

An aerial, high-angle photograph of a modern city. The image shows a complex multi-level highway interchange with several overpasses and ramps. In the background, there are several tall, modern skyscrapers with glass facades. The lighting suggests it's daytime, with shadows cast by the buildings and roads. The overall scene is one of a dense, urban environment.

3M

Design and sustainability:
3M solar, safety and security
window films

At 3M we are guided by one vision

Our Vision

3M Technology Advancing Every Company

3M Products Enhancing Every Home

3M Innovation Improving Every Life



...and it is applying this science, across our organization, that makes us who we are



Automotive



Commercial Solutions



Communication



Consumer



Design + Construction



Electronics



Energy



Health Care



Manufacturing



Mining, Oil & Gas



Safety



Transportation



Sustainability Commitment

Reduced GHG Emissions

by **57%**

nearly 100 million metric tons

in only **11 years**

even as the company grew sales and production



GOAL ACHIEVED:
80% of supplier spend
in top 10 high-risk countries
reviewed for alignment with 3M
supplier policies
and standards

Since 2010,
reduced
23.8%

(per net sales) of

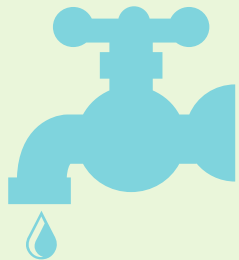


**Volatile Air
EMISSIONS**

Nearly
\$125
million



of cash and in-kind
product donations in
2012 and **2013**



In **2013**, recycled **37%**
of total water used

Approximately
of **TOTAL WASTE** **50%**
generated
annually
is **recycled**
or **reused**



**Nearly 1/2 of
MANUFACTURING SITES
GLOBALLY** have developed
local stakeholder engagement plans



Energy Conservation: 3M Solutions for Enhancing Glass



- Designed to help:
- Improve comfort
 - Manage energy costs
 - Increase safety & security
 - Block harmful UV rays
 - Lessen temperature fluctuations
 - Reduce glare



With options providing:

- No signal interference
- Never turns purple
- Enhance visibility at night



Advanced technology to keep you cool, comfortable and safe in your environment

Benefits of 3M Window Film

Comfort



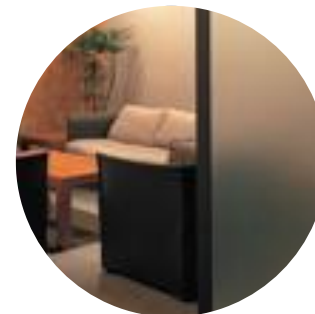
Solar Control



Safety



Privacy



Glare Reduction





Broad Portfolio of Customer Solutions

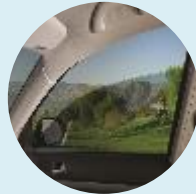
Commercial

Residential

Automotive



Comfort & Glare Control



Solar Control



Safety & Security



Privacy



Solar control films



■ Energy conservation

- Heating, air-con and lighting have significant impact on buildings running cost
- Thermal load of a building can increase 60% in the summer
- 3M solar control film reduce solar heat gain by up to 77% and significantly reduce dependency on air conditioning, heating, blinds and lighting

■ Increased comfort

- 3M solar control films reduce heat of the sun resulting in greater occupant comfort
- Ideal working environment is neither too hot nor too cold, with optimum use of natural lighting
- 3M solar control film allows you to create the optimal, comfortable environment

