmly. "This is a group of small business people made up of fighters and scrappers and survivors. I want to be remembered as a good administrator, not as someone frivolous who just planned a party. But we do need to create an opportunity for the recognition these contractors have earned."

McNamara maintains that NRCA is unusual not only in its longevity, but in its unique mixture of members.

"If someone tried to make us conform to a certain mold, we would lose everything we have going for us," he declares. "It's uncommon to have this kind of variety in an association. The American Bar Association, for instance, is obviously composed of lawyers, and lawyers tend to come from similar backgrounds. But roofing contractors are the biggest conglomeration you will find anywhere. They're everything from clergymen to attorneys," he says, apparently not realizing his implication that the two fields occupy opposite ends of an unspecified scale.

Personal best

When McNamara is asked what drives him, his answer is all business. "An attempt to get results," he says simply.

"I want to plan and then make things happen," he says with just the barest hint of a smile. "I also want to provide a good environment for our employees, and give them as decent an income as we can give them."

But what *really* drives him? What gives him what Lee Ioccoca calls that "fire in the belly?" Does he fear failure? What does he wake up at night sweating about? The man who insists on referring to himself as "an open book" stares out the window for a moment.

"I don't worry about failing," he says coolly. "I just want to compete at the highest level I can."

McNamara has first-hand experience with the insurance crisis; his premiums have increased dramatically in the last two years.

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NRCA UPDATE

NRCA's Centennial celebration: not just another pretty fete

NRCA's Centennial year is a great opportunity for you to promote your company and your industry. Whatever ways you choose to do this, planning will be the key to your success.

The Centennial connection

One easy way to let customers and potential customers know about this special occasion is to include the NRCA Centennial logo in your company letterhead, yellow page ads, brochures and other literature. (NRCA members will find a special camera-ready logo sheet in this edition of *Roofing Spec.*) If you currently have no identification with NRCA in your printed materials, this is a good time to start. Together with your company logo, a Centennial logo will show potential customers that your business is backed by more than 100 years of experience. That can mean a lot to someone who is calling on you for the first time.

A little something special

Staging a special event for your customers and the local media can be an effective way to gain publicity. The occasion may be a press conference, a ground-breaking ceremony or a company birthday. Whatever type of event you choose, you will have a unique opportunity to talk about the Centennial and your company's affiliation with NRCA. Here are some activities around which you can target a special Centennial event for the media or for your customers:

- completing or starting work on: a landmark building; a major project such as an airport, city hall, football stadium or museum; or an unusual project such as a solar roof or roof garden;
- rebuilding a roof that was destroyed by a fire, tornado or major snowfall;
- offering to donate roofing materials or labor to a local charitable institution or important building in your community; or

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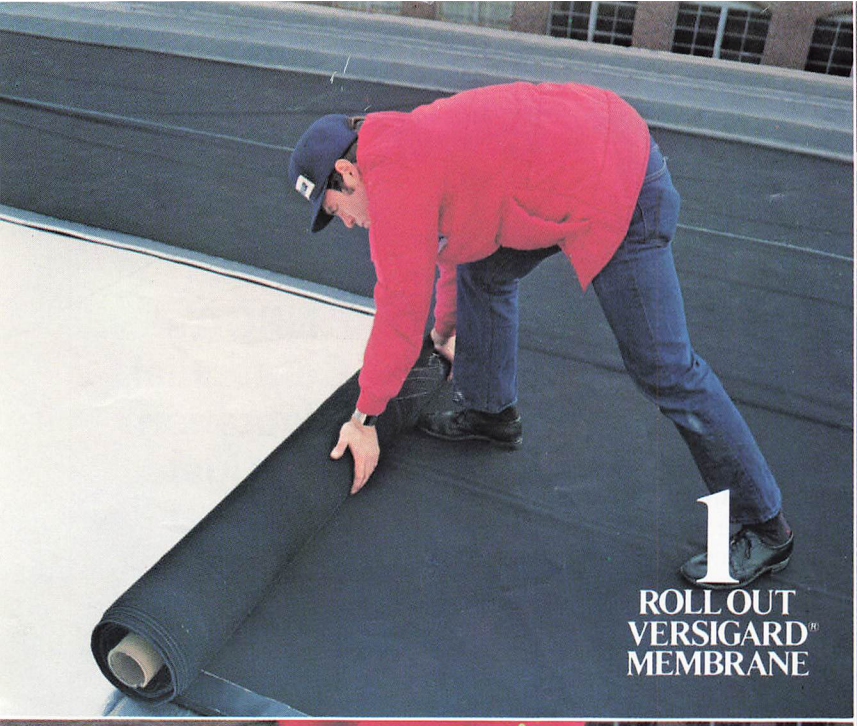

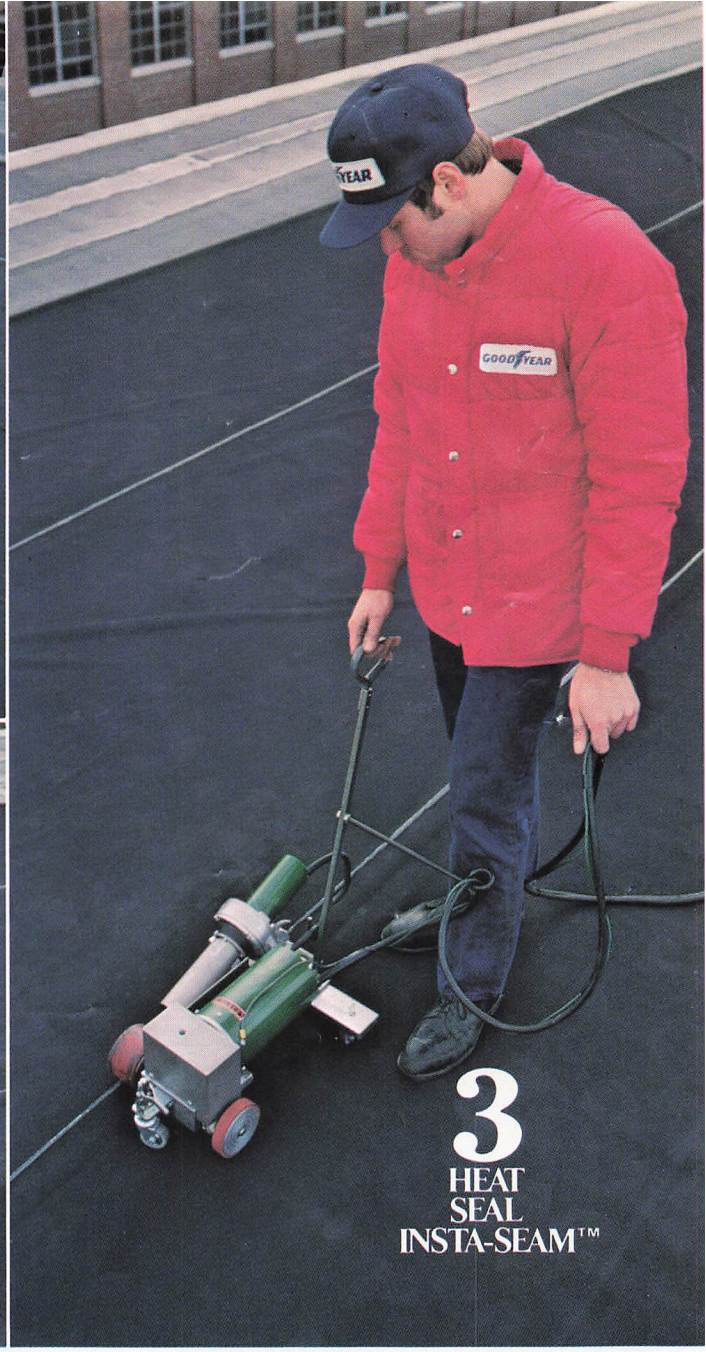

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GOODYEAR

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You may want to contact your local paper and offer your services as a roofing columnist.

■ holding a rooftop press conference to familiarize the media with the latest innovations in roofing (assuming the roof can support the traffic!).

You may also choose to have a simple Centennial cocktail reception as a way of saying thanks to all of your customers for their business. Look for ways to tie the Centennial into all of your promotional events. There will never be a more appropriate time than now. When you hold your media event, be sure to hire your own photographer so that you can send photos to customers and editors unable to attend.

