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# Biophilia... It's the Cure!

**Annissa Flickinger**  
Vitro Architectural Glass

# Cravings?

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A close-up photograph of a woman with long brown hair, wearing a white top, eating donuts. She is holding a large donut with blue and white frosting and sprinkles in her right hand, and another donut with white frosting, chocolate shavings, and orange drizzle in her left hand. She has her eyes closed and a satisfied expression. The background is blurred.

**Stressed? Anxious? Not feeling social?**

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You may be suffering from the

**Pnoview Virus**

or the **Fluorescent Flu...**

or the **Humdrum Syndrome...**

or **Cubicleitis**

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**You've got a  
Nature Problem!**

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The Cure is  
**Biophilia**

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## Biophilia Hypothesis

[ bahy-oh-fil-ee-uh, -feel-yuh ] [ bahy-poth-uh-sis, hi- ]

**Biophilia hypothesis**, idea that humans possess an innate tendency to seek connections with nature and other forms of life. The term biophilia was used by German-born American psychoanalyst Erich Fromm in *The Anatomy of Human Destructiveness* (1973), which described biophilia as "the passionate love of life and of all that is alive." The term was later used by American biologist Edward O. Wilson in his work *Biophilia* (1984), which proposed that the tendency of humans to focus on and to affiliate with nature and other life-forms has, in part, a genetic basis.

The effect is real, and over the years, scientists have shown that nature can provide stress relief, increase social interaction, encourage physical exercise and even help soothe the mental illness

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# Biophilic design

BIOPHILIC DESIGN IS THE PRACTICE OF CONNECTING PEOPLE AND NATURE WITHIN OUR BUILT ENVIRONMENTS AND COMMUNITIES.

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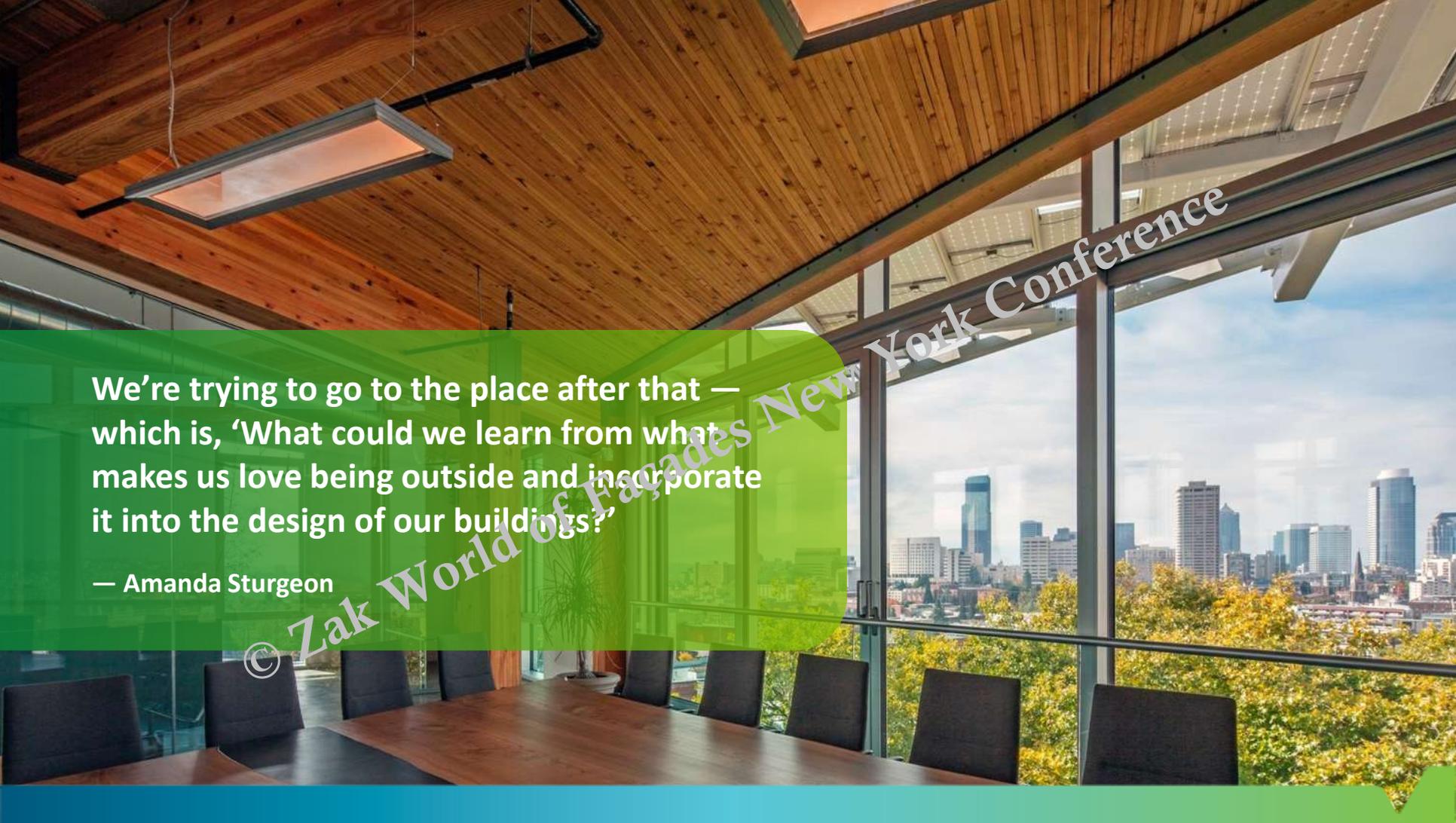


