

Innovations in Glass Technology

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Business*

SHAPE THE
FUTURE



SAINT-GOBAIN
350



Innovations in Glass

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GLASS



Innovations in Exterior Glass

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GLASS

Glass Engineered For Energy Conservation

Lighting



Cooling

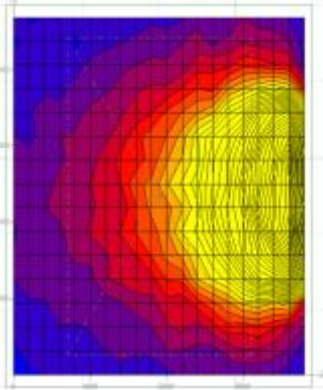
Lighting



Clear Glass

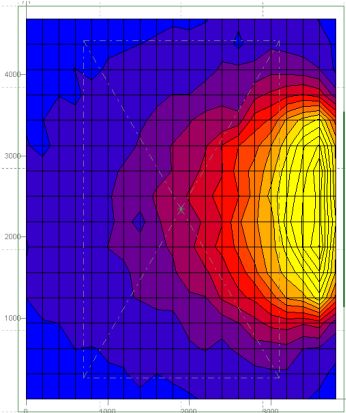
Solar Control Coated Glass

Light Transmission **89%**



Optimize
Light
Transmission

Light Transmission **40%**



Natural Lighting



Barely glazed bedroom

Largely glazed bedroom

Opening index

16.4%

+ 49%

24.5%



Electricity consumed

4.2
kWh/m²/year

- 36%

2.7
kWh/m²/year

Cooling (Solar Control)





Solar Incident Energy : 500 W/Sqm



Temp Diff 15° C

Clear Glass
407 W/sqm

TRIPLE SILVER

319 W/sqm

1G
SF 0.50
U value 5.7

2G
SF 0.35
U value 2.8

217 W/sqm

6G
Selectivity : >2.2



3G
SF 0.30
U value 1.9

178 W/sqm

125 W/sqm

5G
Double Silver
SF 0.20
U value 1.6

4G
SF 0.25
U value 1.8

150 W/sqm

U value W/SqmK

The future is here

“Extreme” Solar and thermal control

- SGG Extreme
- Triple silvered low-e glass
- High spectral selectivity **2.15**
- Solar Factor : **0.28**
- U-Value : **1.5**
- Light Transmission : **60%**