One from column A

One of the least expensive ways to receive publicity for your company and the Centennial is through the written word. With this in mind, you may want to contact the editor of your local paper and offer your services as a roofing columnist. When you approach the editor, offer column suggestions and perhaps present him or her with a sample such as: "Answers to the 10 most frequently asked roofing questions," "How to keep your flat roof from leaking," or "What to expect from a professional roofing contractor."

When you are looking for methods to spotlight your company in NRCA's Centennial year, remember that it is not necessary to hold a special Centennial event; look for ways to incorporate this achievement into the events that you already have planned. Remind customers, suppliers, business associates and local media that you are a member of the oldest construction trade association in the United States. A Centennial only comes once in a lifetime. Use this special moment to promote your business, your Association, your industry, and most of all, your professionalism.

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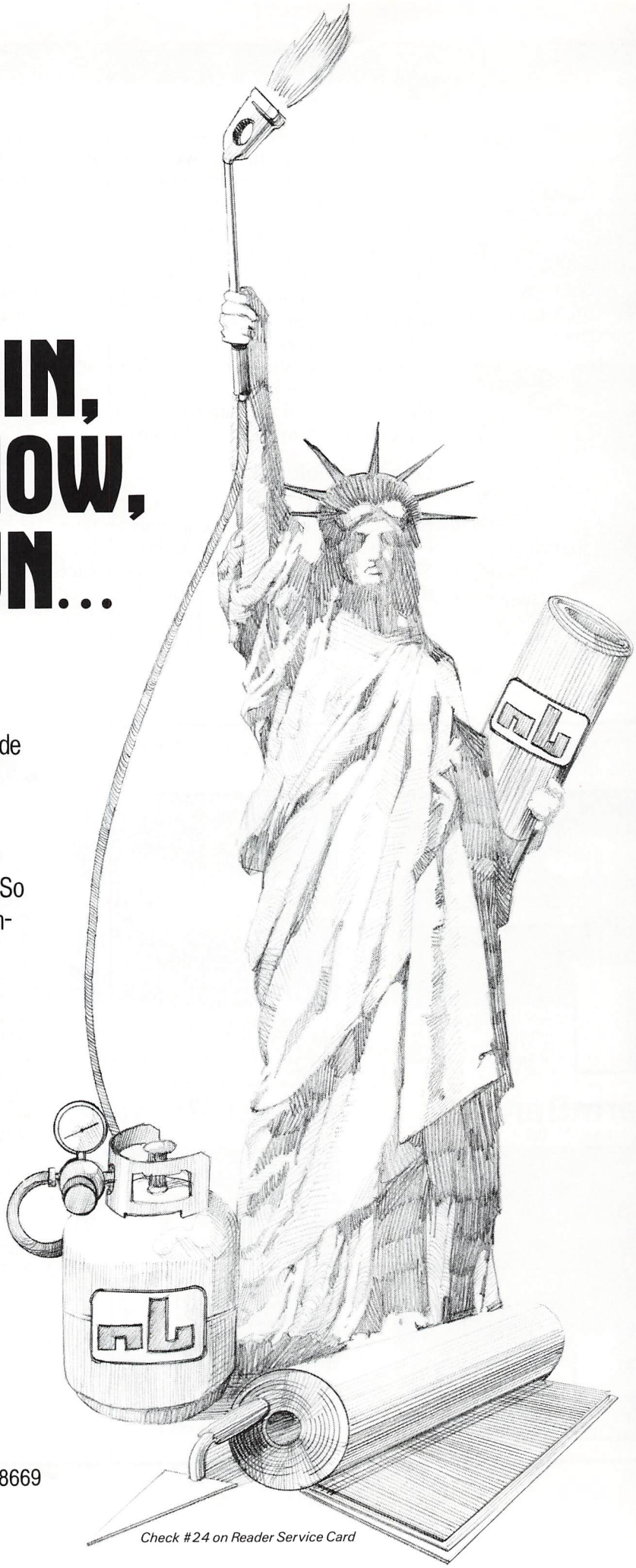

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Check #24 on Reader Service Card

Manville strains for light at tunnel's end

Manville Corp.'s hierarchy had barely recovered from a touchy personnel realignment when word arrived that a Senate tax proposal may hinder the company's recovery plan.

Since filing for Chapter 11 bankruptcy nearly four years ago as the result of 17,000 asbestos-related lawsuits, Denver-based Manville has been steadily trying to regain its position atop the nation's forest-building materials industry. Last August, the company announced the formation of a reorganization plan, but the road to recovery has been anything but smooth.

First things first: a new president

Following months of arguing with asbestos victims' representatives over who should run the company after it emerges from Chapter 11 bankruptcy-law proceedings, J.T. Hulce resigned as Manville's president, according to an article in *The Wall Street Journal.*

Hulce was expected to succeed John A. McKinney as CEO and chairman when McKinney retires Sept. 1. The asbestos plaintiffs' attorneys, however, called the 43-year-old Hulce too young and untried to assume both posts. There was no objection to Hulce continuing as CEO.

"Under the circumstances, we didn't think a fellow who was 43 years old could do it," said Elihu Inselbuch, who represents the plaintiffs' attorneys. "My committee wasn't prepared to bet the roll on that. The success of this company is too important."

Manville's Board elected 63-year-old George C. Dillon chairman, effective after McKinney retires. Dillon has been a Manville director for 17 years. Executive Vice President and Chief Financial Officer W.T. Stevens, 43, was named president. He also is a director.

Back to the drawing board

With its personnel problems straightened out, Manville was free to pursue more important matters, namely, the reparation of its reputation and the appeasement of all parties involved in asbestos-related litigation against the company, especially the victims.

Stockholders have objected to the plan from the beginning because they would have to relinquish up to 80 percent of their common shares to the fund.

Manville's commercial creditors aren't happy with the plan either. A representative of the creditors referred to it as "patently unfair" because the $450 million the company has agreed to pay its creditors is roughly equal to the amount Manville owed when it filed for Chapter 11 in 1982, according to the *Journal.*

However, in a letter dated May 12, 1986, to NRCA Executive Director Fred Good, Roger H. Bengtson, vice president and general manager of Manville's Roofing Systems Division, appeared confident. The proposed plan of reorganization was to be filed early this summer with a confirmation hearing scheduled for sometime this fall, according to the letter.

"While many details must still be resolved," wrote Bengtson, "it appears that the major issues of concern have been resolved with all of our creditors except the common stockholders committee." But Bengtson hadn't figured the Senate into his gameplan.

Finance Committee steps in

Early in May, the Senate Finance Committee proposed a tax-overhaul bill that could severely hamper the effectiveness of Manville's reorganization efforts. The Treasury Department is supporting an element of the bill that, if strictly applied, could dramatically reduce the amount of money available for asbestos victims.

"If it turns out these tax treatments aren't available to us, we'd have to change when the trust was funded, and it might change the way the trust went about disbursing the funds," said James Beasley, Manville's treasurer and vice president, of finance.

IN BRIEF

Over $100 million has been awarded in a class-action suit against thirteen former asbestos manufacturers. The settlement is the largest ever awarded to victims of asbestos-related diseases, according the *The Wall Street Journal.*

The suit, filed in Marshal, Texas, involved 751 former workers who had died or suffered from respiratory diseases as a result of asbestos exposure. It was the first class-action suit to represent asbestos victims.

The defendants included Combustion Engineering; GAF Corp.; Nicolet, Inc.; Raymark Industries, Inc.; Armstrong World Industries; Celotex Corp.; Eagle Picher Industries, Inc.; Fibreboard Corp.; Keene Corp.; Owens Corning Fiberglas Corp.; Owens-Illinois, Inc.; Pittsburgh Corning Corp.; and Standard Insulators, Inc.

1886 NRCA 1986

Celebrate

As a reminder of NRCA's 100th birthday, we are proud to present a series of Centennial memorabilia designed to capture the spirit of commitment, longevity and professionalism of our members. Don't miss this once-in-a-lifetime occasion— place your order today. Please allow six to eight weeks for delivery.

Crystal NRCA logo symbols
This elegant crystal piece depicts the three weather elements of the NRCA logo.
Item 501—$1,000.

Etched crystal logo
The NRCA logo is engraved in this beautiful crystal shield.
Item 502—$450.

