It seems hard to believe, but there were thriving restaurant chains before the likes of the Big Whopper and those famed golden arches. One of these franchising veterans started 30 years ago with a Dallas eatery called Steak & Ale. It's now a growing business called S&A Corp. with Steak & Ale, Bennigan's, J.J. Muggs and Bay Street restaurants under the company umbrella.

Unfortunately, a corporate bumbershoot affords no protection against real weather. A few years ago, S&A realized that its maintenance costs to repair persistent roof leaks on its restaurants were unreasonably high. The company found that its restaurants' exhaust systems were actually aggravating the problem. Like most restaurants, S&A eating establishments exhaust their cooking byproducts, in the form of vapor and steam, through exhaust units located on the roof. These exhaust fumes were deteriorating the built-up roofs that were installed on all S&A buildings.

Getting results

Bruce Johnson of Johnson Sales Associates, the Texas sales organization for Seal-Dry, Inc., met with S&A managers and engineers and presented the Seal-Dry single-ply roofing system to them. To prove that the membrane would hold up in a restaurant environment, Seal-Dry took its System 5000—a 36-millimeter membrane of weft-inserted, reinforced polyester sheathed in a high-tech copolymer alloy (CPA)—and tested it against the same exhaust fumes that were damaging S&A's existing roofs. The tests showed that the membrane wasn't affected after prolonged exposure.

Seal-Dry's System 5000 roof is mechanically attached with unexposed long-life fasteners. The system carries a Factory Mutual I-90 wind uplift rating and an Underwriters Laboratories Class A flame-spread rating. With its 10-year, inflation-protected warranty, the Seal-Dry System 5000 is now specified nationally by S&A Corp.

