



**GUARDIAN
SUNGUARD®**

VIDROS DE CONTROLE SOLAR E EFICIÊNCIA ENERGÉTICA

BUILD WITH LIGHT™

Fernando Simões - Architect
Product Manager Guardian Brazil

Guardian Industries

Since 1932 – U.S.A.

- Guardian one of the main glass fabricators in the world, creating solutions for following markets:
 - Residential
 - Commercial
 - Automotive
- Global presence – all continents



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Guardian in Brazil

Since 1994

- ***Porto Real – RJ***
 - ***1998 – Float Line***
 - ***2000 – Mirror Line***
 - ***2009 – Coater Line***

- ***Tatuí – SP***
 - ***2009 – Float Line***



Guardian in Brazil

- ***Coater Line Guardian:***
 - ***5 Off line Solar products that can be used Monolithically***
 - ***7 High Performance Low-E products, the only ones produced in Brazil***





LEED Certification

LEED – Glass applications

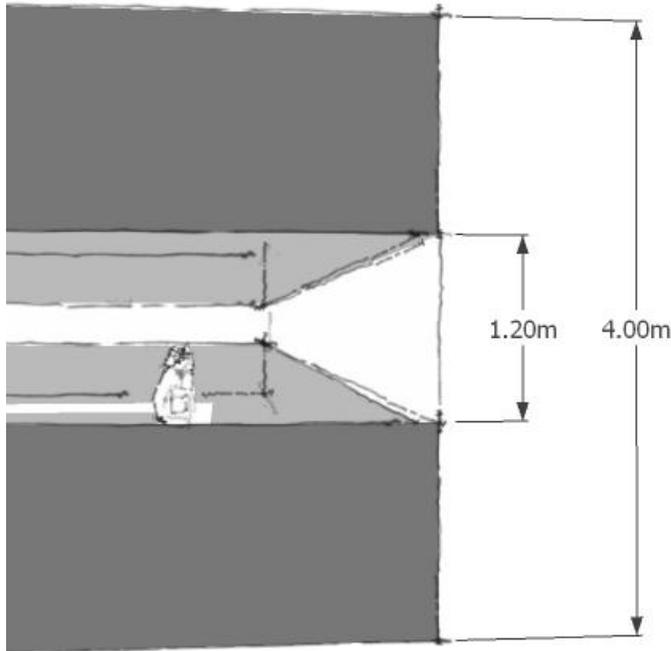
LEED CATEGORY	LEED CREDIT	POSSIBLE POINTS
ENERGY AND ATMOSPHERE	Credit 1: Optimize Energy Performance	2-19
MATERIALS AND RESOURCES	Credit 4: Recycled Content	1-4
	Credit 5: Regional Materials	
INDOOR ENVIRONMENTAL QUALITY	Credits 8.1 and 8.2: Daylight and Views	1-2
INNOVATION AND DESIGN PROCESS	Credit 1: Innovation in Design	1-5
REGIONAL PRIORITY	Credit 1: Regional Priority	1-4
GRAND TOTAL		UP TO 34



