

design better buildings

a sneak preview by
Maic Pannwitz | VP sedak Inc. | BEC Conference



sedak

headquarters & locations

- 300 employees
- since 2007 expertise in large formats
- flat and curved glass
- chemical strengthening
- markets: architecture, marine, interiors

Headquarters + production

Gersthofen, Germany

production unit curved glass

Villafranca-Padovana, Italy

Sales Office

Union, USA

Hongkong, Asia



The BIG idea

120sqm glass, 2 IGUs w/ approx. 20m length, 1 joint



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12,5t/2,5t

WILL 8000 KG

leading glass sedak
41257 K-08

leading glass sedak
41257 K-08

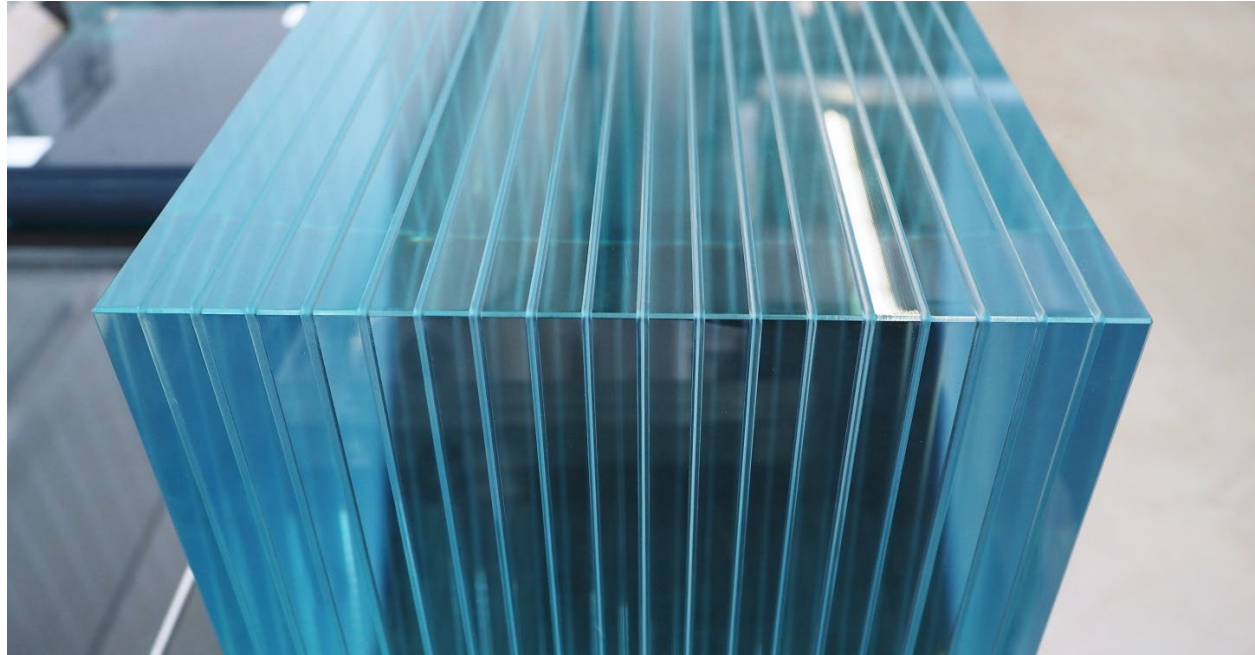
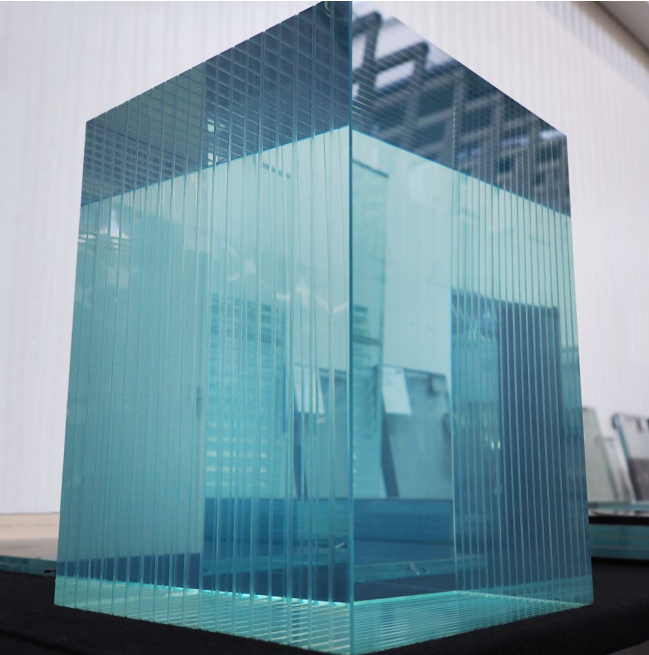