Louie plaque
The National Roofing Foundation is offering a sculptured bronze relief of "Louie," who represents those workers on which the industry has relied for 100 years.
Item 503—$460.

Lithographs
Four lithographic renderings feature tradesmen working on various kinds of roof systems.
Item 504—members $80; non-members $100.

"Roofs Over America" poster
A limited edition commemorative poster has been commissioned and printed by Lesniewicz/Navarre.
Item 505—$35.

One Hundred Years of Roofing in America
At last, the definitive document on the roofing industry in the United States. Books will be ready for delivery in February 1987.
Item 506—members $25; non-members $50.

Emblem
NRCA's Centennial and Association logos are captured on this embroidered patch. Perfect to bring back to your workers.
Item 507—$3.

Centennial stickers
Start celebrating as you display the Centennial stickers on your company letterhead, envelopes or statements. The stickers come in easy-to-use rolls.
Item 508—$1.

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NATIONAL ROOFING CONTRACTORS ASSOCIATION

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Midland seeks Old World expertise

You're dozing off in a class being held in a landmark hall of a major university. Occasionally, your daydream is interrupted by the sound of the work being done on the building's roof.

As the roofers' voices drift in through the open window, you realize that, although you can hear them clearly enough, you can't understand a word they're saying. It's not English, that's for sure, and it doesn't sound like French or Italian. Suddenly, you recognize the language, it's German! There are Germans on the roof!

Although you're fairly certain that you're still a student at Notre Dame University in South Bend, Ind., you look around you to be sure. The graffiti on your desk and the ivy on the walls outside look familiar enough, but the German guys on the roof still have you confused.

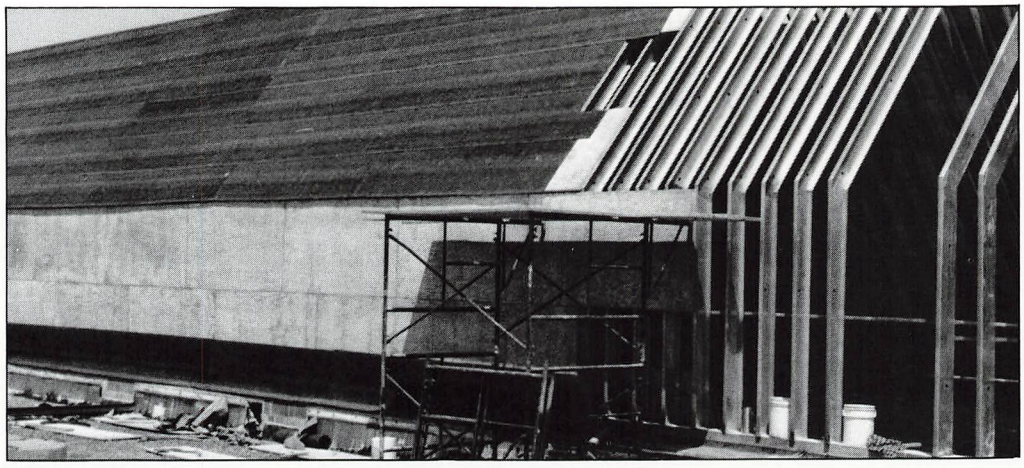
No, Notre Dame hasn't become a Munich University extension. The German you hear is only Adam Adamovsky and Hubert Gockel of South Bend's Midland Engineering Co. discussing the installation of a new slate roof on the campus' Law School building.

continued on page 52

Adam Adamovsky (top)

Hubert Gockel at Notre Dame's Law School, where a new slate roof is being installed.

European roofers are well-versed in the Continent's more advanced slate and tile roofing techniques.



The site of the Law School addition, Notre Dame.

As graduates of the Roofing Meisterschule (Master School) in Mayen, West Germany, Adamovsky and Gockel are Master Roofers specializing is slate and tile work. When Midland sought to expand into the slate and tile market, it was only logical for the company to turn to Europe for its craftsmen. European roofers are well-versed in the Continent's more advanced slate and tile roofing techniques.

Adamovsky joined Midland in 1961. Midland's success in the slate and tile division is largely due to his expertise and craftsmanship.

Adamovsky has done so well at Midland that he has been promoted out of the field

continued on page 54

FLINTLASTIC®
THE ROOFING SYSTEM INSTALLED ON THE STRONGEST PROMISE IN THE INDUSTRY.

THE GENSTAR PROMISE. Flintlastic, Genstar's high-performance, modified bitumen, offers three major benefits so solid and dependable that the risk of premature roof failure should become a worry of the past. That's the Genstar promise.

AMAZING PRODUCT DURABILITY. Created from today's most advanced formulas for modified bitumen, Flintlastic displays extraordinary resistance to mechanical and thermal stress and strain, to roof traffic and punctures and the harsh attacks of wind and weather. This quality is assured by Genstar's strength and resources, including nearly a century of Flintkote commercial roofing innovation.

STRONGEST TECHNICAL SUPPORT. Genstar technical representatives, strategically located across the country, provide highly competent professional consultation and assistance. On projects to be covered by Genstar's Roof Membrane Warranty Program, our technical representatives provide periodic on-the-roof inspections with the contractor to assure an installation that meets Genstar's specifications and standards of quality.

TOTAL GENSTAR PROTECTION. Warranties on Genstar's full line of products and systems are backed by the company's reputation and financial strength. Genstar's Full-Value warranties, available on projects installed by authorized Accredited and Licensed Genstar contractors, are so comprehensive that they provide coverage even beyond the building owner's original installed cost of material and labor. That's the strong protection behind Flintlastic's strong performance.

GENSTAR®

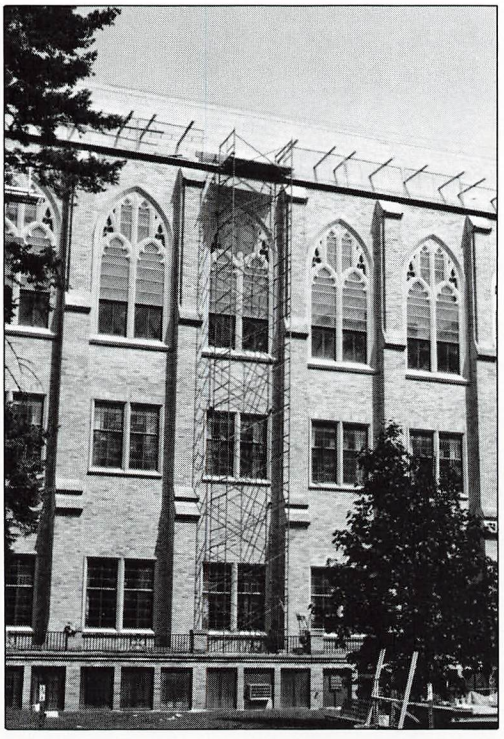
Performance is the promise

For additional information, contact:
Genstar Roofing Products Company, Technical Manager, Commercial Roofing, 5525 MacArthur Blvd., Suite 900, Irving, Texas 75038, 214/580-5600

Flintlastic modified bitumen is available in SBS torch or mop applied and APP torch applied formulations with smooth or granule surfaces and convenient half-width flashing rolls.

Check #13 on Reader Service Card

To carry on the tradition of Old World craftsmanship at Midland, Adamovsky hired Gockel, another Meisterschule alumnus.



LeMans Hall,
St. Mary's College.

and into the office. He is currently the manager of Midland's industrial maintenance and urethane foam division. To carry on the tradition of Old World craftsmanship at Midland, Adamovsky hired Gockel, another Meisterschule alumnus.

Today, Gockel is the manager of Midland's slate and tile division, which specializes in commercial and institutional steep roofing application. His department has worked on churches, schools and courthouses throughout the Midwest.

Gockel's current projects include installing a new slate roof at the University of Notre Dame Law School, reroofing a 500-square roof for LeMans Hall at St. Mary's College, removing and relaying tile at St. Adalberts Church in Chicago, and restoring tile at the Old Post Office in Columbus, Ohio.

Since Gockel has joined his fellow countryman in the office, plans are underway to import two more roofers from the Rhineland to carry on Midland's slate and tile tradition.