Solar Control Glass and Energetic Efficiency

Economy Comparatives: Vision Glass area X Control Glass Solution

Vision Glass area: Regular Green Glass



Vision Glass: 30%

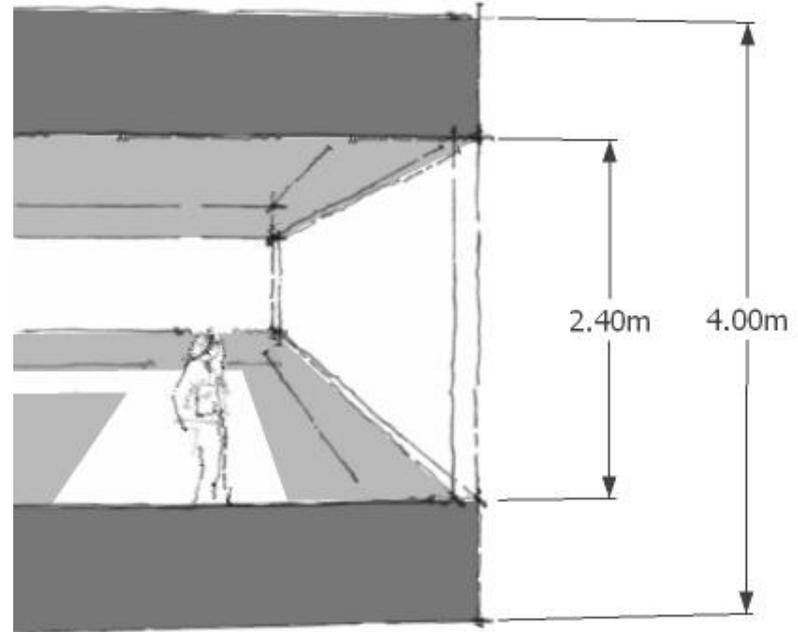
Glass: Regular Green Glass

Vision Glass: 4.800 sqm

Energy cost/year: US\$ 757 K

AC Capacity: 1.001 TR

Weather: São Paulo



Vision Glass: 60%

Glass: Regular Green Glass

Vision Glass: 9.600 sqm

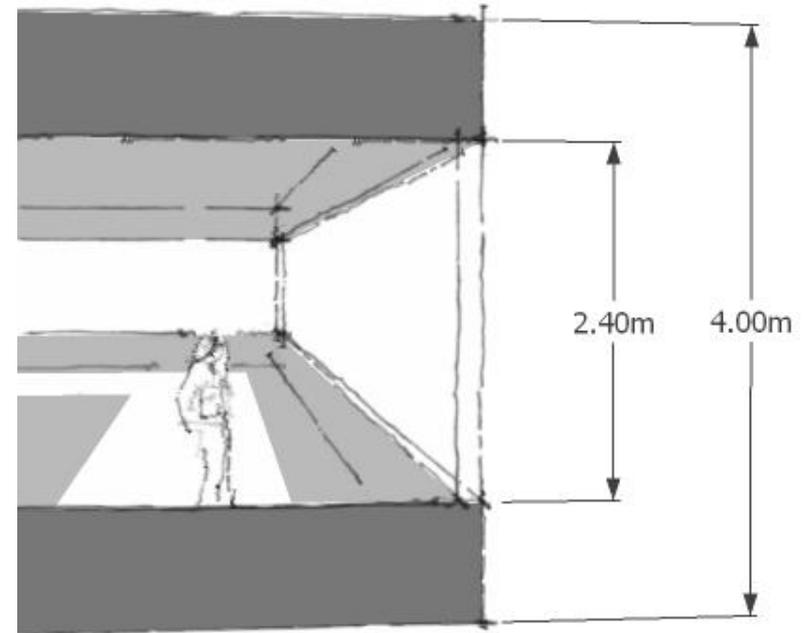
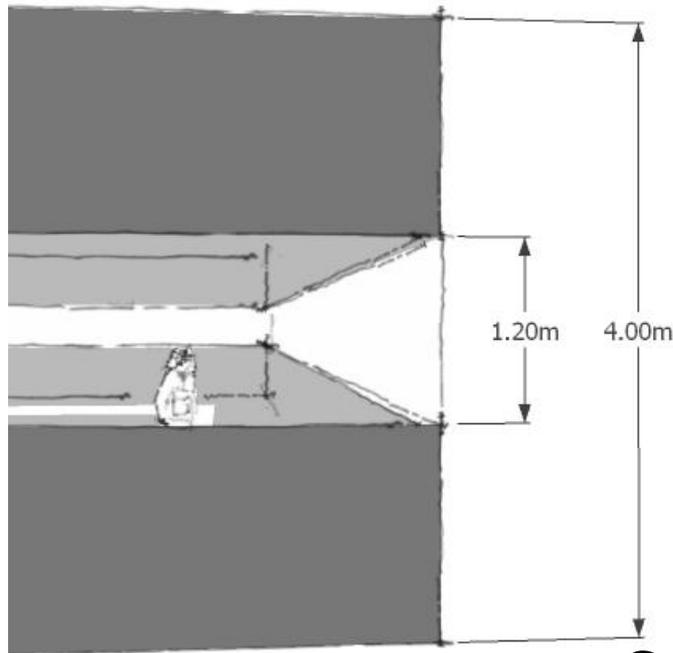
Energy cost/year: US\$ 816 K

AC Capacity: 1.246 TR

Economy Comparatives: Vision Glass area X Control Glass Solution

Vision Glass area: Regular Green Glass

Weather: São Paulo



Comparative

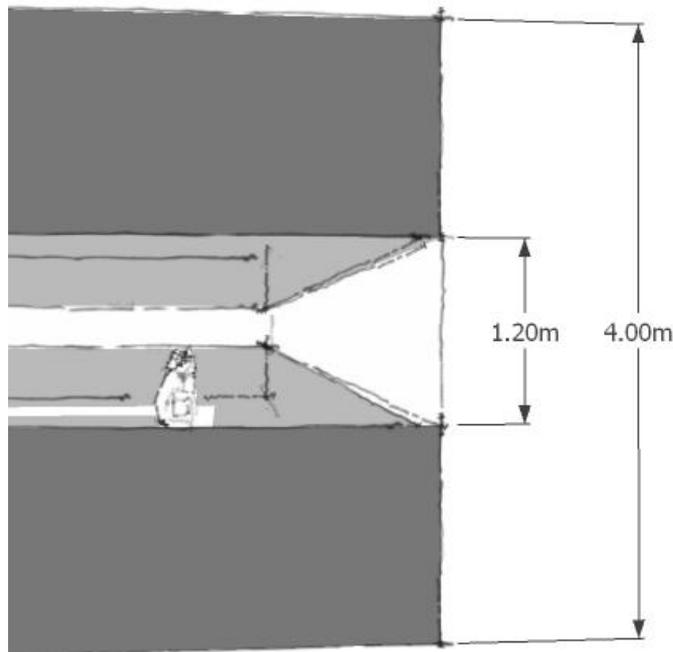
Vision Glass area difference: **+100%**

Energy cost/year increase: **+8,2%** → **US\$ 61 K**

AC Capacity increase: **+24,5%** → **245 TR** → **US\$ 864 K**

Economy Comparatives: Vision Glass area X Control Glass Solution

Vision Glass area: Regular Green Glass X Solar Control Glass IGU **Weather: São Paulo**