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Large in the 3rd dimension

laminated of 19 glass panes each 15mm thick | dimensions: 300mm x 400mm | weight: 85kg



18-layer laminates in 3.6m x 1.9m used as a portholes



underwater window – cruise ship



production capabilities

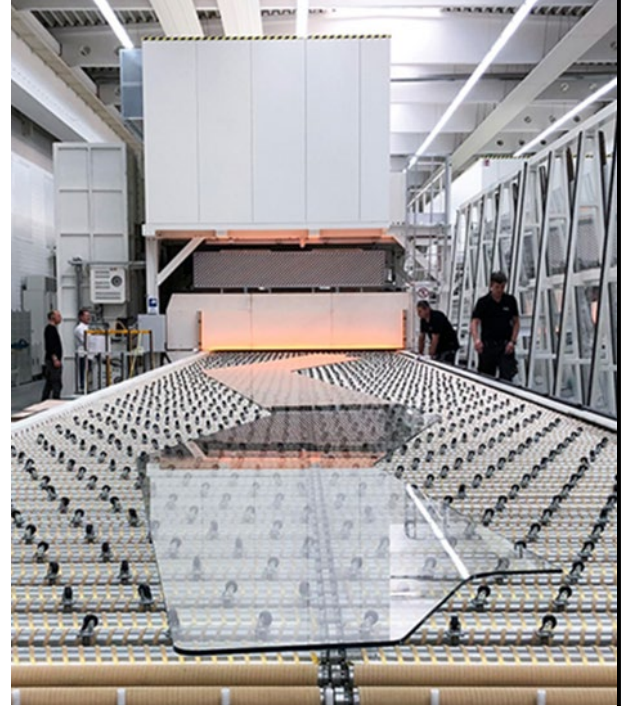
Flat and curved glass up to 3.6 m x 20 m