■ Fade reduction

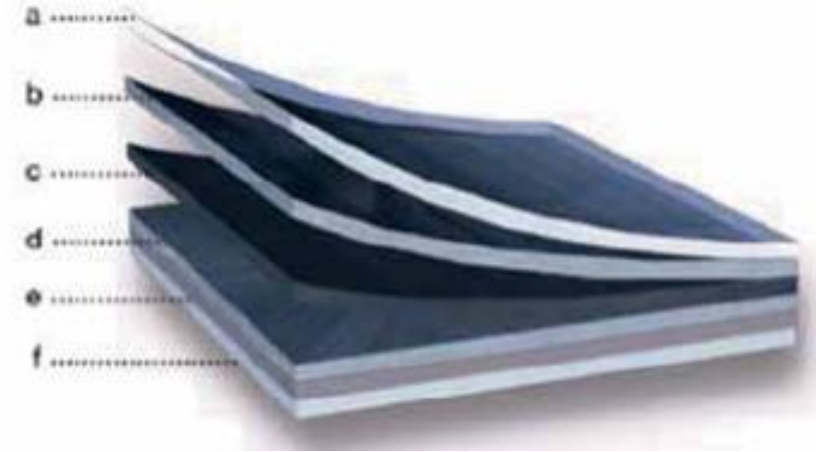
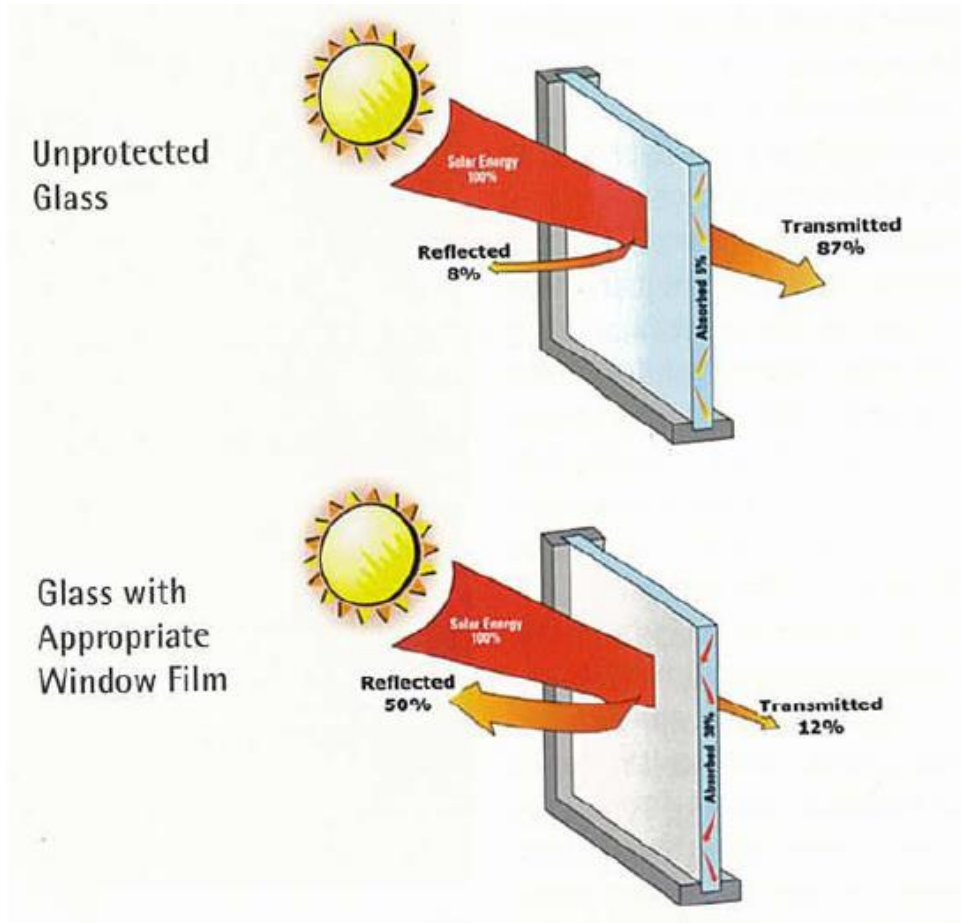
- Ultra violet light responsible for the fading of colours and degeneration of materials
- 3M solar control film reduces the damaging rays by up to 99.9%, substantially slowing down the fading process

■ Glare and reflection reduction

- Working at a computer or watching a screen with light on the surface is frustrating
- By significantly reducing glare, 3M solar control film reduces eyestrain

