

# 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.

MechoSystems’ 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).

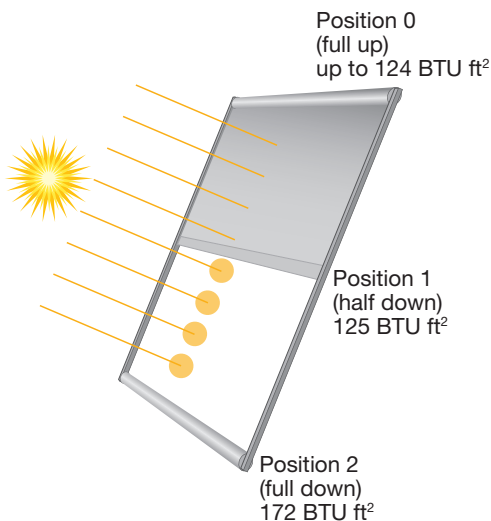
**Controls the shades in harsh desert conditions according to BTU loads—not based on sunny or cloudy conditions**

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

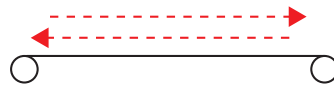
Based on heat loads, shade positions are automatically controlled to be at:

- Position 0 (full up)—up to 124 BTU ft<sup>2</sup>
- Position 1 (half down)—125 BTU ft<sup>2</sup>
- Position 2 (full down)—172 BTU ft<sup>2</sup>

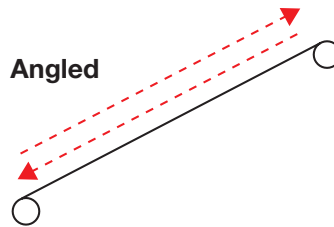
**Shade positions controlled by BTU load on the glazing**



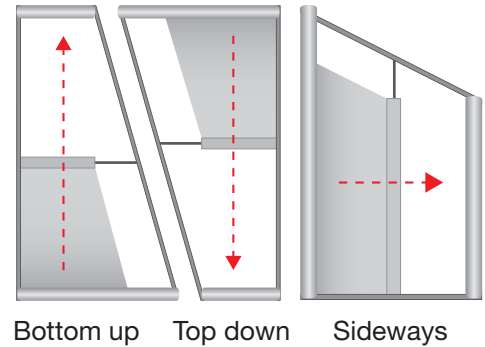
**Flat**



**Angled**



**Geometric**

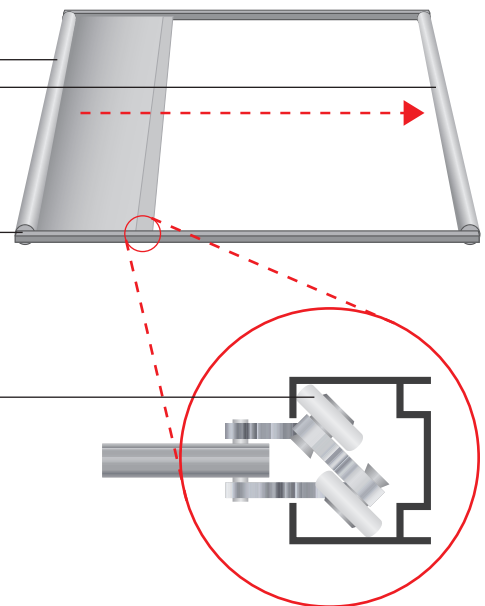


**Dual-motor design**

- 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 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**



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Construction manager:  
O.B. Construction, Inc.  
Oussama Beyhoun, president  
General contractor:  
The Whiting-Turner  
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