

# VGSmartGlass

World's Smartest Glass System

**Company Overview**  
**2015 NREL Industry Growth Forum**  
**[www.vgsmartglass.com](http://www.vgsmartglass.com)**

# VG SMARTGLASS BACKGROUND

- Based in Chicago, IL
- VG SmartGlass was founded in 2014 as an entity specifically to commercialize the technology from SmarterShade Inc.
- SmarterShade Inc. developed the core technology and commercialized the technology into early markets
- On July 30, 2015, VG SmartGlass acquired the assets and key human resources of SmarterShade Inc.

# PROBLEM



Traditional window treatments have wide adoption, BUT...

The Department of Energy named smart glass a “must have technology,” BUT...

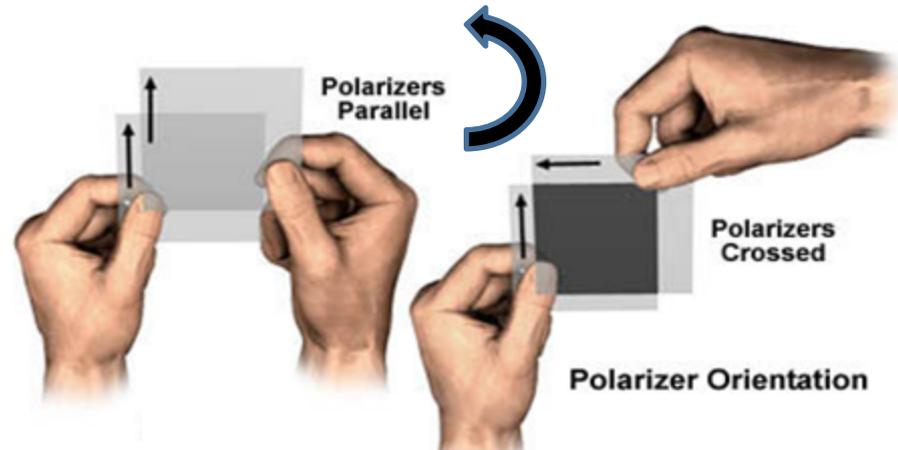


**THERE MUST BE A SIMPLER SOLUTION !**

# INNOVATION: POLARIZATION VIA LINEAR SHIFT

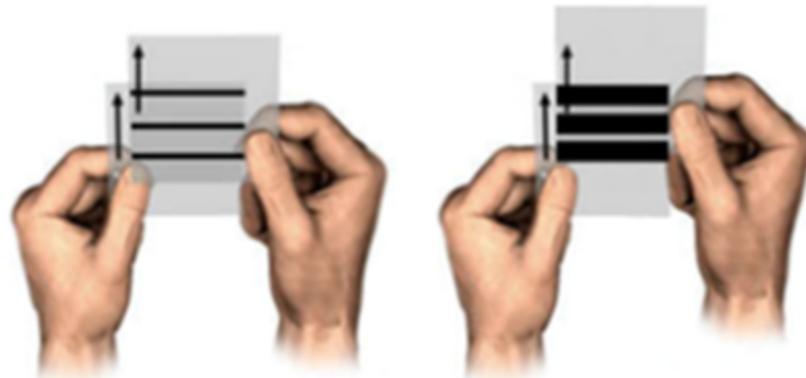
## Traditional Approach

With off-the-shelf polarizer, a **rotation** changes light transmission



## SmarterShade Innovation

With a special optical film, a **linear shift** changes light transmission



**MOST WINDOWS ARE NOT ROUND, SO A LINEAR SHIFT IS NEEDED**

# UNIQUE BENEFITS

- Benefits of smart glass\* at a fraction of the price
- No electricity or phase changing materials
- Instant Switch
- Superior interface and durability vs. blinds and shades
- Built In and aftermarket formats
- Energy savings – 20% to 30%
- Unique ability to create patterns and colors

# FILM TECHNOLOGY PIPELINE

Invisiblind



Color Options



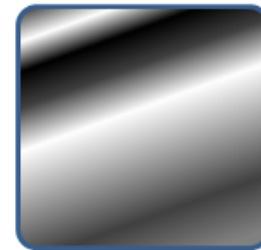
Decorative



Patterned Images/ Logos



Invisiblind Mirror



SmarterShade



Scale Up

Scale Up

Scale up

Scale up

Scale up

Development

On Off Capability

On Off Capability

Special patterns/ images (logos)

