Milestones. Innovations. Projects.
Sarnafil Membrane

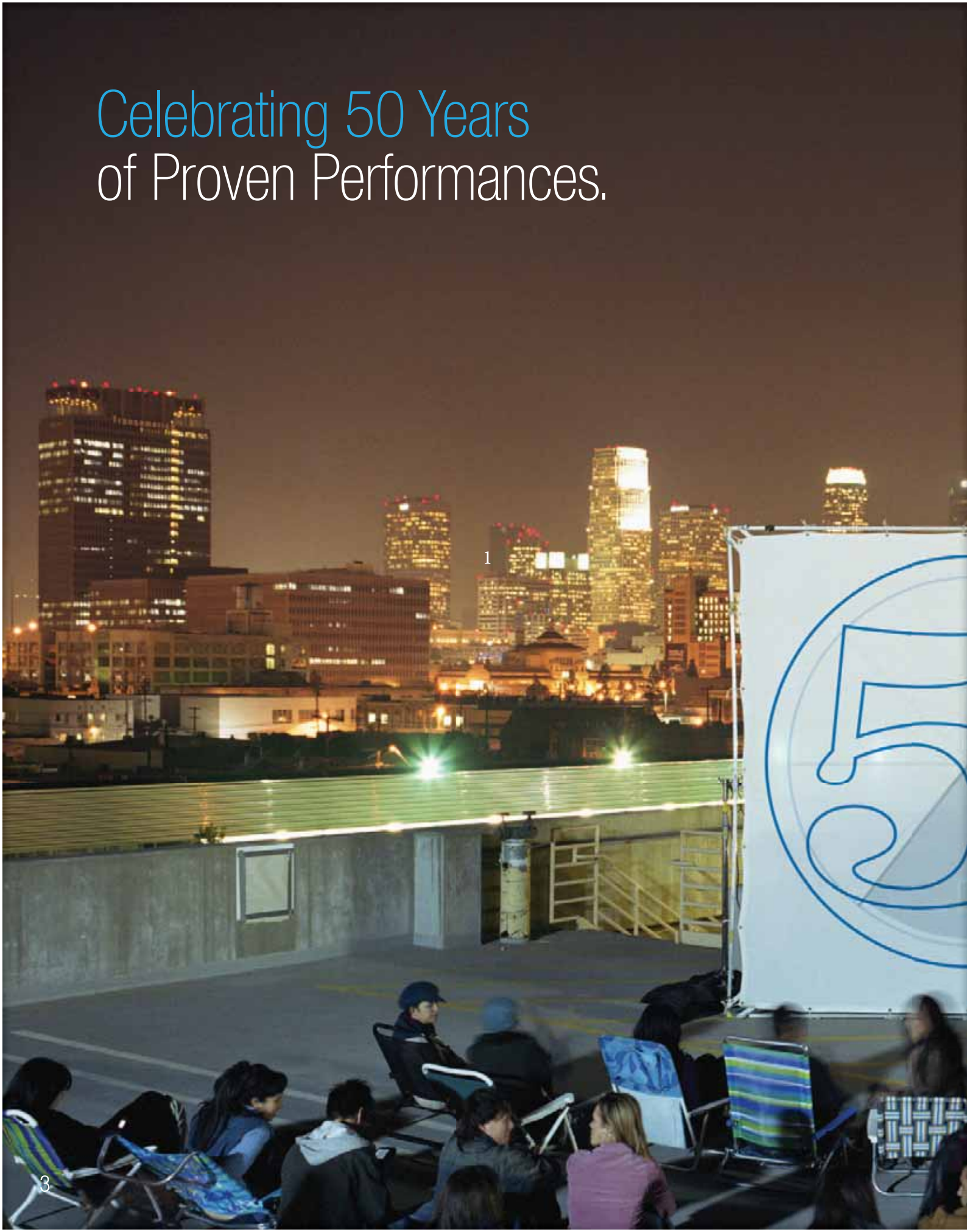
CELEBRATING A HALF-CENTURY OF PROGRESS.

Sarnafil®

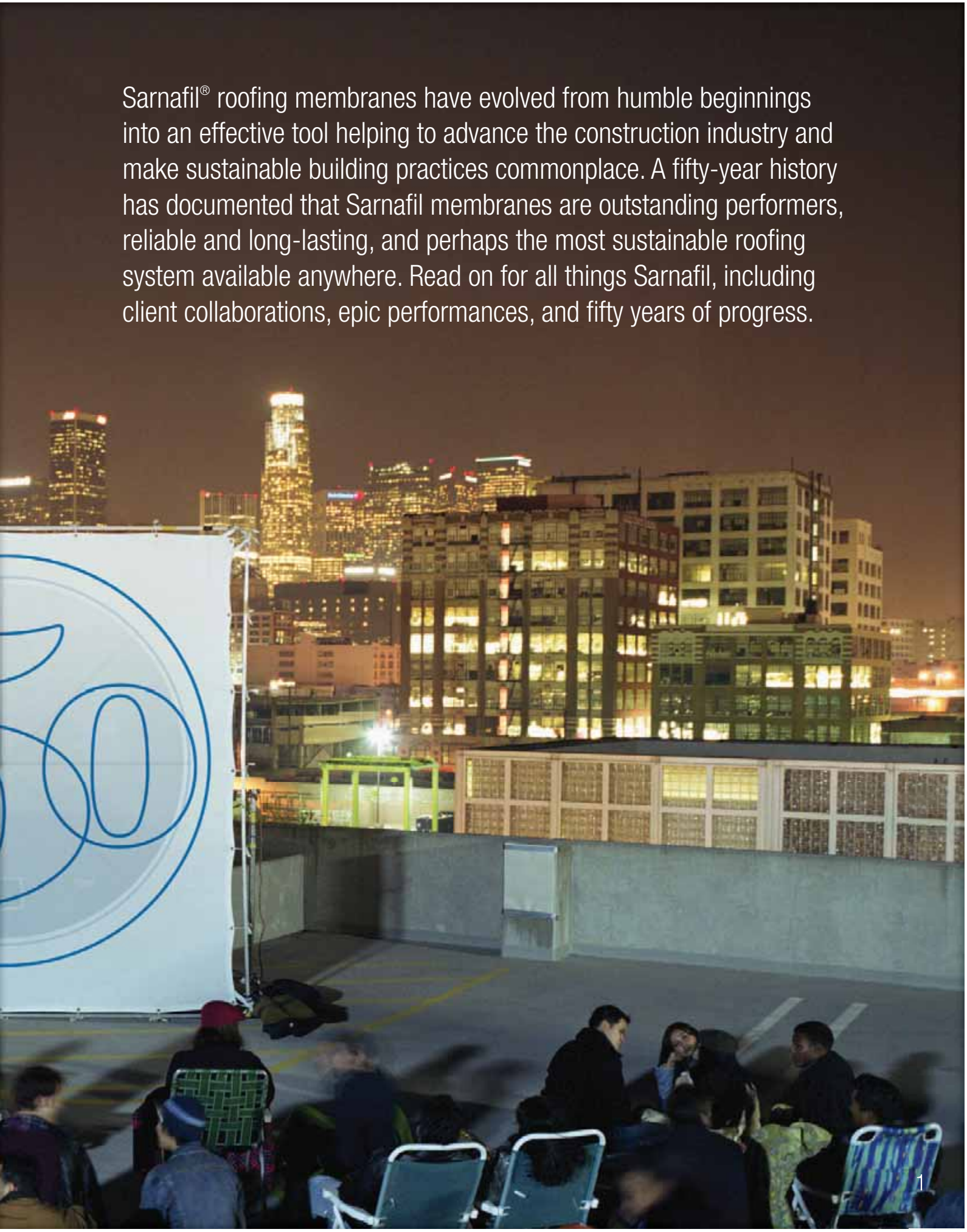
BUILDING TRUST

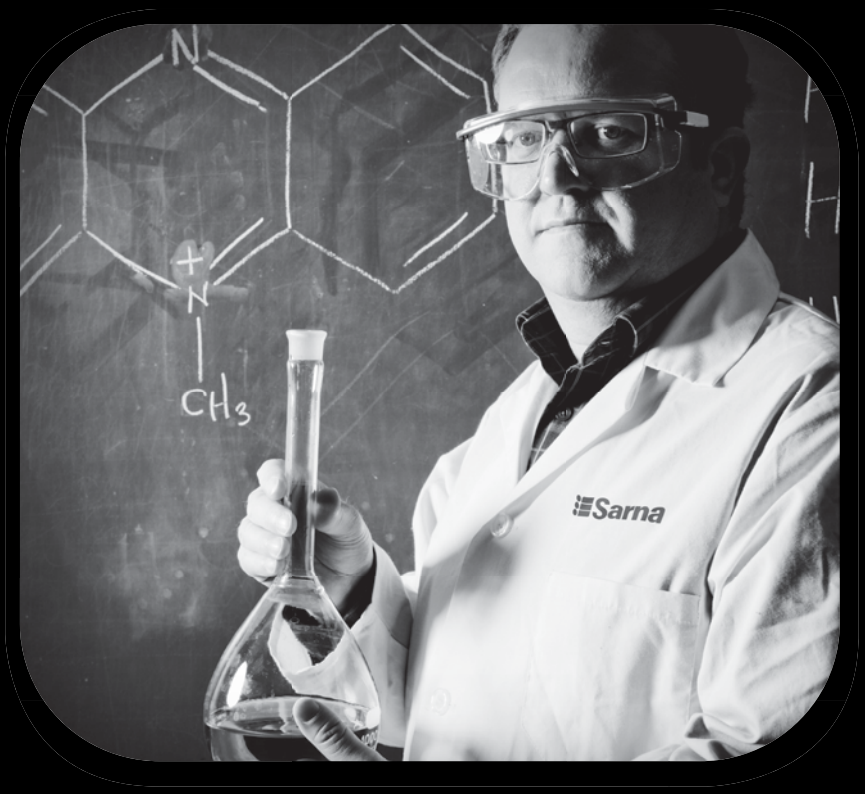
Sika®

Celebrating 50 Years of Proven Performances.



Sarnafil® roofing membranes have evolved from humble beginnings into an effective tool helping to advance the construction industry and make sustainable building practices commonplace. A fifty-year history has documented that Sarnafil membranes are outstanding performers, reliable and long-lasting, and perhaps the most sustainable roofing system available anywhere. Read on for all things Sarnafil, including client collaborations, epic performances, and fifty years of progress.

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Sarna

1962. Sarnafil membrane is born.

In 1958, a company called Sarna was formed in Switzerland to develop polymeric products, and in 1962 this small company did something very big.

Company chemists developed the first thermoplastic membrane reinforced with fabric, leading to a number of industrial applications that included a burgeoning roofing membrane market.

This tear-resistant thermoplastic membrane was patented and trademarked “Sarnafil.” The discovery would revolutionize the single-ply roofing industry.

Sarna

1964

Sarnafil Membrane Lays Stake

An architect for EXPO 64 in Lausanne, Switzerland, realized that he could use the recently introduced Sarnafil membrane as roofing for the Expo's large tent-like pavilions. This exposition introduced the Sarnafil membrane to building professionals throughout the world.


START
START
SARNAFIL MEMBRANES HIGHEST RATED FIRE PERFORMANCE
1965
Sarnafil G410 fiberglass mat reinforced membrane for adhered applications introduced.
1966
Development of Sarnamatic 611 improves seam welding technology and enhances contractor productivity.
1966 JULIE NEWMAR TAKES THE ROLE OF CATWOMAN
1965 AVERAGE COST OF NEW HOUSE: $13,600.00
1969 MAN TAKES THE FIRST STEPS ON THE MOON

Product Innovation
Sarnamatic 611 Seam Welder

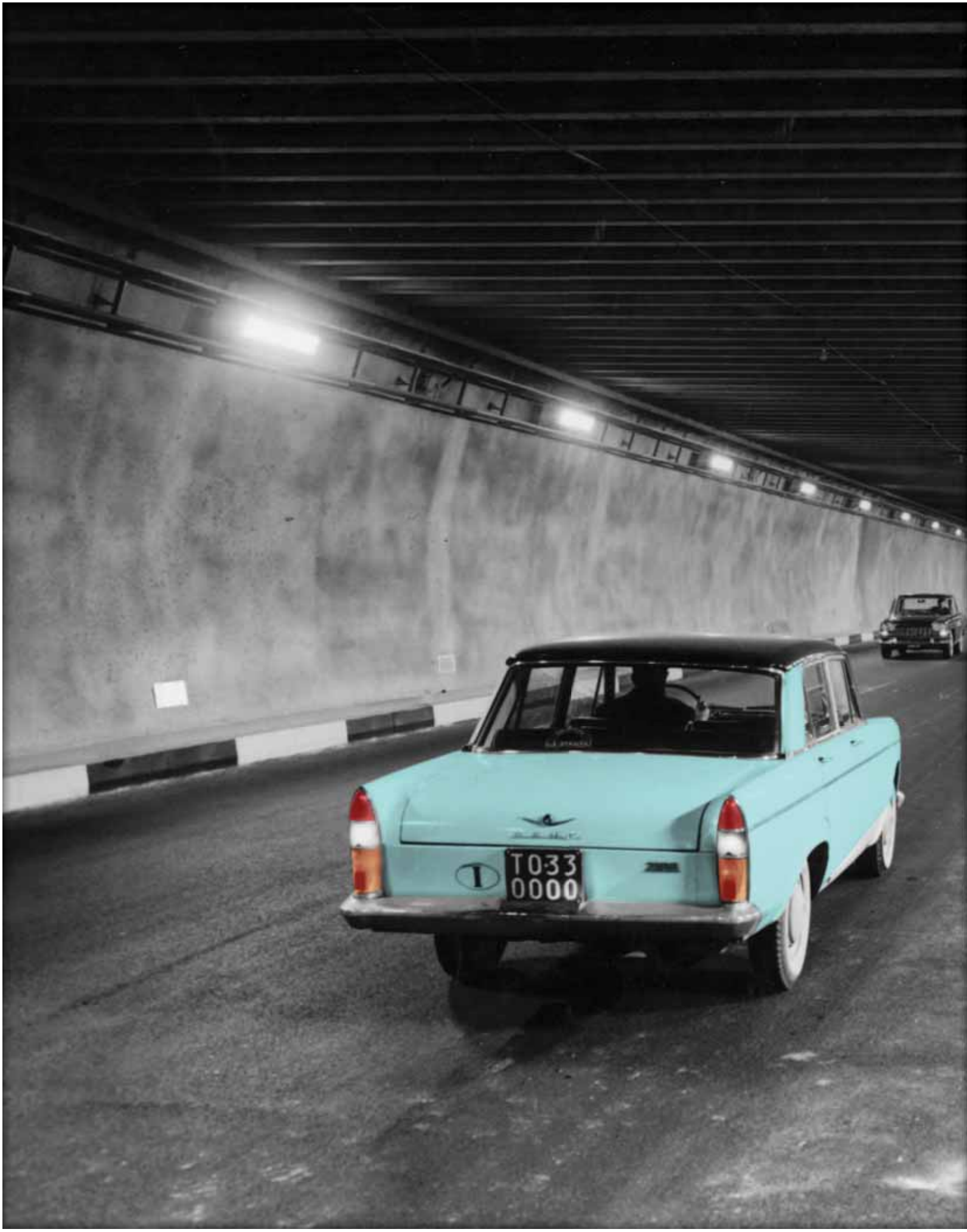
In 1966, Sarnafil was the first membrane manufacturer to design and produce an automatic seam welder, recognizing early on that seam integrity was critical to the long-term performance of thermoplastic roofs.

A key advantage to thermoplastic membranes is the ability to weld seams together with hot air. Once properly welded, seams remain watertight throughout the service life of the roof and, in fact, are stronger than the membrane itself.

The Sarnamatic 611 seam welder used hot air to fuse membrane sheets and created continuous surfaces for superior watertight protection, while also improving roofing contractor productivity.

Many refinements have been incorporated into the Sarnamatic through the years, and it now includes patented kits for the welding of Décor Roof System profiles and the double welding of Sarnafil seams. The Sarnamatic is considered the best means available for achieving seam integrity and reliability.

◀ The Sarnamatic 661 is the latest automatic seam welder to have evolved from the Sarnamatic 611.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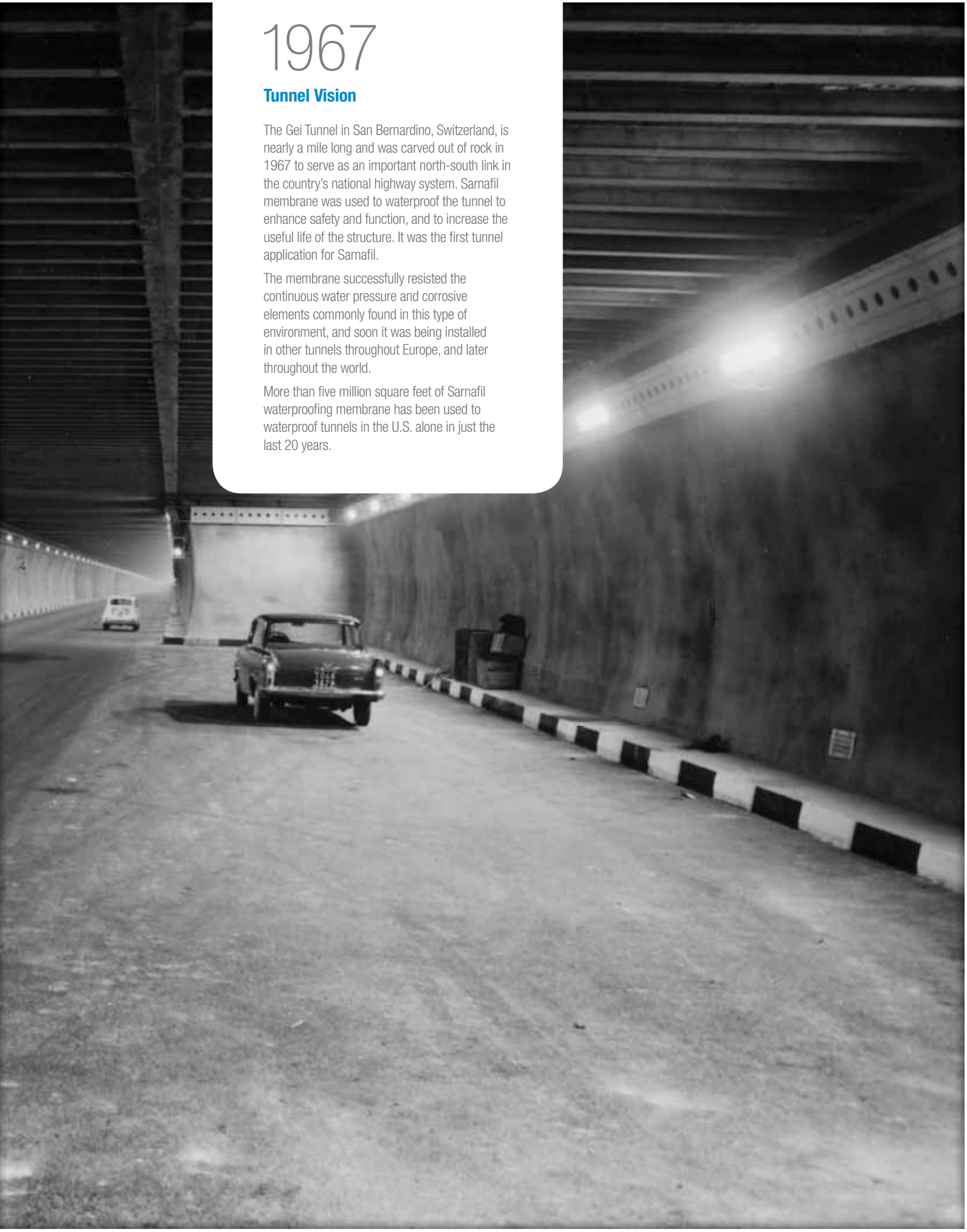
1967

Tunnel Vision

The Gei Tunnel in San Bernardino, Switzerland, is nearly a mile long and was carved out of rock in 1967 to serve as an important north-south link in the country's national highway system. Sarnafil membrane was used to waterproof the tunnel to enhance safety and function, and to increase the useful life of the structure. It was the first tunnel application for Sarnafil.