# Bullitt Center

The first step is, 'Why don't we just go outside? The second step is, 'We'll just bring some trees inside.'

— Amanda Sturgeon Biophilic design expert and CEO of the [International Living Future Institute](#)

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We're trying to go to the place after that — which is, 'What could we learn from what makes us love being outside and incorporate it into the design of our buildings?'

— Amanda Sturgeon

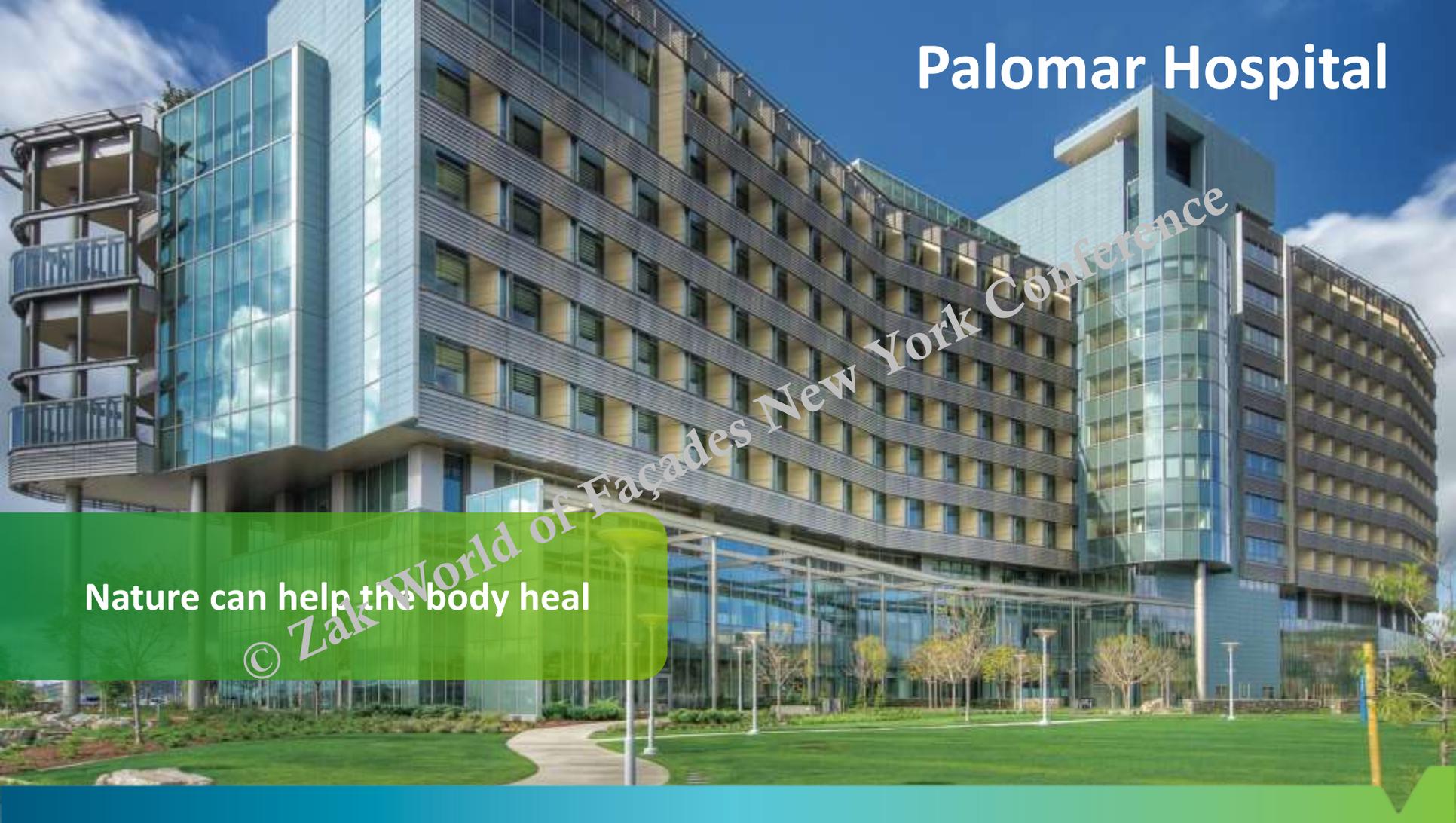


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# Palomar Hospital

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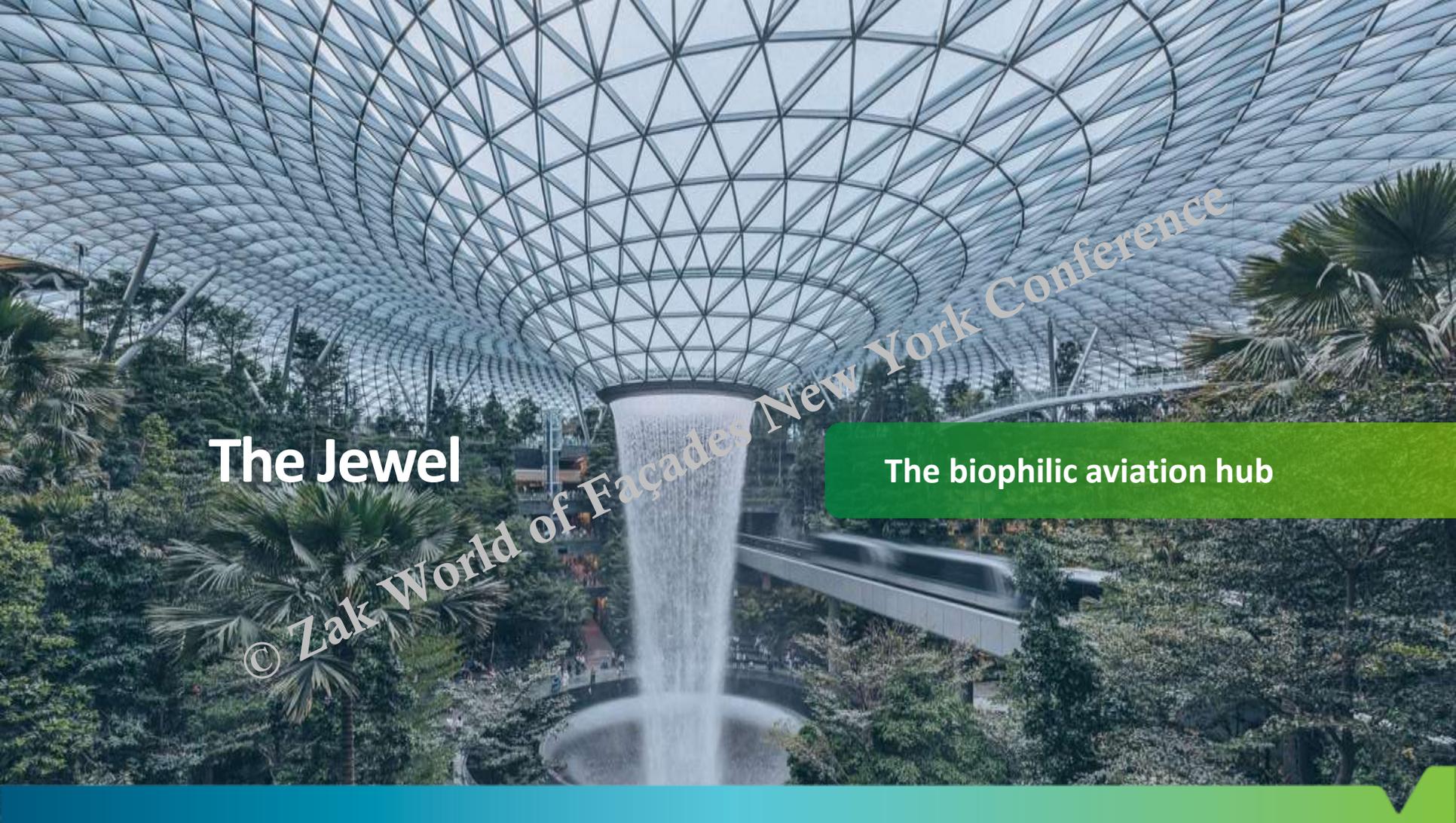
Nature can help the body heal





