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# SMART GLASS BETTER BUILDINGS

Daylight - Dynamic Glazing

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## INTENT VERSUS OUTCOME

How long will the blinds stay down?

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## THE VISION



## REALITY



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## Examples are all around us



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## LIGHTING LEVELS FOR VISUAL COMFORT



Comfortable lighting level in offices & classrooms = 300 to 500 lux

The source for this lighting is:



Natural light

OR

Artificial lighting

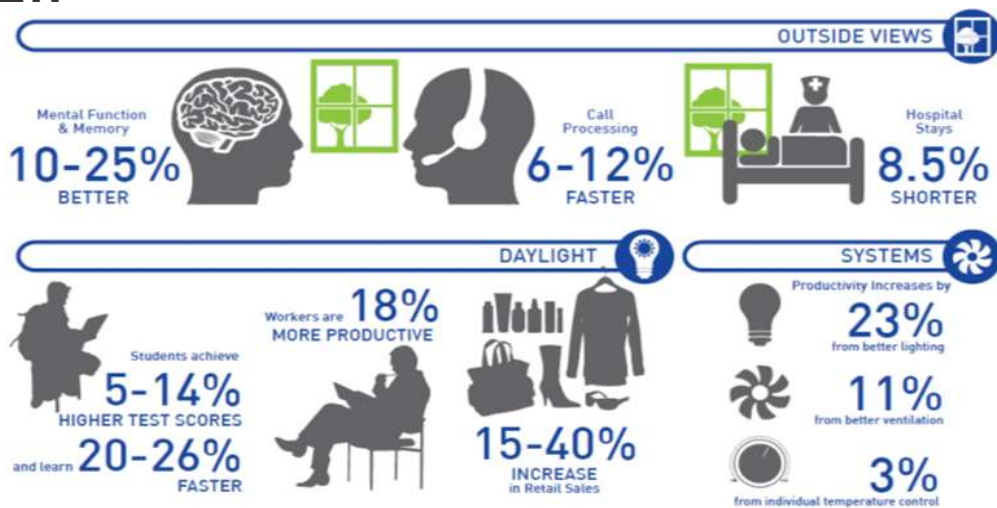


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## PROVEN HEALTH BENEFITS OF DAYLIGHT AND VIEW



Net present value analysis of the operational cost and productivity and health benefits of LEED® certified buildings (World Green Building Council, 2013)



WORLD GREEN BUILDING COUNCIL

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## ONE SOLUTION DOES NOT FIT ALL

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UK



**2 months** of average outdoor light level of around **1,11,000 lux**



**10 months** of average outdoor level of around **20,000 lux**

USA



**5 months** of average outdoor light level of around **1,11,000 lux**



**7 months** of average outdoor level of around **20,000 lux**

INDIA



**9 months** of average outdoor light level of around **1,11,000 lux**



**3 months** of average outdoor level of around **20,000 lux**

**A glass with very high VLT might suit buildings in UK & USA, but the same might not hold true for India!**

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## ENERGY CONSUMPTION ALSO DIFFERS

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UK



Lighting 17%



HVAC 55%

Others 28%

USA



Lighting 22%



HVAC 48%

Others 30%

INDIA



Lighting 59%



HVAC 31%

Others 10%

**Though India is a tropical country with abundant sunlight, why is more energy spent for lighting than on air-conditioning?**

Source: Table 7, A review on buildings energy consumption information, Luiz Perez Lombard, Jose Ortiz, Christine Pout, 12<sup>th</sup> March 2007  
Source for India: <http://www.cseindia.org/userfiles/Energy-and-%20buildings.pdf>



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## WHY THIS GAP?