The membrane successfully resisted the continuous water pressure and corrosive elements commonly found in this type of environment, and soon it was being installed in other tunnels throughout Europe, and later throughout the world.

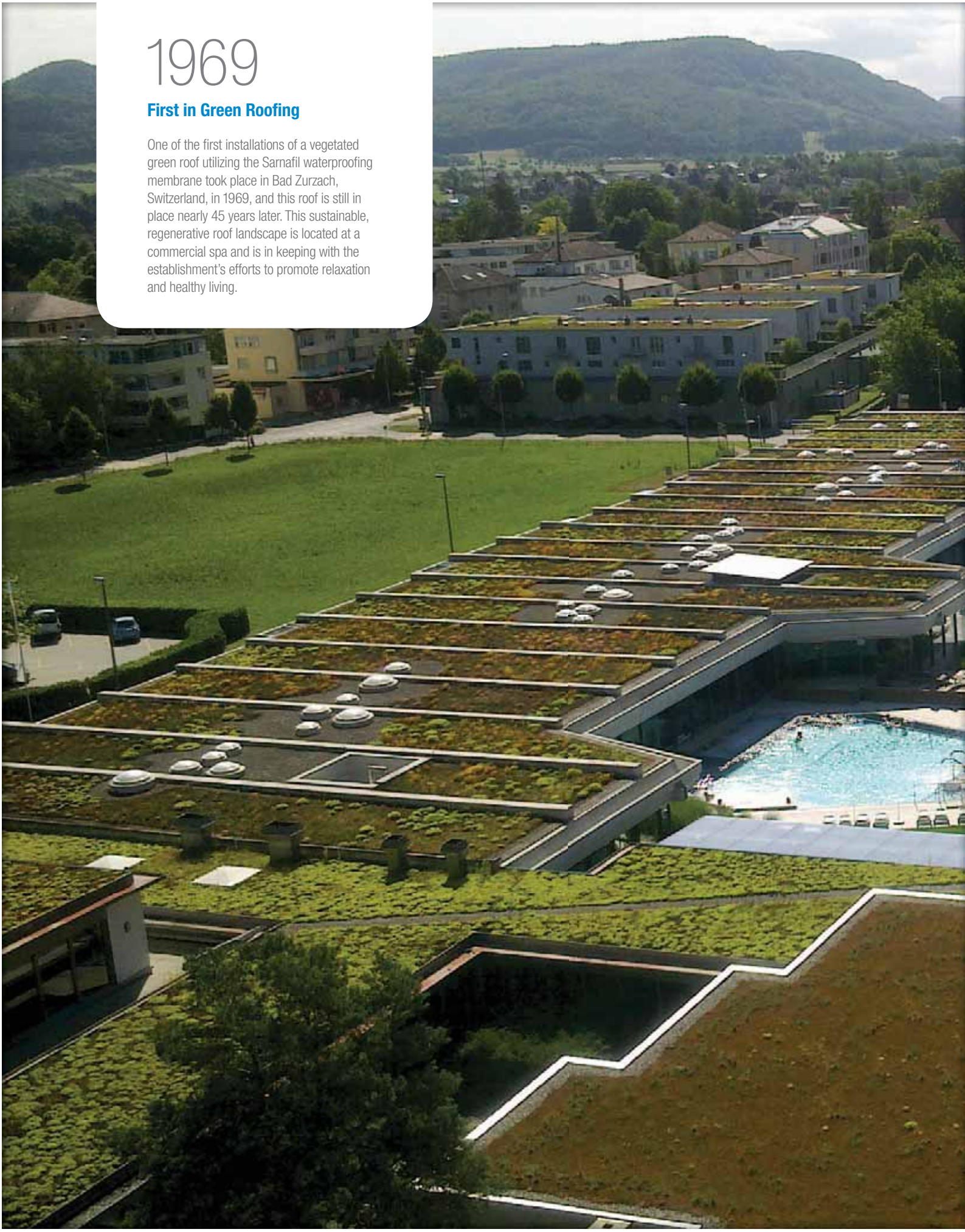
More than five million square feet of Sarnafil waterproofing membrane has been used to waterproof tunnels in the U.S. alone in just the last 20 years.



1969

First in Green Roofing

One of the first installations of a vegetated green roof utilizing the Sarnafil waterproofing membrane took place in Bad Zurzach, Switzerland, in 1969, and this roof is still in place nearly 45 years later. This sustainable, regenerative roof landscape is located at a commercial spa and is in keeping with the establishment's efforts to promote relaxation and healthy living.



THE TEST OF TIME

First United Methodist Church

Install Date: 1976
Gilford, New Hampshire
Membrane: Sarnafil G410

"We've been installing Sarnafil since it was first introduced to the U.S. in 1976, and these roofs have always outperformed. This installation is a testament to that."

— **Larry Matott** *President, Mayo Roofing, Inc., Concord, NH – Roofing Contractor,* First United Methodist Church

In 1976, the year of America's Bicentennial, yet another milestone took place in Gilford, New Hampshire. One of the very first Sarnafil installations in North America was completed, over a church. Remarkably, this Sarnafil roof is still on the job, more than 35 years later.

The church was constructed in 1968 and the original roof relied on a sprayed-on urethane foam top-coated with a sprayed-on Hypalon® coating. The roof also featured a very distinctive, sweeping shape known as a hyperbolic paraboloid.

Unfortunately, the 12,000 square foot "wings" of the sanctuary roof deteriorated rapidly and had to be replaced in 1976. This time the church decided to install a Sarnafil single-ply membrane. It's a decision they have not regretted.

More than three decades later, the roof is still doing well. "That's a very good result and we have been happy with the performance of the roof," said Jack Woodward, Chair of the Board of Trustees for the church. "I've been on the scene here since 2000, and the roof has held up well."

The roof on the sanctuary performed so well that, when the original built-up flat roofs on the east and west wings of the church needed to be replaced in 1985, Sarnafil membrane was once again selected for the job.

Except for regular on-going summer maintenance resulting in minor repairs, all of the Sarnafil roofs have been trouble-free.

"Sarnafil has been the preferred roofing and waterproofing system at Harvard for nearly 20 years. With over 100 applications on libraries, laboratories, classrooms and offices, Sarnafil has withstood the toughest conditions."

— **Philip Bisaga** *Former Director of Maintenance,* FAS Physical Resources, Harvard University, Cambridge, MA

Schools & Universities

Architects and specifiers have done their homework and Sarnafil has moved to the head of the class when it comes to roofing systems for schools and universities.

Local school districts and higher-education institutions face significant challenges today, with limited capital funding seriously impacting the ability of many to provide facilities that are a positive environment for learning. Facility managers and planners must make critical decisions regarding roofing systems, comparing overall performance and initial cost to the system's long-term life cycle cost.

Sarnafil roofing systems have received high honors from K-12 to the university level, providing the best performance and lowest life cycle cost of all low-slope roofing assemblies. Through extended performance and high reflectivity, Sarnafil roofing systems help facility managers control capital expenses, HVAC operating costs and roof maintenance costs. Sarnafil membranes outperform other single-ply systems and asphaltic products and are the preferred choice of countless schools and universities from around the world.

Buhrer Elementary School
Cleveland, Ohio

This 45,000 square foot school relies on a Décor Roof System to realistically simulate the appearance of a standing seam metal roof while delivering superior, weather-tight coverage.

Décor has the benefit of a flexible Sarnafil membrane and welded seams, enabling it to provide the protection Sarnafil systems are known for. The Buhrer Elementary School chose a Patina Green roof, which is one of seven standard Décor colors.

Beyond associated damage and costs, leaky roofs are a significant distraction in the classroom and impact learning. Schools have come to rely on Sarnafil to help keep their curriculums on track.


START
START
WHITE
PATINA GREEN
LIGHT GRAY
1979
TAN
DARK GRAY
EVERGREEN
CORTEN BROWN
1978
AVERAGE COST OF NEW HOUSE $54,800.00
1978
First vegetated Sarnafil green roof installed in North America at Phillips Exeter Academy in Exeter, N.H.
Introduction of custom color Sarnafil membranes and acrylic coating.

Product Innovation
Custom Colored Membranes

In 1979 Sarnafil became the first single ply membrane available in color. Colored membranes have been used ever since to great advantage, accenting the architectural designs of buildings.

A unique manufacturing process builds color into the membrane, with no recoating ever needed.

Sarnafil membranes are available in “EnergySmart Roof” colors that meet or exceed established regulatory standards for solar reflectance and emissivity, in addition to a wide range of diverse custom colors.

Colored Sarnafil membranes are employed by many companies for advertising purposes, with rooftop logos providing unique visibility.

Along with colored membranes, a unique lacquer coating was developed at the same time that is applied to membrane surfaces to minimize staining from airborne dirt and pollutants.

THE TEST OF TIME

Brookshire Grocery

Install Date: 1980
Brookshire Grocery Company, Tyler, TX
Membrane: Sarnafil G410 and S327

"As far as I'm concerned, there is no equal to this roofing system. If it were up to me, this is the only roofing system I would ever use."

— **Ken Reeves** *Facility Maintenance Technician,* Brookshire Grocery Company

Ken Reeves, Facility Maintenance Technician at Brookshire Grocery Company, has been maintaining the 500,000 square foot Sika Sarnafil roof on the Southwest Foods division warehouse and manufacturing facility in Tyler, Texas since the day it was installed in 1980. The roof consists of a G410 adhered Sarnafil system over the freezer section, and an S327 Sarnafil mechanically attached system on the rest of the roof.

"You can't ask for a better roofing system – I love it," Reeves stated. "The main advantage of the Sika Sarnafil roof is the longevity of the material and ease of repair – you just heat-weld a patch of the membrane to the repair and you are done."

Reeves said another benefit of the Sika Sarnafil roof is that it is energy efficient. Brookshire Grocery prepares ice cream, baked goods and cut fruit in this facility, so keeping the temperature cool inside is vital. "Before this roof we had a hot-tar and gravel roof, which absorbed the Texas heat," he explained. "We used to run 36 intake and exhaust fans – but since the Sika Sarnafil roof was installed we haven't needed them at all."

He added that even in areas that are not air-conditioned, the building stays very comfortable. Ease of maintenance is another advantage of the Sika Sarnafil membrane. "I've worked on some other roofs where we were spending 20 to 40 hours a week fixing leaks," Reeves said. "With the Sika Sarnafil roof I only have to go up once every two or three months for routine maintenance."

"There are so many benefits associated with green roofing—storm water retention, energy savings and the creation of green space in an area that is often overlooked as being useful. All of these benefits are applicable to making Chicago a healthier and nicer place to live."

— **Kevin Laberge** *Environmental Engineer,* Department of Environment, City of Chicago

Project Highlight
Chicago's City Hall

Twelve stories above Chicago's busy financial district sits an island of greenery snuggled amid a sea of boiling hot tar roofs. When summer temperatures in the Windy City reach 90 degrees, the vegetated green roof atop Chicago's City Hall lowers the temperature in the immediate area, while neighboring black asphalt roof surface temperatures can reach 160 degrees and higher.

Chicago, Illinois, is one of America's great cities and a leading advocate nationwide for vegetated green roofs. The city has established an array of policies and incentives that go back more than a decade to encourage the use of green roofs—these initiatives have led to hundreds upon hundreds of vegetated oases in this urban environment, with square footage totaling in the millions. It's cool being green in Chicago.

City Hall was the first municipal building in Chicago to be crowned green back in 2001 to bring attention to the city's focus on sustainability. For this highly visible project, the city needed a tough and durable waterproofing system that would be watertight and provide decades of trouble-free service.

The Sarnafil G476 membrane was specially designed for sub-grade environments. "We felt most comfortable with the Sarnafil membrane and its ability to work well with the green roof," said Tom Vukovich, City Architect with the Department of General Services. "The membrane had the flexibility that we were looking for, especially going over the roof deck and clay tile arches."

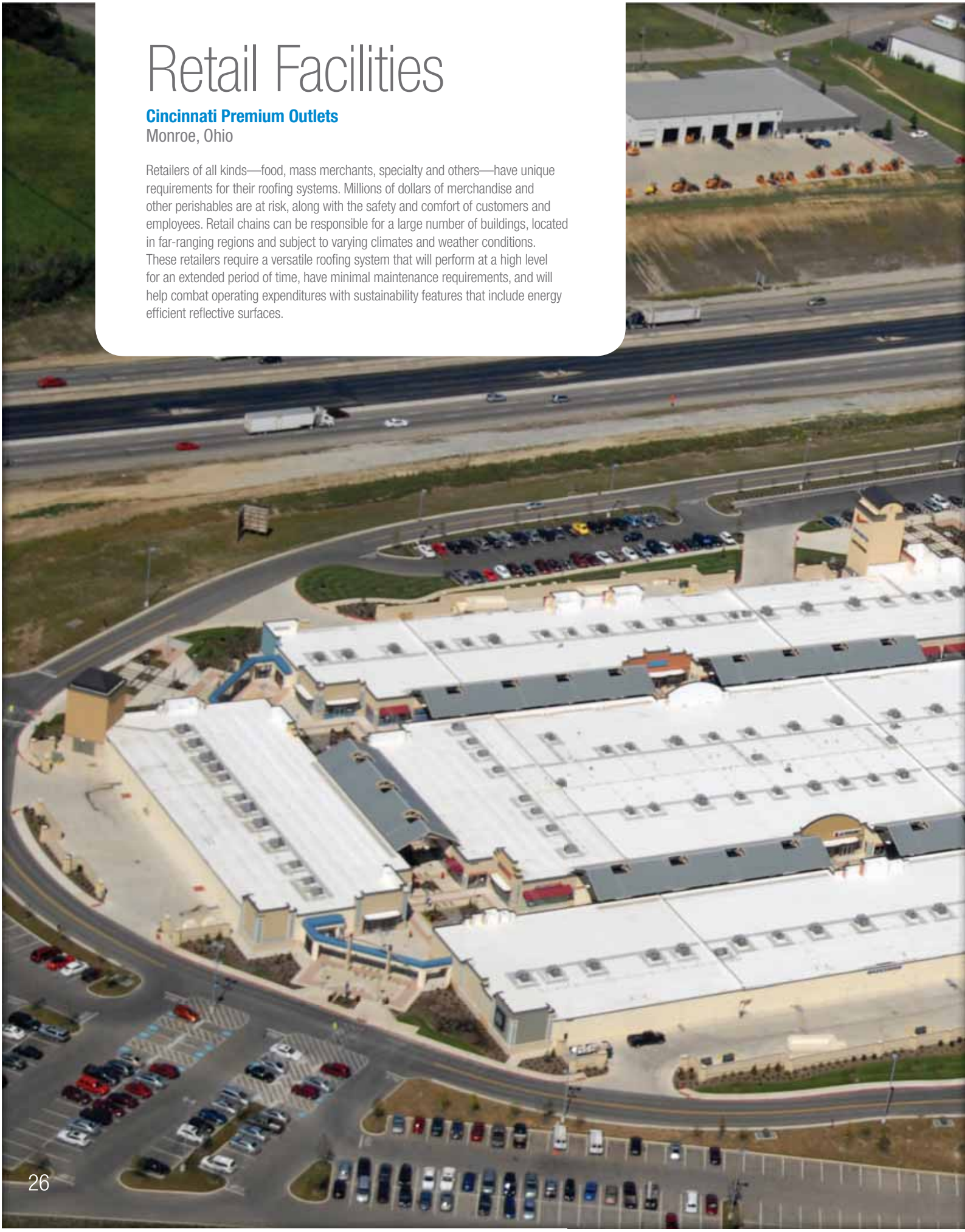
The greening of rooftops in the Chicago area continues, and the Sarnafil waterproofing membrane can be found all over town.

Chicago City Hall
System: Sarnafil Vegetated Roof

Retail Facilities

Cincinnati Premium Outlets
Monroe, Ohio

Retailers of all kinds—food, mass merchants, specialty and others—have unique requirements for their roofing systems. Millions of dollars of merchandise and other perishables are at risk, along with the safety and comfort of customers and employees. Retail chains can be responsible for a large number of buildings, located in far-ranging regions and subject to varying climates and weather conditions. These retailers require a versatile roofing system that will perform at a high level for an extended period of time, have minimal maintenance requirements, and will help combat operating expenditures with sustainability features that include energy efficient reflective surfaces.




START
START
SARNAFIL MEMBRANES A ROOF THAT KEEPS ITS COOL
1989 WARMEST YEAR ON RECORD — POSSIBLE SIGN OF GREENHOUSE EFFECT
1987
Introduction of Sarnafil felt-back membrane.
Sarnafast mechanically attached roof system introduced to resist wind uplift and for ease of installation and speed.
1989
1987 AVERAGE COST OF NEW HOUSE: $92,000.00
1995 SARNAFIL PVC CHANG FIRST ASTM STANDARD FOR PVC MEMBRANES

Project Highlight
JFK Library & Museum

In 2002, historical artifacts were at risk when a rubberized asphalt waterproofing system failed at the John F. Kennedy Presidential Library and Museum in Boston. Three roofs at the site and two large plazas with occupied space below grade had failed, and a weather-tight solution for the long-term protection of irreplaceable objects was needed.

Plaza decks are located at or above grade level. They are public access areas and may cover office space, mechanical and storage areas, or parking garages. They may also be directly above valuable links to history, as was the case at the Kennedy Library.

Plaza decks require special attention since they may hold water for a period of time after precipitation, and the waterproofing system is buried under overburden and thus repairs become both challenging and costly.

At the Kennedy Library, the plazas involved the busy entranceway and a second location used as an outdoor event area, with numerous exhibit rooms situated directly below the plazas.

Once the existing failed waterproofing system was removed, contractors installed a Sarnafil Grid Waterproofing system specially designed to compartmentalize water should a leak occur in the future.