Welcome to the Future



➔ Glass that tints on demand

➔ Flexible Energy management – at a click of a switch



➔ Automatic transition - excellent light and heat control – Climate responsive

Automatic transition performance from clear to high solar control at will

Ball State University: Muncie

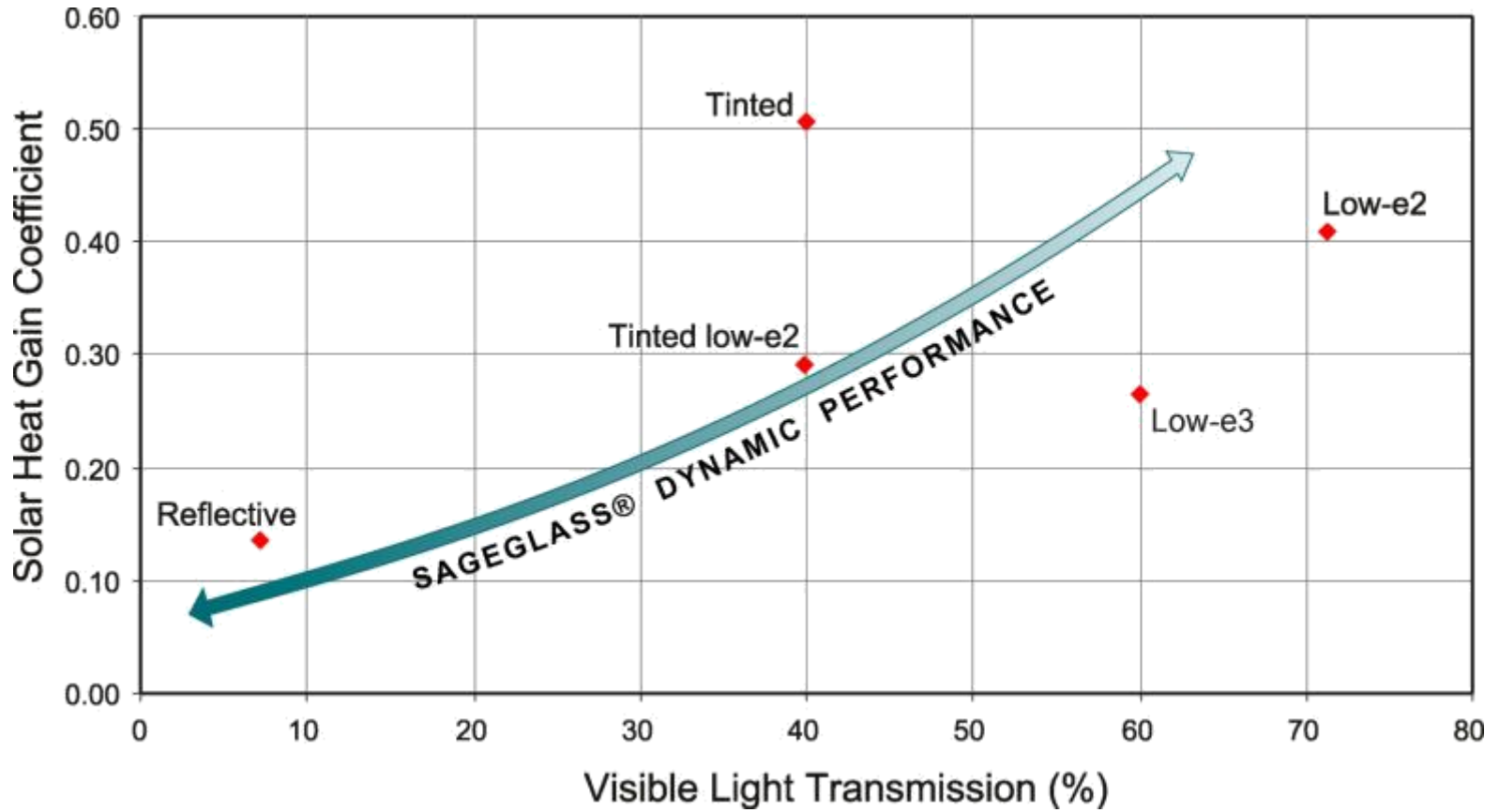


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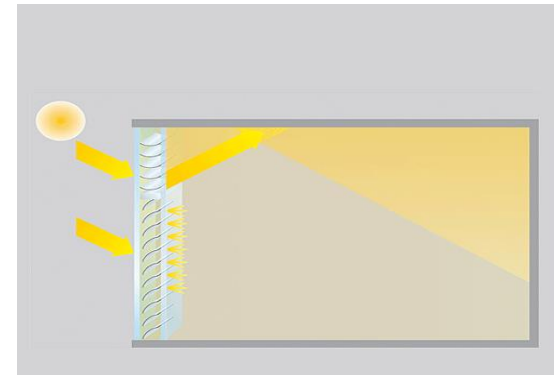


Performance



Automated Louvers

- ➔ Glass integrated electrically operated louvers - solar and glare control.
- ➔ Solar factor total of as low as 8 % and Diffused Light Transmission of upto 22% can be achieved
- ➔ Roof Glazing - innovation in skylights
 - ➔ Reichstag, Berlin (GER) – Sir Norman Foster
 - ➔ Daimler Chrysler AG, Sindelfingen (GER) – Renzo Piano



Glass Engineered For Environment

Non-Toxic



Low VoC

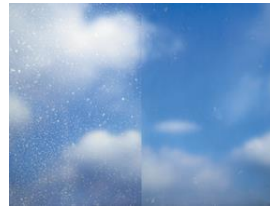


**100%
Recyclable**



**Lead Free
Arsenic Free**

Hygiene



**Self
Cleaning**

Self Cleaning Glass





Innovations in Fire Safety Glass

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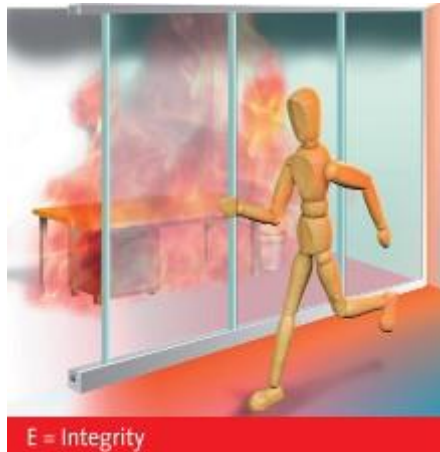


