

SITE City of Denver Government Buildings **SITE LOCATION** Denver, Colorado **VISTA® PRODUCT USED** Ambiance VE 35 Low-E



Energy savings

At an altitude of 5,280 feet above sea level, the city of Denver is subjected to extreme cold in the winter and severe heat and sun in the summer. As a result, buildings have a huge need for heat in the winter and absorb excessive heat in the summer, which in turn requires cooling systems to work longer and harder. At the same time, the sun's glare and ultraviolet rays create an uncomfortable and hazardous work environment.

Solar energy, a composite of electromagnetic wavelengths, is responsible for fading of furnishings, excessive heat gain, sun glare, waste of energy, and skin damage.

To cope, city officials authorized the fitting of solar control window films on most of the City's properties. Because of this and other ongoing energy conservation efforts, The Environmental Protection Agency honored the city and county with a Certificate of Merit for Innovative Technology.

Dr. Darryl Winer, Denver's Director of Utilities, supervised the project and awarded the contract to CPFilms whose professionals had recommended Vista Ambiance VE 35 Low-E (low emissivity) Film. Emissivity is a measure of the thermodynamic ability of a surface to absorb heat and to reflect it. The lower the emissivity, the less radiant heat is absorbed by glass and the more interior heat is retained. Additionally, the Low E film, which eliminates 99.9% of harmful ultraviolet radiation, to protect furnishings, fabrics and carpets, will reject 69% of

the exterior solar energy that reaches windows — most of which is heat — thus yielding substantial savings on air conditioning in the warm months of the year.

Commenting on the selection of the film Dr. Winer said, "We needed a film that produced good energy savings and which had good solar properties. Glazing was too expensive and we couldn't go with an off-the-shelf product. We didn't want to use films that have highly reflective properties or distinct tinting on government buildings because we look to blend into our environment, not stand out."

Vista Ambiance Film was installed as a retrofit item on the interior of glass. The film and installation is expected to pay for itself through energy savings in less than four years. By the end of 1999, more than 125,000 square feet of film has been installed in 60 city and county buildings. And the film carries a five-year warranty against thermal breakage.

"Annual savings are expected to be \$41,250 or about 33-cents per square foot," says Dr. Winer, "We're big on energy conservation out here. With Denver's elevation, radiation from the sun is a big issue. The film helps minimize that".



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Vista Window Film is pleased to have strict quality systems and has been ISO 9001 Certified (Certificate Number FM 35957)
The nature of certain delicate fabrics and dyes will lead to premature fading regardless of the application of any window film protective treatment.

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