Fifty years ago, the Westlake Hotel was the pride of Ohio and the annual headquarters of the famous Cleveland National Air Races. Aviation greats Charles Lindbergh and Amelia Earhart were frequent guests.

Today, as condominiums, the Westlake is a landmark listed in the National Register of Historic Places. But just a decade ago, the majestic hotel on the banks of the Rocky River was little more than a ramshackle inn.

Preserving the hotel's landmark status during its conversion into condominiums required special attention to authenticity. According to Scott Mauer, co-developer of the Westlake Condominiums, the roof presented a particular challenge.

"We needed to restore the original Spanish tile on the steep-pitched main roofs. For the walkways on top of the 10-story structure, the vestibule, garage roofs and the sundeck coating, we looked for a roofing system that was durable, yet lightweight enough to reduce the overall weight. For those areas we chose Firestone's RubberGard single-ply roofing system based on Du Pont's Nordal hydrocarbon rubber."

According to Mauer, the architects originally specified a built-up asphalt roofing system, but the building's height, access problems and heavy weight made BUR impractical.

With the single-ply system, installation was fast and efficient, according to Mike Manning of Manning Maintenance, roofing contractor for the project.

The 16,500-square-foot roof above the parking garage was completed in just two days. The single-ply system eliminated the need for stone ballast on the high, narrow service walkways. The walkway system was installed using a partly adhered method. The new single-ply system is expected to provide greater wear-life than BUR and eliminate the problem of loose stones being blown off the roof.

New roof part of Westlake Hotel's rebirth

COMING EVENTS

(For inclusion of events, address all correspondence to: **Roofing Spec** "Coming Events" 8600 Bryn Mawr Ave., Chicago, Ill. 60631).

June 12-15
Summer Convention
Virginia Association of Roofing Contractors
Virginia Beach, Va.

June 16-18
D-8 Committee on Roofing, Waterproofing and Bituminous Materials
American Society for Testing and Materials
Louisville, Ky.

June 18-20
12th Annual Convention & Trade Show
Western States Roofing Contractors Association
Disneyland, Anaheim, Calif.

June 18-21
Annual Convention
Roofing and Sheet Metal Contractors Association of Georgia, Inc.
Destin, Fla.

June 20-22
30th Annual CSI Convention and Exhibit
Construction Specifications Institute
Los Angeles, Calif.

June 21-28
Reconvened meeting
Western States Roofing Contractors Association

June 23-27
A/E/C Systems '86 Computer Management Show
McCormick Place, Chicago, Ill.

July 10-13
43rd Annual Summer Convention
Carolinas Roofing and Sheet Metal Contractors Association
Hilton Head, S.C.

Sept. 8-12
Infrared Scanning Course
Infraspection Institute
Burlington, Vt.

Sept. 16-20
31st Annual Convention
National Association of Women in Construction
Little Rock, Ark.

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Asbestos...
The Good News in Roofing Mastics

It's Time to Separate Fact From Fiction . . . And The Fact is, Nothing Works Better or is More Cost-Effective Than Asbestos-Fibred Roof Coatings and Cements.

Another fact: asbestos-fibred roofing mastics are totally safe to use. Asbestos, when used in roofing mastics, is literally locked in. The technical term is "encapsulation".

Let's look at the facts about a material found only in the finest roofing products.

Fact: Asbestos-fibred roofing mastics are unsurpassed for longevity, protection, handling and cost. In coatings and other mastics, asbestos reinforces the asphalt, preventing the asphalt from cracking from expansion and contraction. Asbestos-fibred roofing mastics provide high "slump" resistance, retard oxidation and deterioration, retard melting and running of the mastic in the event of fire, are more flexible than coatings without asbestos, are less likely to crack and leak than coatings without asbestos, provide greater protection than coatings without asbestos. Therefore, asbestos-fibred mastics need to be applied less frequently than mastics not containing asbestos.

Asbestos-fibred roofing mastics outperform by a substantial margin, roofing mastics without asbestos. THERE IS NO REASON NOT TO USE ASBESTOS-FIBRED ROOFING MASTICS, BECAUSE THERE IS NOTHING BETTER FOR TODAY'S ROOFING NEEDS . . . AND THEY ARE ABSOLUTELY SAFE TO USE.

Fact: Encapsulation makes it impossible for asbestos fibers to be released from roofing mastics into the ambient air. Encapsulated products are so safe that they do not require special work practices or government control. Regardless of the amount of asbestos in various types of roofing mastics, the full encapsulation of fibers renders the asbestos completely "unbreathable".

Fact: A medical expert study of 6,500 roofers failed to discover a single case of mesothelioma (cancer of the lining of the chest and abdominal cavity). The expert conclusion was that this would not have been the case if asbestos roofing mastics presented a significant hazard.

Fact: Studies done for the Environmental Protection Agency (EPA) address the safety of encapsulated asbestos fibers in roofing products. The EPA's most recent revision to its regulation, "National Emission Standard for Asbestos", makes a specific exemption for spray-on application of encapsulated mastics, further attesting to the total lack of risk associated with the use of such products.

Monsey Products Company has always been in the forefront of the fight to make our environment and the workplace as safe and clean as is humanly possible. That's why our own standards of product safety exceed those required by environmental regulatory groups. This same dedication extends to product quality. It's your assurance of the finest roofing mastics available today. Asbestos-based roofing mastics.

These are the facts. Don't let anyone tell you anything different.

For reprints of this ad, write:

Michael P. Manning
Assistant Vice President
Monsey Products Co.
Cold Stream Road
Kimberton, PA 19442

WHY DERBIGUM MAY BE YOUR SINGLE BEST CHOICE IN SINGLE-PLY ROOFS.

Most single-ply roofs have built a reputation on how easily they go down. The Derbigum™ roof system, though, long ago built its reputation on how well it stands up.

THE STRENGTHS OF BUR IN A SINGLE-PLY

Derbigum™ is a unique commercial roofing system that combines the strengths of traditional, asphalt, built-up roofing with the ease and low-cost installation of a single-ply.

This patented system is a bitumen modified with polypropylene, to slow the aging process and increase roof life. And, like proven, built-up roofs, it's made with reinforcing mats for greater strength. All in a single-ply.

In addition, Derbigum's built-in adhesive layer ensures easy, torch-on application, high-strength bonding and a smooth, finished surface.

Derbigum will excel on virtually any kind of roof–dome, barrel, peaked and flat decks. In new as well as re-roof applications.

17 YEARS PROVEN PERFORMANCE

With all this going for it, it's small wonder that Derbigum is one of the world's best-proven, single-ply roofs. With over 1.6 billion square feet installed since 1967. On roofs all over the world. In virtually every kind of climate.

Since it was first introduced in the United States, there have been no known product failures.

40 YEARS OF ROOFING EXPERIENCE

Owens-Corning knows that Derbigum roof systems are called upon to endure torturing extremes. Driving winds, ice, snow and roof temperature variations of over 100 degrees in a single day can be expected on a commercial roof.

That's why we have invested over 40 years and hundreds of millions of dollars in providing the highest quality, state-of-the-art roofing asphalts, membranes and insulations.

So that when you specify Derbigum, you've singled out a single-ply roof you can rely on.

For more information, contact your Owens-Corning sales representative. Or write B.T.D. Meeks, Owens-Corning Fiberglas® Corp., Fiberglas Tower, Toledo, Ohio 43659.

OWENS/CORNING
FIBERGLAS
TRADEMARK ®

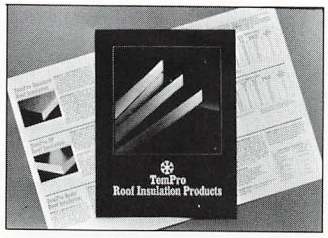
Temple-Eastex publishes catalog

Temple-Eastex has published a new catalog describing its line of TemPro roof insulation products.

The four-page brochure offers detailed information on TemPro Standard, TemPro SP and TemPro Basic roof insulations, including data on applications, acceptances, limitations and recommendations for storage.

The catalog also outlines the company's line of fiber base roofing substrates and gives a full page of application instructions with data charts.

Check #44 on Reader Service Card



Small businesses get bidding aid

A guide designed to aid small business owners who wish to sell to or buy from the federal government is being offered by the Small Business Administration.