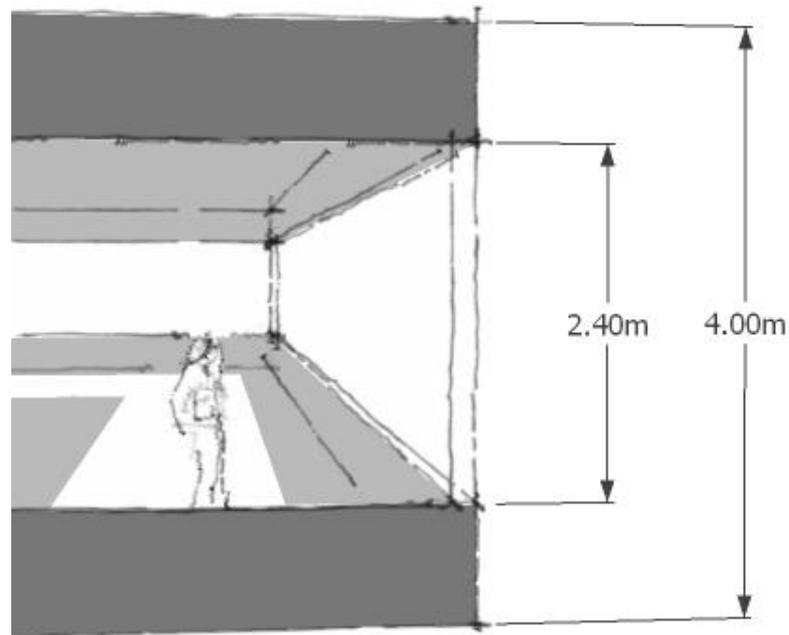
Vision Glass: 30%

Glass: Regular Green Glass

Vision Glass: 4.800 sqm

Energy cost/year: US\$ 757 K

AC Capacity: 1.001 TR



Vision Glass: 60%

Vidro: Solar Control Glass IGU

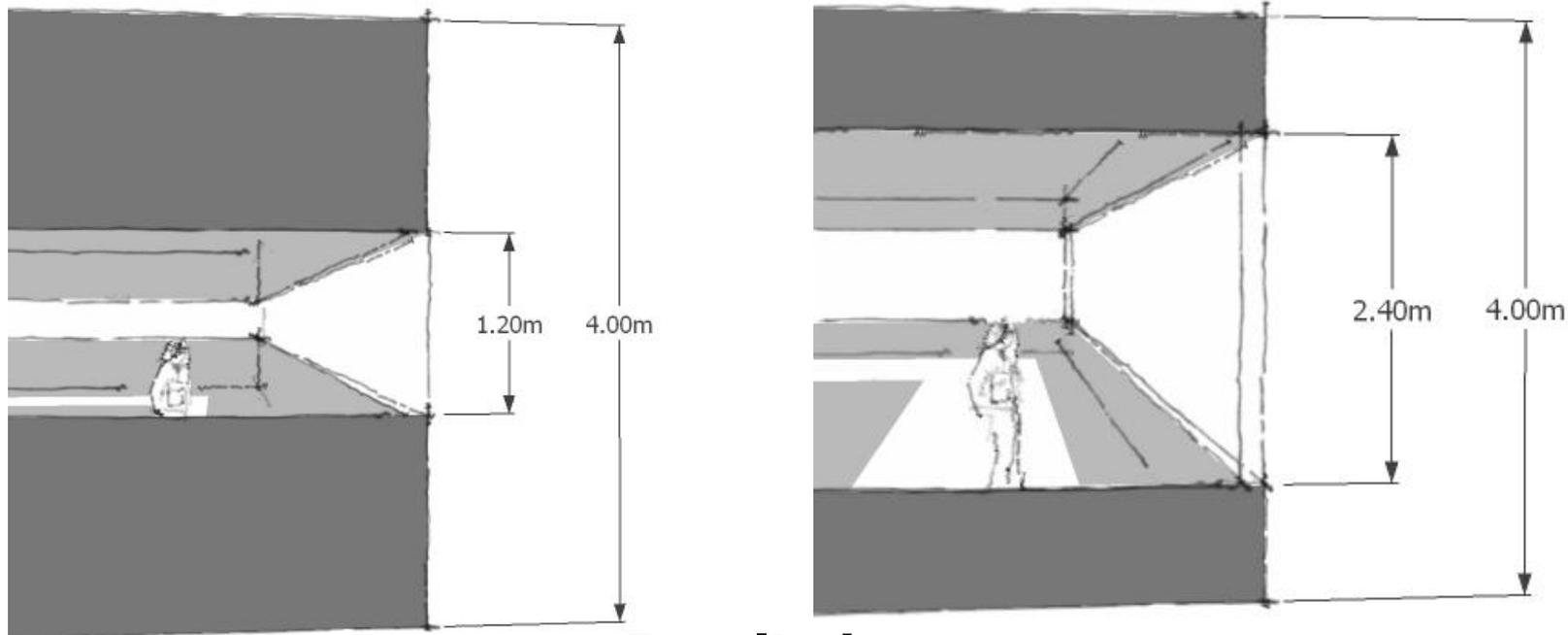
Vision Glass: 9.600 sqm

Energy cost/year: US\$ 750 K

AC Capacity: 953 TR

Economy Comparatives: Vision Glass area X Control Glass Solution

Vision Glass area: Regular Green Glass X Solar Control Glass IGU **Weather: São Paulo**