Daylight & views vs glare and heat



Want vs Need



Daylighting experts vs rest of us



Believing the value and seeing the value



New vs existing buildings

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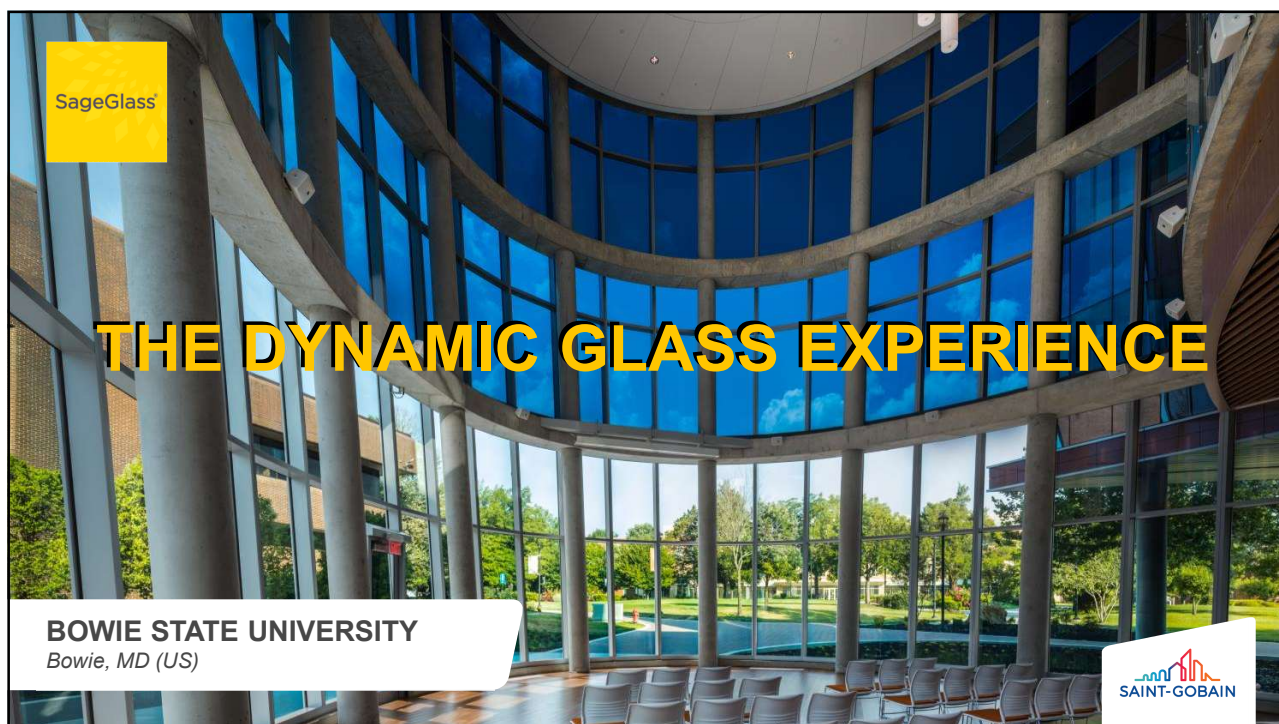
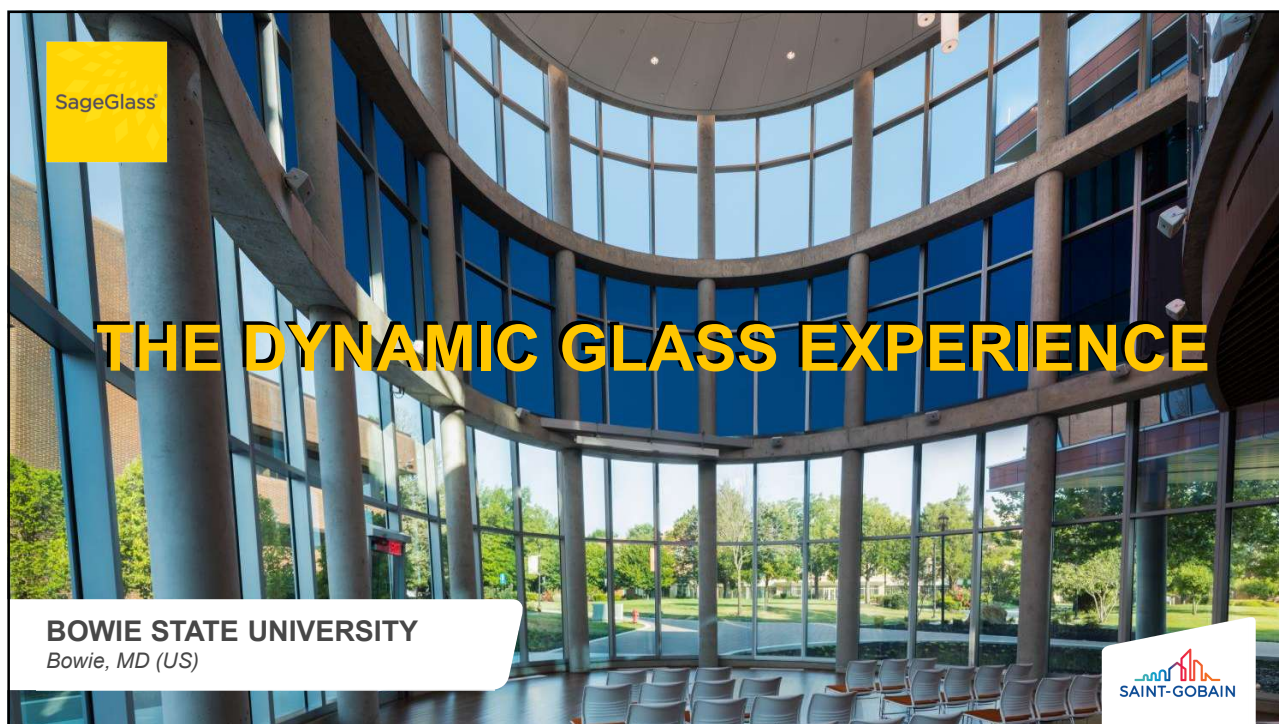
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## THE STATIC GLASS EXPERIENCE