The guide, *U.S. Government Purchasing and Sales Directory,* explains how the government buys, how small businesses can locate sales opportunities, how to be placed on bid lists, and how to prepare bids and proposals. The 199-page book consists of alphabetical listings of the products and services bought by major military departments and by federal civilian agencies, and identifies by code the purchasing offices that buy them. It explains how the Small Business Administration can help a business obtain contracts and subcontracts, and provides data on govenment sales of surplus property.

The *Directory* also provides information on government specifications, including details on what they are, how they are used and where they may be obtained by prospective bidders. Government forms to assist users are included with a listing of federal government offices, their addresses and phone numbers.

Check #45 on Reader Service Card

Program protects, maintains roofs

The D&S Roofing and Sheet Metal Corp. has instituted a preventive maintenance program called Peace of Mind for building owners.

The program includes an inspection of the roof along with research of the roof's history. Consultants then provide management with drawings of the roof and, if the roof is old, a brief written analysis of its condition and its potential for developing problems. Short- and long-range restoration recommendations are also listed. In the case of new single-ply roofs, D&S will outline a program of warrantor relations and assume the responsibility of contacting the manufacturer to perform repairs that fall under warranty.

The company also helps the client plan a budget for repairs and restoration, and will perform this work along with emergency repairs. Twice a year, D&S inspects the roof and updates the roof analysis. At the semi-annual inspection, the company cleans drain areas, checks flashings and counterflashings, removes debris, ballasts minor bare spots, checks for cracking or ponding water, inspects new penetrations or equipment on the roof, and repairs minor defects.

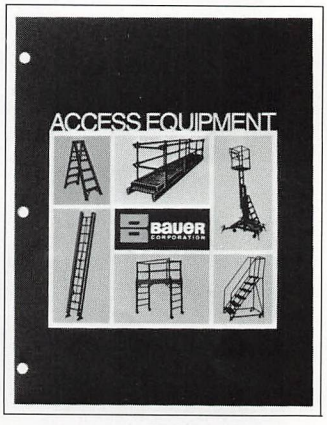
Check #46 on Reader Service Card

Bauer publishes ladder catalog

The Bauer Corp. has published an expanded 24-page catalog detailing the company's line of ladders, accessories, fall protection equipment, planks and stages, and scaffolding.

The catalog provides specifications for materials, capacities, duty ratings, overall sizes, maximum working lengths and highest standing levels. Information on the advantages and disadvantages of the various materials used in the products is provided with an explanation of the principal uses of each type of material.

Check #47 on Reader Service Card



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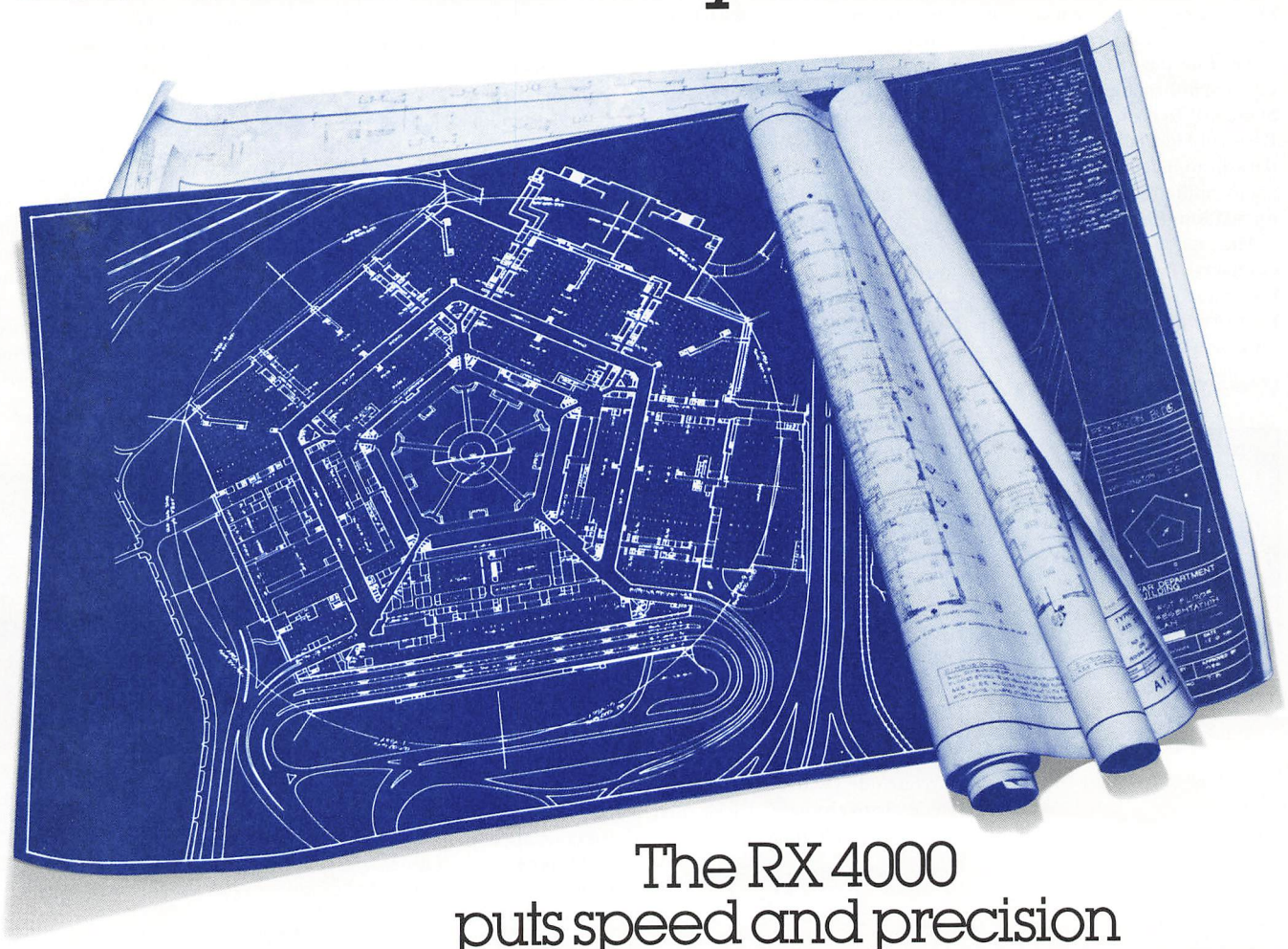
Your best defense against cost overruns on your next bid.



The RX 4000 puts speed and precision in every estimate.

Bidding on a job can be a risky business. Costs of labor or material might be off target — delivery or installation schedules might be unrealistic — quantity buying opportunities might go unnoticed. Until now! Introducing the RX4000 Series, the estimating system designed exclusively for contractors.

With the RX4000, you can produce bids as quickly and professionally as you do your actual construction. While the traditional takeoff entails many hours of counting, measuring, calculating and checking for errors, the RX4000 gets the estimating done in one-fourth the time, with almost 100% accuracy. That means you can produce four times the bids in the same time it takes to do just one... with no fear of error that can cut deeply into your profits.

But estimating is only part of the story. We can also assist your total business management: job cost, payroll, accounting, and word processing. We provide the necessary tools for every office function. And now we offer IBM compatibility.

It's your blueprint for success... worry-free bidding, in one-fourth the time. Remember, your best defense is a good offense. Call or write today to arrange for an appointment. The RX4000.

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Check #8 on Reader Service Card

Calculator figures in feet and inches

Calculated Industries has developed a new handheld calculator that adds, subtracts, multiplies and divides directly in feet, inches and fractions of an inch.

The Construction Master calculator displays dimensions on an LCD readout and allows for fractional entries in almost any format down to sixty-fourths of an inch. The unit also performs direct, one-button conversions between feet/inch fractions, decimal feet, yards, meters and inches, and accommodates square and cubic measurements in any format. It features built-in solutions for rise-run-slope and roof pitch as well as for board feet.

The Construction Master also operates as a standard math calculator with memory and automatic shut-off. It comes with instruction manual, one-year replaceable batteries, carrying case and one-year warranty.

Check #48 on Reader Service Card

Hidden remote opens roof window

Velux-America, Inc., has announced the availability of a fully concealed electric operator for its Model GGL roof window.

Contained behind the ventilation flap at the top of the sash, the Model EB control option opens and closes the window from a remote switch, making it especially suitable for out-of-reach installations and disabled homeowners.