JFK Library and Museum
System: Sarnafil Plaza Deck Waterproofing

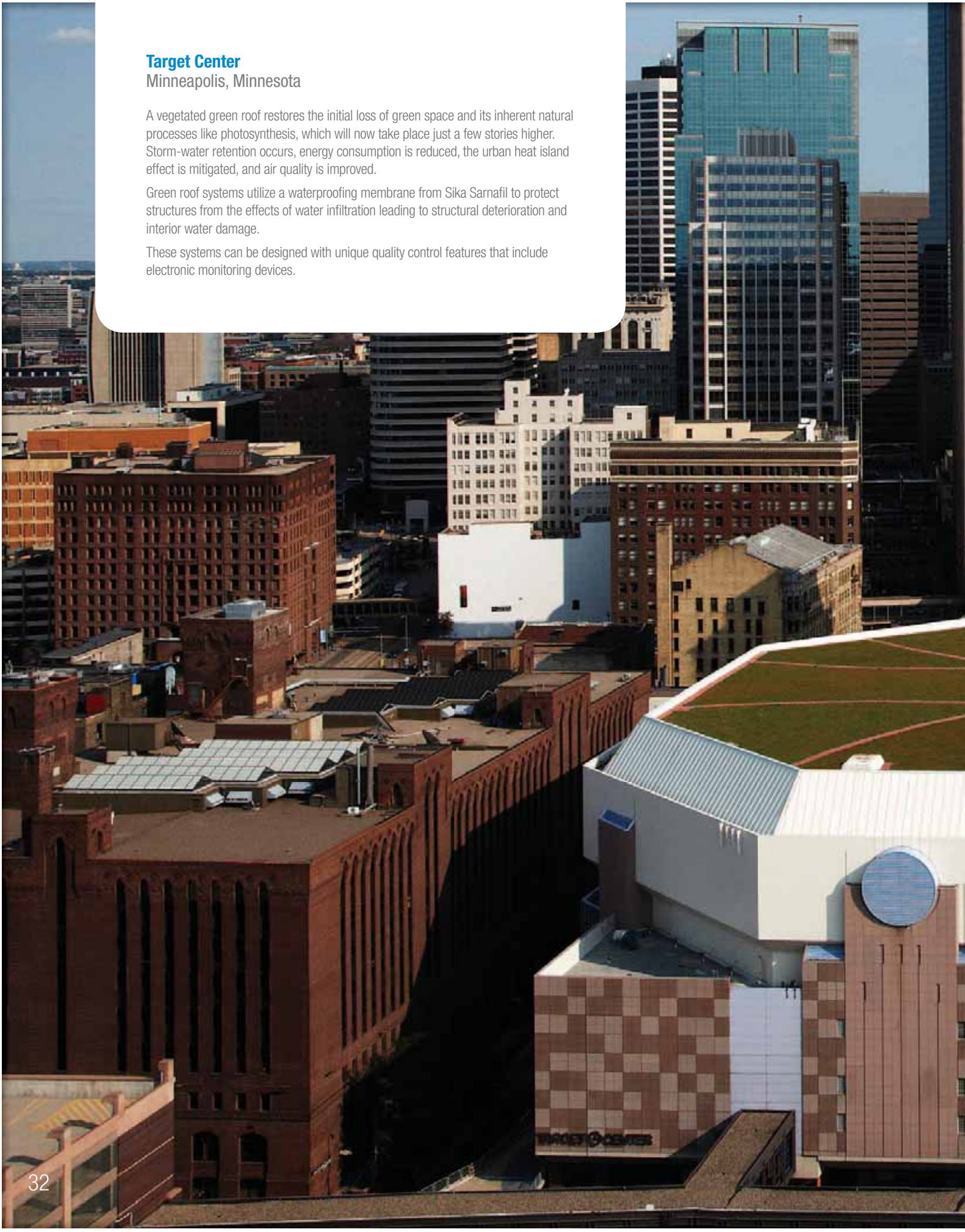

STOP

Target Center
Minneapolis, Minnesota

A vegetated green roof restores the initial loss of green space and its inherent natural processes like photosynthesis, which will now take place just a few stories higher. Storm-water retention occurs, energy consumption is reduced, the urban heat island effect is mitigated, and air quality is improved.

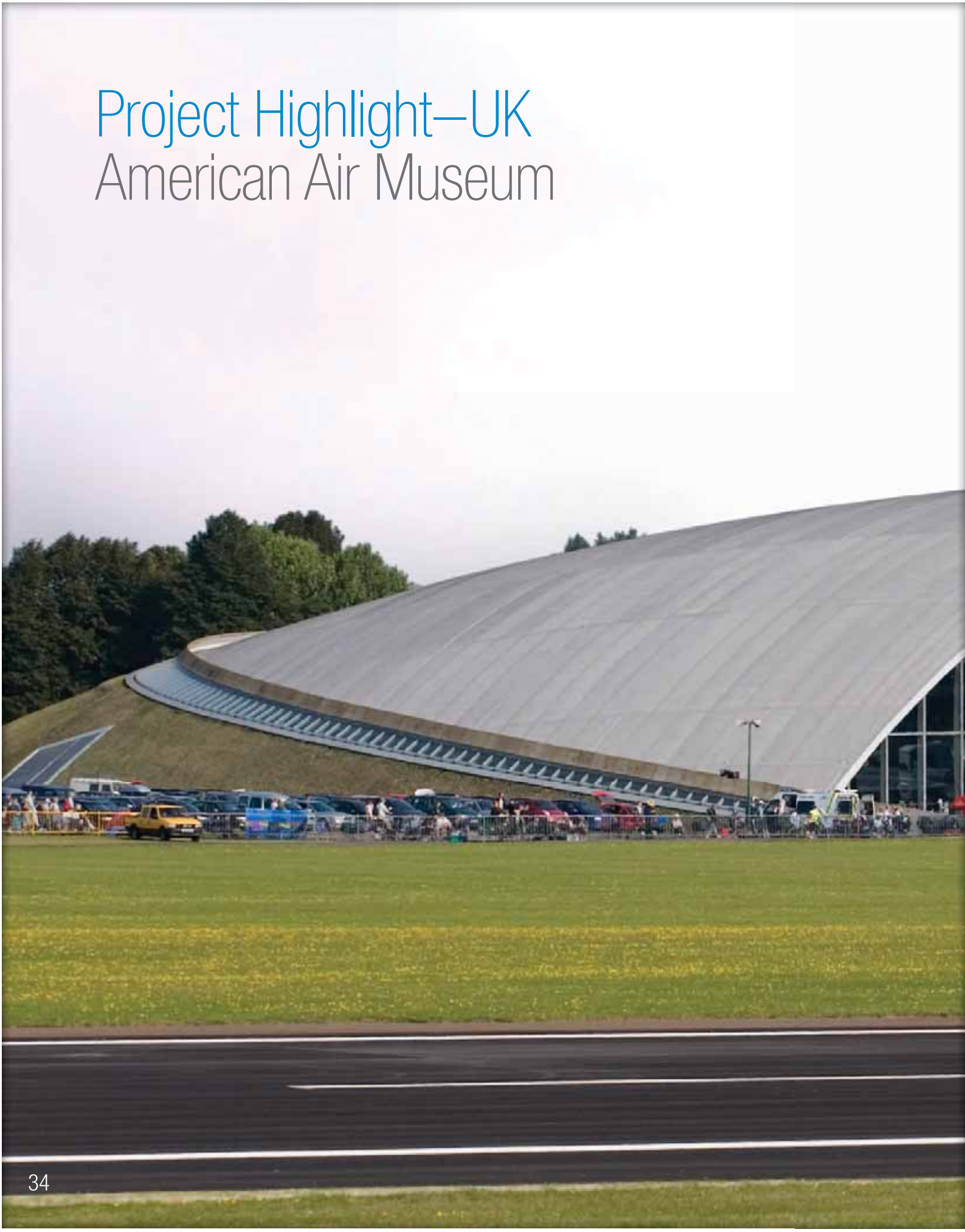
Green roof systems utilize a waterproofing membrane from Sika Sarnafil to protect structures from the effects of water infiltration leading to structural deterioration and interior water damage.

These systems can be designed with unique quality control features that include electronic monitoring devices.




FOSHAY
PANTAGES
VAUDEVILLE

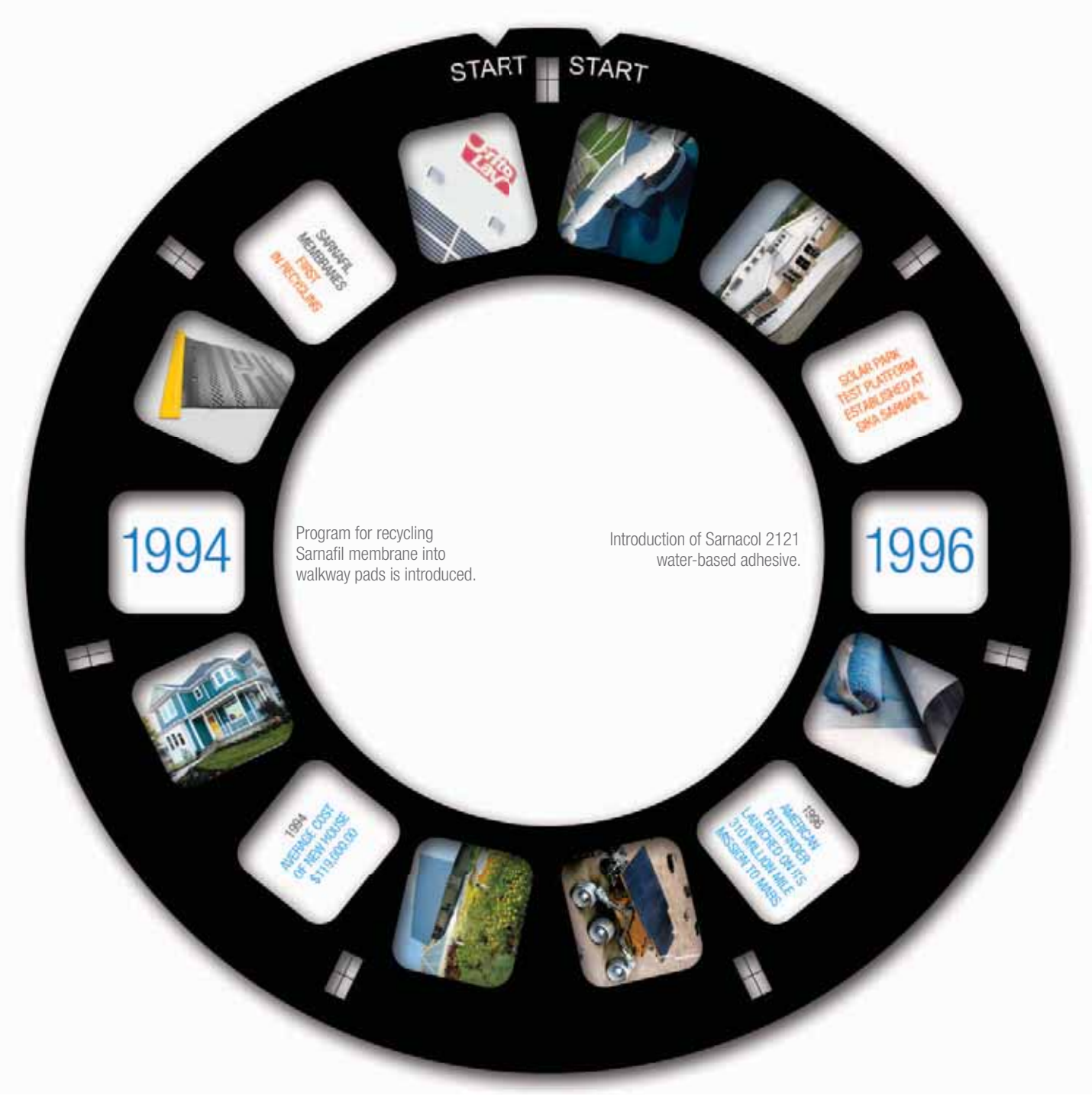
Project Highlight–UK
American Air Museum



Award winning museum features adhered Sarnafil roofing system.

The Imperial War Museum Duxford in Cambridgeshire, England, is Britain's largest aviation museum and houses nearly 200 aircraft, in addition to other military artifacts. The site is located on the grounds of a historic airfield used in both World Wars I and II and features more than a half dozen exhibit halls, including original buildings and hangars from the Battle of Britain.

In dramatic contrast to the older structures at the site is the American Air Museum, an award-winning facility built in 1997. Almost two dozen vintage American fighting aircraft are on display within the museum, which is protected from the elements by more than 60,000 square feet of Sarnafil membrane.


START
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SARNAFIL MEMBRANES FIRST IN RECYCLING
SOLAR PARK TEST PLATFORM ESTABLISHED AT SIKA SARNAFIL
1994
Program for recycling Sarnafil membrane into walkway pads is introduced.
Introduction of Sarnacol 2121 water-based adhesive.
1996
1994 AVERAGE COST OF NEW HOUSE: $119,000.00
1996 AMERICAN PATHFINDER LAUNCHED ON ITS 310 MILLION MILE MISSION TO MARS

Project Highlight
Holocaust Museum & Education Center

This striking 65,000 square foot facility in Skokie, Illinois opened in April 2009 and is the largest center in the Midwest dedicated to preserving the memories of the six million lives lost in the Holocaust.

The complex features both a dark building with a steep gable roof and a light building with a barrel roof. The dark side symbolizes the historical context of the Holocaust and other acts of genocide and hatred, whereas the light side represents liberation, immigration and rebirth.

Finding a roofing system that could accommodate the different roof shapes as well as the contrasting roof colors was not an easy task. A standing seam metal roof was desired to evoke an industrial feel to the dark building, but the interfaces between the gable and barrel roofs would create difficulties with flashings and such. Meanwhile, a reflective, light colored roofing membrane was desired for the light side of the building and for the non-visible parts of the dark side.

The design team ultimately settled on a white Sarnafil reinforced membrane for the light building, and the Décor Roof System in gray to give the dark building the desired look. Décor profiles have the appearance of standing metal seams and enabled the Center to use the same membrane for both the gable and barrel roofs.

Holocaust Museum & Education Center
System: Décor Roof System

THE TEST OF TIME

Filtration Group

Install Date: 1984
Filtration Group, Joliet, IL
Membrane: Sarnafil S327

"When you consider how long the roof has lasted and how little effort it has required on my part. . . to me this is a superior roof membrane."

— **Dennis Hocker** *Maintenance Manager,* Filtration Group

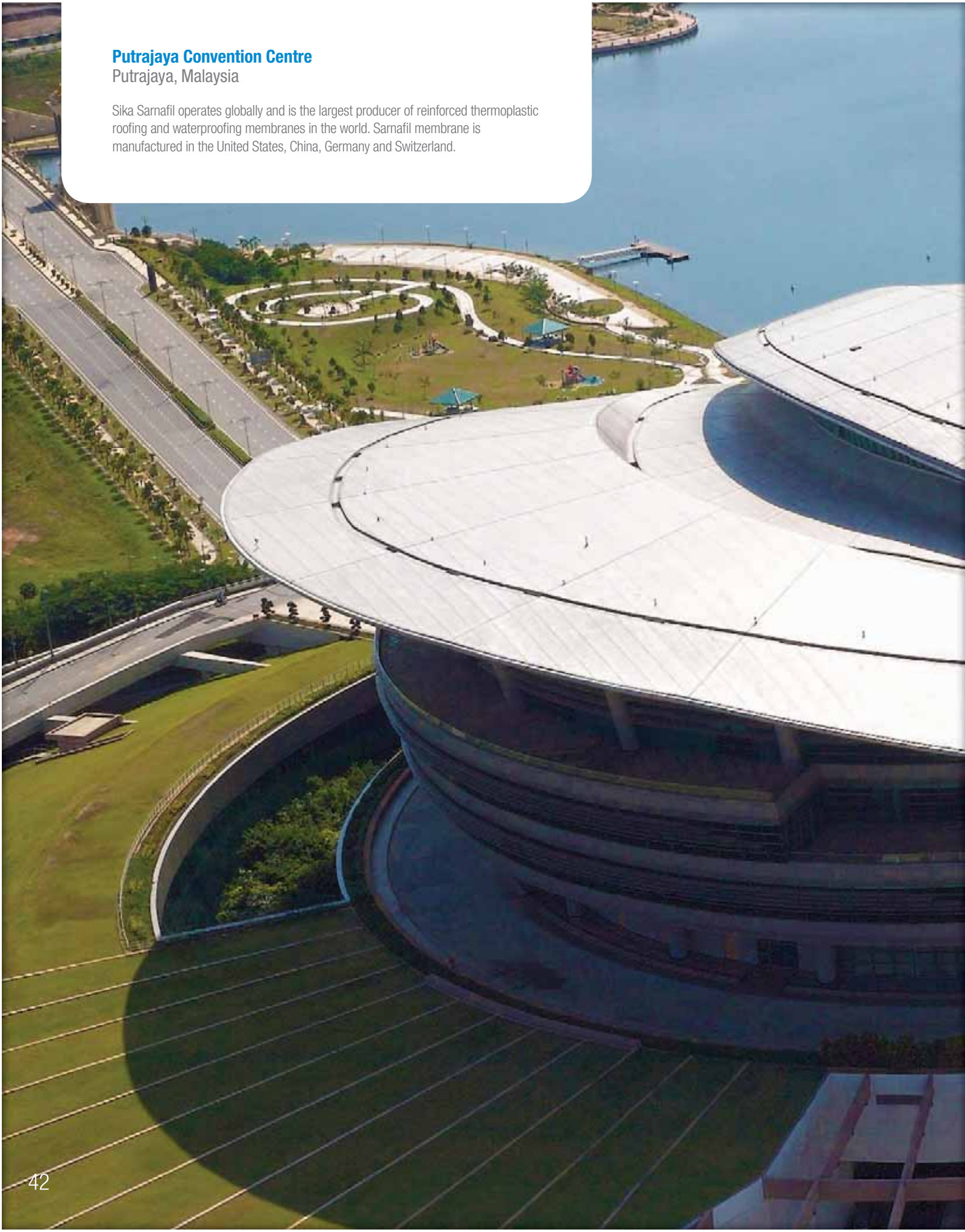
As Maintenance Manager at the Filtration Group LLC, Dennis Hocker oversees 165,000 square feet of roofing—including EPDMs, TPOs and PVCs. To him, a good roof is one that doesn't require a lot of his time. "Except for normal maintenance and scheduled roof inspections, I don't pay attention to roofs unless they are leaking," he stated. One roof that hasn't been requiring much notice is the 35,000 square foot Sarnafil roof over a building that houses corporate offices and a manufacturing facility in Joliet, Illinois. What makes this unusual is that the roof was installed almost 30 years ago.

The mechanically attached roofing membrane was installed on a wood deck in 1984, on a building built in 1920. "Since the building was built there have been a lot of additions and modulars added, with various kinds of roofing systems," Hocker explained. "This Sarnafil roof is the oldest roof and on the oldest part of the building."

Except for normal maintenance and some repairs due to storm damage, this roof has been trouble-free for the 13 years Hocker has worked there. "When you consider how long the roof has lasted and how little effort it has required on my part, you can see that the life cycle cost is equal to or less than other roofing systems," Hocker said. "To me this is a superior roof membrane."