processing



printing



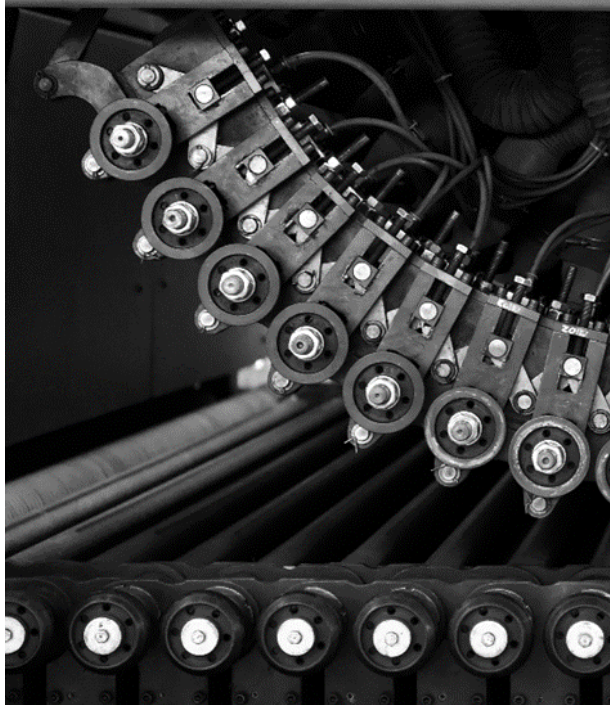
tempering

production capabilities

Flat and curved glass up to 3.6 m x 20 m



lamination bending



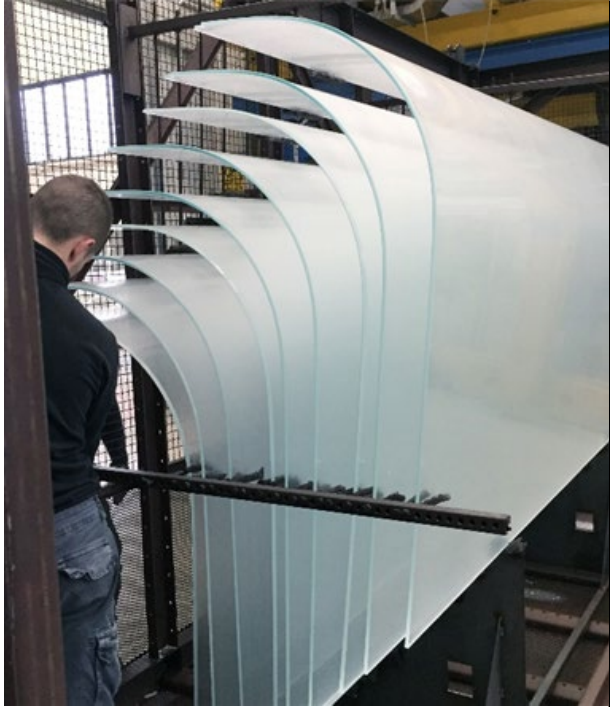
thermal bending



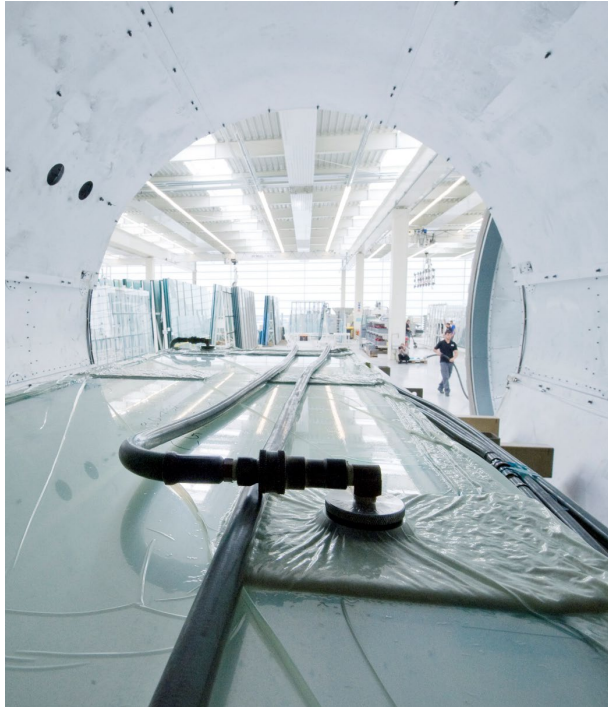
gravity bending

production capabilities

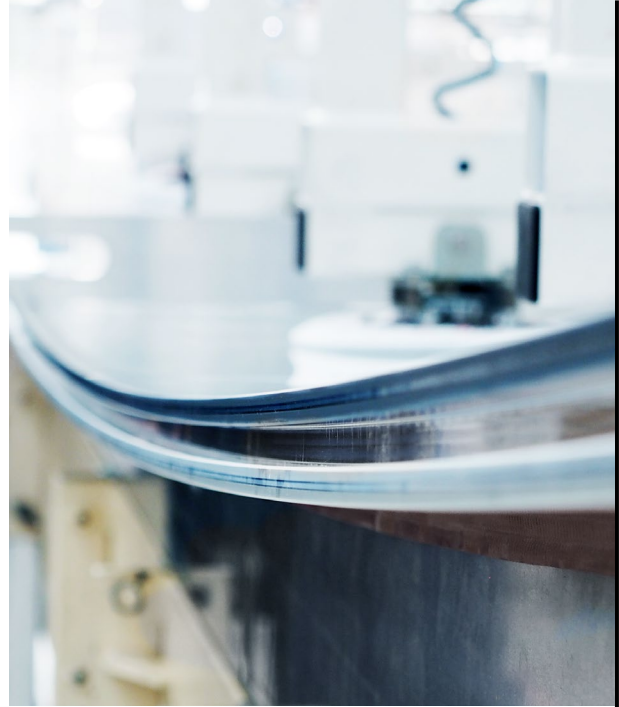
Flat and curved glass up to 3.6 m x 20 m