The control unit is available for all but the smallest of the nine windows in the GGL series. The unit comes with step-by-step diagrams to aid in installation.

Velux has also developed a new adapter, which, when attached to the roller blind in the Model GGL roof window, allows the blind to be raised and lowered by the same remote control rod that operates the windows in out-of-reach applications.

The Type AR roller blind adapter is clamped to the roller blind's pull tab, and can be securely gripped by the Type BS control rod used with the GGL roof window. The only tool required for installation of the adapter is a small Phillips screwdriver.

The company has also announced the availability of windows and flashings in a copper finish, priced 25 to 45 percent above the standard aluminum products depending on model type and size. A 24-page brochure detailing the Velux line of roof windows and skylights is available from the company.

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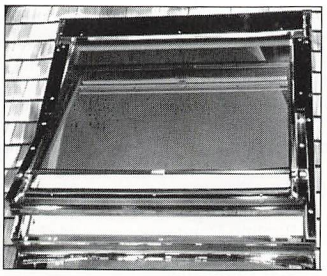


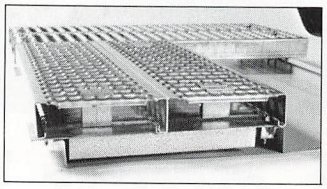
Brochure details Interlock walkway

A brochure detailing a new rooftop walkway system for standing seam sheet metal roofs is available from the United McGill Corp.

The Interlock grating rooftop walkway system, designed for use with Armco and Flexospan roofs, provides a grating parallel to the standing seam, allowing roofers or maintenance workers access to the roof area without concern for dishing or other roof damage. The system incorporates an anti-skid surface to prevent slipping in rain, snow or icy conditions.

The walkway system comes in standard widths of 18, 24, 30 and 36 inches, with other widths available on request. The walkway is constructed from galvanized steel or aluminum Interlock grating planks in 20-and 24-foot lengths. No special tools are required for installation.

Check #50 on Reader Service Card



Booklet describes Lutradur mats

A six-page brochure from the Lutravil Co. summarizes the characteristics of different types of Lutradur® polyester spunbonded non-woven mats, giving recommendations for use for a variety of fabric weights.

Lutradur compressed mats deliver more asphalt for waterproofing in BUR systems than do polyester mats, according to the company. In producing a 160-mil-thick waterproof membrane using an 8-ounce-per-square-yard mat reinforcement, Lutradur allows for 85 percent free asphalt, compared to 63 percent free asphalt for polyester mat.

The brochure also provides information on relative tear strength and puncture resistance for Lutradur, polyester mat and glass mat.

Check #51 on Reader Service Card

continued on page 63

It's not easy being perfect.

Yet some succeed at it again and again.

It's a challenge to be perfect even once. It's an incredible feat to be perfect 100 times. Yet that's the hallmark of the Carlisle Centurion.

He's applied 100 or more error-free Carlisle roofing systems as judged by our technical representatives. That means every single detail of the installation was 100% perfect—the very first time.

Carlisle thinks that's quite remarkable. So we've honored these worthy roofing contractors as Carlisle Centurions. They're few and far between. And, without a doubt, they're among America's superstar roofers.

We're proud these men are associated with Carlisle. Their workmanship, coupled with Carlisle's reputation for quality, keeps Carlisle the name second to none.

For more information, call toll free **800-233-0551.** In PA, 800-932-4626. In Canada, 1-800-387-4990.

1. **Richard Greb** / Fettin Roofing Company, Inc., Lincoln, NE
2. **R.A. Potts, II** / Potts Construction and Roofing, Inc., Sedalia, MO
3. **Robert L. Bubenzer** / Henry C. Smither Roofing Co., Inc., Indianapolis, IN
4. **Mike Kusenko** / Mak-Lyn, Inc., Brackenridge, PA
5. **James Smithey** / Frost & Company, Inc., Wapakoneta, OH
6. **Robert Barr** / B&B Roofing & Construction, Inc., Chambersburg, PA
7. **Steven Pensinger** / B&B Roofing & Construction., Inc., Chambersburg, PA
8. **Brad Ream** / Cumberland Valley Roofers, Inc., Carlisle, PA
9. **Warren Edwards** / Roof-Tek, Inc., Marshville, NC
10. **Don Parsons** / Wood Roofing Co., Inc., Des Moines, IA
11. **Pat O'Neill** / Granite City Roofing Company, St. Cloud, MN
12. **Kim Schwickert** / Schwickert Company, Mankato, MN
13. **Kent Schwickert** / Schwickert, Inc., Mankato, MN
14. **Harlan Hanson** / Central States Roofing Company, Ames, IA
15. **Ronald Therrien** / A.W. Therrien Company, Inc., Manchester, NH
16. **Mark Sobeck** / The Sobeck Corporation, Wyoming, PA
17. **John Gooding** / Gooding, Simpson & Mackes, Inc., Ephrata, PA
18. **Ardell Porter** / Porter Roofing Company, Inc., Belton, MO
19. **Chris Wille** / Ak Sar Ben Roofing Company, Inc., Omaha, NE
20. **Jim Taylor** / Jim Taylor, Inc., Belleville, IL
21. **Don Largent** / Don Largent Roofing, Harrisonburg, VA

NOT IN PICTURE:

22. **Kent Nielsen** / Curran V. Nielsen Company, Inc., Minneapolis, MN
23. **Glenn Langer** / Langer Roofing & Sheet Metal, Milwaukee, WI
24. **Sam Roth** / Roth Brothers, Inc., Youngstown, OH

SILVER ANNIVERSARY 25 YEARS · 1961 · 1986

The Carlisle Centurion There is no equal.

CARLISLE

Carlisle SynTec Systems
Division of Carlisle Corporation
P.O. Box 7000, Carlisle, PA 17013

Check #4 on Reader Service Card

NEW IDEAS

Selection guide details fasteners

The Rawlplug Co. is offering a roofing fastener selection guide that provides information on deck fasteners for insulation board and woodblocking, perimeter fasteners for termination bars, and flashing and metal fasteners for siding sheets and trim. The chart also describes stress plates and washers, and masonry drills.

The selection guide includes illustrations of each type of fastener and a description of its use. The guide also details the materials from which the fasteners are manufactured and contains information on corrosion protection for each. Size ranges are included in the guide along with general information on the special features of each fastener.

Check #52 on Reader Service Card

VIP introduces smooth roof coatings

VIP Enterprises is offering two new smooth roof coatings for use over urethane foam, existing roof systems and primary substrates.

FoamGuard #4001 roof coating has a 330 percent elongation factor and carries a Class A fire rating. It can be applied over old precoated foam, composition shingles, felt-cap surfaces or plywood. The coating is flame- and smoke-retardant, and resists mildew, chemical pollutants and ultraviolet radiation.

VIP's #3501 roof coating has a Class C fire rating and provides 150 percent elongation. It is recommended for use in situations where elongation is not a critical factor.

Both products can be applied by roller, brush or spray. The coatings are available in white or gray and can also be matched to custom colors.

Check #53 on Reader Service Card

continued on page 65

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NEW IDEAS

WeatherGard adds to FireGard line

WeatherGard Roofing Systems, Inc., has announced two additions to its line of FireGard EPDM membranes.

FireGard U450 Black carries an Underwriters Laboratories Class A fire rating for mechanically fastened or fully adhered roofing systems. FireGard U450 White has a Class C rating when fully adhered to a combustible deck.

Both membranes are available in standard widths from 5 to 50 feet; all widths come in 100-foot rolls. WeatherGard also supplies accessories for installation of the systems.

Check #54 on Reader Service Card

Pentagon markets quick-cure coating

Pentagon Plastics, Inc., is marketing a new polyurethane weatherproof roof coating that cures quickly and resists degradation from ultraviolet rays, humidity and chemicals.

Decothane consists of two components that are mixed in a one-to-one ratio. It can be applied without primer to urethane foam insulation, bituminous surfaces, wood, metal and concrete; application is by airless spray, brush or roller.

The coating develops resistance to wash-off by light rain within minutes, although the rain may cause surface pock marking up to four hours after application. Decothane is touch-dry in six to eight hours, with sufficient strength to accept foot traffic in 16 to 18 hours. The membrane, which has a life expectancy of 20 years, is flexible enough to absorb thermal and structural movement and mechanical damage.

