

Interactive shades for extraordinary design

Cleveland Clinic Lou Ruvo Center for Brain Health



Interactive shades to solve a unique problem

The Frank Gehry-designed Lou Ruvo Center for Brain Health in Las Vegas is one of the most startling and unique structures built in the first decade of the 21st Century.

The building is dominated by exterior walls that appear bent, twisted, and unsettled, making it, Gehry once explained, “not only a metaphor of a brain, but a metaphor of the disease we’re trying to solve.”

The fascinating wall configuration meant that effective window shading would pose quite a challenge.

MechoShade Systems’ experience with complicated fenestration projects made it the obvious choice for this project.

Among the many shade configurations installed in the structure are sideways-traveling shades, developed especially for the project.

The window-shading solution:

- Solves the problem of a bending and undulating skin face.
- Controls the shades according to the BTU load on the glass—not on whether a day is cloudy or sunny.
- Includes roller shades in more than 200 windows.
- Incorporates a spring motor into each roller shade.
- Requires customized ElectroShade® brackets and unique pivoting guide-wheel assemblies.
- Integrates a special wheel assembly for the side channels in each window.
- Features tensioned shades controlled by dual motors—electric and spring.



The large number of windows exposed to the desert's brutal sun widely varies:

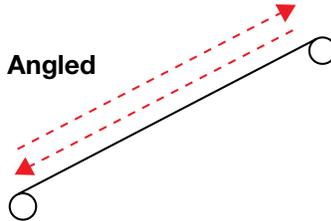
- Flat (perpendicular).
- Angled (non-perpendicular in various degrees).
- Geometric (square, rhomboidal, and trapezoidal).

Controls the shades in harsh desert conditions according to BTU loads—not based on sunny or cloudy conditions

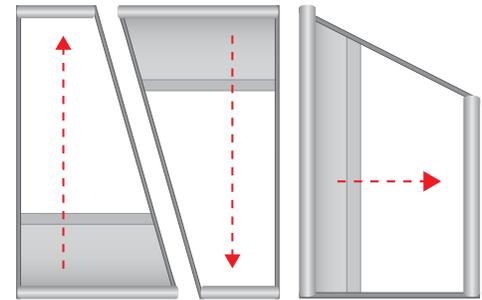
Flat



Angled



Geometric



Bottom up Top down Sideways

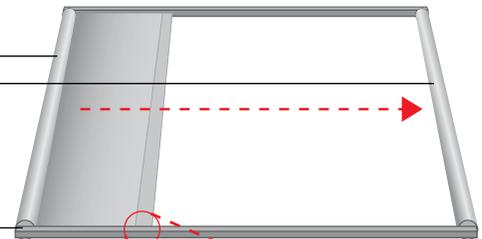
SolarTrac®, the most technologically advanced WindowManagement® System in today's marketplace, maneuvers the shades for protection from the intense sun to optimal positions.

Based on heat loads, shade positions are automatically controlled to be at:

- Position 0 (full up)—up to 124 BTU ft²
- Position 1 (half down)—125 BTU ft²
- Position 2 (full down)—172 BTU ft²

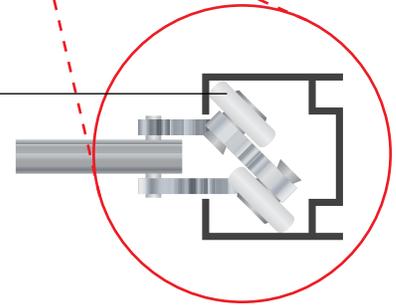
Dual-motor design

- ElectroShade® motor
- Spring motor
- Sideways travel (developed for the project)

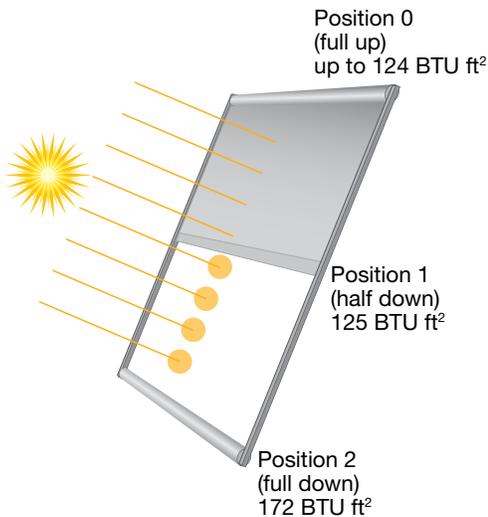


Side channel with concealed cables

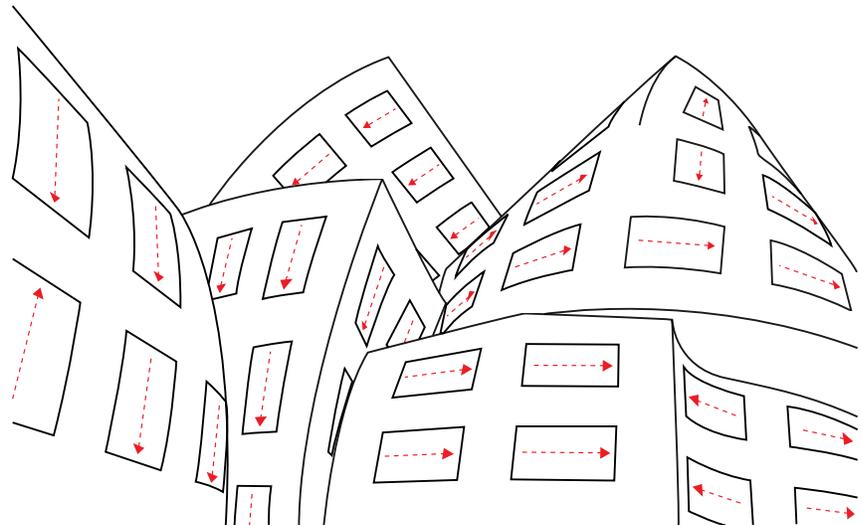
Custom, non-binding, pivoting four-wheel carriage in the side channel



Shade positions controlled by BTU load on the glazing



Shade directions relative to the building's structure



The results produce:

- Occupant comfort.
- Daylight integration, leading to an appreciable energy savings over the use of artificial lighting and HVAC.

How it happened:

- Shades were installed onto the window frame while on the ground.
- Window-and-shade assemblies were then lifted up to their intended locations.
- Shade and frame were installed in tandem.

Scientifically engineered shade cloth material:

- Known as ThermoVeil® Dense Weave 1513.
- Has 3% openness to filter the desert sun effectively.
- Provides heat-gain reduction for a comfortable environment.

Serves creature comfort while providing the highest level of daylight integration



Architect: Gehry Partners, LLP
Construction manager:
O.B. Construction, Inc.
Oussama Beyhoum, president
General contractor:
The Whiting-Turner
Contracting Company



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