**BOWIE STATE UNIVERSITY**  
Bowie, MD (US)

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## SAGEGLASS® FOR EVERY APPLICATION

The world's most elegant dynamic glass



- Glare control without shading devices
- Intelligent daylight management
- Maintain view and connection to the outdoors
- Help achieve green labels
- Automatic and manual control



### *SageGlass Benefits Plus:*

- Precise solar control
- Excellent interior color rendering



### *All the Benefits of SageGlass and SageGlass LightZone® Plus:*

- Elegant visual experience with gradual in-pane tint transitions
- Enhanced biophilic design

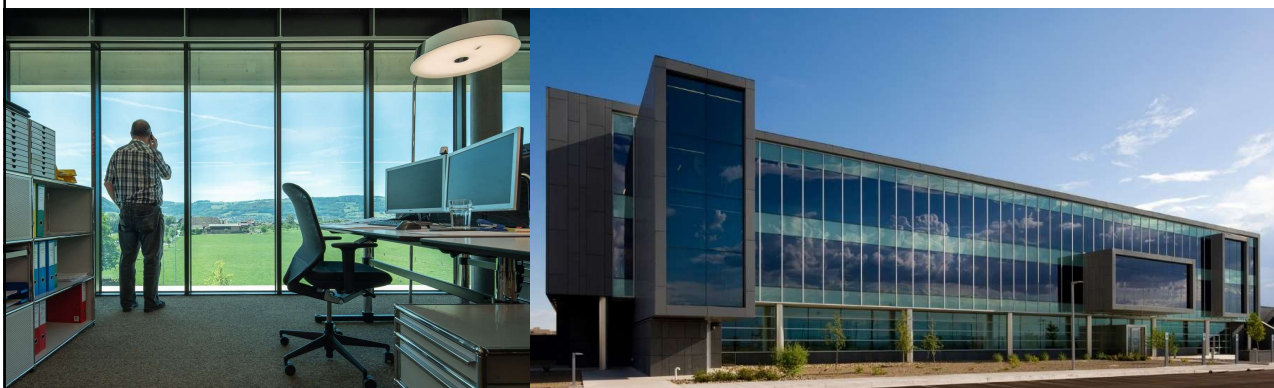




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## ENHANCE THE BEAUTY OF YOUR DESIGN

Dynamic facades delivers delight inside and out



Unique coating process within glass results in a more clean, uniform and vibrant finish

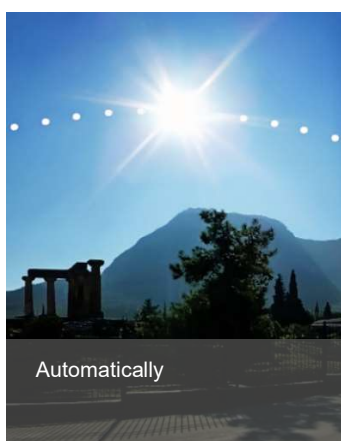


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## SMART GLASS THAT INTERACTS

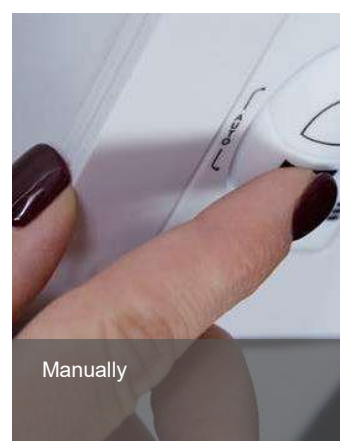
Higher performance, greater emotion



Automatically



Remotely



Manually

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## DYNAMIC GLASS

A broad range of human and economic benefits

### PEOPLE CENTRIC



Retain/Attract  
Comfort  
Productivity  
Well-Being

### SUSTAINABLE



Material Reduction  
Energy Conservation  
Green Ratings Contribution

### INTELLIGENT



Connected  
Intuitive  
Futureproof



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SMART GLASS  
HAPPY PEOPLE



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## DAYLIGHT AND VIEWS

Top amenity workers want



“In a research poll of 1,614 North American employees, we found that access to **natural light and views** of the outdoors are the **NUMBER ONE** attribute of the workplace environment, outranking stalwarts like onsite cafeterias, fitness centers, and premium perks including on-site childcare.”