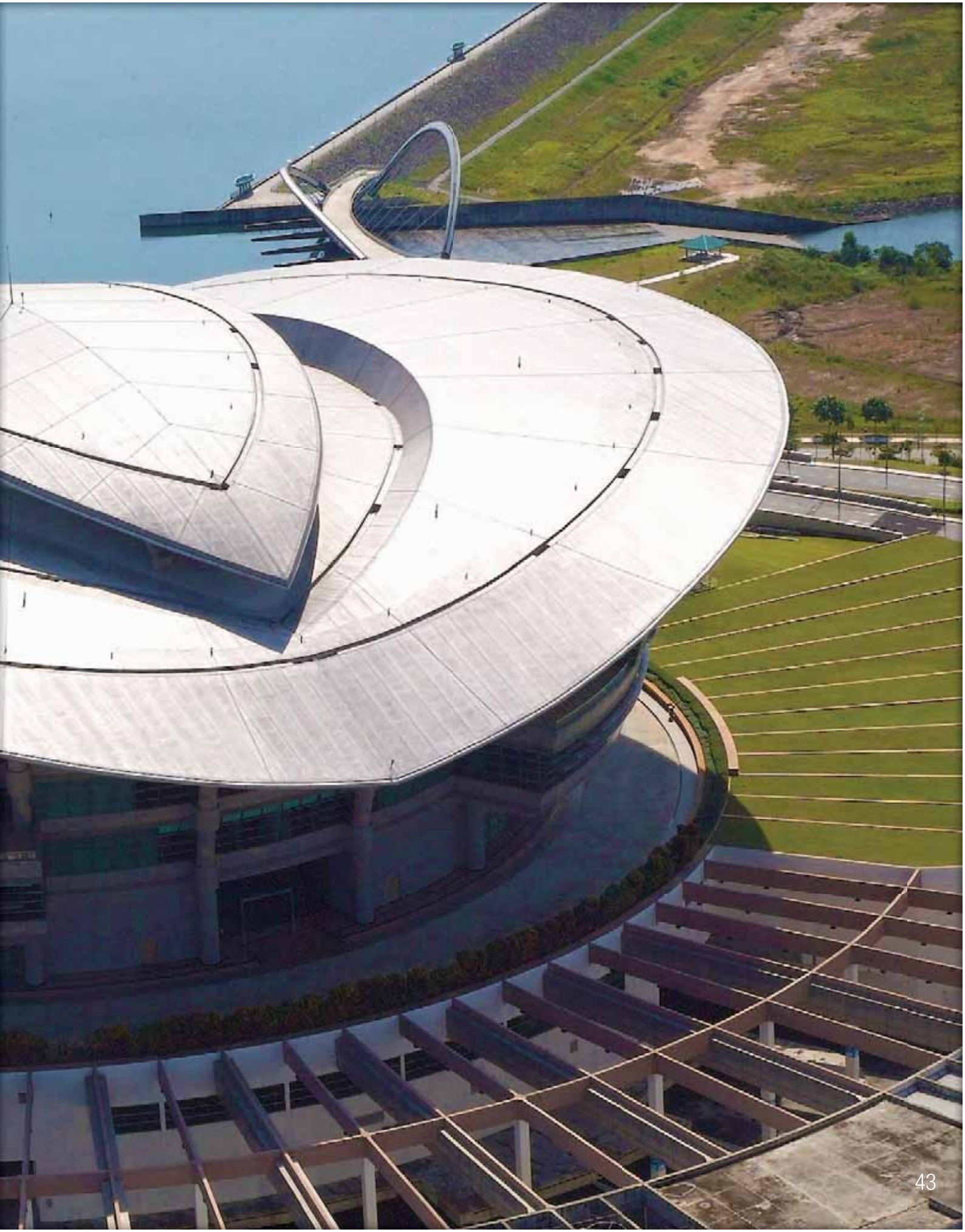
Ron Jorgensen, President of One Source Roofing & Maintenance in Richmond, Illinois, agrees that the Sarnafil system is an exceptional system. "I've been servicing that Filtration Group roof since 2002, and the roof has performed very well," he stated. "It is still flexible and sustainable, and can still be cleaned up and hot-air welded after all these years, which is remarkable."

Hocker said that he currently has Sika Sarnafil roofing systems on about 60,000 square feet of the roofs he manages, and that he will definitely consider installing it on future applications, including when it comes time to replace the oldest roof. "That roof is over rooms where the CEO has meetings, so I want to make sure that roof remains leak-free," he stated. "With a Sika Sarnafil system I won't have to worry about that."



Putrajaya Convention Centre
Putrajaya, Malaysia

Sika Sarnafil operates globally and is the largest producer of reinforced thermoplastic roofing and waterproofing membranes in the world. Sarnafil membrane is manufactured in the United States, China, Germany and Switzerland.




START
START
DÉCOR ROOF SYSTEMS
LOOKS LIKE METAL
LASTS LIKE SARNAFIL
1997
FIRST BOOK IN THE HARRY POTTER SERIES BY J.K.ROWLING IS PUBLISHED
1998
Introduction of EnergySmart Roof membrane with high reflectance and emissivity to promote energy efficiency.
Development of Décor Roof System, featuring look of standing seam metal roof with thermoplastic performance.
1999
1998
AVERAGE COST OF NEW HOUSE: $120,000.00
1999
SARNAFIL, INC. BECOMES CHARTER PARTNER IN ENERGY STAR® ROOF PRODUCTS PROGRAM

Product Innovation
EnergySmart Roof®

In 1998 a Sarnafil membrane in a highly reflective white color was introduced and it has become the mainstay of the Sika Sarnafil product line.

The EnergySmart Roof reduces a building's energy requirements, lowers maintenance costs, helps to mitigate the urban heat island effect, and has a documented history of longevity and high performance.

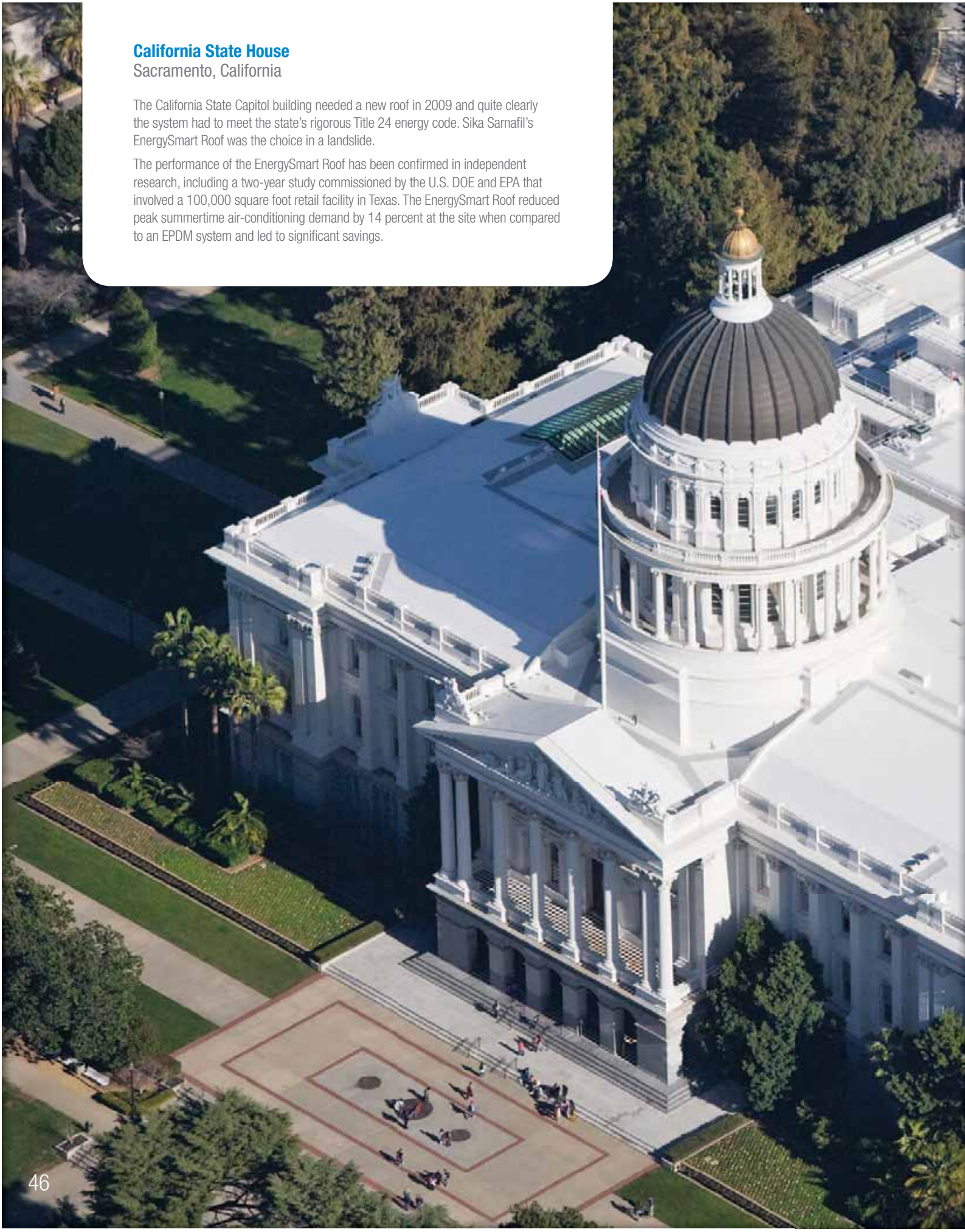
Preventing solar radiation from elevating a building's internal temperature is a key strategy in reducing energy consumption. White-colored EnergySmart Roof membranes scored a 104 in the Solar Reflective Index on a scale of 1-to-100 in research conducted by the Lawrence Berkeley National Laboratory. This membrane exceeds the cool roof requirements of ENERGY STAR®, California's Building Energy Code (Title 24), Green Globes® and LEED®.

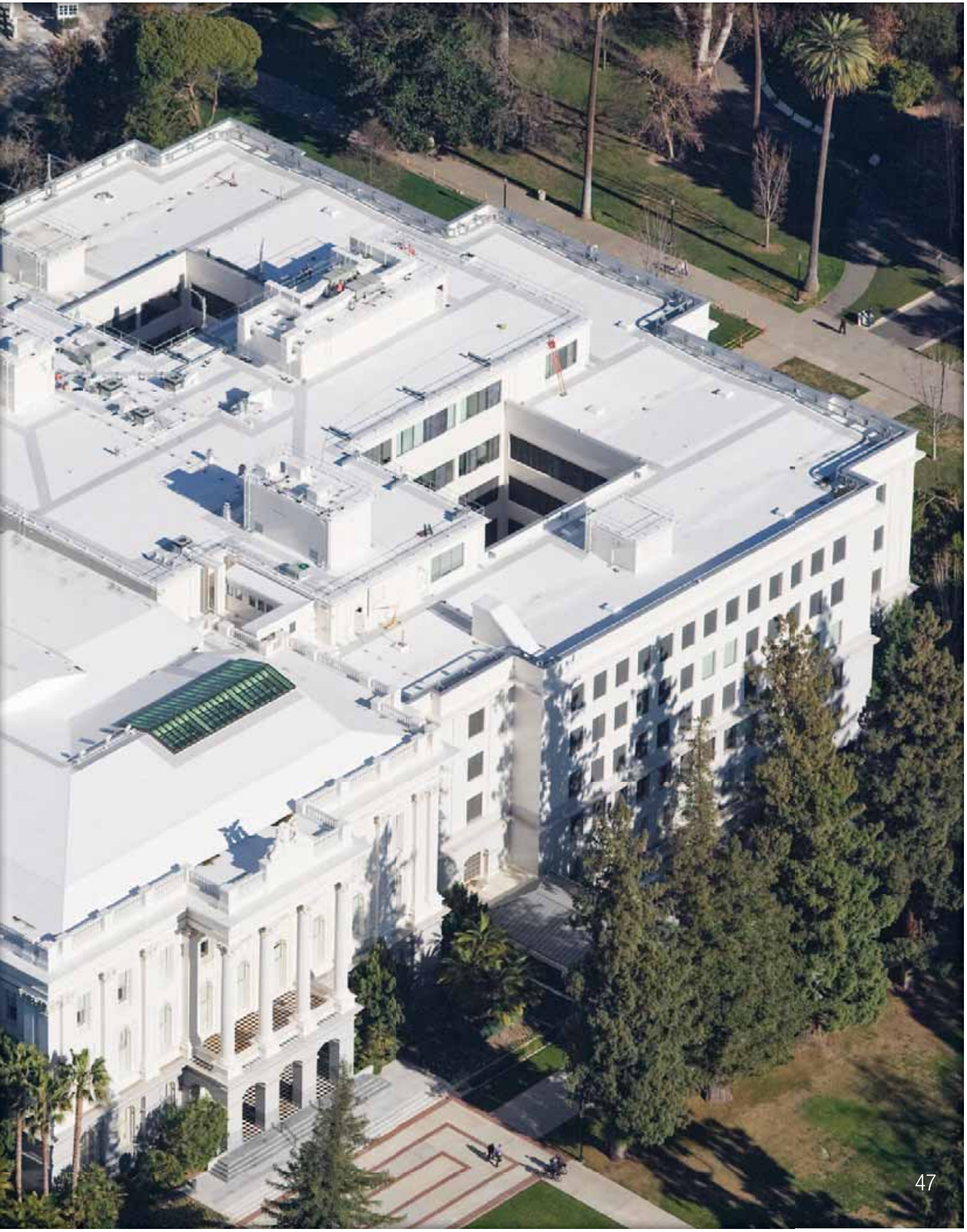
The EnergySmart Roof has demonstrated that it reliably safeguards a building and its contents, improves occupant comfort, increases a roof's longevity, and can save the building owner money.

California State House
Sacramento, California

The California State Capitol building needed a new roof in 2009 and quite clearly the system had to meet the state's rigorous Title 24 energy code. Sika Sarnafil's EnergySmart Roof was the choice in a landslide.

The performance of the EnergySmart Roof has been confirmed in independent research, including a two-year study commissioned by the U.S. DOE and EPA that involved a 100,000 square foot retail facility in Texas. The EnergySmart Roof reduced peak summertime air-conditioning demand by 14 percent at the site when compared to an EPDM system and led to significant savings.





Product Innovation
Décor Roof Systems

Looks Like Metal. Lasts Like Sarnafil.

Designers and architects acquired additional aesthetic freedom in 1999 with the introduction of the Décor Roof System.

The Décor Roof System features profiles that are heat-welded to a vinyl membrane to realistically simulate the appearance of a standing seam metal roof—and yet the system retains the long-term watertight security of a heat-weldable thermoplastic. Décor provides exceptional design flexibility for both new and re-roof applications, regardless of slope, shape, or complexity.

The system has enabled building owners to enjoy the appearance of metal, but without the cost or performance issues. Unlike metal roofs, where penetrations and detailing are a common source of leakage, Décor's hot-air welded flashings remain watertight.

Décor profiles have the same product formulation as the Sarnafil membrane, ensuring that colors match initially and over time. These profiles are permanently fused to the Sarnafil membrane, and a felt backing on the membrane helps to achieve a smoother appearance over common roofing substrates.

Systems are available in seven standard colors, including three that meet cool roof requirements, in addition to a wide range of custom colors.

THE TEST OF TIME

Robbins Hall

Install Date: 1981
UC Davis—Davis, CA
Membrane: Sarnafil G410

"I see other roofing systems that only last 15 or 18 years – but the Sarnafil roof on Robbins Hall has lasted almost twice as long as that."

— **Sean Snyder** *Project Manager,* UC Davis

Sean Snyder, Project Manager at the University of California at Davis, works with 1,000 buildings on the college campus. "We have almost every single type of roofing system installed here – it is like a roofing laboratory," he explained. "I can see which systems work and which don't."

One roof that has been working well – for more than 31 years – is the 19,000 square foot Sarnafil G410 adhered membrane on Robbins Hall, which houses laboratories. "This roof has completely exceeded my expectations!" Snyder stated. "I see other roofing systems that only last 15 or 18 years – but the Sarnafil roof on Robbins Hall has lasted almost twice as long as that. In fact, it is performing as well as some of the other new roofs on campus."

Snyder added that there are about 15 Sika Sarnafil roofs on campus, and they are all performing well. "When the Housing Department is doing a reroofing project and comes to me, they know I'm going to tell them to use a Sika Sarnafil roofing system," he said. "It is the de facto campus standard. It's a very good product. Whatever they are doing, they should keep doing it."


START
START
SARNAFIL MEMBRANES LONGEST RECORD IN SUSTAINABLE ROOFING SYSTEMS
#1
2000
Sarnafil membranes rated # 1 by Simpson Gumpertz & Heger in study of 15 thermoplastic roof membranes.
2000 AVERAGE COST OF A GALLON OF GAS $1.26
SURVIVOR
2000 TV REALITY SHOW "SURVIVOR" BECOMES A RUNAWAY HIT ON CBS
Sarnafil membrane in 10 foot widths introduced.
10ft.
2001
2001 APPLE COMPUTER INTRODUCES THE IPOD
iPod.

Company Milestones

SGH Rates Sarnafil #1 (and #2) in the Field.

An in-depth analysis of thermoplastic roofing products in 1999 compared the physical properties and performance capabilities of fifteen commercially available PVC and TPO thermoplastic membranes.

The testing and performance rating was conducted by Simpson Gumpertz & Heger (SGH), and the results confirmed that the performance of Sika Sarnafil roofing membranes was superior to the other commercially available heat-welded products. Of the fifteen thermoplastic membranes analyzed, the Sarnafil G410 and S327 PVC membranes were rated number one and number two, respectively.

BBA Cites Membrane Durability, Longevity.

An independent analysis of Sarnafil membranes in 2008 by a leading European expert on building products suggests that Sarnafil membranes should have a service life of more than 35 years.

The British Board of Agrément (BBA) conducts laboratory testing, factory inspections, and site visits and is the United Kingdom's leading authority on construction products. BBA Certificates are recognized throughout the United Kingdom and beyond.

The BBA conducted an independent analysis of Sarnafil membranes based on real world performance and issued a certificate in 2008 stating…

"All available evidence suggests that the durability of Sarnafil membranes, when used in accordance with the relevant BBA certificates, should have a life in excess of 35 years."[1]

[1] British Board of Agrément Assessment Report No. 08/4532, 2008.

Dallas Fort Worth International Airport

Dallas, TX

Adhered Sarnafil roofing systems, like the ones installed at the Dallas Fort Worth Airport in Dallas in 2005, attach securely over uniquely shaped roofs to combat mechanical stress from wind uplift and eliminate sheet flutter and "billowing."

Sika Sarnafil was the first single-ply company to develop a membrane specifically for adhered roofing applications. The Sarnafil G410 membrane has a non-woven firberglass mat for superior dimensional stability and a low coefficient of thermal expansion and contraction – these factors are critical to the service life of an adhered roof. The G410 has the best dimensional stability of any single-ply membrane, based on testing to ASTM D1204.

Complementary products from Sika Sarnafil include both solvent and water-based adhesives. In addition to performance attributes, adhered roofing systems are known for their aesthetically appealing appearance.

Olympic Gold

Olympic Speed Skating Oval

Kearns, Utah

The finest athletes in the universe can be found at the Olympic Games, competing in some of the best arenas in the world.

The Games are a world stage like no other, and host nations seek to establish venues for these highly anticipated events that are medal-worthy, as well.

Sarnafil roofing and waterproofing systems have had a presence at the Games for decades and were once again in place at the 2012 Olympic Games in London. Through the years, Sarnafil systems have been called upon to protect a wide variety of locations at the Games — ranging from bobsled runs to large, multi-purpose stadiums and arenas.

Superior performance abounds at the Olympic Games. In the pool, on the court, and up on the roof.


LT LAKE 2002

Scotiabank Saddledome
1988 Winter Olympics, Calgary, Canada
System: Sarnafil Adhered

Sika Sarnafil roofing solutions are compliant with U.S. DOD Unified Facilities Criteria and U.S. Postal Service Building Design Standards.

Sarnafil, Inc. is purchased by Sika AG of Baar, Switzerland. Sika is a globally recognized construction industry leader.