Resultados

Vision Glass area difference: **+100%**

Energy cost/year decrease: **-0,6%** → **-US\$ 7 K**

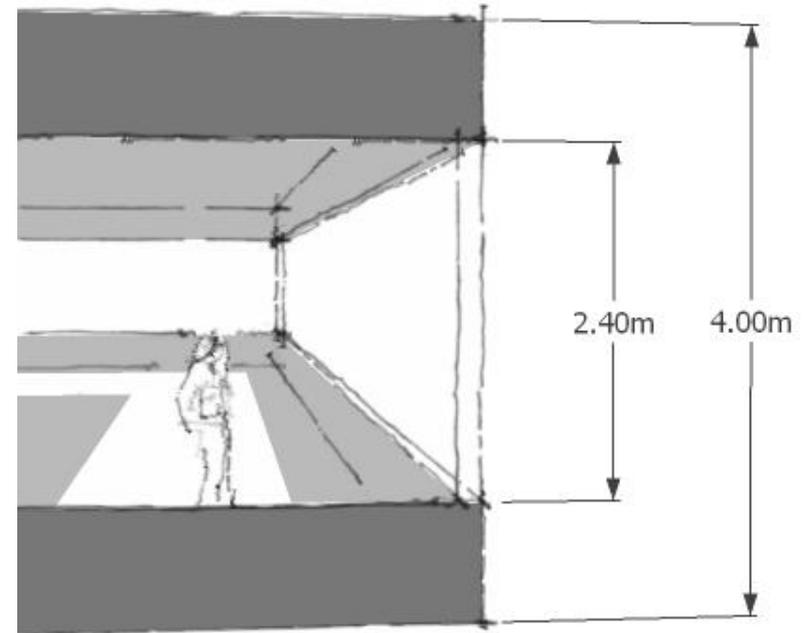
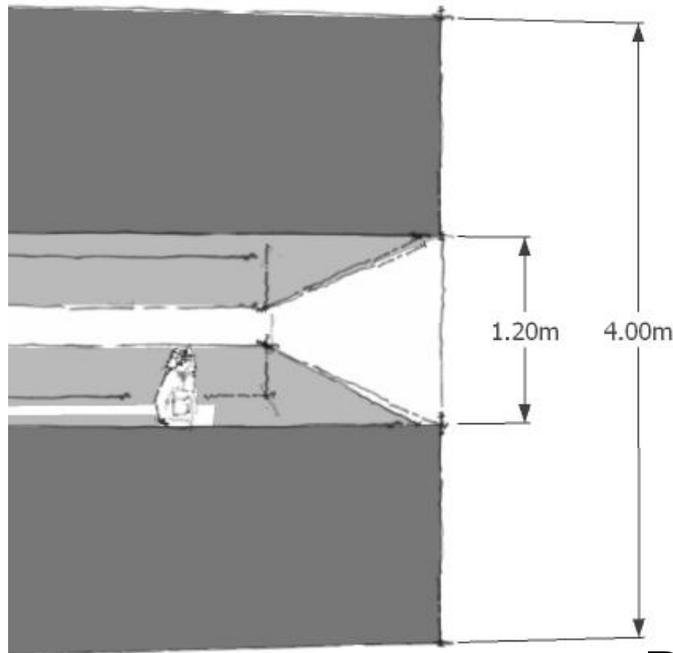
AC Capacity decrease: **-4,7%** → **-48 TR** → **-US\$ 169 K**

[São Paulo]