GLASS

Glass for Fire Safety

- ➔ **Clear visibility of fire source & trapped person**
- ➔ **Quicker identification faster extinguishment of fire**
- ➔ **Glass that**
 - ➔ **Stops the spread of fire, smoke & hot gases**
 - ➔ **Provides radiant heat protection**
 - ➔ **Provides heat insulation**

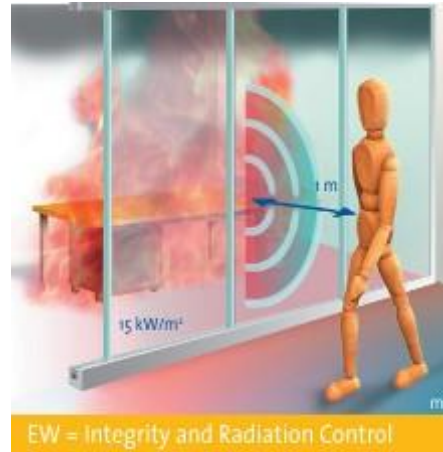
Concepts – Fire Performance Classifications



E Class

Criteria: Integrity

Glazing products to block smoke, flames & toxic gas.



EW Class

Criteria: Radiation

Products to reduce radiant heat transfer (limit 15 KW/sqm at 1m distance)



EI Class

Criteria: Insulation

Products providing a barrier to radiant and conducted heat transfer ($\leq 140^{\circ}\text{C}$)



Innovations in Interior Glass

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GLASS

Writing on the Wall...!

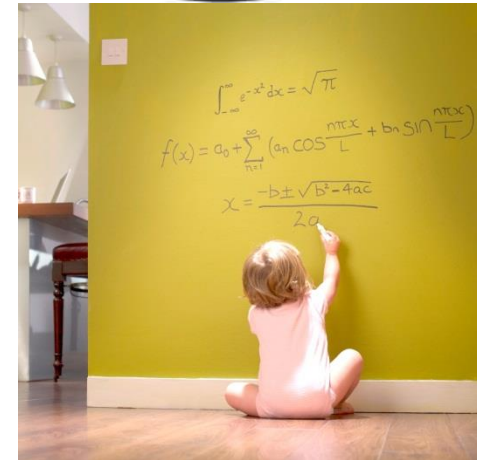
➔ Save Paper!

- ➔ Have we ever wondered , how much of paper is used for regular office communication?



➔ Maintenance ?

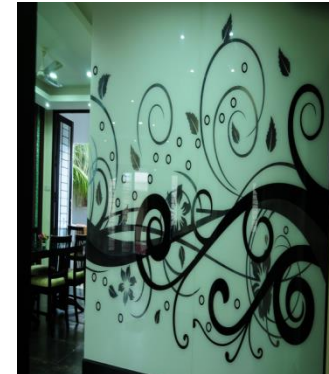
- ➔ How do we reduce toxic Maintenance measures?



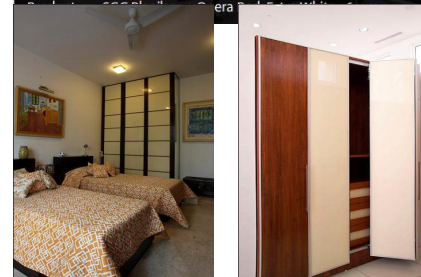
Lacquered Glass



- Combines the visual depth of lacquer colors and the resistance of glass
- Environment friendly - Lead free, arsenic free, formaldehyde free, low VOC



Project : Aaron Group
Architect : Ambrish Arora and Sidhartha Talwar, Lotus
era



The Writing on the wall... **is now clear!**





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GLASS















INNOVATIONS IN BRIEF



Fire Safety Glass

Automated Glass integrated Louvres



Triple Silver , Highly Spectral Selective coatings

Self-Cleaning Glass



Flexible Climate Responsive Control

Environment friendly Lacquered Glass



Glass !!

TRULY ... an intriguing material

... with Glass Engineered for the tomorrow....



Thank You!!!

www.glassisgreen.com

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