

3M™ Sun Control Window Film — Prestige Exterior Series Substantially Cuts Cooling Bill for Arizona Bank

Payback period is less than five years
for the 18,000 ft² skylight installation



In a city where the daily average high temperature in mid-summer is 102°F, and monthly rainfall averages under one inch, a vast amount of unimpeded sunlight is a serious detriment to efficient, cost-effective cooling. So when National Bank of Arizona decided to take advantage of a comprehensive energy-efficiency rebate program being offered by its local electric utility, Salt River Project (SRP), finding a solution to the skylight problem became one of its high-priority objectives.

C A S E H I S T O R Y

BACKGROUND

National Bank of Arizona's 144,000-square-foot headquarters complex in Phoenix, built in 1987 for a previous owner, contains a beautiful amenity: 18,000 square feet of skylights allow natural light to flood the premises, nurturing an abundance of plant life as well as the busy employees and customers on the floor 30 feet below the glass.

According to Dennis Calik, National Bank of Arizona's senior vice president of corporate properties, the bank's energy-efficiency makeover included the installation of a new 250-ton chiller to supplement the old one, together with the addition of lighting sensors and new lighting technology. However, the full advantages of these upgrades would not be realized unless something was done to address the heat transmitted through the skylights.



CHALLENGE

The goal was to retain the benefits of natural light while reducing the amount of heat it generated, and also to cut down on glare manifested on some parts of the banking floor, especially the reception area in the lobby. An added complication was the height of the skylights, which would make any interior work difficult, expensive and potentially disruptive to normal banking operations.

SOLUTION

After investigating a range of products, including the possible placement of cloth panels over the skylights, the bank chose 3M Sun Control Window Film Prestige Exterior 40, which satisfied all of the project's objectives. Applied to the exterior of the glass, the Prestige Exterior series reflects up to 97 percent of the sun's heat-producing infrared light, and 99.9 percent of ultraviolet rays, which have potentially adverse health effects. Because the film is non-metallic, it is not subject to corrosion, which negates the need for edge sealing, simplifying and reducing the time required for exterior installation. Furthermore, the absence of metal eliminates the potential for interference with signals from electronic equipment and devices.

Prestige 40 was also chosen because it substantially reduces glare.



RESULTS

3M Sun Control Window Film was installed in the relatively short span of two weeks, with no interior disruption. The film is estimated to be saving the bank 249,000 kilowatt hours of electricity per year, which is enough energy to power approximately 17 average-size homes, according to SRP. Equally important, Mr. Calik noted that visibility in the lobby immediately improved. The window film is anticipated to pay for itself over a period of five years.

"The total program has been a great success, saving us about 747,000 kilowatt hours a year," said Mr. Calik. Instead of running two chillers, the bank has found that, with the addition of direct digital controls, it can operate the new chiller at about 75-to-80-percent of capacity, even on the hottest days. According to SRP, the bank is saving more than \$74,000 per year in electricity costs. And much of the project's cost was offset by rebates from SRP.

THE 3M DIFFERENCE

"Working with 3M and its authorized 3M dealer provided an important measure of assurance that both product and installation would be of the highest quality," said Mr. Calik. "We found a solution that enabled the bank to preserve all of the natural light our headquarters enjoys, without sacrificing energy efficiency."

PROJECT SUMMARY

3M Dealer: Intellifilm

Installation Date: Completed in October 2011

Skylights Covered: 18,000 ft²

Installation Time: Two weeks

Type of Film: 3M Sun Control Window Film – Prestige Exterior 40

Payback Period: Less than five years

kWh Savings: Over 249,000 kWh per year



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