

## CASE STUDY: Transforming comfort while enhancing prestige

### Building

Harbour View Tower & Hotel

### Location

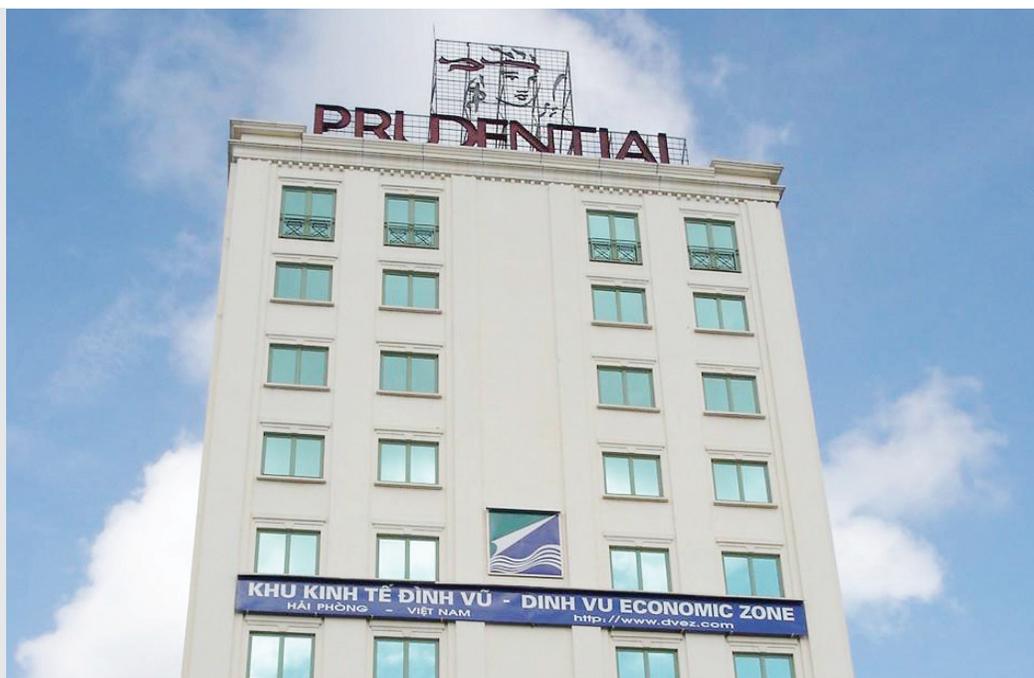
Haiphong, Vietnam

### Window Film

R-20 SR CDF (Silver)

### Type

Solar Control Film



## SITUATION

Harbour View Tower and Hotel offers more than 32,290 square feet (3,000 m<sup>2</sup>) of prestigious office space near the main entrance to Haiphong Harbour, a prime location in Haiphong. Adjacent to the tower is the Harbour View Hotel, which features 122 luxurious rooms and suites with rich teak wood furnishings. The owners wanted to increase the energy efficiency of both buildings while, at the same time, upgrading their appearance.

## SOLUTION

LLumar reflective window film, R-20 SR CDF, gave both buildings a significant return on investment. First, the film's reflective exterior surface transformed the buildings' appearances, presenting a more prestigious image. Second, with 80% total solar energy rejection, cooling costs are reduced and the building's occupants are more comfortable. And third, interior furnishings are now protected from harmful ultraviolet rays, the primary cause of fading.

## RESULT

Hotel Sales Executive Mr. Vu Xuan Khang reports that the buildings' tenants are much more comfortable after LLumar window film was professionally installed. The hotel is 40% cooler following the film installation, and with glare reduced by as much as 83% in the tower, employees sitting next to the windows are experiencing less eye fatigue when working on computers. The film has also created a new, more prestigious appearance for both buildings.

## Performance Data

	% Total Solar Transmittance	% Total Solar Reflectance	% Total Solar Absorbance	% Visible Light Transmittance	% Visible Reflectance (exterior)	% Visible Reflectance (interior)	Winter U-value	Shading Coefficient	% Ultraviolet Ray Protection (wavelengths 280-380nm)	Emissivity	Solar Heat Gain Coefficient	% Total Solar Energy Rejected	Light-to-Solar Heat Gain Ratio (LSG)	% Summer Solar Heat Gain Reduction	% Winter Heat Loss Reduction	% Glare Reduction
Clear Glass	83	8	9	90	8	8	1.03	1.00	29	0.84	0.86	14	1.05	-	-	-
Reflective Series	Reflective films feature reflectance on both interiors and exteriors for superior reduction in summer cooling costs and heat retention in winter. Providing a high level of glare and heat control, they are scratch-resistant, shield >99% of ultraviolet rays, and provide excellent heat rejection.															
R-20 SR CDF (Silver)	11	57	32	15	62	63	0.90	0.22	>99	0.58	0.20	80	0.75	77	13	83

## EASTMAN

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The solar performance data reported for LLumar architectural window films was captured using the National Fenestration Rating Council's (NFRC) standard guidelines for window film solar performance measurement as measured on single pane, 1/8 inch (3 mm), clear glass. Reported values are taken from representative product samples and are subject to normal manufacturing variances. Actual performance will vary based on a number of factors, including glass type and properties. Films do not eliminate fading - they reduce it. UV rays and heat are contributing factors to fading, but other factors exist. For further information, see [LLumar.com/download-library](http://LLumar.com/download-library). © 2016 Eastman Chemical Company. LLumar® and the LLumar® logo are trademarks of Eastman Chemical Company or one of its wholly owned subsidiaries. As used herein, ® denotes registered trademark status in the U.S. only. (06/16) L1873