chemical toughening



Vacuum-bag lamination



IGUs

sneak preview

5 very good ideas

to design **better** buildings w/ glass

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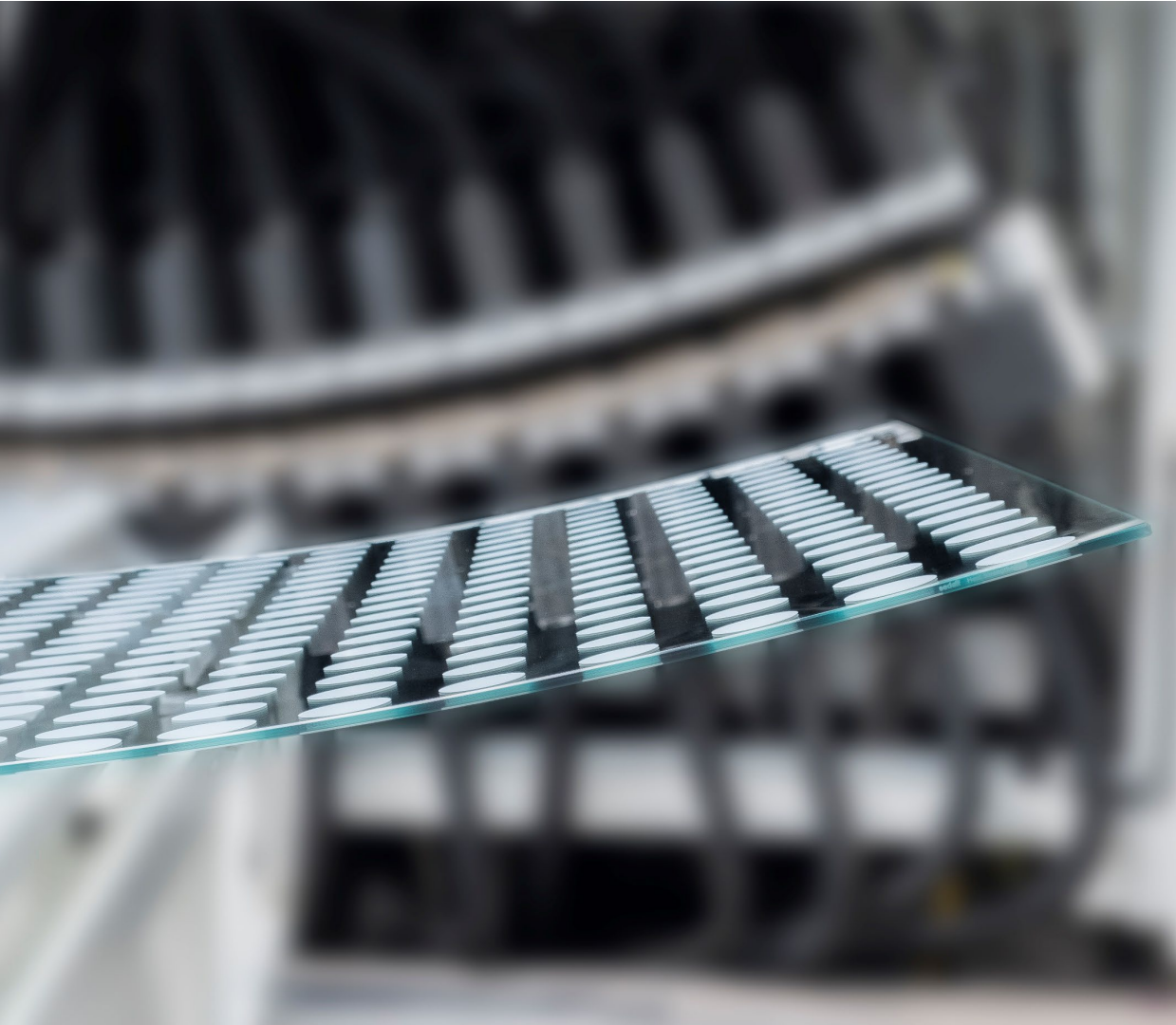