Economy Comparatives: Vision Glass area X Control Glass Solution

Weather: Rio de Janeiro

Vision Glass area: Regular Green Glass X Solar Control Glass IGU



Resultados

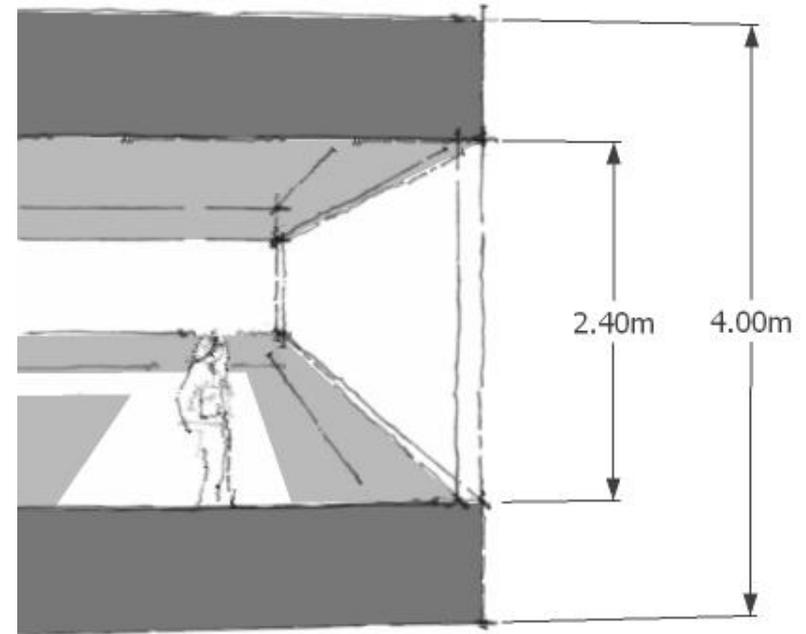
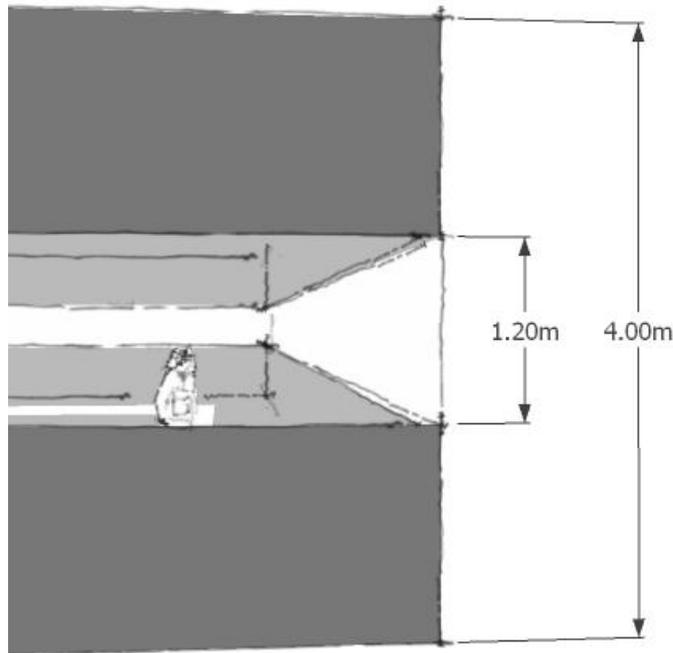
Vision Glass area difference: **+100%**

Energy cost/year decrease: **-1,3%** → **-R\$ 11 K**

AC Capacity decrease: **-6,7%** → **-77 TR** → **-R\$ 271 K**

[Rio de Janeiro]

Economy Comparatives: Vision Glass area X Control Glass Solution



Results

We can get the same, or even better performance with the double of Vision Glass → specification



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**GUARDIAN
CLIMAGUARD®**

LUZ E CONFORTO TÉRMICO



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VIDROS DE CONTROLE SOLAR E EFICIÊNCIA ENERGÉTICA

Solar Control Glass products in Brazil

Climaguard

Residential Market Products: 4 options

Sunguard Solar

Commercial Products (can be used even monolithically) :

5 coaters x 4 substrates = 20 options

Sunguard High Performance

Low-E products (the only ones produced in Brazil):

7 coaters x 4 substrates = 28 options

Solar Control Glass Imported

Super Neutral

Double and triple silver layers products, with high light transmission and low solar heat gain

U.S.A.

- SN 54
- SN 62
- SN 68
- **SNX 62/27**

Europe

- HS SN 40
- HS SN 51
- HS SN 62



Projects with Climaguard



**Residence in Tremembé –
Climaguard Silver**





**Residence in Tremembé
Climaguard Silver**





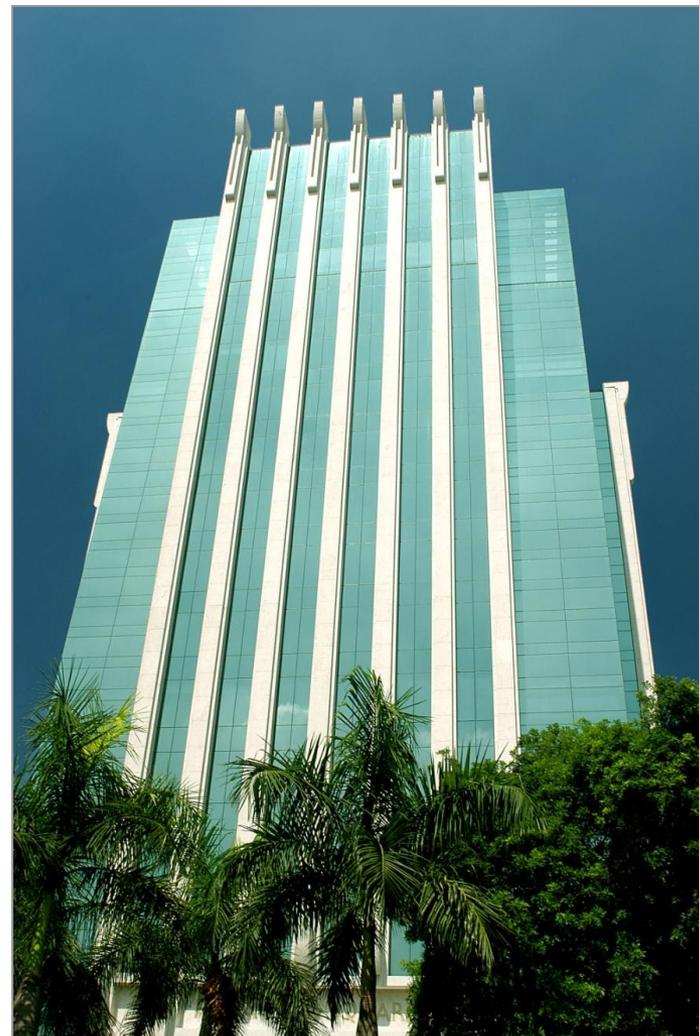
Casa Cor SP 2011 (Color House SP) Climaguard Light