Project Highlight
Rogers Centre

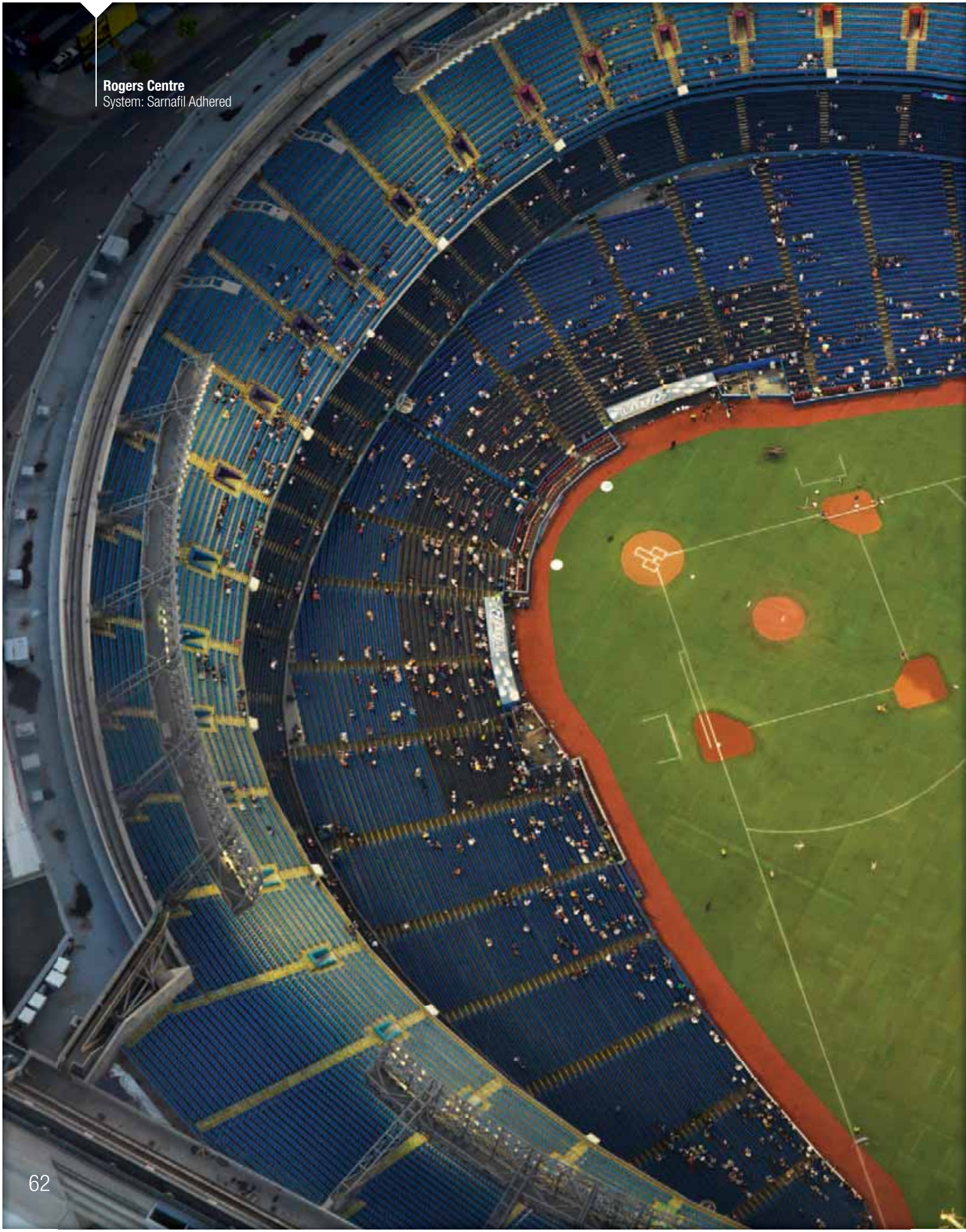
The world's first functional, fully retractable stadium roof was constructed in the mid-1980's atop a sports and entertainment venue then known as the Skydome, and this magnificent structure relied on more than 350,000 square feet of Sarnafil membrane to protect the enclosure.

This colossus, completed in 1989 and now the Rogers Centre, was a significant technological marvel and universally lauded as a breathtaking achievement. Today, nearly 25 years later, it is still considered one of Canada's architectural wonders—and it still sports the original Sarnafil roofing membrane.

Many of the best-known sports and entertainment arenas across North America rely on Sarnafil roofing and waterproofing systems. These stadiums host professional sports teams in hockey, basketball, football and baseball, in addition to many teams at the collegiate level.

AT&T Park in San Francisco, the Toyota Center in Houston, the Saddledome in Calgary, the Staples Center in Los Angeles, Barclays Center in Brooklyn, Energy Solutions Arena in Salt Lake City, TD Garden in Boston, the United Center in Chicago, American Airlines Center in Dallas, Citizens Bank Park in Philadelphia, the Edward Jones Dome in St. Louis, Miller Park in Milwaukee… the list goes on and on.

Sarnafil systems deliver a championship performance in all seasons.



Rogers Centre
System: Sarnafil Adhered

The Air We Breathe

In most geographic areas, an air temperature increase translates into a decrease in air quality. Higher temperatures mean a greater need for air conditioning and increased energy use. As power plants burn more fossil fuels, they generate additional carbon emissions. Smog results from the photochemical reactions of pollutants in the air, and these reactions are more likely to intensify at higher temperatures.

Highly reflective roofs help to lower temperatures and lessen this condition. Reflective Sarnafil membranes help to alleviate the oppressive urban air temperatures and slow the reaction of smog-forming pollutants. Vegetated green roofs with Sarnafil waterproofing membranes filter the air and improve air quality, absorbing and converting carbon dioxide to oxygen.


START
START
2006
Metal Retrofit System is introduced to cover failing metal roof systems with watertight, economical and long-lasting vinyl membrane.
Introduction of Sarnafil G476 self adhered waterproofing membrane.
2007
SARNAFIL, INC. CHANGES ITS NAME TO SIKA SARNAFIL
2006 HEATWAVE AFFECTS US AND EUROPE IN JULY
2007 SIKA SARNAFIL RECEIVES 3RD CONSECUTIVE ARCHITECT CHOICE FOR EXCELLENCE AWARD
SARNAFIL MEMBRANES PROTECT DOZENS OF COLLEGIATE AND PRO SPORTS STADIUMS

Project Highlight
Cowboys Stadium

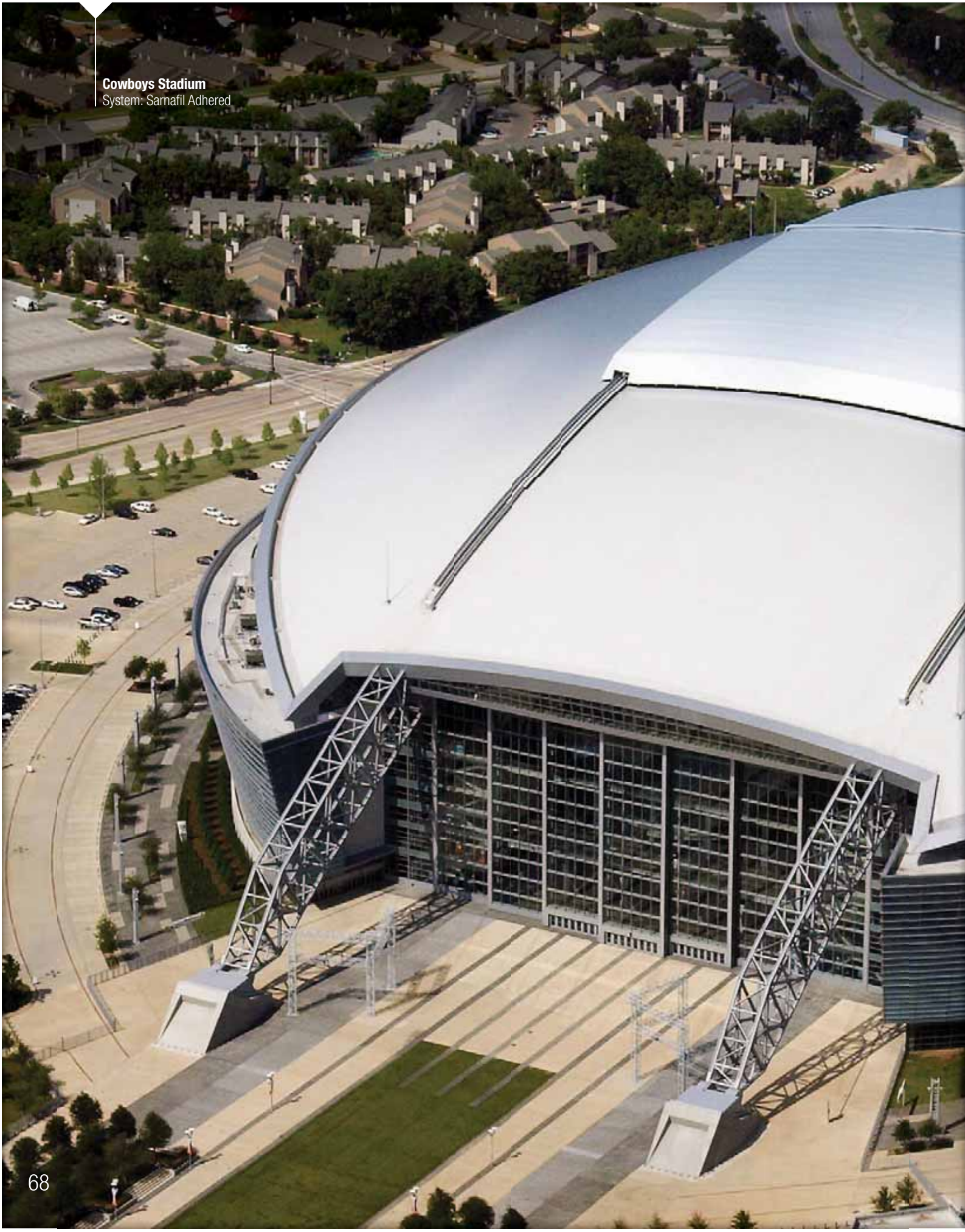
In Texas, bigger is better, leading some to call Cowboys Stadium "The Eighth Wonder of the World."

Cowboys Stadium was constructed in Arlington, Texas, in 2009 and is the largest National Football League site ever built, at nearly three million square feet and with capacity for 100,000 people. The stadium also features a retractable roof that is the largest of its type in the world.

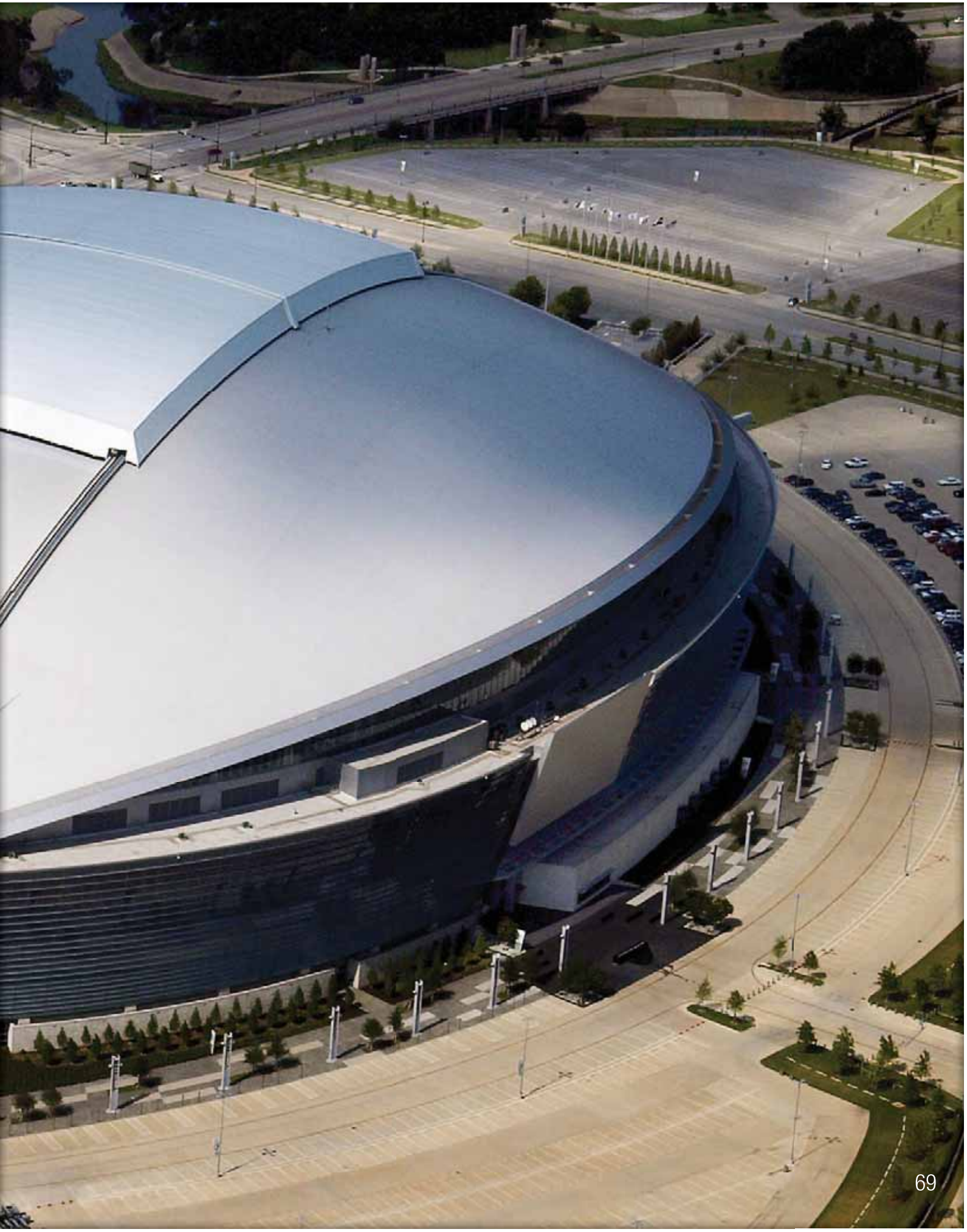
Atop this gargantuan facility, which also features the world's largest video scoreboard, more than 660,000 square feet of Sarnafil membrane covers the stadium's massive fixed dome.

Kevin Taylor, Senior Vice President at the architectural firm HKS, Inc. of Dallas, said there were a lot of "firsts" with the stadium, so special care was taken when selecting the right materials for the different areas of the building, including its unique roof. "We knew a single-ply system would give us the flexibility and monolithic appearance we wanted, and that Sika Sarnafil has one of the most durable single-ply systems out there," he explained. "We've used Sarnafil roofs on several other projects and we are very familiar with the quality of these systems."

Mark Hickman, Assistant Project Manager for Manhattan Construction Company of Dallas, the general contractors of the project, said, "Sika Sarnafil is viewed as a superior roofing system, and the owner felt this was the best product for the job."



Cowboys Stadium
System: Sarnafil Adhered

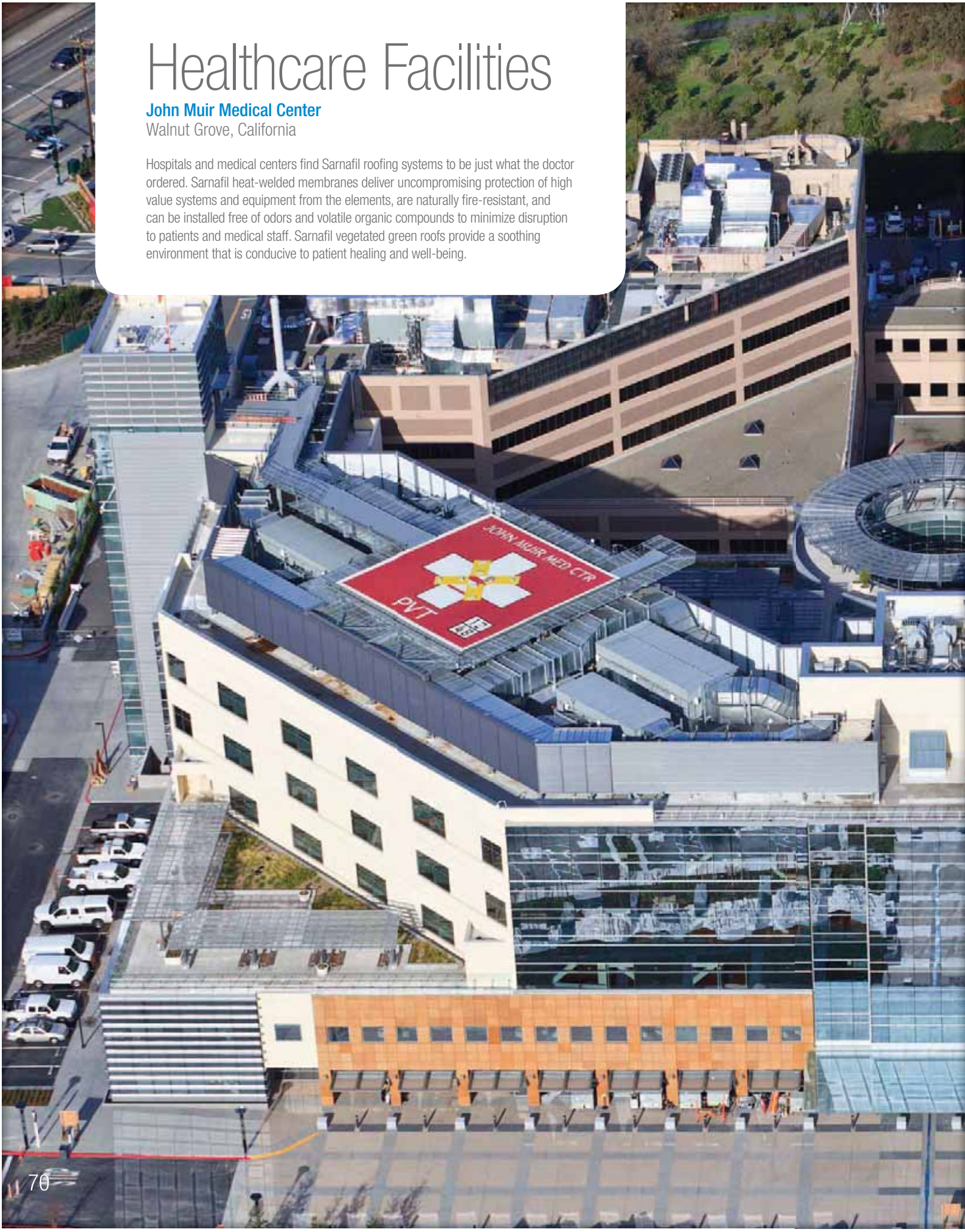


Healthcare Facilities

John Muir Medical Center

Walnut Grove, California

Hospitals and medical centers find Sarnafil roofing systems to be just what the doctor ordered. Sarnafil heat-welded membranes deliver uncompromising protection of high value systems and equipment from the elements, are naturally fire-resistant, and can be installed free of odors and volatile organic compounds to minimize disruption to patients and medical staff. Sarnafil vegetated green roofs provide a soothing environment that is conducive to patient healing and well-being.




START
START
2008
First of its kind recycling program for older PVC roofing membrane incentivizes roofing contractors and enables building owners to help minimize waste burden impacting landfills nationwide.
2009
RhinoBond® Roofing System introduced to the market, an alternative attachment system for Sarnafil membranes that enhances wind uplift resistance while streamlining installation process.
2009
SIKA SARNAFIL RECEIVES ISO 14001:RC-14001 CERTIFICATION
2009
MASSACHUSETTS STATE PROCLAMATION RECOGNIZES SIKA SARNAFIL ROOF RECYCLING PROGRAM
2008
AVERAGE COST OF A NEW CAR $27,958.00
2010
WARRANTIES FOR SELECTED SARNAFIL SYSTEMS EXTENDED TO 25 AND 30 YEARS

Industry Innovation Roof Recycling Program

In 2008, Sika Sarnafil introduced a first-of-its-kind recycling program for commercial vinyl roofing membranes. This program has successfully reprocessed more than 25 million pounds of vinyl membrane in just the last decade into raw material suitable for use in the manufacture of new membrane products.

The program significantly reduces the burden on landfills and conserves natural resources. Waste is reduced at each step in the product life cycle. Trimmings generated during manufacturing operations and membrane trimmings collected by contractors installing new roofs are recycled into new product, as are millions of square feet of used vinyl membrane torn off by contractors involved in reroofing activities.