1. Shape Buildings

Use curved glass

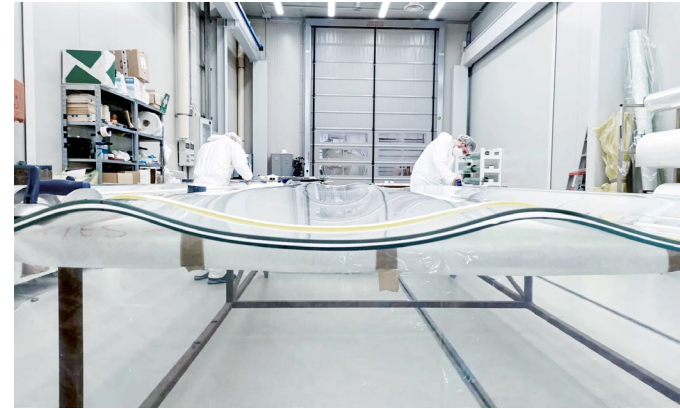
Enhanced capabilities@sedak

- Lamination bending
- Thermal bending
- Gravity bending
- Chemical toughening



1. Shape Buildings

Cylindrical, free-form and other shapes



1. Shape Buildings

Examples



2. Create 3D Illusions

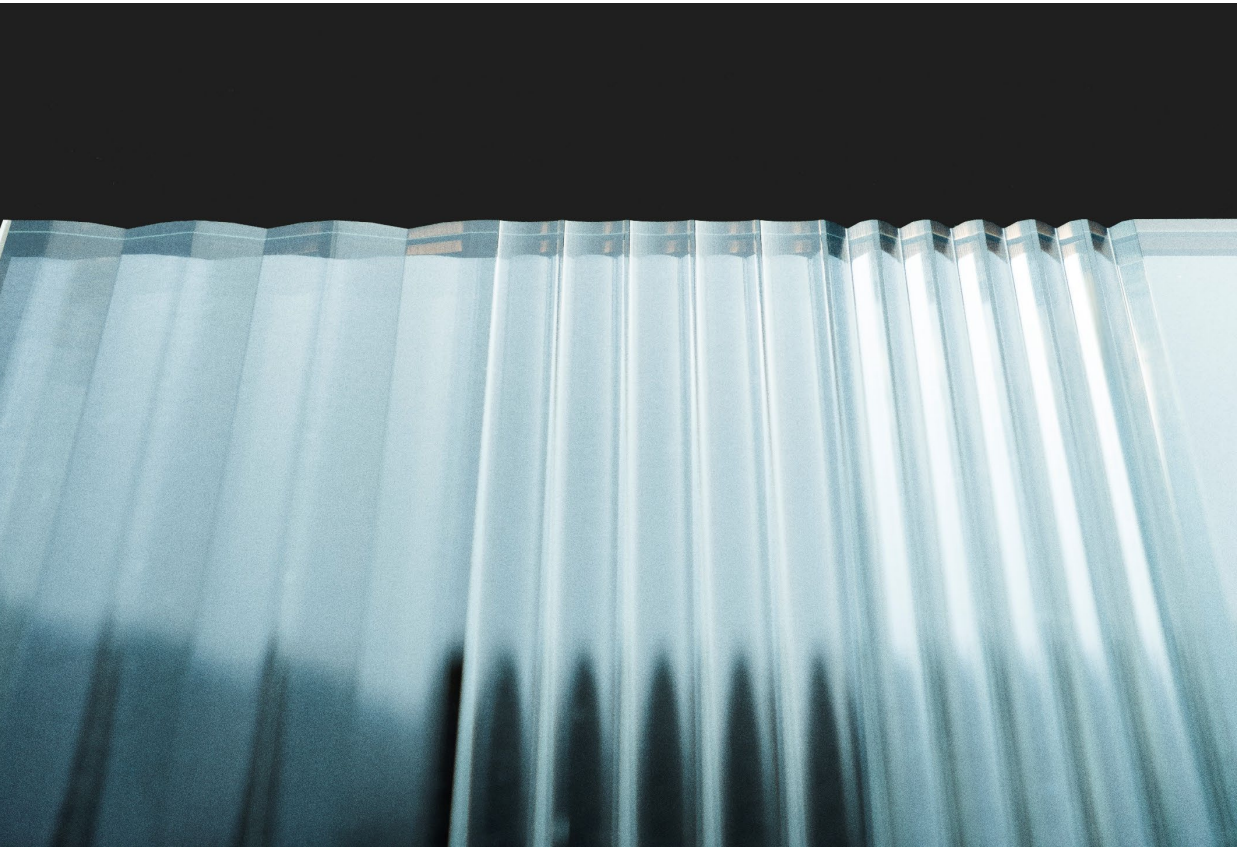
Use cut curved glass

Enhanced CNC treatment@sedak

- matt grinded, polished grinded, mirror polished
- C cut, V cut
- Façade, interior, etc.
- Available curved!

2. Create 3D Illusions

Examples



2. Create 3D Illusions

Application fields



3. Optimize Opaque Areas

Glass w/ insulation