Special patterns/ images (logos)

Reflects solar heat gain

Continuous shading

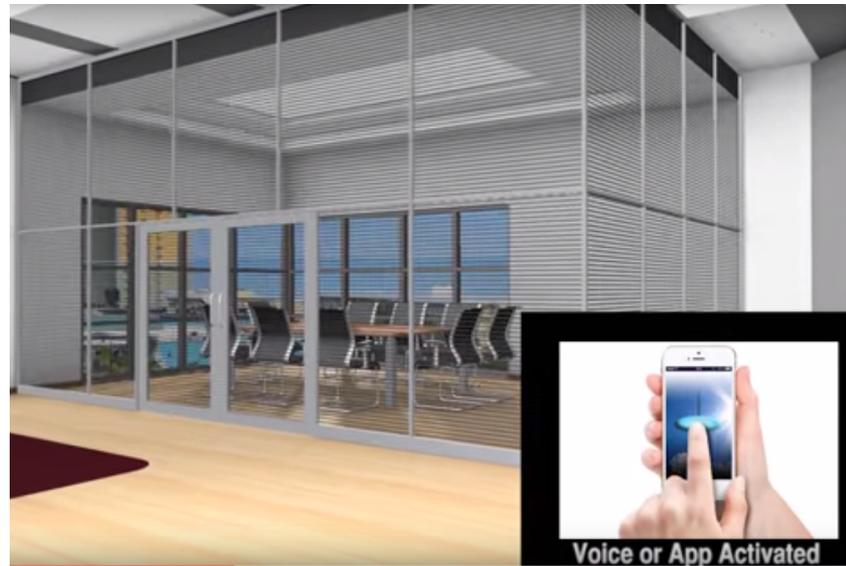
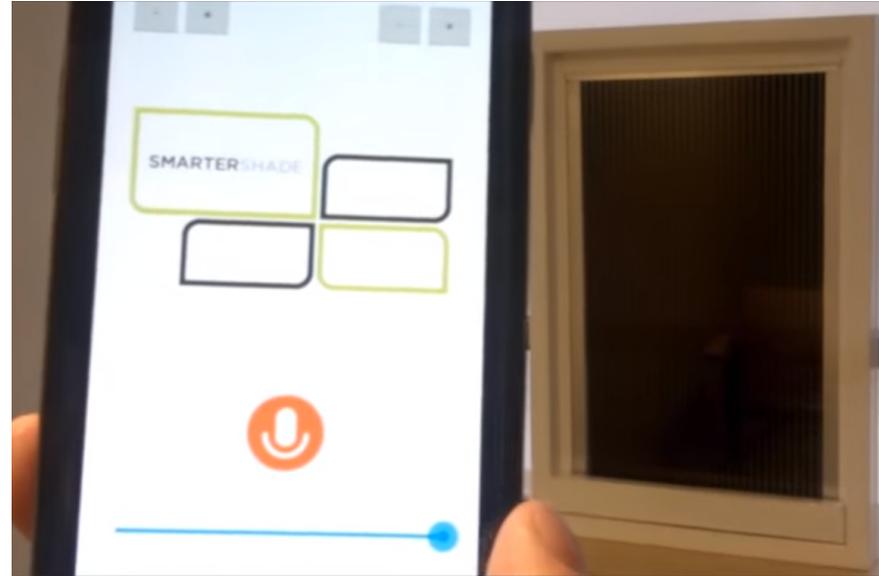
**VG FULLY OWNS GLOBAL PATENT PORTFOLIO ON ENTIRE FILM PIPELINE**