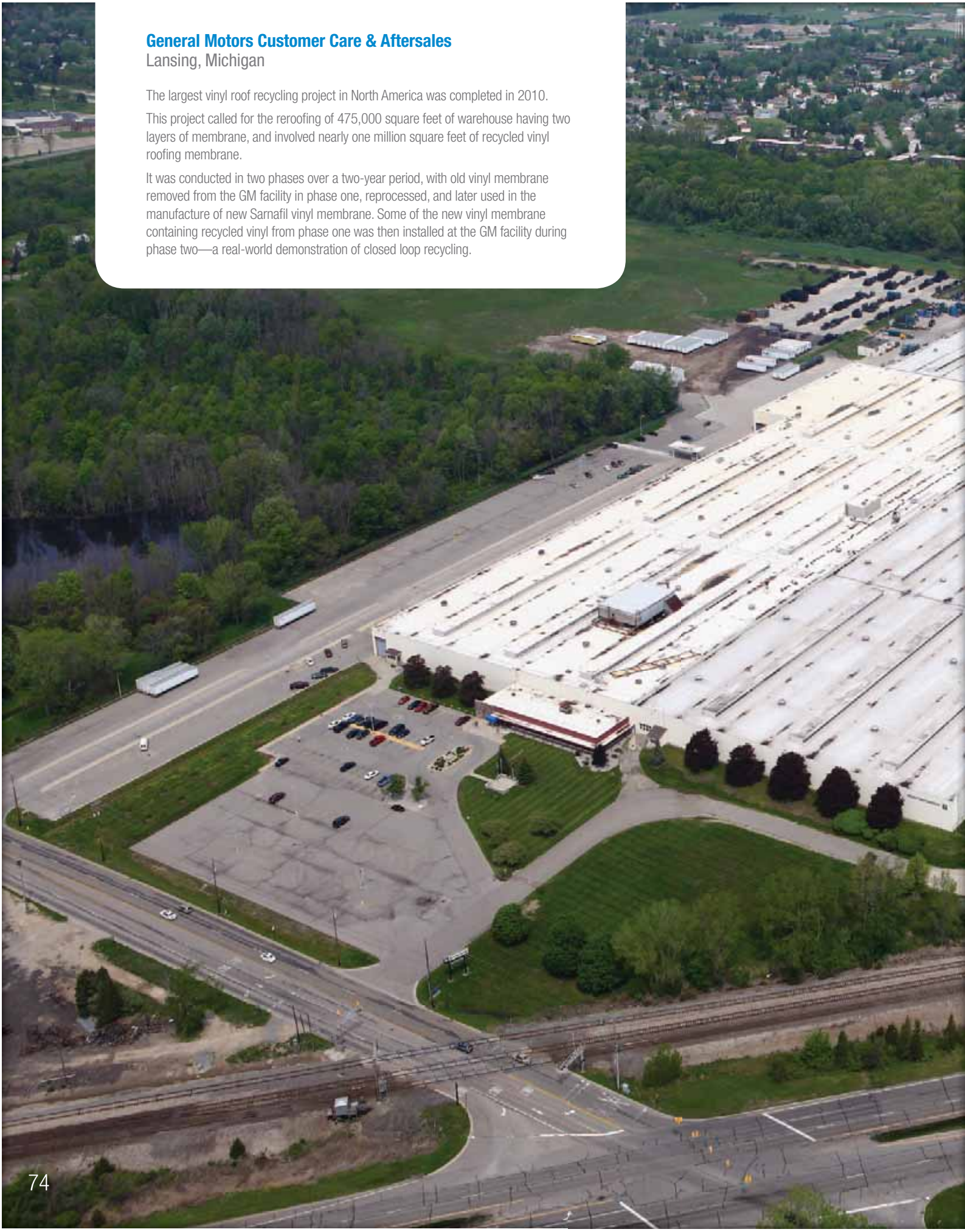
Waste reduction, of course, starts with durable products that stand the test of time. Long-lasting roofs need to be removed and replaced less frequently, providing lower life cycle costs and reducing the amount of waste destined for landfills. Sarnafil membranes perform after decades of use in a wide range of climates.

General Motors Customer Care & Aftersales
Lansing, Michigan

The largest vinyl roof recycling project in North America was completed in 2010.

This project called for the reroofing of 475,000 square feet of warehouse having two layers of membrane, and involved nearly one million square feet of recycled vinyl roofing membrane.

It was conducted in two phases over a two-year period, with old vinyl membrane removed from the GM facility in phase one, reprocessed, and later used in the manufacture of new Sarnafil vinyl membrane. Some of the new vinyl membrane containing recycled vinyl from phase one was then installed at the GM facility during phase two—a real-world demonstration of closed loop recycling.



THE TEST OF TIME

North Thurston HS

Install Date: 1983
North Thurston High School—Lacey, Washington
Membrane: Sarnafil G410

"The Sarnafil roof is doing very well and I'm happy with it. It has endured the extremes of typical Pacific Northwest weather without a problem."

— **Mike Laverty** *Director of Construction and Design Department,* North Thurston High School

The 87,831 square foot Sarnafil roof on this high school has been demonstrating excellence since it was installed in 1983 and is still performing well. This is also true for the 18,524 square foot Sarnafil roof on the nearby Auditorium, which was installed in 1994.

"Both roofs are doing great, and the high school one in particular has lasted longer than expected," said Dean Martinolich, Program Administrator at North Thurston Public Schools. "In fact, at least 85 percent of the roofs on the high school campus are Sarnafil roofs. That's because we've been very pleased with them – we like their longevity and the way they perform better than some other single-ply membranes we've installed."

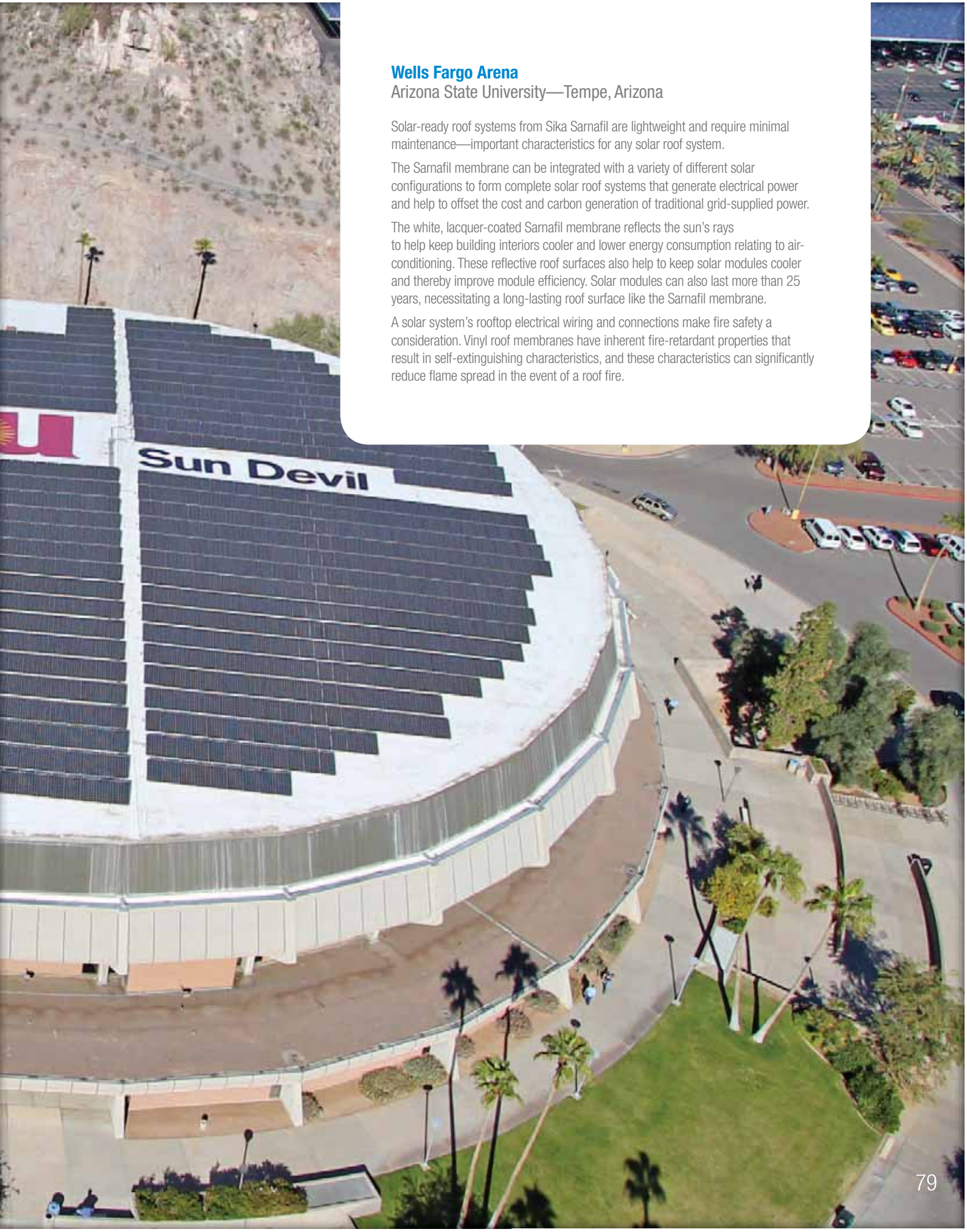
Martinolich also pointed out that Sarnafil roofs have been installed on many buildings district-wide, including two elementary schools, a second high school and on parts of the district's administrative center. "All of these roofs are doing well, and we like how Sika Sarnafil has approved installers," he remarked. "I feel we get a higher quality group of contractors bidding on the Sarnafil jobs."

Mike Laverty, Director of Construction and Design Department at North Thurston High School, has been overseeing the high school Sarnafil roof for 14 years with very few issues. "The Sarnafil roof is doing very well and I'm happy with it," he stated. He added that it "has endured the extremes of typical Pacific Northwest weather without a problem" such as the 51 inches of rain Lacey averages per year, which is 14 inches more than the U.S. average. Laverty also mentioned that the Sarnafil roof has been easy to maintain.

The North Thurston school district is hoping to modernize the high school in the near future, and both Laverty and Martinolich hope that if the roof is replaced, it is with another Sarnafil roof. "We are always comparing Sarnafil roofs to other projects, with an eye on costs and results," Laverty said. "I hope we continue to consider Sarnafil for our buildings."

"I like the people who represent Sarnafil and we have a positive history with their roofs," added Martinolich. "I would certainly go with another Sarnafil roof again."


Power
ASU
WELLS FARGO ARENA



Wells Fargo Arena

Arizona State University—Tempe, Arizona

Solar-ready roof systems from Sika Sarnafil are lightweight and require minimal maintenance—important characteristics for any solar roof system.

The Sarnafil membrane can be integrated with a variety of different solar configurations to form complete solar roof systems that generate electrical power and help to offset the cost and carbon generation of traditional grid-supplied power.

The white, lacquer-coated Sarnafil membrane reflects the sun's rays to help keep building interiors cooler and lower energy consumption relating to air-conditioning. These reflective roof surfaces also help to keep solar modules cooler and thereby improve module efficiency. Solar modules can also last more than 25 years, necessitating a long-lasting roof surface like the Sarnafil membrane.

A solar system's rooftop electrical wiring and connections make fire safety a consideration. Vinyl roof membranes have inherent fire-retardant properties that result in self-extinguishing characteristics, and these characteristics can significantly reduce flame spread in the event of a roof fire.

Federal Facilities

NASA Sustainability Base

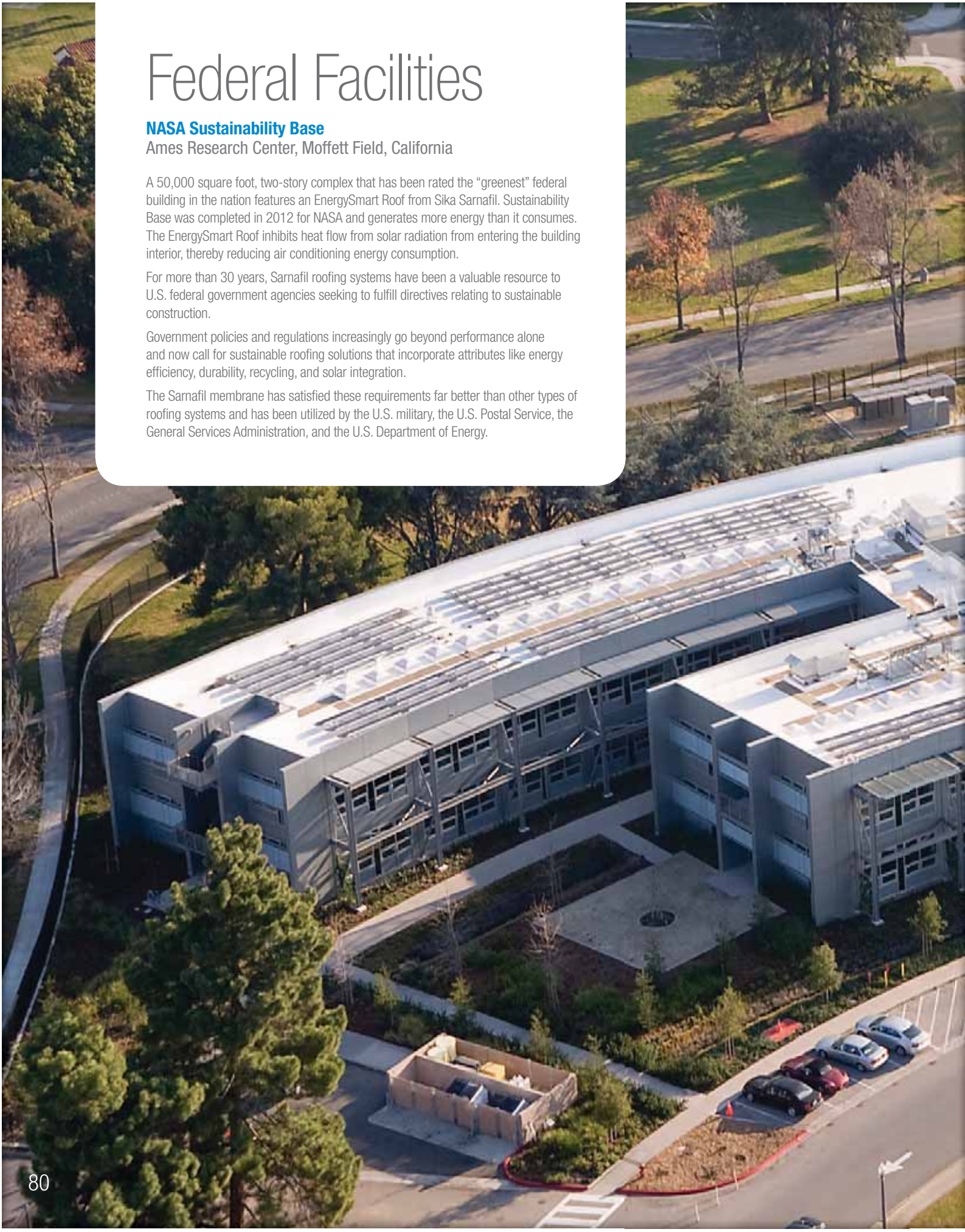
Ames Research Center, Moffett Field, California

A 50,000 square foot, two-story complex that has been rated the “greenest” federal building in the nation features an EnergySmart Roof from Sika Sarnafil. Sustainability Base was completed in 2012 for NASA and generates more energy than it consumes. The EnergySmart Roof inhibits heat flow from solar radiation from entering the building interior, thereby reducing air conditioning energy consumption.

For more than 30 years, Sarnafil roofing systems have been a valuable resource to U.S. federal government agencies seeking to fulfill directives relating to sustainable construction.

Government policies and regulations increasingly go beyond performance alone and now call for sustainable roofing solutions that incorporate attributes like energy efficiency, durability, recycling, and solar integration.

The Sarnafil membrane has satisfied these requirements far better than other types of roofing systems and has been utilized by the U.S. military, the U.S. Postal Service, the General Services Administration, and the U.S. Department of Energy.



Project Highlight
The Ascent Condominiums

The Ascent at Roebling's Bridge luxury condominium complex in Covington, Kentucky, is eye-catching not only because of its crescent shape, but also because of the striped design of the concrete and glass curtain-walled structure, which continues up and over the sloping roof.

Finding a roofing system that would match the colorful bands on this 22-story, steep-sloped structure was not easy. The solution proved to be a Sarnafil adhered membrane in custom colored limestone and blue.

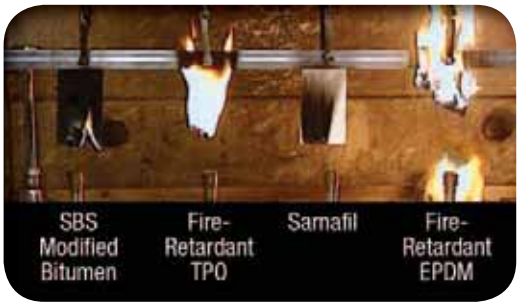
"We see roofs as primary features of buildings and pay great attention to the integration of the roof, as part of the building design," said Yama Karim, Principal of the project at the architectural firm Studio Daniel Libeskind in New York, NY. "Our goal in selecting a roofing system was to preserve the integrity of the design and have the stripes continue up over the façade and back down," Karim continued. "There were several ways we could do that with a metal or pre-cast concrete roof, but problems arose with both approaches."

Scott Kyle, architect and Senior Associate of Development/ Mixed Use at GBBN Architects, Inc. of Cincinnati, the architect of record, said that cost and other factors also played a role in the roof system selection. "The primary criteria were durability, low maintenance and adaptable detailing methods," he stated. "We also wanted a system with color selections and color processes that would readily match the façade colors, as well as not bleed." His company recommended Sarnafil.

"I was confident that Sika Sarnafil would be easy to work with in detailing how the two different colored membranes come together and would be able to satisfy everyone's need," Kyle explained. "That was my 'gut' feeling, which was based on what I'd heard and past experience with Sika Sarnafil. They are a quality manufacturer and in the end, they lived up to my gut feeling."

"Vandals started several fires on the roof, including dumping gasoline and lighting it. Your product performed very well in resisting flame spread. The roof fires were only discovered when a worker went on the roof the next day. Sarnafil performs well … even in ways that I never expected to experience."

— **Bill Hamlin** *Senior Project Architect*, Design West Architects, P.A., Meridian, Idaho



Industry Innovation Fire Resistant Vinyl Roofing

In a laboratory experiment, a flame source was applied for 15 seconds to the underside of SBS modified bitumen, fire retardant TPO, Sarnafil, and fire retardant EPDM. When the flame source was removed, the Sarnafil membrane stopped burning, while the alternative membranes continued to support combustion.

Vinyl roof membrane has inherent fire-retardant properties that provide self-extinguishing characteristics and can significantly reduce flame spread in the event of a roof fire. Vinyl outperforms all other single-ply roofing materials when it comes to fire resistance.

Sarnafil roof membranes have UL Class A fire ratings at up to four times the slope of TPO membranes over polyisocyanurate insulation, the most commonly used insulation on low-slope, non-residential buildings. Spread-of-flame fire tests conducted at UL confirm that EPDM and TPO membranes spread up to twice as far as Sarnafil membranes on like surfaces and slopes. Further, EPDM and TPO membranes will continue to burn after the flame source is removed, while Sarnafil membranes self-extinguish.


START
START
2011
Introduction of Sikacoat roof coating, which economically extends life of existing roof systems until replacement is necessary.
2012
High performance, cost effective adhered roofing system called EcoBond Roof utilizes Sarnacol 2121 adhesive.
2011 SOCIETY OF PLASTICS ENGINEERS PRESENT RECYCLING AWARD TO SIKA SARNAFIL
BROOKS Pharmacy
2010 UL ENVIRONMENT CERTIFIES RECYCLED CONTENT IN SARNAFIL MEMBRANES
2012 AVERAGE COST OF A NEW HOUSE $227,000 USD
HOW DOES YOUR ROOF RATE?