new product of sedak: GSP®

- glass pane is bonded to a serial sandwich panel (PUR or mineral wool core)
- U values of up to $0.13 \text{ W}/(\text{m}^2\text{K})$.
- max. design freedom as glass pane is printed individually
- 3-in-1 product: glass, insulation, wall

3. Optimize Opaque Areas

Application fields



4. Gain Solar Energy

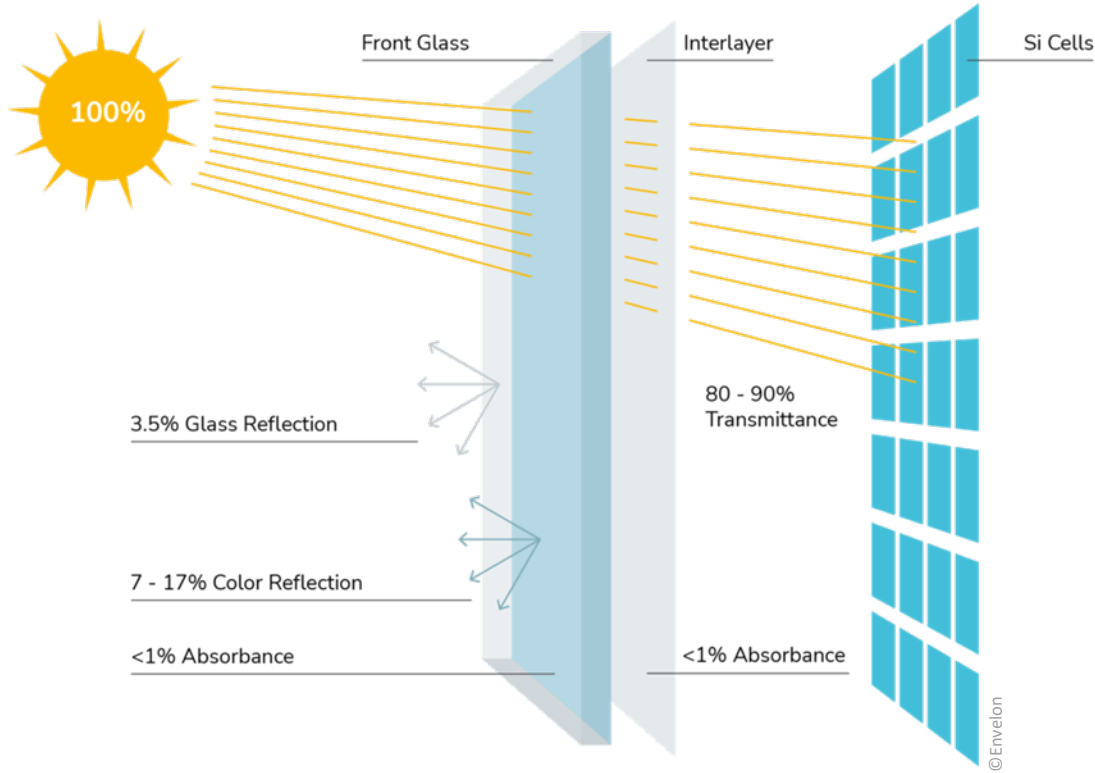
Use glass w/ integrated pv modules

new product of sedak: solar energy panel

- glass panel with laminated SI cells
- generate solar power with facade glazing
- can be combined with GSP® to maximize energy
- available in different colors
- available in max. formats