Residence in Vinhedo – Climaguard Light

Projects with Sunguard Serie Solar

FARIA LIMA SQUARE – S20 GREEN



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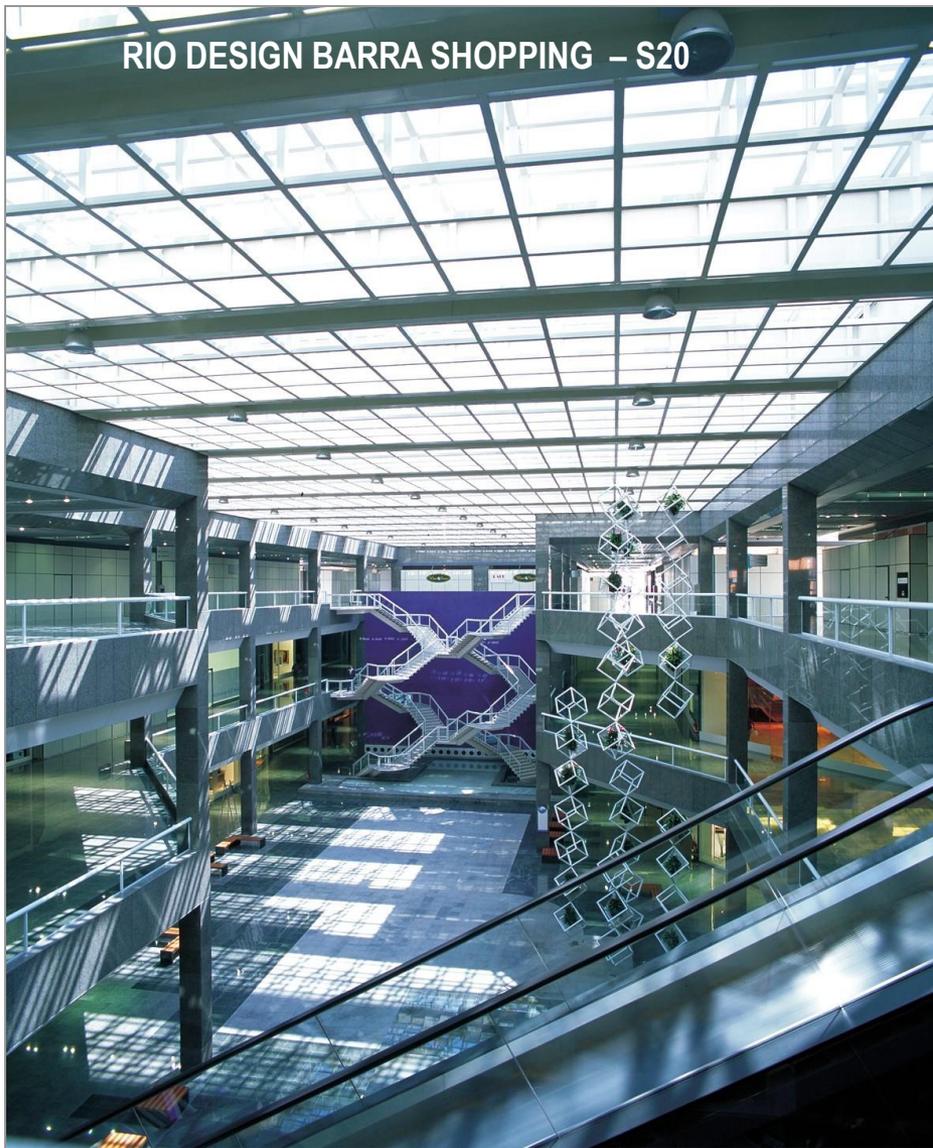
FARIA LIMA SQUARE – S20 GREEN



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VIDROS DE CONTROLE SOLAR E EFICIÊNCIA ENERGÉTICA

RIO DESIGN BARRA SHOPPING – S20



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Burj Khalifa

Silver 20 and
Climaguard





Campos do Jordão – Silver 20

HOSPITAL BAHIA – S32 GREEN



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Cristo Redentor – Light Blue 52 on green



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HOTEL SHERATON BARRA RJ – LB52 GREEN