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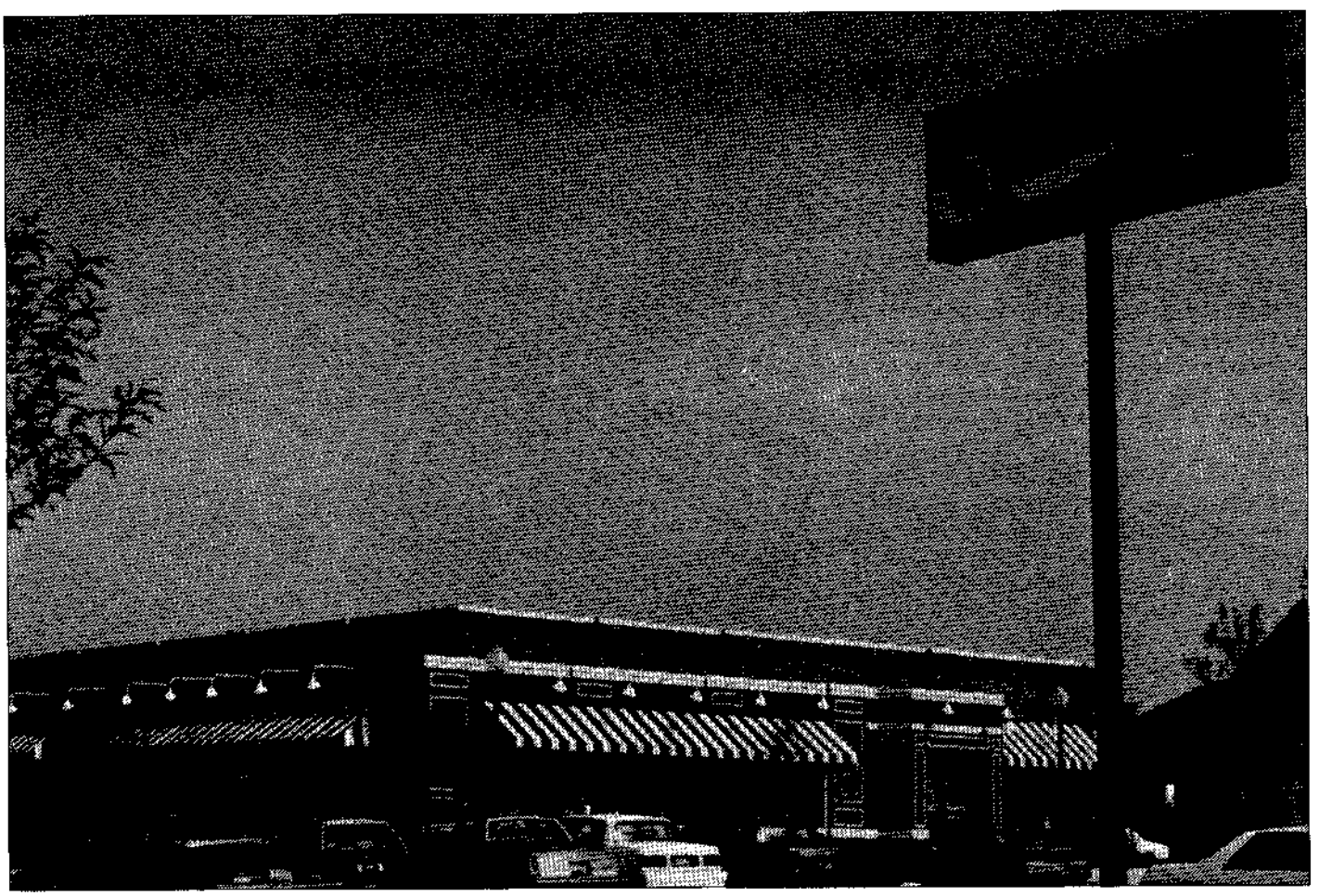
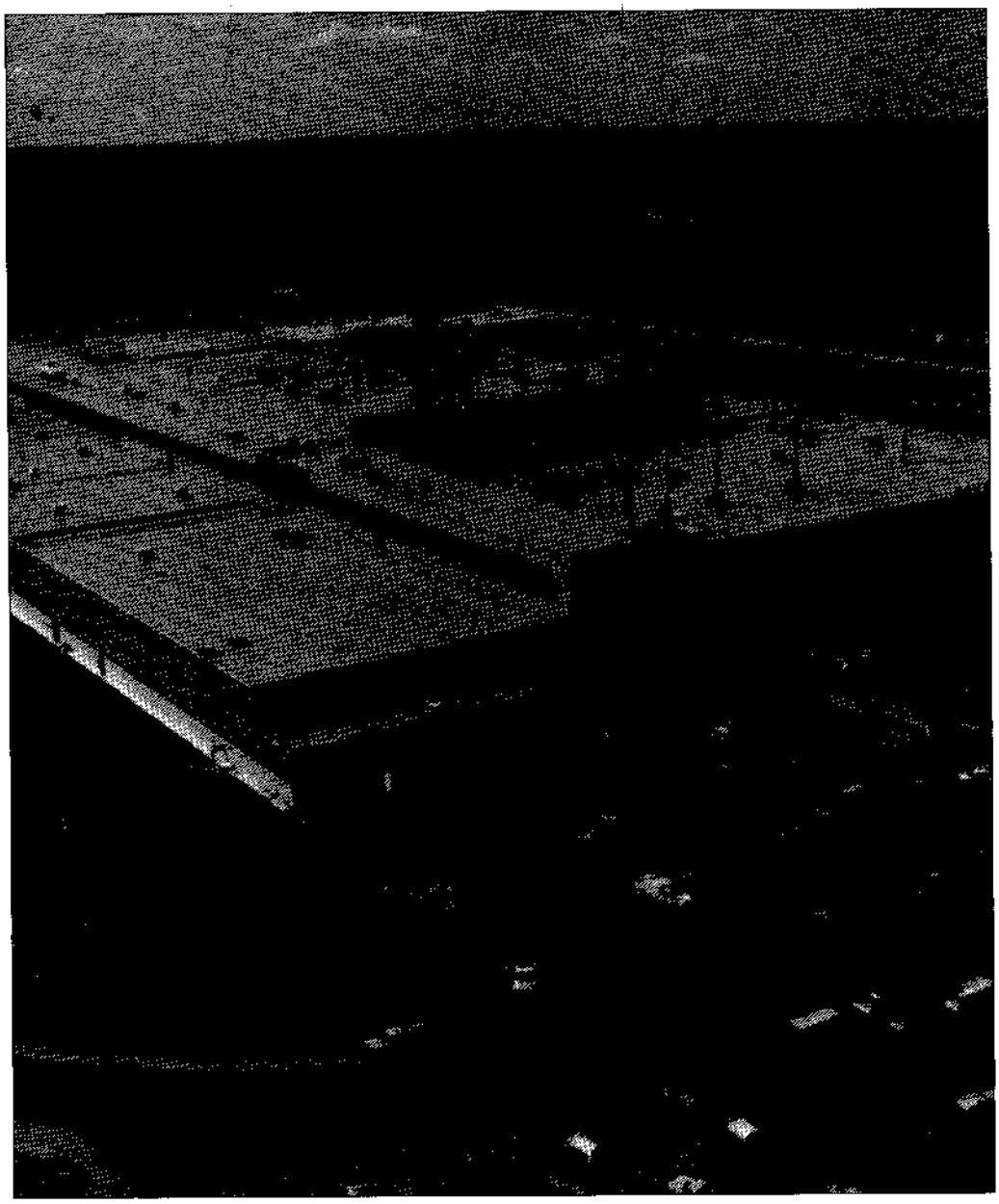


polyvinyl chloride (PVC) membrane was originally specified for Honda's 620,000-square-foot automobile production facility in Alliston, Ontario, Canada. But a couple of factors convinced the facility's designers, Giffels Associates, Ltd., Consulting Engineers and Architects, Toronto, to switch the specs to Goodyear's Versigard ballasted single-ply system and pre-engineered flashing system. One reason Giffels Associates chose Goodyear's EPDM system was the on-the-scene availability of personnel from Goodyear's roofing systems division. Another reason was the fact that Goodyear, which has plants in Canada, created a favorable proposal that met the architect's and owner's performance criteria.