4. Gain Solar Energy

Performance values und design



4. Gain Solar Energy

Sample calculation

Cursor:
 Selected: 36.167, -115.148
 Elevation (m): 820
 PVGIS ver: 5.2

Use terrain shadows:
 Calculated horizon
 Upload horizon file

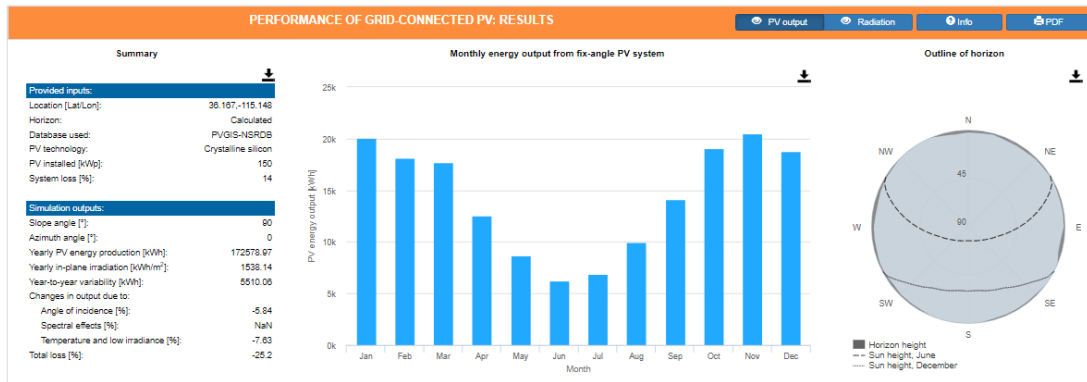
PERFORMANCE OF GRID-CONNECTED PV

Solar radiation database*: PVGIS-NSRDB
 PV technology*: Crystalline silicon
 Installed peak PV power (kWp)*: 150
 System loss [%]: 14

Fixed mounting options
 Mounting position*: Free-standing
 Optimize slope
 Optimize slope and azimuth

PV electricity price
 PV system cost (your currency):
 Interest [%/year]:
 Lifetime [years]:

- Building Address: Las Vegas
- Installed peak PV power: 150 kWp
- Slope 90
- Azimuth 0
- PV energy production p.a.: **172,578.97 kWh**



→ Covers electricity demand of 13 households (w/ an annual consumption of \varnothing 12.984 kWh

5. Protect Animals

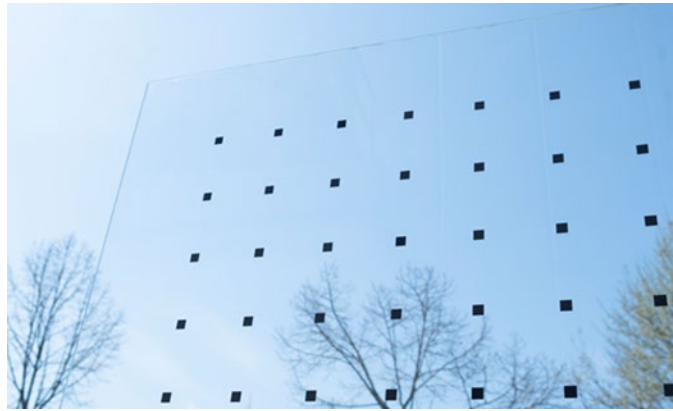
Use eco-friendly glass

sedak bird frit recommended

- 99% of the glass surface remains transparent
- recommended “optimal” and “highly effective”
- 2 Design variants: Grid point (Threat Factor <14%), Grid squares (Threat Factor <10%)
- available w/ precious metal colors

5. Protect Animals

Recommended bird protection glass



**we stand for quality, excellent
products, highly efficient
processes, and outstanding
results**