Making a Difference

The innovative spirit and skills that led to the Sarnafil membrane are alive today at Sika Sarnafil. The company fully expects the next 50 years to be even more productive, with the Sarnafil membrane having an even greater role in safeguarding commercial facilities while minimizing the impact on the environment.

Introduction of the Sarnafil membrane in 1962 brought the world its first fabric-reinforced thermoplastic membrane—a long-lasting, high performance roofing and waterproofing system that could truly be depended upon to protect commercial structures and their contents from the elements.

Advances relating to the Sarnafil membrane continue to be pioneered by Sika Sarnafil and have ranged from custom colors to self-adhered membranes, and from low-VOC adhesives to acrylic coatings and membranes with enhanced reflectivity.

Sustainable construction practices, more than ever before, drive the company's development efforts and will no doubt accelerate in the years to come. The Sarnafil membrane has represented high performance and a positive ROI, while minimizing impact on the environment and protecting natural resources.

More than 15 billion square feet of Sarnafil membrane has been used to protect schools, libraries, hospitals, commercial and government buildings, and other high value institutions around the world.

Many would characterize the Sarnafil membrane's 50-year history as distinguished. Sika Sarnafil views it as a beginning.

Recent Achievements

► 2000

Sarnafil membranes are rated #1 and #2 in study conducted by independent building consultant Simpson Gumpertz & Heger based on 15 most popular thermoplastic roof membranes.

Sarnafil, Inc., presented Vendor Award of Excellence by retailer Target for superior business practices and exceptional commitment to Target's success.

Independent Lawrence Berkeley National Laboratory study commissioned by U.S. DOE and U.S. EPA finds Sarnafil EnergySmart Roof reduces peak summertime air-conditioning demand at 100,000 sq. ft. Texas facility by 14 percent when compared to black rubber EPDM roof.

► 2001

Roofing membrane samples from 44 roofs in North America and Europe are collected by Sarnafil, Inc., and document durability of the company's vinyl roofing membranes in exposed applications. Average age of roofs tested is more than 20 years, with oldest 34 years in age.

► 2002

Recipient of U.S. DOE Rebuild America Energy Champion Award for promoting energy-smart technologies and practices.

► 2003

Buildings Magazine presents Sarnafil, Inc., with a Top 100 Products Award for the solar roofing system.

► 2004

Buildings Magazine presents Sarnafil, Inc., with a Top 100 Products Award for the Décor Roof System Battan.

NRCA presents Exhibitor Excellence Award for most innovative new product, service or program—solar roofing system.

Recipient of U.S. DOE Rebuild America Premier Business Partner Award for promoting energy-smart technologies and practices.

Oaklyn Branch Library with Sarnafil vegetated roof in Evansville, IN, is winner of Green Roofs Award for Excellence from Green Roofs for Healthy Cities.

Life Expression Wellness Center with Sarnafil vegetated green roof in Sugarloaf, PA, is winner of the Green Roofs Award for Excellence from Green Roofs for Healthy Cities.

► 2005

Awarded Environmental Merit Award from U.S. EPA for exceptional work and commitment to the environment.

Recipient for second consecutive year of U.S. DOE Rebuild America Premier Business Partner Award for promoting energy-smart technologies and practices.

Sarnafil receives highest eco-efficiency rating in analysis of low slope roofing system membranes conducted by independent Carbotech AG of Basel, Switzerland. Eco-efficiency is ratio of a roofing system's total life cycle costs as compared to total life cycle environmental impacts.

Architect's Choice for Excellence (ACE) award winner for thermal and moisture protection, membrane roofing.

► 2006

For second consecutive year, Architect's Choice for Excellence (ACE) award winner for thermal and moisture protection, membrane roofing.

► 2007

For third consecutive year, Architect's Choice for Excellence (ACE) award winner for thermal and moisture protection, membrane roofing.

► 2008

British Board of Agrément (BBA) conducts independent analysis of Sarnafil roof membranes and issues certificate indicating "All available evidence suggests that the durability of Sarnafil membranes, when used in accordance with the relevant BBA certificates, should have a life in excess of 35 years."

School Planning & Management and College Planning & Management magazines award Sika Sarnafil the Green Design Award for Outstanding Architecture & Design in Education.

► 2009

Massachusetts Executive Office of Energy and Environmental Affairs presents Sika Sarnafil with proclamation recognizing industry-leading recycling program for vinyl roofing membrane.

Architect Magazine presents R&D Award to Sika Sarnafil for Rhinobond Roofing System, one of only three companies in U.S. selected for recognition.

Sika Sarnafil receives ISO 14001 / RC 14001 Certification, meeting strict standards established by two leading independent organizations relating to environment, health and safety, and security.

Center for Environmental Innovation in Roofing (CEIR) announces Excellence in Design Awards and four installations featuring Sarnafil membranes are named winners.

► 2010

Sika Sarnafil the first commercial roofing company in the U.S. to receive certification from UL Environment relating to the recycled content of its roofing membrane products.

Target Center featuring Sarnafil vegetated green roof in Minneapolis, MN, named winning project in 2010 Award of Excellence competition sponsored by Green Roofs for Healthy Cities, North America.

► 2011

Sika Sarnafil receives the Plastics Recycling Technologies and Applications Award from the Society of Plastics Engineers in recognition of the company's vinyl roof membrane recycling program.

NASA's Ames Research Center in California's Silicon Valley is awarded the federal government's green building of the year designation. The facility features the latest advances in sustainable technology and features a solar-ready Sarnafil roof system.

► 2012

U.S. Postal Service (USPS) Morgan Processing and Distribution Center in New York City features vegetated Sarnafil green roof and is named a winner of 2011 RoofPoint™ Excellence in Design Award. Program recognizes commercial roof systems that promote long-term energy and environmental benefits.

The Company We Keep

A random sampling of the markets and customers serviced by Sika Sarnafil

SCHOOLS / UNIVERSITIES

Amherst College, MA
Dade County Schools, FL
Des Moines Public Schools, IA
Duke University, NC
Illinois State University, IL
Ithaca College, NY
Los Angeles School District, CA
Louisiana State University, LA
Plano Schools, TX
Princeton University, NJ
Purdue University, IN
Syracuse University, NY
UCLA, CA
University of Kansas, KS
University of Minnesota, MN
University of Wyoming, WY

RESTAURANTS

Applebee's
Big Boy Restaurant
Burger King
Dairy Queen
Fuddruckers
Hardee's
Kentucky Fried Chicken
McDonald's
Olive Garden
Outback Steakhouse
Starbucks
Taco Bell
T.G.I. Friday's
Wendy's

FOOD & BEVERAGE

Anheuser Busch
Coca-Cola
General Foods
General Mills
Heinz USA
Hershey Foods
Hostess - Frito/Lay
J.M. Smucker
Kraft Foods
Land-O-Lakes
McCain Foods / Del Monte Foods
Morton Salt
Nabisco Foods
Nestle
Sun-Maid Growers

COMPUTER / ELECTRONICS

Advanced Micro Devices
Bose
Compaq
Deltronics
GTE
Hewlett Packard
IBM
Intel Corp.
Level 3 Communications
Microsoft
Sony
Unisys Corporation

MANUFACTURING

Avery – Dennison
Eli Lilly
G.E. Aircraft Engines
General Motors
Georgia Pacific Corporation
Gillette
Honda
Kimberly Clark
Motorola
Parker Brothers
Parker Hannifin
Procter & Gamble
Raytheon
Rubbermaid
Weyerhaeuser Company
Whirlpool

STADIUMS / ARENAS

American Airlines Center, TX
AT&T Park, CA
Barclays Center, NY
Citizens Bank Park, PA
Dalhousie Univ. Arena, Nova Scotia
Edward Jones Dome, MO
Energy Solutions Arena, UT
Honda Center, CA
Maple Leaf Gardens, Toronto
Miller Park, WI
RBC Center, NC
St. Pete Times Forum, FL
Staples Center, CA
TD Garden, MA
United Center, IL

RETAIL

7-Eleven
Bank of America
Best Buy
Costco
K-Mart
Macy's
Old Navy
Publix Super Markets
Safeway
Saks Fifth Avenue
Simon Properties
Target
Toys R Us
Wal-Mart
Walgreens

HEALTHCARE

Brigham & Women's Hospital, MA
Children's Hospital, Los Angeles, CA
Crosby Memorial Hospital, MS
Dixie Regional Medical Center, UT
Duke Univ. Albert Eye Research, NC
Franklin County Medical Center, ID
Harrisburg Hospital, PA
Henry Ford Health Systems, MI
Johns Hopkins, MD
Ocala Regional Medical Center, FL
Phoenix Baptist Hospital, AZ
Providence Centralia Hospital, WA
Saint Joseph's Hospital, NY
Scott & White Hospitals, TX
Sentera Health Systems, VA

AIRPORTS / AIR TRANSPORTATION

ATCT-Houston Int'l Airport
Boston Logan International Airport
Calgary International Airport
Fort Wayne Airport
JFK Airport
Los Angeles Airport
McCarran Airport
Miami International Airport
Midway Airport
Minneapolis International Airport
O'Hare Airport
Salt Lake Airport
Seattle Airport
Toronto Pearson Airport
West Palm Beach Airport

ENERGY / POWER / COMMUNICATIONS

AT&T
Central Maine Power
General Electric
Gulf Power
Iowa Electric Light & Power
Johnson Controls
Lucent Technologies
Niagara Mohawk Power
Northwestern Bell Telephone
Seabrook Nuclear Station
Southern California Edison
Texas Utilities & Electrical
Utah Power & Light
Westinghouse Electric
Wisconsin Electric Power

FEDERAL GOVERNMENT

Army Corps of Engineers
Environmental Protection Agency
Federal Aviation Administration
Federal Bureau of Prisons
General Services Administration
Jet Propulsion Laboratory
Lawrence Berkeley National Lab
NASA
National Park Service
United States Postal Service
US Air Force
US Army
US Coast Guard
US Navy
US Treasury

Product Source Guide

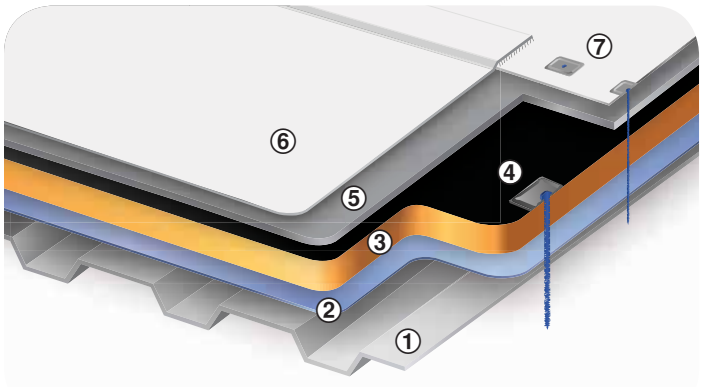
EnergySmart Roof.®

High performance system reduces building operating costs while providing maximum protection against the elements.

The EnergySmart Roof is a weather-tight, single-ply roof system that can reduce the energy needed to maintain comfort in air-conditioned buildings by decreasing heat flow through the building roof.

This system has a range of demonstrated capabilities no other PVC roofing system can match. The EnergySmart Roof can reduce a building's energy requirements, lower maintenance costs, and minimize the urban heat island effect. Systems contain UL-certified recycled content and have a documented history of longevity and high performance.

The EnergySmart Roof membrane has a highly reflective, lacquer-coated surface that exceeds the cool roof requirements of ENERGY STAR, California's Building Energy Code (Title 24), Green Globes and LEED.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Coverboard
⑥ Sarnafil S Membrane
⑦ Membrane Fastener

ENERGYSMART ROOF	
Sarnafil Membrane	Sarnafil G410 – Fiberglass reinforced with feltback option, for adhered applications Sarnafil S327 – Polyester reinforced with feltback option, for mechanically attached applications
Sika Sarnafil Adhesives	Sarnacol 2121 (water-based, low VOC) Sarnacol 2170 (solvent-based) Sarnacol 2170VC (solvent-based, VOC compliant)
Mechanical Attachment Systems	Sarnafast Sarnafil Express Sarnafil Engineered RhinoBond
System Components	Sarnatherm Insulation Sarnavap Vapor Retarders Coverboard Sarnaplates and Sarnafasteners
Membrane Color	EnergySmart "Cool Roof" Colors: White — Solar Reflectance[1] 0.83 — Solar Emittance[1] 0.90 Tan — 0.73 — 0.85 Light Gray — 0.50 — 0.84 Patina Green — 0.55 — 0.86
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[2] Mechanically attached membrane can be recycled at end of service life
Warranty	Up to 30 years

[1] Initial Values
[2] UL Environment Project # 10C A22508

EcoSmart Roof.®

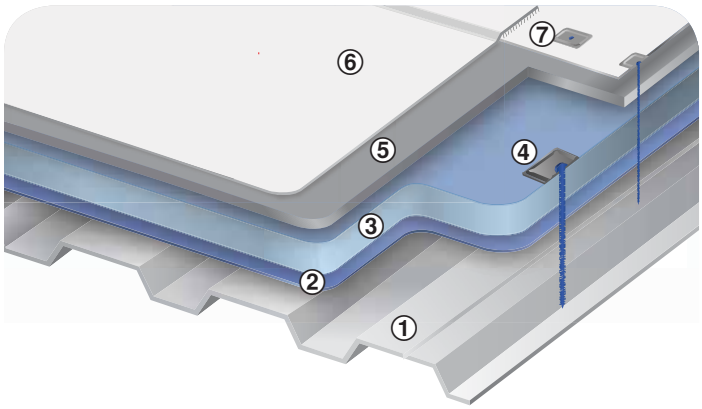
Recycled content, lengthy service and reliable performance make this system good for the environment and great for the building owner's ROI.

The EcoSmart Roof packages the signature Sarnafil membrane with STYROFOAM™ brand insulation from Dow Building Solutions and a coverboard to produce one of the longest lasting, most ecologically responsible roofing systems available.

The white reflective surface of the Sarnafil membrane minimizes solar heat gain into the building to reduce the building's cooling load—this saves energy and diminishes the building's carbon footprint. When the membrane does reach the end of its useful life, it can be recycled back into roofing membrane product at Sika Sarnafil's manufacturing plant.

STYROFOAM Brand DECKMATE™ Plus extruded polystyrene insulation from Dow provides insulating properties necessary to minimize heat flow through the roofing system. The insulation is reusable when the building is reroofed and comes with a 50-year reuse warranty on its DECKMATE Plus insulation from Dow Building. This means that the building owner can leave the insulation in place when the building is ready for a new roof.[1]

The system coverboard improves the roof system's wind uplift characteristics. The coverboard also provides increased resistance to foot traffic to protect the overall roofing system and enhance its longevity.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Coverboard
⑥ Sarnafil S Membrane
⑦ Membrane Fastener

ECOSMART ROOF	
Sarnafil Membrane	Sarnafil S327 – Polyester reinforced with feltback option, for mechanically attached applications
Mechanical Attachment Systems	Sarnafast Sarnafil Express Sarnafil Engineered
System Components	STYROFOAM DECKMATE Plus – Extruded polystyrene from Dow Building Solutions Sarnavap Vapor Retarders Coverboard Sarnaplates and Sarnafasteners
Membrane Color	EnergySmart "Cool Roof" Colors: White – Solar Reflectance[2] 0.83 – Solar Emittance[2] 0.90 Tan – 0.73 – 0.85 Light Gray – 0.50 – 0.84
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[3] Membrane can be recycled at end of service life
Warranty	Membrane up to 30 years STYROFOAM DECKMATE Plus 50-year reuse warranty[1]

[1] Subject to terms and conditions in the Dow Building Solutions Limited 50-Year Reuse Warranty.

[2] Initial Values

[3] UL Environment Project # 10C A22508

EcoBond Roof.®

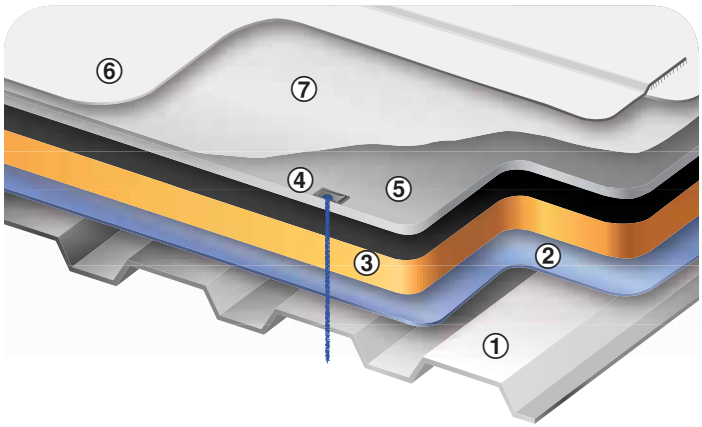
Water-based adhesive and Sarnafil membrane combine to deliver a system that meets all applicable VOC guidelines.

The EcoBond Roof utilizes the proven low VOC adhesive called Sarnacol® 2121 and a Sarnafil G410 membrane to create a high performance, cost effective adhered roofing system that meets all applicable state and federal VOC guidelines.

This system attaches securely over low sloped roofs to resist mechanical stress from wind uplift. It eliminates sheet flutter and prevents billowing. In addition, it is suitable for non-nailable substrates like concrete. The EcoBond Roof is also an excellent choice when all other roof system components are adhered, eliminating the need for mechanical fasteners that can cause thermal bridging.

The EcoBond Roof can be squeegee-, roller- or spray-applied—providing the maximum in application versatility.

Sarnacol 2121 water-based adhesive is more cost effective than solvent-based adhesives due to lower material usage and faster application. With Sarnacol 2121, adhesive is applied only to the roofing substrate and membrane is immediately laid into the adhesive. This differs from solvent-based adhesives that require application to the membrane and the roofing substrate, and wait times that exist before membrane can be laid in.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Coverboard
⑥ Sarnafil G Membrane
⑦ Sarnacol 2121 Adhesive

ECOBOND ROOF	
Sarnafil Membrane	Fiberglass reinforced with feltback option, for adhered applications
Sika Sarnafil Adhesive	Sarnacol 2121 (water-based, low VOC)
System Components	Sarnatherm Insulation Sarnavap Vapor Retarders Coverboard Sarnaplates and Sarnafasteners
Membrane Color	Standard colors include EnergySmart "cool roof" colors White, Tan, Light Gray, and Patina Green, in addition to Copper Brown, Evergreen, and Dark Gray. Also available in wide variety of custom colors
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[1]
Warranty	Up to 30 years

[1] UL Environment Project # 10C A22508

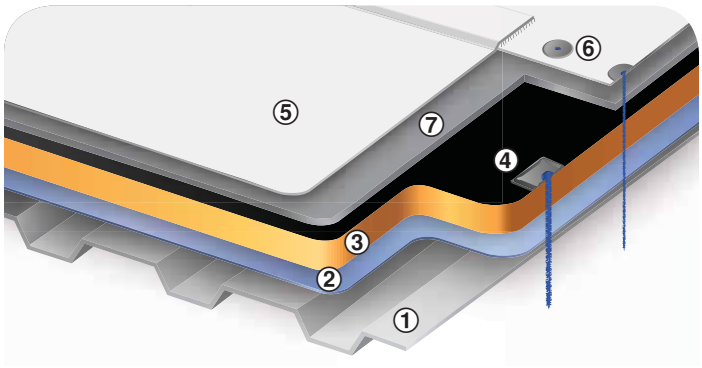
Sikaplan.®
A cost-effective roofing system from the world leader in vinyl roofing.

