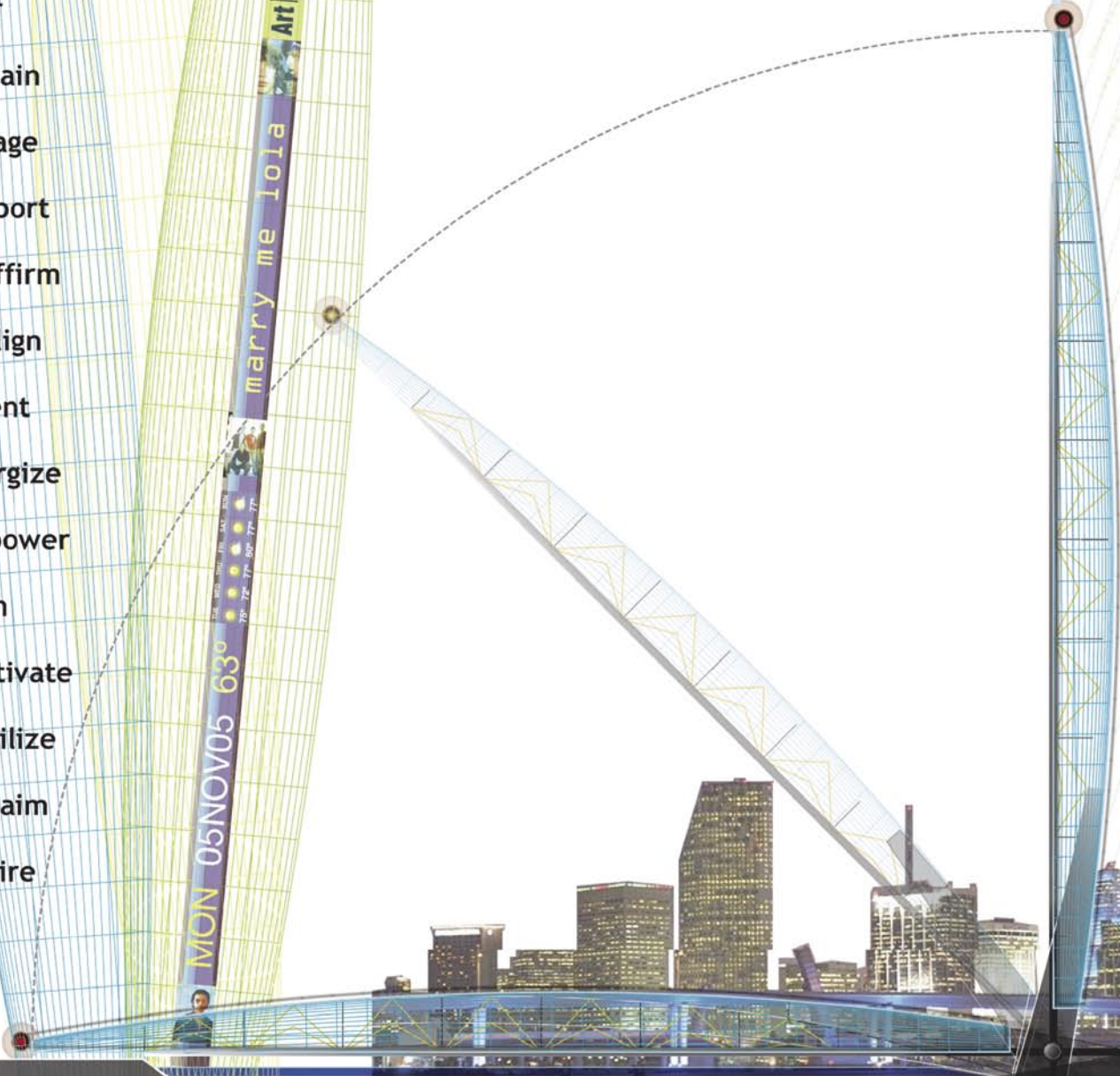


- Activate
- Connect
- Invite
- Bridge
- Transform
- Transport
- Soar
- Sustain
- Engage
- Support
- Reaffirm
- Realign
- Orient
- Energize
- Empower
- Span
- Captivate
- Mobilize
- Exclaim
- Inspire