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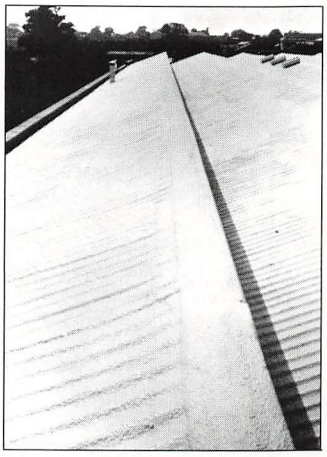

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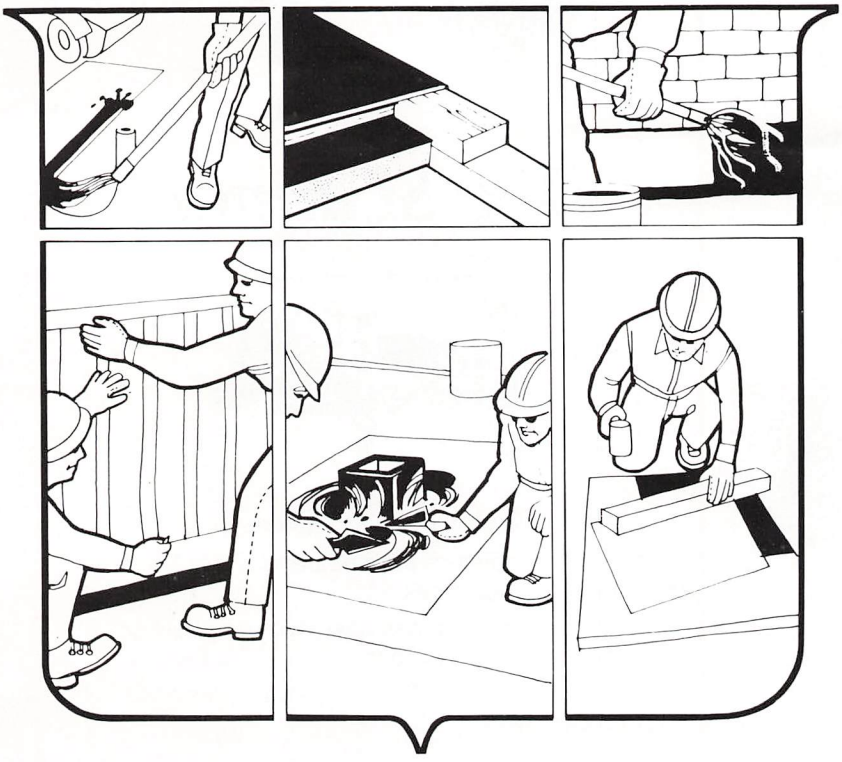
Application of the Built-up Roof: Flashings



Now available from NRCA is the worker training program **Application of the Built-up Roof: Flashings.** The training package consists of a narrated audiovisual presentation and companion workbook specifically designed for training workers through in-house sessions in the contractor's shop. It introduces the roof mechanic to flashing detail design, to the different materials used for BUR flashings, and to the proper procedures for installing both vertical and horizontal flashings. The program provides clear, step-by-step instruction in the application of built-up flashings at drains and penetrations, roof edges and walls, and curbs.

The audiovisual program, available in either slide/cassette or videotape format, consists of 400 slides and a 47-minute narration. A comprehensive workbook contains a complete outline of the program plus quizzes, drills, and tests to gauge student progress and aid in instruction. A complete instruction guide is available as well.

Up to six hours of credit toward the requirements of the Academy of Roofing Contractors program can be earned using this program.

For more information on **Application of the Built-up Roof: Flashings,** contact the NRCA Education Department, 8600 Bryn Mawr Ave., Chicago, Ill. 60631, (312) 693-0700.

A four-part audiovisual program designed for the roofing worker

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NEW IDEAS

BFGoodrich covers expansion joints

BFGoodrich has introduced a new expansion joint cover that features a double-thick hinge design for long life.

The one-piece Lexsuco® LP system, available in 50- or 100-foot lengths, ties into the roofing membrane using a built-in joining system. The Lexsuco LP's flap is self-gasketing at the metal nailer and covers all nail holes as it is adhered to the membrane. The hinge area is smooth, eliminating crimps that can catch water. The system also allows multi-directional joint and roof movement.

Check #56 on Reader Service Card

Kool Seal offers new elastomeric

Kool Seal, Inc., has introduced the Kool Seal® Elastomeric White Roofing™ system.

Elastomeric White Roofing is a water-borne product containing no solvents. It can be applied with brush, roller, trowel, squeegee or airless spray unit. The product forms a thick, seamless, rubber-like coating that expands and contracts with the roof as it moves. The system can be applied to asphalt, wood, shingles, concrete, brick, metal and polyurethane foam.

Check #57 on Reader Service Card

NEW IDEAS

Olympic develops new roofing fasteners

Olympic Fasteners has developed a new concrete nail for fastening insulation and membranes to structural concrete roof decks, and the company is marketing a line of fasteners with a long-term corrosion-resistant coating.

The Con-Tite nail features a flat head and a diameter of .212 inch. It is installed by drilling a hole and hammering in the nail. The fastener is approved by Factory Mutual when used with Olympic's 3-inch plastic and steel stress plates. Con-Tite nails are available in a range of sizes from 1⅛ inch to 7 inches.

Olympic's CR-10 fluorocarbon-coated fasteners meet the Factory Mutual approval standard 4470. The coating was specifically formulated for roof insulation fasteners that may encounter severe corrosion attack in new and reroofing installations. A special coating method designed to insure complete coverage is used in application.

Check #58 on Reader Service Card

Skylife coating seals skylights

Elastic Materials, Inc., is marketing a new protective coating designed to seal and protect skylight panels.

The Skylife coating is a clear elastomer that provides a new surface on skylight panels that otherwise would have to be replaced. On metal roof skylights using fiber glass-reinforced panels, the coating prevents weathering away of the reinforcing fibers. Skylife also seals laps and fastener heads.

The membrane expands and contracts with the substrate and remains flexible at temperatures as low as -35F. Skylife may be applied by rolling, brushing or spraying and will adhere to any cleaned substrate, including fiber glass, glass, wood, shingles, metal, bricks, masonry concrete and asphalt.

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Do test cuts indicate roof quality?

By Bob LaCosse

This month's article further explains NRCA's position on test cuts. It was prepared by Bill Cullen, NRCA research associate, with Bob LaCosse's assistance.

The debate continues between owners, contractors, manufacturers, design professionals and the specification writing community over the use of test cuts for evaluating the quality of new or replacement BUR membranes. Some organizations insist on their use while others depend on different means to assess and ensure the quality of a roofing application.

Those who support the use of test cuts claim the procedure offers certain advantages. Some say that test cuts may motivate foremen and roofing crews to demonstrate their professional skills when applying membrane components. Organizations that base their quality control measures on test cut evaluations claim the practice leads to improved overall roof performance.

However, the many limitations of test cut sampling far outweigh the advantages. One objection often raised is that test cut procedures were not developed to evaluate new work. Many also question the precision of the test results, which are often influenced by laboratory biases. Furthermore, the accuracy of the procedure described in the American Society for Testing and Materials (ASTM) standards for test cuts has not been established. It is also nearly impossible to ensure that the samples tested are truly representative of the job because the bias of the sample taker is a factor when selecting the areas to be tested.

NRCA objects to cuts

NRCA's position on test cuts has been summarized in the document *Quality Control in the Application of Built-Up Roofing.* In *Quality Control,* the Association discourages the use of test cuts. NRCA believes that test cuts do not provide an adequate picture of overall roof quality. According to the Association, test cuts do not address the quality of flashings, penetrations, expansion joints and rooftop equipment mounts, which are components NRCA believes are more critical to a roof's watertight integrity than the weight and uniformity of the interply mopping asphalt. The booklet emphatically states that the most effective means to evaluate quality installation is by continuous visual inspection.

Quality Control does acknowledge that test cuts are sometimes required by job specifications. The document recommends that, when test cuts are necessary, they should be prepared in accordance with ASTM Standard D-3617, "Sampling and Analysis of New Built-Up Roof Membranes."