Sikaplan is a quality roofing membrane from a trusted supplier at an economical price. Sikaplan has had a successful performance record of more than 20 years on buildings throughout the world.

This single ply PVC membrane is designed for low-slope and steep-slope roofing applications. The membrane has an internal polyester scrim reinforcement to provide the tear resistance required for mechanically attached roof systems.

Sikaplan's white color reflects the sun's solar energy and helps to lower building cooling costs. The product meets the cool roofing requirements of USGBC's LEED program, Green Globes, ENERGY STAR and California Title 24.

Like all Sika Sarnafil membranes, Sikaplan is thermoplastic; allowing seams and flashings to be hot-air welded using the Sarnamatic automatic hot-air welder. When welded together, the sheets of membrane become one continuous layer of material impervious to water and moisture infiltration.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Sarnafil S Membrane
⑥ Membrane Fastener
⑦ Coverboard

SIKAPLAN	
Sarnafil Membrane	Polyester reinforced with feltback option
Mechanical Attachment Systems	Sikaplan RhinoBond
System Components	Insulation Vapor Retarders Coverboard Plates and Fasteners
Membrane Color	EnergySmart "Cool Roof" Colors: White — Solar Reflectance[1]: 0.83 — Solar Emittance[1]: 0.90
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[2] Membrane can be recycled at end of service life
Warranty	Up to 20 years

[1] Initial Values
[2] UL Environment Project # 10C A22508

RhinoBond® Roof System.

Penetration-free attachment system that quickens the installation process while enhancing resistance to wind uplift.

The RhinoBond Roof System is an innovative attachment system used with Sika Sarnafil PVC membranes to increase contractor productivity and enhance roof wind uplift resistance.

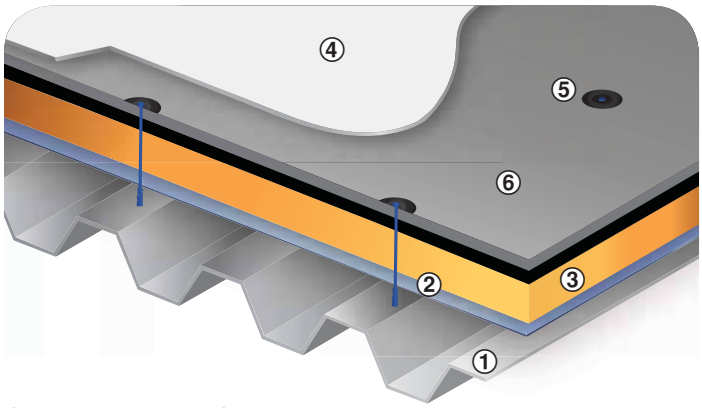
RhinoBond relies on electromagnetic induction welding to eliminate fastener penetrations through the membrane. Specially coated membrane plates are fastened to the roof assembly and later fused to the underside of membrane using the RhinoBond tool.

The RhinoBond Roof System uses a patented stand-up tool—a single worker places the unit above a plate and activates the electromagnetic pulse, which is completely safe. The pulse causes the securement plate to heat up and fuse to the membrane directly above it. Typical weld time is five seconds per plate. A weighted RhinoBond 'cooling clamp magnet' is then temporarily placed on top of the plate to assure a strong bond.

RhinoBond is ideal for projects that require enhanced wind protection. The system achieves an FM I-90 rating in the field while requiring 30 percent fewer fasteners per square than traditional systems.

The system is also perfect for metal retrofit applications. And with adequate steel deck strength, contractors can even avoid the need to drill and fasten into steel roof purlins. Productivity is improved by eliminating this time-consuming step, and wider roof membrane sheets can also be used with fewer seams to weld.

The RhinoBond tool is lightweight, portable, and is simple to use. The system has proven to be a real time saver for contractors.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Sarnafil S Membrane
⑤ Membrane Fastener
⑥ Coverboard

RHINOBOND ROOF SYSTEM	
Sarnafil Membrane	Sarnafil S327 – Polyester reinforced Sikaplan
Mechanical Attachment Systems	RhinoBond Roof Fastening Tool
System Components	Sarnatherm Insulation Sarnavap Vapor Retarders Coverboard RhinoBond Plates and Fasteners
Membrane Color	EnergySmart "Cool Roof" Colors: White: Solar Reflectance[1] 0.83, Solar Emittance[1] 0.90 Tan: 0.73, 0.85 Light Gray: 0.50, 0.84 Patina Green: 0.55, 0.86
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[2] Membrane can be recycled at end of service life
Warranty	Up to 20 years

[1] Initial Values
[2] UL Environment Project # 10C A22508

Sikacoat®

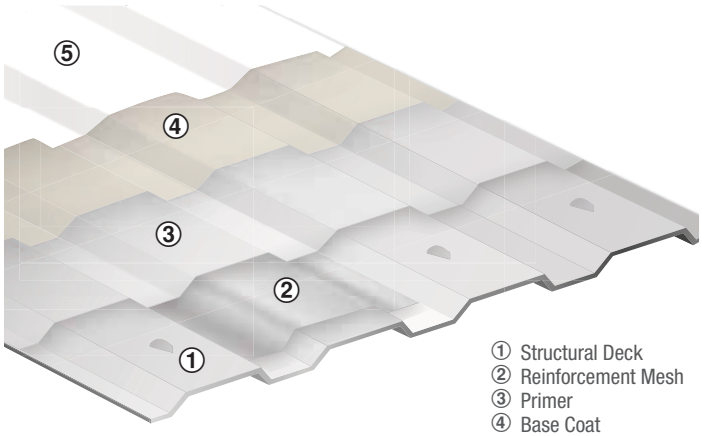
Reflective roof coatings that extend roof life, address leaks and lower building energy consumption.

Sikacoat roof coatings provide building owners with a cost effective option for roof maintenance and restoration while enhancing roof reflectivity. These high performance elastomeric coatings provide a seamless waterproofing barrier that can expand and contract with roof movement.

Sikacoat is formulated using water-based acrylic technology low in odor and volatile organic compounds (VOCs). The product offers excellent adhesion to a wide variety of roofing substrates that include metal, bitumen, TPO, EPDM, Hypalon and PVC.

The product is available in a buff-colored base coat and a bright white finish coat in two distinct formulations for climate variations. It meets the cool roofing requirements of ENERGY STAR, California Title 24, LEED and Green Globes programs. The product's high solar reflectance helps to reduce heat transfer into buildings, lowers cooling energy costs, and reduces membrane stress and heat accelerated degradation.

Sikacoat can extend roof life, eliminate leaks and improve a building's aesthetics and energy usage, and often at a much lower cost than a new roof. It is a valuable option for those challenged by a roof nearing the end of its service life or building owners frustrated by metal roof leaks and other types of roofing failures.



SIKACOAT				
System Components	Reinforcement Mesh Primer Base Coat Finish Coat			
TECHNICAL SPECIFICATIONS	**FC3500 WHITE**		**FC3400 WHITE**	
	Initial	**3 Year**	**Initial**	**3 Year**
Solar Reflectance	.83	.73	.84	.75
Thermal Emittance	.88	.95	.89	.91
Low VOC content meets South Coast Air Quality Management District rules				
CRRC Listed, UL and FM Approved				

Décor Roof System.

The ideal choice for aesthetics, design freedom, and long-lasting, cost-effective performance.

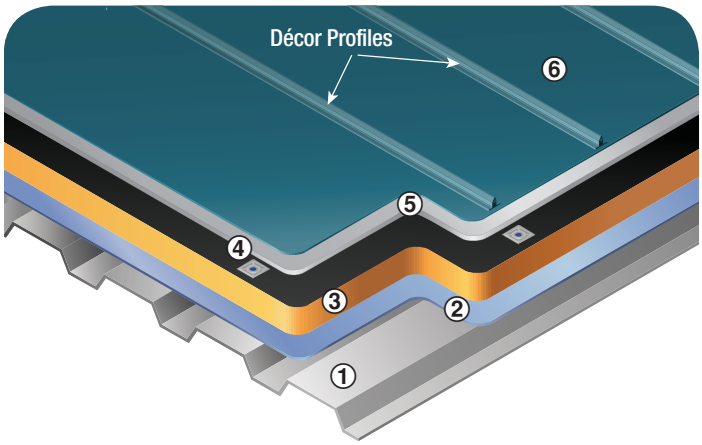
The Décor Roof System realistically simulates the appearance of a standing seam metal roof while providing the long-term, watertight security of heat-weldable thermoplastic.

Systems consist of a Sarnafil membrane and extruded vinyl profiles that are hot-air welded to the membrane. These profiles have the same product formulation as the Sarnafil membrane, ensuring that colors match both initially and over time. Profiles come in ten-foot sections and are permanently fused up on the roof to the Sarnafil membrane using a hot-air welder. Ribs can be spaced at any interval and in virtually any configuration for complete design flexibility.

Décor is available in seven standard colors or in a wide variety of custom colors to match the building's design. It is also available in EnergySmart Roof colors that meet ENERGY STAR, Title 24, LEED and Green Globes requirements for solar reflectance and emissivity ratings.

Décor Roof Systems use a Sarnafil membrane with integral fiberglass reinforcement to provide exceptional dimensional stability and a low coefficient of thermal expansion. A felt backing on the membrane helps to achieve a smoother appearance over common roofing substrates.

Décor Roof Systems can be installed on new or existing buildings that call for the appearance of a metal roof, yet require maximum watertight performance. These systems meet or exceed all relevant standards, including those of ASTM, UL, and Factory Mutual.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Coverboard
⑥ Sarnafil G Membrane

DÉCOR ROOF SYSTEM	
Sarnafil Membrane	Sarnafil G410 – Fiberglass reinforced with feltback
Décor Profile	PVC extrusion 1" (high) x 1 3/8" (base) x 10' (long), heat-welded to membrane
Sika Sarnafil Adhesives	Sarnacol 2121 (water-based, low VOC) Sarnacol 2170 (solvent-based) Sarnacol 2170VC (solvent-based, VOC Compliant)
System Components	Sarnatherm Insulation Sarnavap Vapor Retarders Coverboard Sarnaplates and Sarnafasteners
Membrane Color	Standard colors include EnergySmart "cool roof" colors White, Tan, Light Gray, and Patina Green, in addition to Copper Brown, Evergreen, and Dark Gray. Also available in wide variety of custom colors
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[1]
Warranty	Membrane and profile up to 20 years

[1] UL Environment Project # 10C A22508

Solar-Ready Roofing Systems.
Turn unused commercial roof space into a sustainable, energy-generating asset.

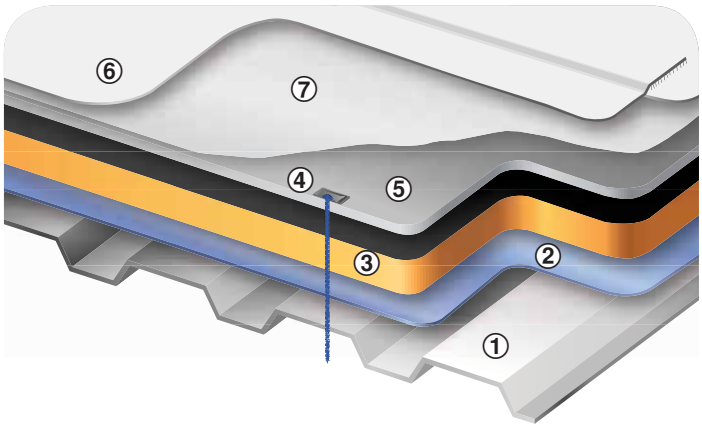
Solar-Ready Roofing Systems utilize an energy-efficient Sarnafil membrane to enhance overall solar operation and functionality and can be adapted to accommodate virtually any solar system configuration.

The EnergySmart Roof membrane exceeds industry standards for cool roofs and is the key element in the company's solar-ready system design. This lacquer-coated membrane reflects the sun's rays to help keep building interiors cooler and lower energy consumption. The reflective surface also helps to keep solar modules cooler and thereby improves module efficiency.

Sika Sarnafil's solar-ready systems are lightweight and require minimal maintenance. Solar modules can last more than 25 years, necessitating a long-lasting roof surface. Sarnafil membranes are durable and have been proven to last for decades.

Solar systems include rooftop electrical wiring and thus fire safety becomes an even greater consideration. Vinyl roof membranes have inherent fire-retardant properties and these characteristics can significantly reduce flame spread in the event of a roof fire.

Flashing the large number of solar system penetrations typical in most installations can be labor-intensive and leave surfaces vulnerable to water leaks. Sarnafil membranes are very flexible and, along with weldable vinyl seams, expedite the process and result in a watertight roof.



① Structural Deck
② Vapor Retarder
③ Insulation
④ Insulation Fastener
⑤ Coverboard
⑥ Sarnafil G Membrane
⑦ Sarnacol Adhesive

SOLAR-READY ROOF	
Sarnafil Membrane	Sarnafil G410 – Fiberglass reinforced with feltback option, for adhered applications Sarnafil S327 – Polyester reinforced with feltback option, for mechanically attached applications
Sika Sarnafil Adhesives	Sarnacol 2121 (water-based, low VOC) Sarnacol 2170 (solvent-based) Sarnacol 2170VC (solvent-based, VOC Compliant)
Mechanical Attachment Systems	Sarnafast Sarnafil Express Sarnafil Engineered RhinoBond
System Components	Sarnatherm Insulation Sarnavap Vapor Retarders Coverboard Sarnaplates and Sarnafasteners
Membrane Color	EnergySmart "Cool Roof" Colors: White — Solar Reflectance[1] 0.83 — Solar Emittance[1] 0.90 Tan — 0.73 — 0.85 Light Gray — 0.50 — 0.84
Recycled Content	Membrane contains 10% recycled content on average, UL-certified (5' and 10' sheets)[2] Mechanically attached membrane can be recycled at end of service life
Warranty	Up to 30 years

[1] Initial Values
[2] UL Environment Project # 10C A22508

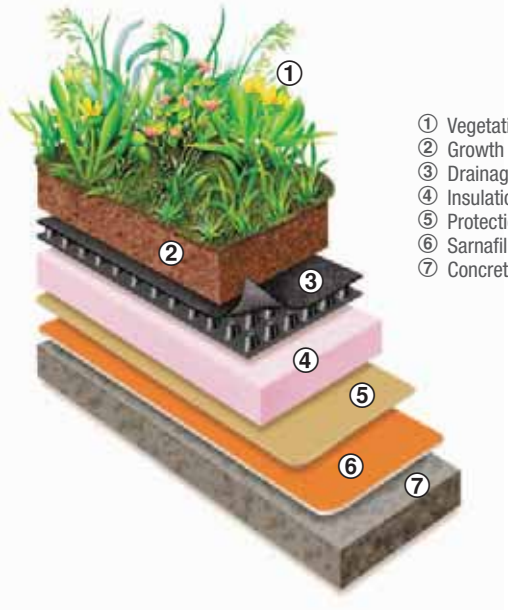
Vegetated Green Roofs.
Quality membranes are essential when it comes to landscaped roof areas.

Sarnafil waterproofing membranes are specially designed for sub-grade environments, compounded to remain watertight in extreme conditions that include constant dampness, ponding water, high and low alkaline conditions, and exposure to plant roots, fungi and bacterial organisms.

Many waterproofing membranes are not resistant to root penetration. Sarnafil membranes are inherently root and algae resistant and no additional barriers need be added to the system. Sarnafil membranes have passed the most stringent European tests for root resistance, including both the German FLL and the Swiss SIA 280 standards.

Membranes are available in a range of thicknesses to match the application, the overburden type and specific project requirements. A bright orange color makes them easy to identify and inspect during installation.

Sika Sarnafil has waterproofing systems designed for both Extensive and Intensive green roof configurations. Complete system delivery including vegetation is available with a single source warranty from Sika Sarnafil. Electronic leak detection is an available option and greatly reduces the risks associated with accidental leaks.



① Vegetation
② Growth Medium
③ Drainage Composite
④ Insulation
⑤ Protection/Drainage Layer
⑥ Sarnafil Membrane
⑦ Concrete Deck

VEGETATED GREEN ROOF	
Sarnafil Membrane	Sarnafil G476 Sarnafil G476 Self-Adhered – Fiberglass reinforced with foam backing
Sika Sarnafil Adhesives	Sarnafil G476 Self-Adhered – Factory-coated
System Components	Vegetation Growth Medium Filter Fabric Drainage Mat Sarnatherm Insulation Protection Layer
Membrane Color	Sarnafil G476 – Orange Sarnafil G476 Self-Adhered – Orange
Recycled Content	Membrane contains 10% recycled content, UL-certified (5' and 10' sheets)[1] Loose-laid membrane can be recycled at end of service life
Warranty	Membrane up to 20 years Single-source warranty available for Extensive green roof assemblies that includes overburden removal, waterproofing and vegetated cover

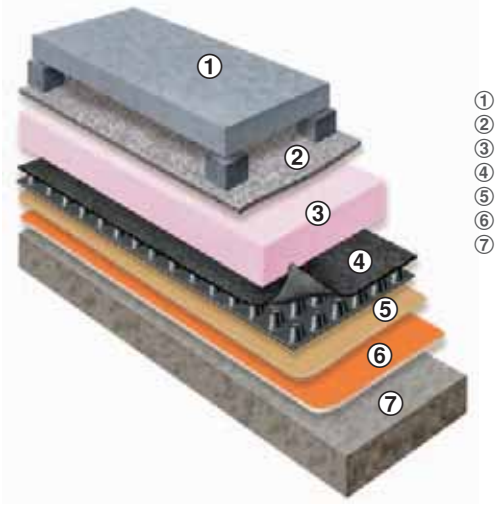
[1] UL Environment Project # 10C A22508

Plaza Deck Systems.

Rugged, durable systems that stand up to demanding conditions and safeguard your investment.

Sika Sarnafil offers a variety of high quality waterproofing systems that encompass the full range of plaza deck conditions, including pedestrian and vehicular plazas, balconies, terraces and observation decks. All systems rely on durable Sarnafil thermoplastic waterproofing membranes specifically developed for below-grade conditions. These membranes have a factory-controlled membrane thickness, will accommodate building movement, can withstand ponded water conditions, are resistant to roots and decay, and have the security of fused welded seams.

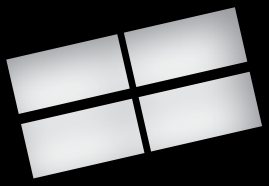
The Sarnafil G476 membrane is the key component in the company's waterproofing systems. This durable thermoplastic membrane is designed to remain watertight in buried environments that represent extreme conditions. Electronic leak detection is an available option and greatly reduces the risks associated with accidental leaks.



① Paver System
② Filter Fabric
③ Extruded Polystyrene Insulation
④ Drainage Composite
⑤ Protection Layer
⑥ G476 Self-Adhered Membrane
⑦ Substrate

PLAZA DECK SYSTEMS	
Sarnafil Membrane	Sarnafil G476 Sarnafil G476 Self-Adhered – Fiberglass reinforced with foam backing
Sika Sarnafil Adhesives	Sarnafil G476 Self-Adhered – Factory-coated
System Components	Pavers Filter Fabric Drainage Mat Sarnatherm Insulation Protection Layer
Membrane Color	Sarnafil G476 – Orange Sarnafil G476 Self-Adhered – Orange
Recycled Content	Membrane contains 10% recycled content, UL-certified (5' and 10' sheets)[1] Loose-laid membrane can be recycled at end of service life
Warranty	Membrane up to 20 years

[1] UL Environment Project # 10C A22508



Sarnafil®

BUILDING TRUST

Sika®

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Sarnafil®

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