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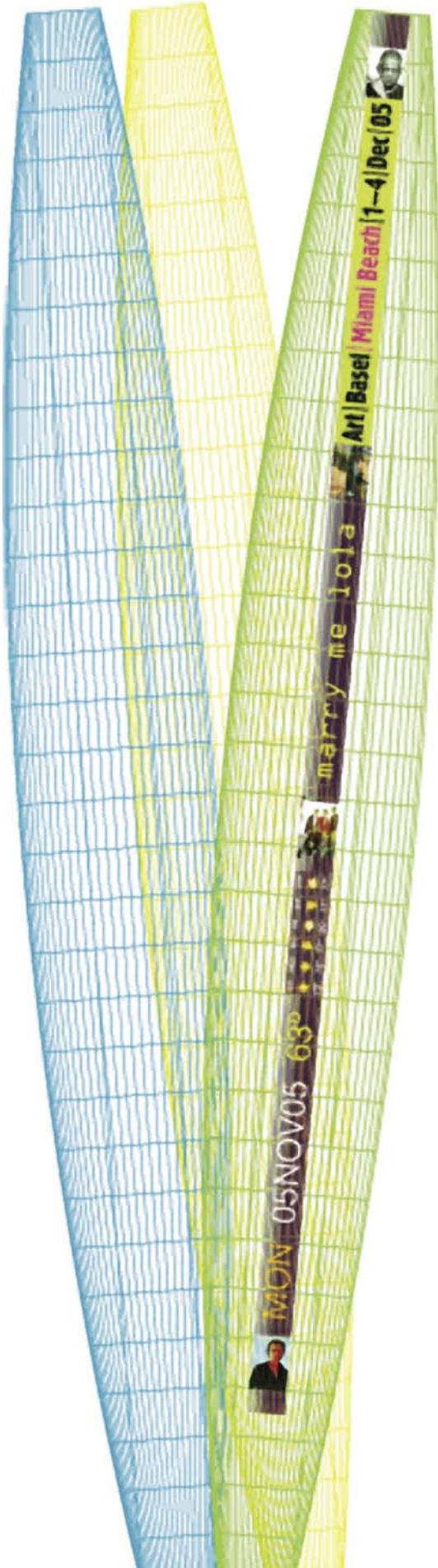
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LANDMARK CASE STUDY



A MONUMENT TO MIAMI— DESIGNED IN VECTORWORKS



LANDSCAPE ARCHITECT
ROBERTO ROVIRA DESIGNED
THE WINNING ENTRY TO
THE MIAMI MONUMENT
COMPETITION IN
VECTORWORKS.

THE ASSIGNMENT

The Miami Monument Competition sought visionary designs for a marker that would celebrate the city of Miami and distinguish its skyline from that of other great cities in the world. The structure had to encourage civic involvement, as well as strengthen the urban fabric of the city by creating an iconic structure—a monument—to the pioneering and evolving nature of Miami.

THE WINNING DESIGN

Using VectorWorks, Roberto Rovira, landscape architect and assistant professor in the landscape architecture department at Florida International University's School of Architecture, designed the winning entry.

The Miami Sunspars consist of three solar-powered towers capable of transforming from dramatic vertical lookouts into horizontal pedestrian bridges. The Sunspars communicate civic, climatological, and cultural events via a streaming media bar that runs along the spine of each of the towers. Visible from both land and sea, they symbolize the dynamic nature of Miami by creating a monument that prominently defines the city's urban profile and doubles as a functional pedestrian network in a car-dominated environment, while re-interpreting the concept of a contemporary monument as a dynamic, sustainable structure.



THE VERSATILITY OF VECTORWORKS

According to Rovira, "The inherent versatility of VectorWorks makes it extremely compatible with the interdisciplinary nature of my work. Projects like The Miami Sunspars require the ability to handle complex shapes and details, while other designs require an interface that can quickly and smoothly generate drawing solutions without an overly complicated process. VectorWorks can easily handle both ends of the spectrum."

"The inherent versatility of VectorWorks makes it extremely compatible with the interdisciplinary nature of my work."

OVERCOMING TECHNICAL CHALLENGES

The project presented several technical challenges for Rovira that VectorWorks was able to help him solve.

"Line weight control was essential, since the canopy of the Sunspars had to be very delicately rendered against the silhouetted background of the city," he explains. "In addition, the Sunspars' oblong shape had to be modeled three-dimensionally and evaluated from different angles to simulate the action of the rotating structures and generate graphics that I could incorporate into the competition boards. I used VectorWorks to generate the concave skins of the Sunspars and exported them into Adobe Illustrator, Photoshop, and SketchUp."