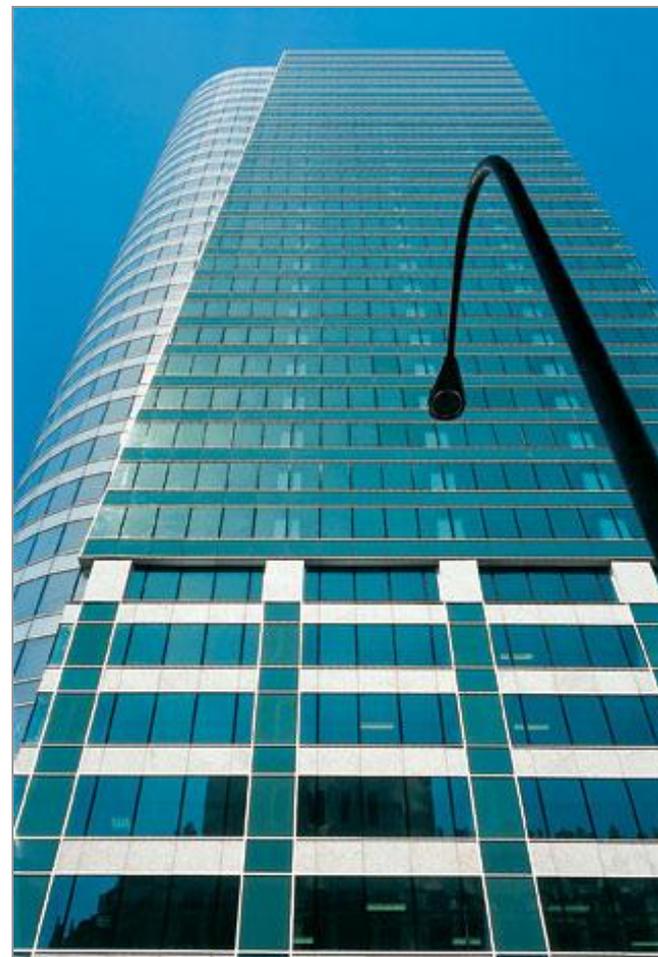
HOTEL SHERATON BARRA RJ – LB52 GREEN



VIDROS DE CONTROLE SOLAR E EFICIÊNCIA ENERGÉTICA

Projects com Sunguard Serie High Performance Low-E

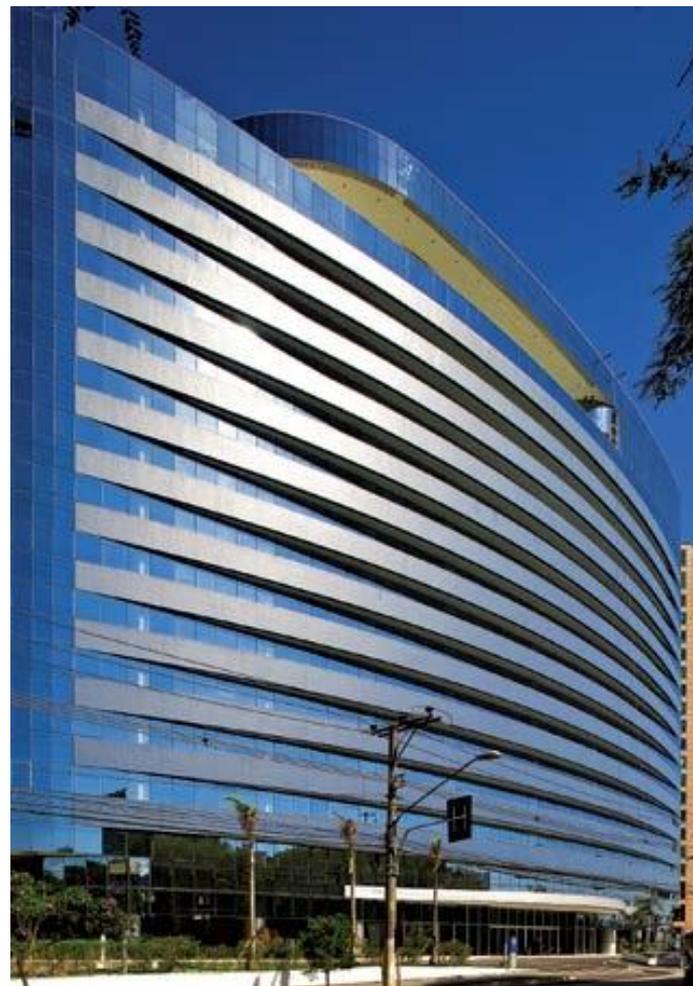
TORRE ALMIRANTE RJ — N40 GREEN e N61



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Landmark – SP

RB 40



Igarassú – SP

RB 40



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Eco Berrini

Neutral Plus 50 on Crystal Gray



www.sunguardglass.com – Web Site

The screenshot displays the Guardian Sunguard website interface. At the top, the browser address bar shows the URL www.sunguardglass.com/index.html. The website header includes the Guardian Sunguard logo (Advanced Architectural Glass), a search bar, and navigation links for "Você está em: South America", "Gratuito", "Trocar Região / idioma", and "Fale Conosco - Solicite uma amostra".

The main content area features a large banner with the text "SUNGUARD BUILD WITH LIGHT®" and a description: "O vidro de controle solar SunGuard da Guardian é a união da arte com a ciência. Tecnologia de ponta que possibilita a você construir com o melhor uso da luz e da cor, ao mesmo tempo em que economiza energia e ganha pontos LEED." Below the banner is a navigation menu with five categories: "PRODUTOS SUNGUARD", "PROJETOS", "ESPECIFICAÇÕES E FERRAMENTAS", "INTRODUÇÃO AO SUNGUARD", and "COMO COMPRAR SUNGUARD".

The featured product section highlights "SunGuard Neutral Plus® 50", noting it is available on clear substrates (subject to consultation) with medium reflectivity and a selective spectrum. It mentions the Burj Khalifa in Dubai, UAE, as a project example. A "VEJA MAIS" button is provided. To the right, a "O que há de novo" section lists updates, including the world's tallest building being coated in SunGuard glass and innovative glass systems for large enterprises. A "Links Rápidos" section offers a link to "Download - informações dos produtos".