# ACTIVATION AND CONTROL

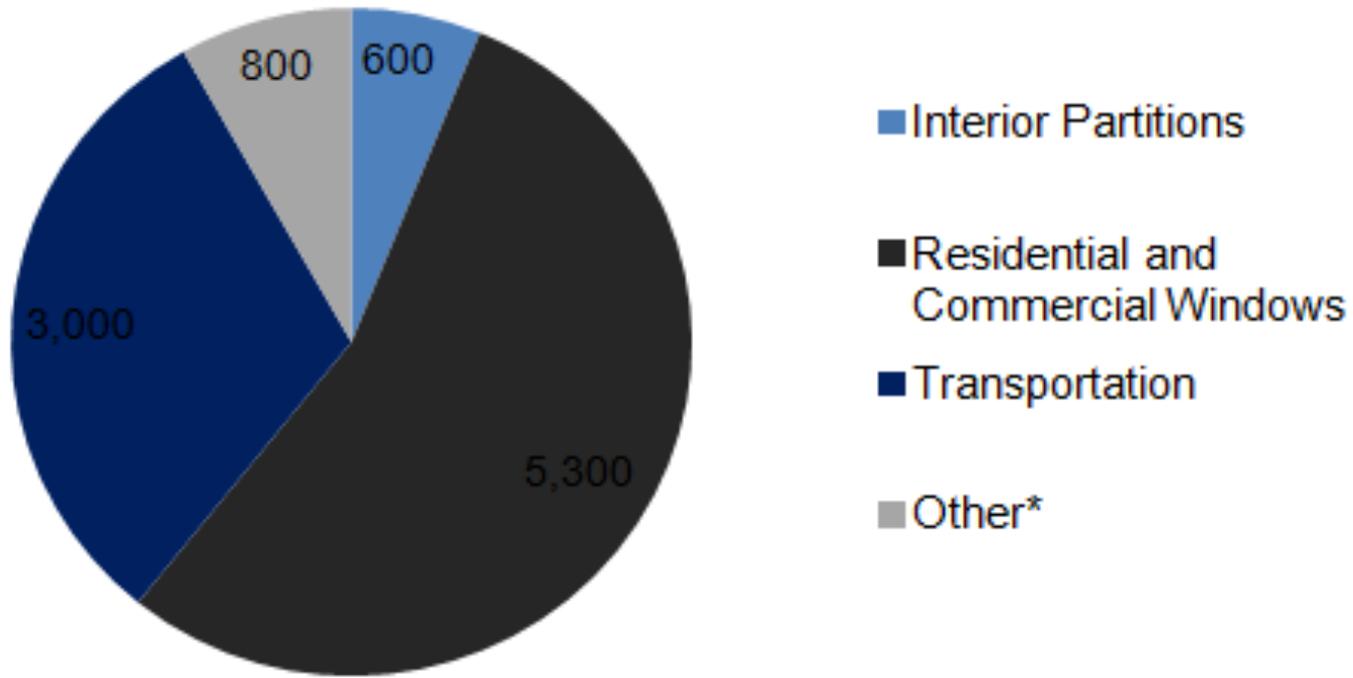
Manual



Automated



# ADDRESSABLE MARKET (MILLIONS USD)



**TOTAL MARKET  
POTENTIAL:  
\$9.7B+**

\* Other includes advertising,, branding, toys, eyewear, etc..

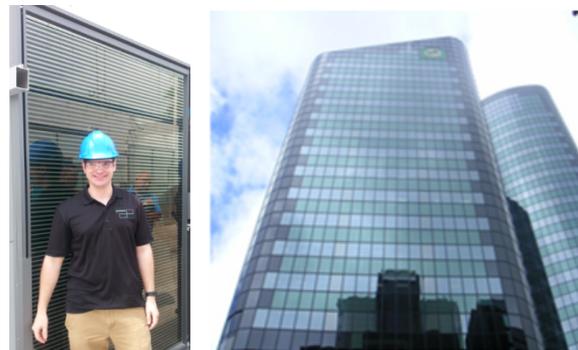
# TRACTION

## I Interior Partition



- Launched in Europe and Asia
- Customer installations in education, healthcare, office applications

## II Fenestration



- Full Size Mockups Built
- Demo at NREL Facility
- Pilot Launch 2016



## III Transportation



- Licensee has development projects with 3 OEMs and 5 tier 1's
- Concept Car Demo Nov 3-5

# CORE TEAM

## Management Team



### **Tony Lambros, President**

Over 30 + years as an executive and sales expert in the window and door hardware business



### **Jerry Hogan, Director of Design and Engineering**

Over 35+ years of experience in custom high-performance window design, and applications engineering



### **Mike Stacey, VP of Sales and Business Development**

SmarterShade Founder, 15+ years experience as strategy and operations entrepreneur and management consultant



### **Ryan Tatzel, Optical Film R&D**

SmarterShade Founder, 8+ years experience conducting optical film and chemical engineering background

## Key Advisors

- **John Faour** (Faour Glass Technologies): high end residential glass expert, North America
- **Carmine Parente** (AGM Industries): glass and metal supply industry distribution
- **National Renewable Energy Lab (NREL)**, Window simulation and testing partner
- **Steve Abramson**: Window industry commercialization expert
- **Ted Willoughby**, Building products expert

