The Earth is the only planet in the universe, known yet, to harbor life. There is nowhere else at least in the near future to where we can migrate.

**So, let’s SHAPE THE FUTURE!**

With Glass for today & tomorrow
WHAT IS GREEN?

REDUCE

ENERGY CONSUMPTION
GREENHOUSE GAS EMISSIONS
RAW MATERIAL CONSUMPTION
SOLID WASTE STREAMS
ENHANCE

PRODUCTIVITY

COMFORT

IMAGE

MARKETABILITY

WHY GREEN?
WHY GREEN?

URBANISATION KEEPS ACCELERATING EVERYWHERE...

PERCENT OF POPULATION LIVING IN URBAN AREAS

![Map showing percent of population living in urban areas worldwide.](image)

Source: United Nations, 2014

---

...LEADING TO CLIMATE CHANGE AND RESOURCE SCARCITY

**CLIMATE CHANGE**

+2°C by 2100 (COP 21)

Paris agreement – To limit global warming to less than 2°C compared to pre-industrial levels

**RAW MATERIALS DEMAND**

+50% by 2030, with some raw materials disappearing by 2100

The Coal reserves across the world are being depleted

**CLIMATE REFUGEES**

60 million in 2015, 250 million by 2050

Case in point: Fiji, Tuvalu, Kiribati, Vanuatu and the Marshall Islands could be submerged in 50 years!

**WATER DEMAND**

+40% by 2030

**AIR POLLUTION**

> 7 million deaths in the world in 2015

**ENERGY DEMAND**

+40% by 2030
20TH CENTURY
The great acceleration

- Growth of population by a factor of 3.7
- Growth of GHG emissions by a factor of 13
- Increase of average globe surface temperature by 0.6 °C
- Growth of total material extraction by a factor of 8
- Growth of chemicals production since WWII by a factor of 15

THE CONSTRUCTION SECTOR IS AT STAKE
As advanced beings, with increased consciousness, the world seeks ‘wellbeing’
Not just any kind of wellbeing.
The one where wellbeing is guaranteed all through the individual's life, at home, at school, at work and on the move...

And where of course, people expect comfort, but also Performance, Safety, Adaptability, Accessibility, Beauty.
WHY GREEN?

- Increase Energy Efficiency
- Reduce Waste generation
- Enhance Productivity
- Enhance Comfort
- Enhance Image
- Increase Marketability

HOW CAN SAINT-GOBAIN HELP YOU TO ‘CHOOSE GREEN’?
HOW DOES SAINT-GOBAIN HELP YOU “CHOOSE GREEN”?

- Energy efficiency
  State-of-the-art and innovative glazing solutions to achieve Energy Efficiency

- Minimal waste generation
  Circular economy which promotes Recycling

- Positive overall human impact
  • Enhanced Image & Marketability
  • Increased Productivity

ENERGY EFFICIENCY
Challenges…

3 PROBLEMS TOO OFTEN MET IN BUILDINGS

Glare  
Heat gain  
Uncomfortable working and living space

Presenting to you, the cutting edge solution!

SageGlass
WHAT IS SAGEGLASS?
Dynamically Tinting Electrochromic Glass for a Dynamic Facade

Performance Data

<table>
<thead>
<tr>
<th>SageGlass® Product</th>
<th>Level of Tint</th>
<th>Inner Rise</th>
<th>%Tnl</th>
<th>%IR (%)</th>
<th>%Ra InL</th>
<th>%NIRall</th>
<th>SHGC</th>
<th>U-Factor</th>
<th>%Tov</th>
</tr>
</thead>
<tbody>
<tr>
<td>SageGlass Clear 6.38mm Clear w/54%</td>
<td>Clear State</td>
<td>0.0</td>
<td>15</td>
<td>17</td>
<td>13</td>
<td>0.41</td>
<td>0.26</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0.80mm SaniGlass 2.21mm SageGlass</td>
<td>Intermediate State 1</td>
<td>15</td>
<td>17</td>
<td>9</td>
<td>7</td>
<td>0.75</td>
<td>0.38</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0.80mm air space w/9%Argon fill 4mm clear</td>
<td>Intermediate State 2</td>
<td>15</td>
<td>17</td>
<td>9</td>
<td>2</td>
<td>0.10</td>
<td>0.26</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>4mm clear</td>
<td>Fully Tinted</td>
<td>1</td>
<td>15</td>
<td>9</td>
<td>0.4</td>
<td>0.09</td>
<td>0.26</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

A façade you can interact with
HIGH PERFORMANCE, GREATER EMOTION

Automatically
Remotely
Manually
Transparent heat and glare control

ASHFORD CASTLE
Cong, Ireland
MINIMAL WASTE GENERATION
CIRCULAR ECONOMY - RECYCLE

Are we today throwing away the resources of tomorrow?

LINEAR ECONOMY

MAKE

MAKE

DISPOSE

MAKE

CIRCULAR ECONOMY

USE

RETURN

VS

30 Zn

27 Co

15
CIRCULAR ECONOMY
FOR SAINT-GOBAIN

- DEVELOPING SOLUTIONS EASY TO REUSE OR RECYCLE
- INCREASING THE RECYCLED CONTENT IN OUR PRODUCTS
- USING RENEWABLE MATERIALS
- RECYCLING OR REUSING OUR PRODUCTS

Eco-innovation is Saint-Gobain’s policy to bring differentiating value to our customers by developing and distributing innovative products and solutions that help reduce the environmental impact of buildings and infrastructure over their whole life cycle.
POSITIVE OVERALL HUMAN IMPACT

Natural Daylight thru Glass has Positive Impact on human beings

- Students achieve 5-14% higher test scores
- Learn 20-26% faster
- Workers are 18% more productive
- Increase in retail sales 15-40%
Glass facilitates Connection to the outdoors positively impacting us

Connection to the outdoors

ENHANCE IMAGE & MARKETABILITY
Make the building more attractive to buyers and tenants

Command a higher sales price

Increase a property’s value

Lower operating costs

Realize brand recognition, public relations and community benefits

Green is not just a certification.

It is a movement; an idea to build a better tomorrow.

And for us at Saint-Gobain, Green is the only way of life!
THANK YOU!!