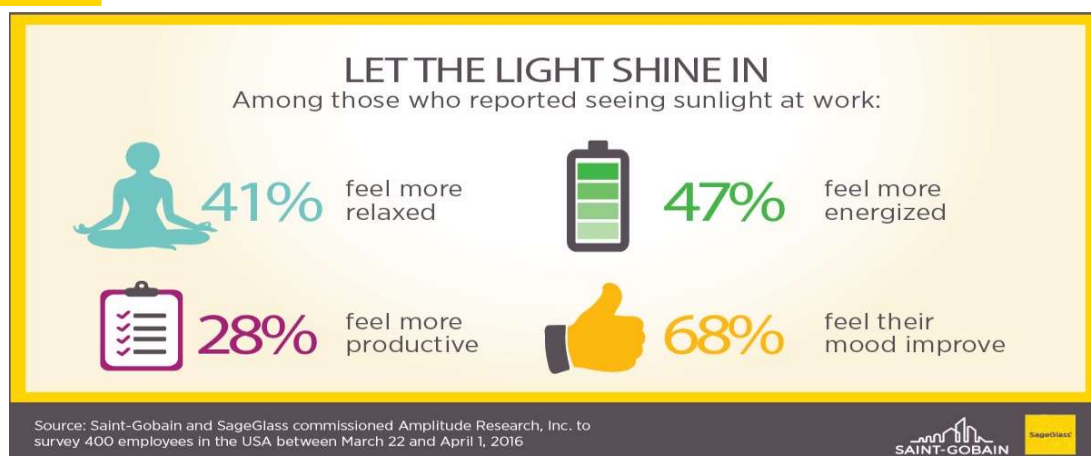


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## WELL-BEING & COMFORT

Benefit of Natural Views & Sunlight



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## VALUE OF DAYLIGHT IN REAL ESTATE

Buildings with ample  
daylight command a

# 5.9%

Premium than  
buildings with less  
daylighting

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<https://www.sageglass.com/en/visionary-insights/quantifying-real-estate-value>

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## SMART GLASS HAPPY PLANET

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## NET-ZERO BUILDING GROWING ACCEPTANCE

# \$96B

Anticipated global market for  
net-zero buildings by 2026

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<https://www.marketwatch.com/press-release/net-zero-energy-buildings-market-size-set-to-register-strong-growth-of-cagr-to-2026-2019-03-06>



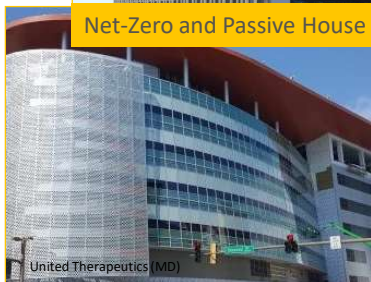
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## SMART GLASS & SUSTAINABILITY

- Reduce HVAC energy by **up to 20%**
- Reduce peak energy by **up to 26%**
- Peak reduction allows for **HVAC downsizing** for Capex savings
- Fully tinted, dynamic glass **blocks 91% of solar heat** compared to just 75% by high-performance conventional glass



Net-Zero and Passive House Buildings with SageGlass



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**HIGHER RETURNS**  
With Dynamic Glass

**9+**  
Months Faster Lease Up

**10%+**  
Premium in Rent

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## THE CASE FOR DYNAMIC GLASS

A broad range of human and economic benefits



### Developer / Owner

Contribution in Green Ratings  
HVAC Downsizing  
Faster Leasing  
Higher PSF Rent  
Increased Perimeter Space  
Premium Design Aesthetics  
Futureproof



### Tenant

Retain or Attract Talent  
Occupant Thermal and Visual Comfort  
Maximize Daylight and Views  
Higher Productivity  
Lower Absenteeism  
Energy Savings  
No Blind or Shade CapEx / OpEx

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### MonteCarlo

Ahmedabad

Q4 2019