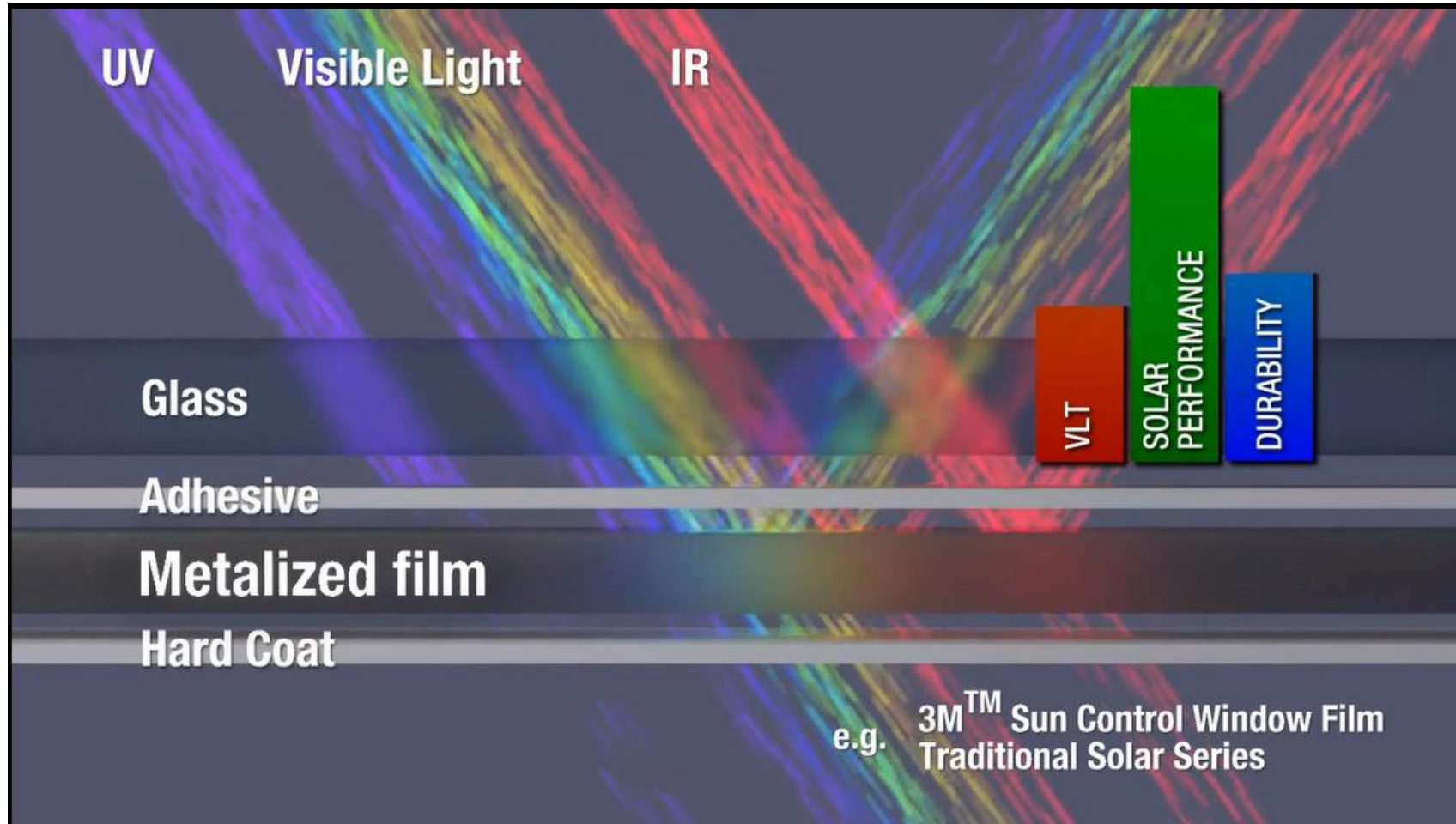


How do traditional Window Films work?