## Product Engineering Resources



**Abhi Chattopadhyay**, Electrical and Mechanical

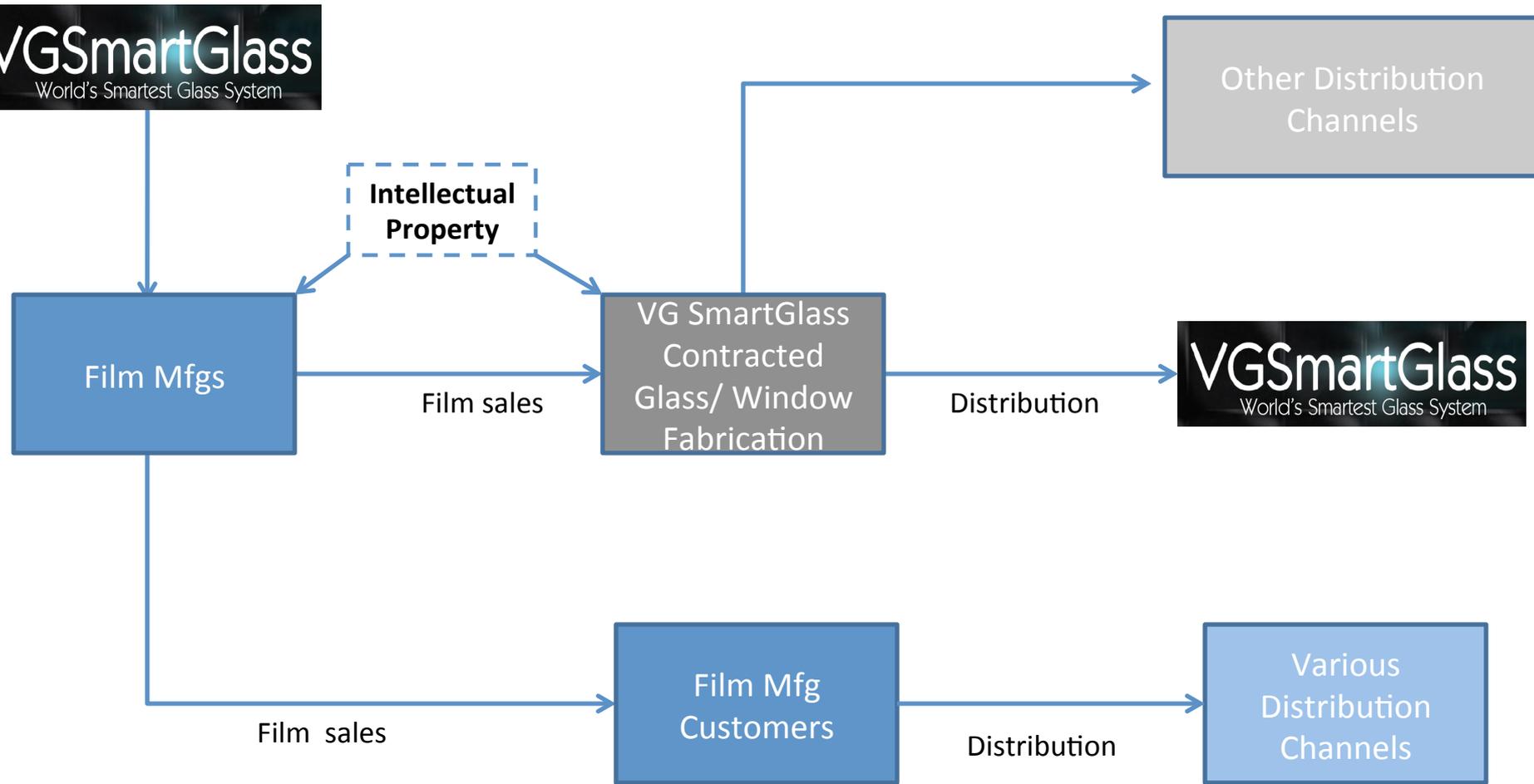


**Sebastian Morales**, Mechanical and Rendering



**Aaron Brown**, Mechanical

# VALUE CHAIN



## VG SMARTGLASS BUSINESS MODEL:

- 1) LICENSE TECHNOLOGY
- 2) SELL PRODUCTS MADE BY GLASS+ WINDOW FABRICATORS

# FINANCIALS

INCOME STATEMENT	2015E	2016E	2017E	2018E	2019E
	FY	FY	FY	FY	FY
<b>Revenue</b>					
Fabricator Product Sales	\$ 164,058	\$ 6,349,078	\$ 36,519,366	\$ 101,200,585	\$ 191,653,325
VG Product Commissions	\$ 24,609	\$ 952,362	\$ 4,382,324	\$ 10,120,059	\$ 19,165,333
VG Licenses	\$ 16,406	\$ 468,729	\$ 1,652,109	\$ 3,228,222	\$ 4,117,878
VG JDA Payments	\$ 34,500	\$ 175,000	\$ -	\$ -	\$ -
<b>Total VG Revenue</b>	<b>\$ 75,515</b>	<b>\$ 1,596,091</b>	<b>\$ 6,034,433</b>	<b>\$ 13,348,281</b>	<b>\$ 23,283,210</b>
<b>Total Operating Expenses</b>	<b>\$ 258,418</b>	<b>\$ 1,084,043</b>	<b>\$ 2,946,603</b>	<b>\$ 5,515,618</b>	<b>\$ 10,043,517</b>
<b>NET Earnings</b>	<b>\$ (182,904)</b>	<b>\$ 396,847</b>	<b>\$ 1,939,489</b>	<b>\$ 5,015,181</b>	<b>\$ 7,059,450</b>
<b>EBITDA</b>	<b>\$ (182,904)</b>	<b>\$ 517,047</b>	<b>\$ 3,097,829</b>	<b>\$ 7,847,663</b>	<b>\$ 13,304,693</b>