Quality Control condemns the use of the laboratory test procedure ASTM D-2829, "Sampling and Analysis of Built-Up Roofs," a procedure that calls for the preparation of 1-foot-square samples. NRCA objects to the use of this test procedure because it was not developed to evaluate the installation of new roof membranes, a fact that is stated in the ASTM standard describing the test.

In spite of these objections, a number of organizations continue to require ASTM D-2829 or similar laboratory tests to evaluate the watertight integrity and projected future performance of a new BUR, even after the surfacing bitumen and aggregate have been applied. Frequently, these test results are employed to make major and costly decisions about the acceptability of a roofer's workmanship.

The current NRCA position on test cuts can be summarized in three brief statements:

- Continuous visual inspection by a person knowledgeable in roofing technology and good workmanship practices is strongly recommended as a means of quality control.
- When job specifications require test cuts to complement visual inspection, the use of ASTM D-3617 for on-site evaluation is recommended.
- NRCA categorically states that laboratory analysis procedures for test cut evaluation are not acceptable for quality control purposes for new or replacement BUR membrane installation.

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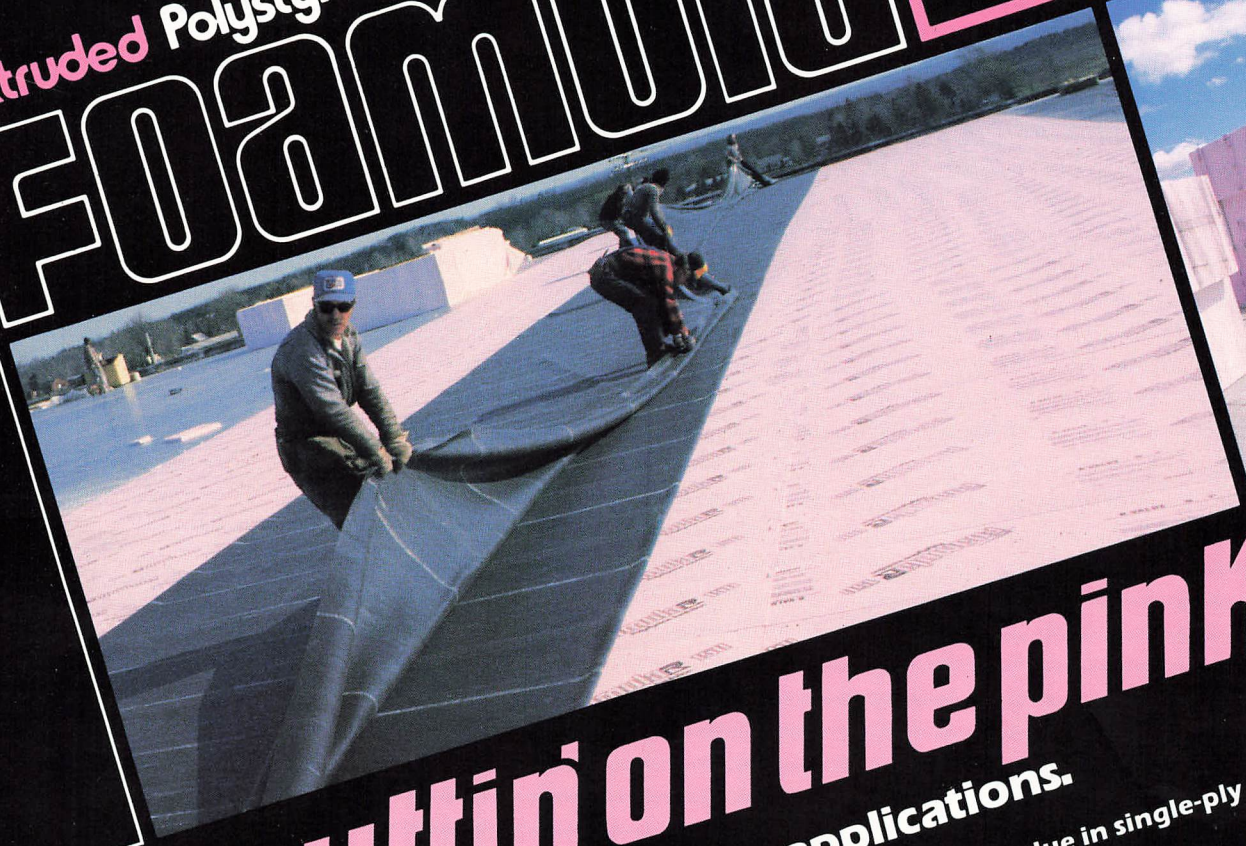

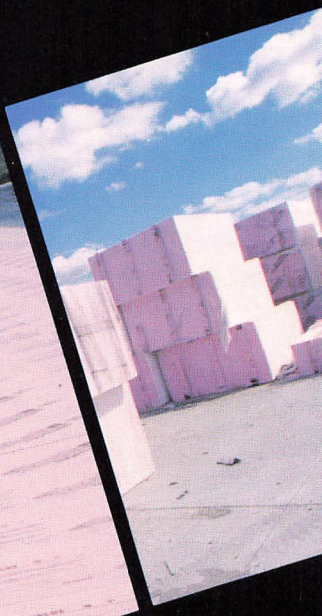

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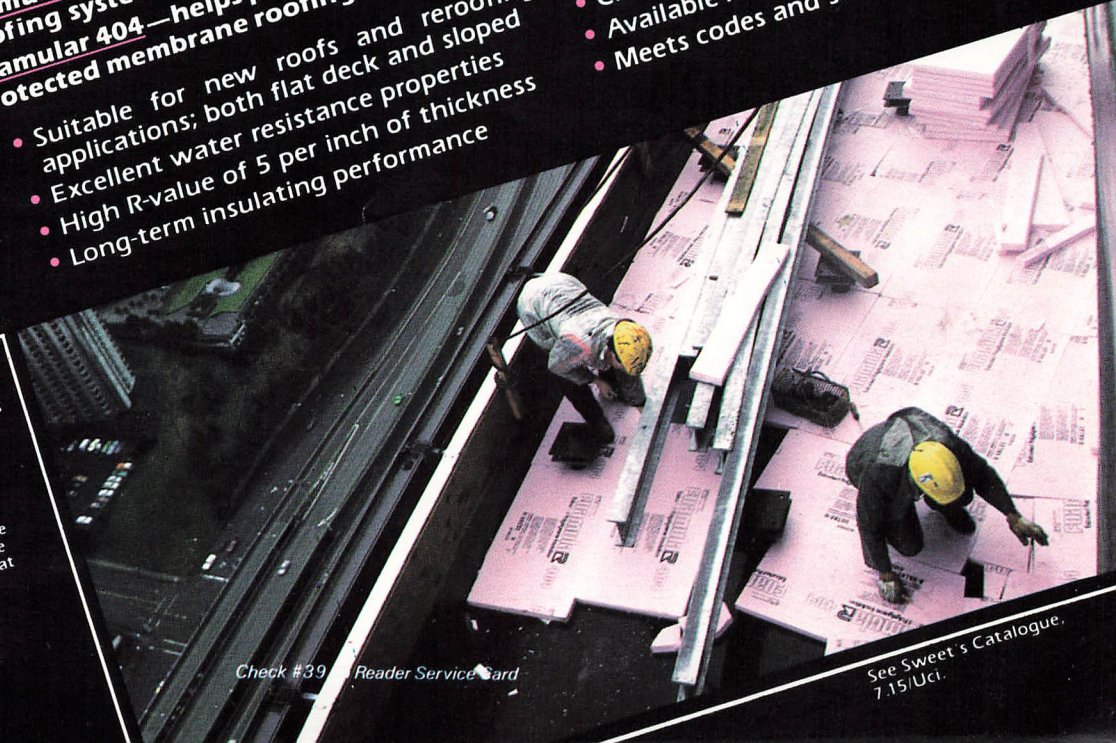

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- Management
- The legal side of roofing
- Alternative roofing

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- Architect-Contractor relations
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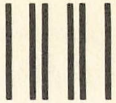

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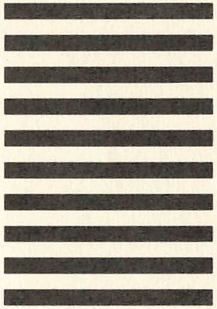

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