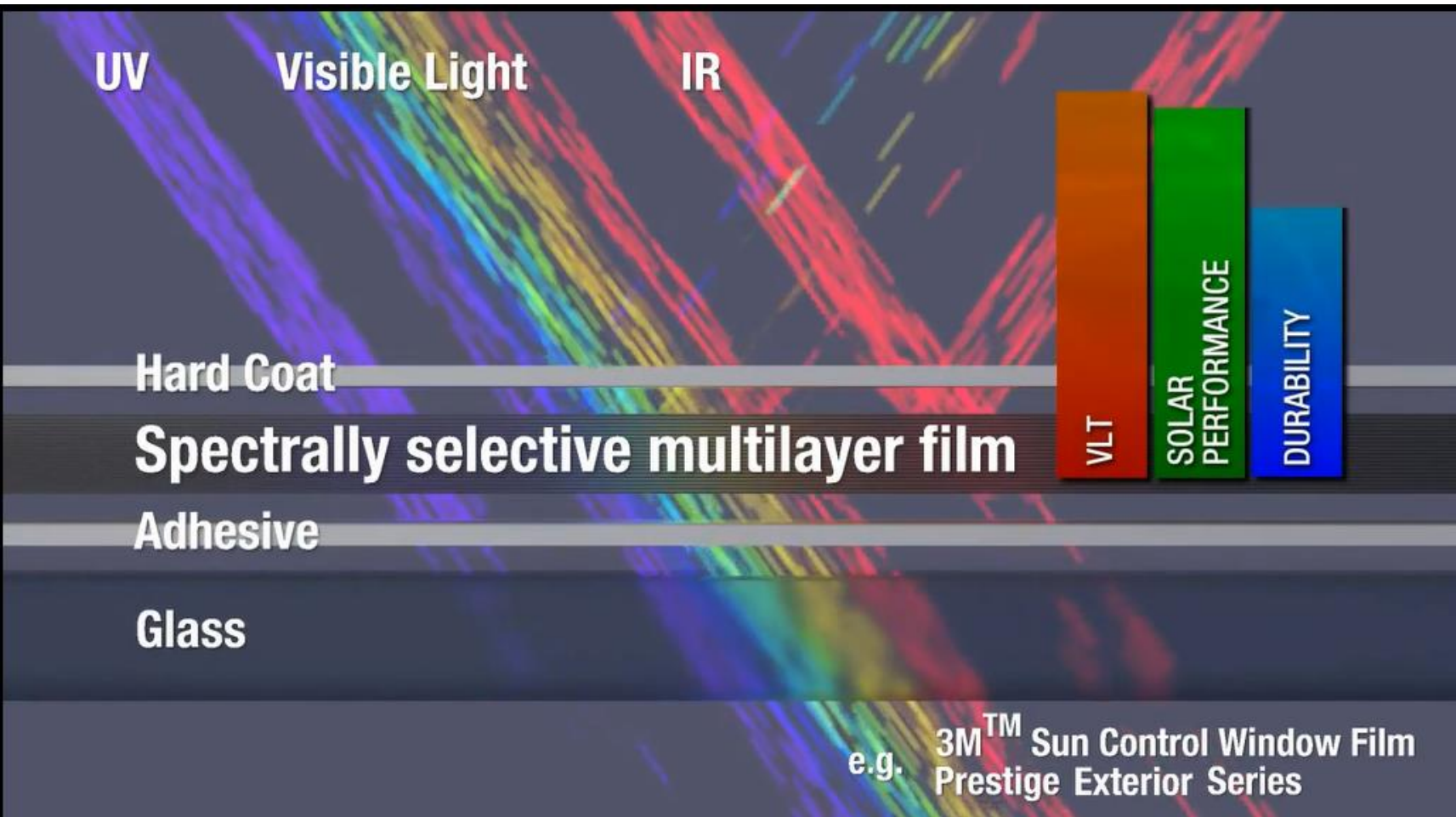


- Through a typical insulating glazing apprx. 63% of the solar energy passes into the building.
- With the right film this can be reduced up to apprx. 14% - this is a 80% improvement!

How traditional Window Films work?



How 3M „Prestige Exterior“ works!



Window Films and Energy Saving

Applying 3M films on your windows will:

Reduce the heat inside your building



Reduce the need for air conditioning



prolonge HVAC life



Reduce your energy bill



Improve occupant comfort



Improve people's productivity



increase profit



Safety & Security films



▪ Flying and broken glass

- 3M safety film retains shattered glass, even when entire window unit and frame is blow out of the building, greatly reducing amount and velocity of projected glass fragments and human injury

▪ Forced entry and theft

- Film holds the glass in place after window hit with heavy objects
- Film's resistance to tearing makes breaking and entering very difficult

▪ Civil unrest

- Providing a secure environment during Large public, political or sporting meetings and events a priority
- 3M safety film works to minimize any resulting loss and damage

▪ Graffiti and vandalism

- 3M safety films can go on outside of windows or mirrors to protect glass from vandalism
- When vandal sprays, paints, writes, gouges, scratches or acid-etches onto window damaged film can be replaced as sacrificial layer



Case study UNIQA

Office building with 6 floors
Solar heat on South facade



950 square meters of 3M™ Prestige 70 Exterior film where installed on the whole southern facade.

Tests showed a heat decrease with 4°C and cost reduction around 7% per year.



3M technology
helps to reduce
energy consumption
and
save money

Thank
you