<b>EBITDA Margin</b>	<b>-242.21%</b>	<b>32.39%</b>	<b>51.34%</b>	<b>58.79%</b>	<b>57.14%</b>

**Commissions and Licenses will drive a highly profitable business model.**

# FUNDING SOURCE / USES

2015

\$435K

PLANNED

\$675K

## SOURCES:

- 1.\$185K Investor funds
- 2.\$250K Wells Fargo Grant

- 1.\$500K Financial Investor
- 2.\$175K Strategic Partner

## USES:

- 1.U.S. Launch – interiors
- 2.Development / Testing - windows
- 3.Demo Installations - windows

- 1.Product Design and Fabrication Lab
- 2.Fenestration (Windows) Launch
- 3.Development/ Testing- Automation

# SUMMARY

- ✓ Proprietary technology with VAST MARKET POTENTIAL
- ✓ Unique solution for privacy, glare, and energy control in MANY APPLICATIONS
- ✓ TRACTION with key partners in Europe and Asia
- ✓ Wholly-owned GLOBAL Patents and Suite of product designs
- ✓ Right management team to execute

# APPENDIX

# COMMERCIALIZED PRODUCT

<http://www.intastop.com/site/ivision>

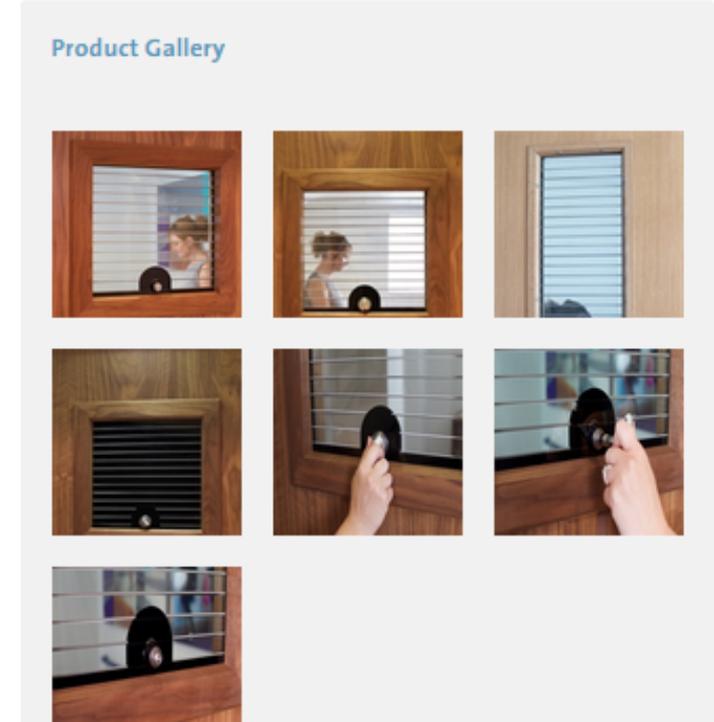


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Ivision   **Overview**   Technical Info & Downloads   Colours & Finishes