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Patients able to see nature got out of the hospital faster, had fewer complications and required less pain medication than those forced to stare at a wall.



# The Jewel

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The biophilic aviation hub

The 135,700 sqm Jewel Terminal is covered by a glass biodome that lets natural light flood in.



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Just 10 minutes of immersion in nature can reduce stress, restore cognitive ability, and improve mood.

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# PNC Tower Pittsburgh

So we set out to design a building that could breathe.

— Gensler

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# Via 57 West

Buildings with Vitro  
Glass creatively blend  
glass and grass.

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# Amazon Spheres



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The Spheres radically rethinks the way an office can look, feel, smell and sound.



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The Spheres are a result of innovative thinking about the character of a workplace and an extended conversation about what is typically missing from an urban office — a direct link to nature.

— Ben Eiben, Amazon's horticulture program manager



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## Color Rendering Index

	<b>Solarban® 60 on Acuity™</b>	<b>Solarban® 72 on Acuity™</b>	<b>Solarban® 90 on Acuity™</b>	<b>Solarban® 67 on Acuity™</b>
<b>CRI</b>	<b>97</b>	<b>94</b>	<b>94</b>	<b>94</b>
<b>SHGC</b>	<b>0.41</b>	<b>0.28</b>	<b>0.23</b>	<b>0.30</b>
<b>VLT</b>	<b>73%</b>	<b>67%</b>	<b>54%</b>	<b>56%</b>

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## **Vitro Glass Performance With CRI**



Solve your nature problem with Vitro Glass.

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**Please exercise caution when designing with large glass openings, as not all glasses perform the same.** A Color Rendering Index (CRI) value of 90 or higher is recommended. When using glasses with CRIs, below 90 and/or when glasses have a strong blue hue, occupants have been known to experience blurry design vision, dizziness, fatigue and spontaneous breakage of the human spirit. Avoid designing with large glass openings under stressful conditions, such as unworkable deadlines and while at the in-laws' for the holidays. Distorted large glass units may have the following effects on occupants: dizziness, light-headedness, drowsiness, dry mouth, headache, insomnia, nausea and cloudy thoughts.

Caution should also be exercised when selecting glasses with high solar values, specifically Solar Heat Gain Coefficients (SHGC). Occupants and items near the glazing may become hot, fevered or melt into a liquid state. Do not attempt to design large glass units that have not been heat-treated, which helps with wind load. Deflection may occur when the glass physically bows into or out of the building because of positive and negative wind loads. Excessive deflection may cause discomfort and/or concern the occupants of the building, and could potentially result in loss of edge support of the IG. Do not attempt to designing glass units that don't exceed ¼" of deflection.

When designing large insulated glass units, a thermal stress break is a possibility. Unusual changes in temperate may cause the glass to become hotter than the edge, resulting in an increased risk of breakage. Exercise caution at sunrise, when a thermal stress break is most likely to occur. Do not attempt to design large glass without the supervision of a certified fabricator, who may perform tests to ensure the glass can withstand anticipated thermal stresses.

Clinical trials indicate heat-treating may assist in immunity to wind loads and thermal stress. However, side effects may include distortion or diminished posture of the glass lite.

Large glass units may result in difficult handling during fabrication, spacer issues, seal ruptures, distortion and injuries to the sealed air cavity. Large glass is heavy, increasing the risk of damage during fabrication. Damage can best be prevented by making sure glazing contractors and glass fabricators are board-certified and licensed by appropriate governing bodies.

Field issues may occur on the jobsite. Rapid fluctuations in temperature



Architectural Glass

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[vitroglazings.com](http://vitroglazings.com)

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