The bottom of the screenshot shows the Windows taskbar with several open applications, including "Netus PC Suite", "One Touch Access...", "SUNGUARD APP...", "SunGuard - SunGo...", and "Replicator - Lotus...".

www.sunguardglass.com - Samples

http://www.sunguardglass.com/.../ContactUs/index.htm

Arquitetural Glass Manufacturers - SunGuard by Gua...

PRODUTOS SUNGUARD | PROJETOS | ESPECIFICAÇÕES E FERRAMENTAS | INTRODUÇÃO AO SUNGUARD | **COMO COMPRAR SUNGUARD**

Home > Como Comprar SunGuard > Solicite Amostras ou Informações

Solicite Amostras ou Informações.

Entre em contato conosco através do formulário abaixo, nos envie um [email](#) ou ligue no número 0800 - 709-2700.

Empresa *

Tipo * Selecionar

Nome do Projeto

Nome *

E-mail *

País * Selecionar

CEP / ZIP CODE *

Endereço *

Número *

Complemento *

Bairro *

Estado * Selecionar

Cidade *

Telefone *

Comentários / Dúvidas / Outras Solicitações (insira um ícone para completar sua caixa de solicitações especiais)

70 Cremande Hill, QC, Canada

VEJA MAIS >

Fazendo o download da imagem http://www.sunguardglass.com/sites/default/files/sunguard/documents/web

Internet

Windows taskbar: Ponto PC Suite, One Touch Acces..., SUNGUARD APP..., Architectural Glas..., Replication - Loba..., PT

www.sunguardglass.com – Products

The screenshot displays the SunGuard website interface. At the top, the browser address bar shows the URL www.sunguardglass.com/SunGuard/Products/index.html. The navigation menu includes 'Favoritos', 'Ferramentas', and 'Ajuda'. The main content area is titled 'Produtos SunGuard®' and features a sidebar with search filters: 'Procure por Aparência', 'Procure por Desempenho', 'Procure por Série', 'Produtos em Destaque', 'Ferramenta de Comparação de Desempenho', and 'Tipos e aplicações de Vidros'. The main content area includes a search section with three categories: 'APARÊNCIA' (Discover products by color, transmission, and reflectance), 'DESEMPENHO' (Choose products by solar heat gain coefficient and visible light transmission), and 'SÉRIE' (Explore products in SuperNeutral, High Performance, and Solar series). A 'Produtos em destaque' section highlights 'SunGuard Neutral Plus 50' and 'SunGuard Royal Blue 40'. The footer contains download links for 'Catálogo de Produtos', 'Manual Técnico', 'Catálogo LEED', and 'Exibitor SunGuard HC'. A system notification at the bottom right indicates 'Conexão de rede sem fio está conectado'.

www.sunguardglass.com - Projects

The screenshot shows a web browser window displaying the SunGuard Projects page. The browser's address bar shows the URL <http://www.sunguardglass.com/ProjectDatabase/View.htm>. The page features a navigation menu with links for 'Estat', 'Favoritos', 'Ferramentas', and 'Ajuda'. Below the menu, there is a breadcrumb trail: 'Arquitetural Glass Manufacturers - SunGuard'. The main heading reads 'Encontre projetos com vidros de controle solar e eficiência energética SunGuard'. The introductory text states: 'A Guardian dispõe de um arquivo de projetos para facilitar a procura por exemplos de obras comerciais que contam com produtos SunGuard. Mostramos alguns projetos abaixo, mas você pode buscar pela base de dados completa para ver uma grande variedade de obras comerciais com vidro SunGuard. Você pode procurar por um dos critérios abaixo ou por palavra-chave.' A second paragraph adds: 'Você também pode clicar e ver todos os projetos. Uma vez que encontrar um projeto, você pode ver detalhes na composição do vidro ou até mesmo clicar no Google Maps para saber exatamente onde ele está localizado. Se precisar de ajuda, por favor ligue para 0800 709 2700.' The interface includes a search filter panel on the left with dropdown menus for 'Produto SunGuard', 'Localização', 'Tipo de Edifício', 'Aparência Externa', 'Arquiteto', 'Tipo de Vidro', and 'LEED', along with a text input for 'Palavra Chave' and a 'EXIBIR' button. To the right, a grid of eight project thumbnails is displayed, each with a title: '33. Gramercy', 'Cruz Tower', 'Evelyn H. Hall Library', 'Concordia University', 'Concordia Park', 'Francisco Araújo', 'Heller International', and 'Hospital da Bahia'. At the bottom of the page, the copyright notice reads: 'Copyright © 2008 Guardian Industries Corp. Todos os direitos reservados (sunguard@americas.guardian.com) Política de Privacidade | Termos de Uso | Índice | SunGuard Select | Fabricator Login'. The Windows taskbar at the bottom shows several open applications, including 'PÁGUA PC SUITE', 'One Touch Access...', 'SUNGUARD APRE...', 'Arquitetural Glas...', and 'Aplicação - Luba...'. The system tray shows the time as 11:00 AM and the date as 11/11/2011.



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