## Overview See our BIM library below

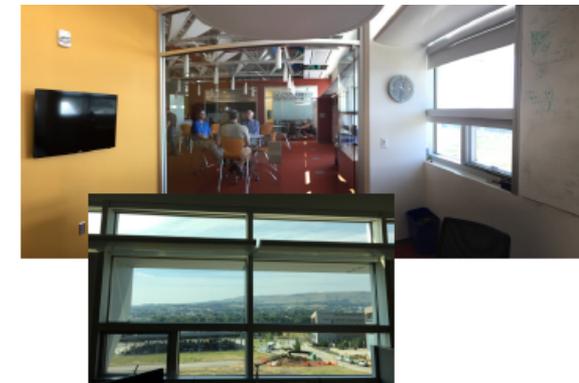
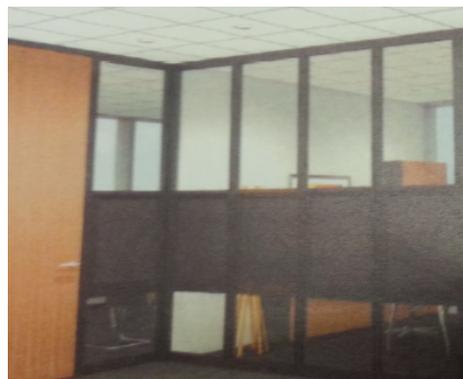
SEE what you've been missing with this stylish vision panel providing 92% visibility

- Benefits:
- Monitor patients easier with near full visibility.
  - Security and dignity of staff and service users assured using silet operation.
  - Easy for left or right hand users.
  - Staff only need to carry one key (Lifeline) to operate multi devices
  - Quiet operation (controlled closing of glass and optional plastic key).

- Features:
- Provides 92% visibility.
  - Fire tested to BS476 Part 20 & 22 for 30 and 60 minutes.
  - LIFETIME guarantee.\*
  - Manually operated, no wiring/mains power required.
  - Interchangeable key to operate multiple devices.
  - Omni-Directional operator design.
  - Frameless design.
  - Cycle tested to greater than 250,000 cycles.
  - Patented design.

# INSTALLATIONS

Segment	Location	Details	Status
Hospital	United Kingdom	Multiple Hospital-patient room doors	Complete + in progress
Hospital	Japan	2 medical equipment showrooms	In progress, complete Q4 2015
Education	Japan	Okegawa City Library	Complete
Office	Japan	Executive office suite	Complete
Office	Chicago, USA	IIT office doors	In progress, complete Q4 2015
Commercial Window (Retrofit)	Denver, USA	NREL building – Wells Fargo IN2 program	Due Jan 2016



# OTHER KEY PROJECTS

## Interiors

- Being evaluated by 2 leading architects on multiple hospital jobs
- Requests by leading hotel chains to evaluate technology



## Residential

- Door projects with multiple top residential companies
- Local Window company in Chicago to showcase technology in show room

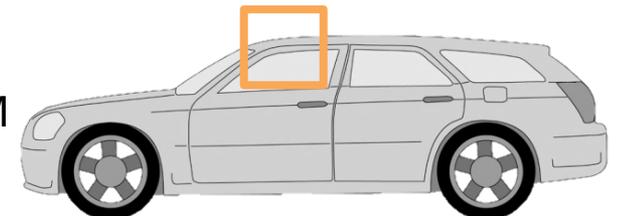
## Commercial

- Large Commercial company has developed full size mockup window with our technology
- Local Window company in Chicago to partner with VG SmartGlass



## Automotive

- Showcasing Technology through licensee at SEMA Show Nov 3-6
- Licensee has 5 automotive projects in Japan
- Request for 2016 development effort with U.S. based OEM



# RECENT PRESS

## AURP Innovation Award October 2015



<http://tinyurl.com/nf5q7p4>

## Company Profile at White House Clean Energy Investment Summit June 2015



[https://www.youtube.com/watch?v=A\\_3rvABz7fM](https://www.youtube.com/watch?v=A_3rvABz7fM)

## Wells Fargo IN2 Award April 2015



<http://tinyurl.com/nh687b6>

## Global Automotive Innovation Challenge April 2015