Durable flashing system

The pre-engineered flashing system consists of corrosion-resistant rails that are designed for fast and effective installations. The system also consists of watertight seams in the flashings around the roof perimeters and parapets, and in angles where roof decks meet the walls. These areas are usually labor-intensive and consume large amounts of sealing materials. Goodyear's system can cut caulk and adhesive consumption for flashings by up to 75 percent, the company claims. The contract also called for 40-by-100-foot sheets of EPDM membrane to be installed on Honda's roof.

The Honda job, which began in 1985, was completed in April 1986.



On the subzero evening of Nov. 15, 1985, most of the residents of Gardiner, Mont., were 70 miles away in Bozeman, cheering for their Lady Bruins high school basketball team. With the town nearly deserted, there was no one left to notice the fire that had started in the Gardiner school's gymnasium that night. "The people who reported the fire said that they heard an explosion about 8:30 p.m.," Fire Chief Bob Kopland explains. "That was when the fire broke through the gymnasium roof. But others noticed a glow coming from the general direction of the school at about 6:45 p.m. Therefore, the fire had almost a two-hour head start on us."

The gymnasium was part of a school complex that consisted of a high school, a gymnasium and an elementary school. The buildings were constructed at different times but they were connected. Years before the fire occurred, the high school complex was covered with Duro-Last roofing, and the elementary school had been reroofed with the same product. According to Glenn Hinton, the school's head custodian, the town chose Duro-Last for two reasons. First was the material's ability to stand up to Montana's subzero temperatures. The second, and more important, factor was the product's flame-retardant properties.

Burning the midnight oil

Unfortunately, the gymnasium still had its original built-up roof with layers of asphalt, paper and fiber glass insulation. Chief Kopland reports, "The tar from the built-up roof was actually sliding off in flames like a river of lava. Heavy steel beams were twisted, and anything made of aluminum was turned to liquid. From a quarter of a mile away, one could keep warm from the fire's incredible heat."

Despite these intense temperatures, the Duro-Last roofs on the high school and the elementary school remained intact and didn't burn. However, the fire traveled through the high school's attic and dropped down into the classrooms. "The [high school] building eventually burned out from under the roof," notes Kopland. "Flames could only be seen where the fire had burned through the roof vents." Sparks and burning debris that landed on the roof didn't burn through.

Obviously, the gymnasium and the high school were totally lost, but fire fighters decided it would be possible to save the elementary school. The Duro-Last roofs had slowed the fire enough so that the fire fighters could get into the building with a front loader and separate the elementary school from the high school. However, when they moved in, they found that the front loader couldn't break through the roof membrane because it was still tough and flexible. For the elementary school to escape destruction, the fire fighters had to cut through the Duro-Last membrane with fire axes and knives.

Duro-Last has received an Underwriters Laboratories Class A rating for combustible and non-combustible decks, and has been issued a Class 1 fire rating from the Factory Mutual Research Center.

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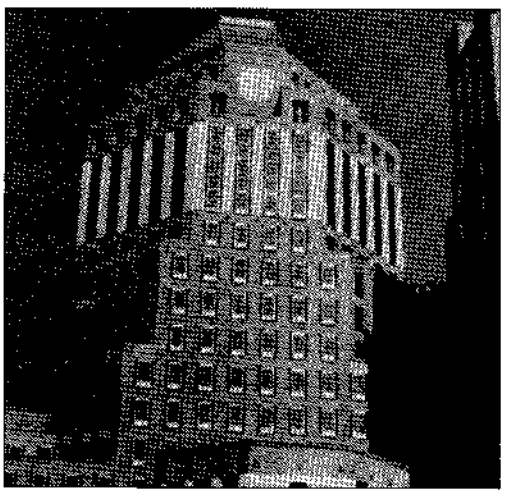
Looking at the new Procter & Gamble Co. (P&G) corporate headquarters building in Cincinnati, it's obvious that finding the right roofing assembly presented the designer with a monumental task. The system chosen had to accommodate 70 different roof elements, measuring in size from 40 to 10,000 square feet. It also had to be flexible and dependable enough to work around a wide assortment of projections, including drains, vents and HVAC units.



Cost-effectiveness a concern

P&G found that an insulated roof membrane assembly (IRMA) from American Hydrotech, Inc., (AHI) fit the bill. According to Ed Jarger, AHI's manager of technical services, "If P&G wanted its choice to be cost effective, the solution was to find one assembly—preferably an IRMA—that has a proven record of watertightness and thermal efficiency."

AHI's IRMA has a high R-value, is freeze/thaw-resistant and is capable of taking the punishment of severe weather conditions. The assembly features AHI's protected roof membrane and Dow Chemical's Styrofoam™ RM insulation board. The AHI and Dow IRMA offers a 10-year, single-source warranty.

A work crew completed the job for P&G on schedule in 1985.