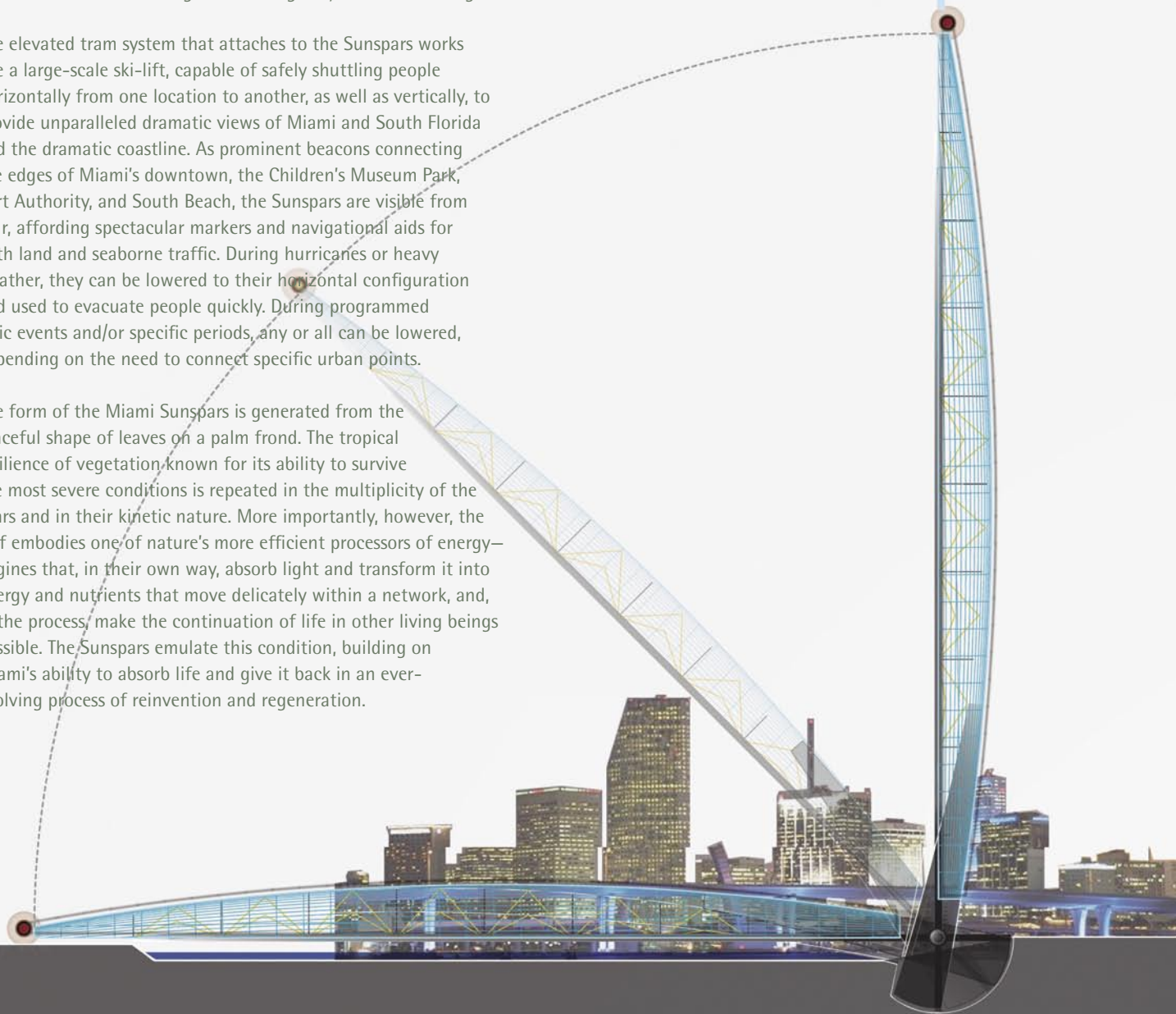
Rovira continues, "VectorWorks also allows me to easily export image files, in formats such as TIFs, EPS, and JPG, so I can quickly create graphics that can be imported into other programs with minimal need for adjustment at the receiving end."

THE MIAMI SUNSPARS— A METAPHOR FOR TROPICAL RESILIENCE

When horizontal, the Sunspar network physically links important destinations along Miami's edge. When vertical, they soar over 2,000 feet, providing dramatic urban markers whose solar sails shimmer under the tropical sun, collecting enough energy to illuminate them dramatically at night and returning many extra kilowatts to the electrical grid in an elegantly sustainable design.

The elevated tram system that attaches to the Sunspars works like a large-scale ski-lift, capable of safely shuttling people horizontally from one location to another, as well as vertically, to provide unparalleled dramatic views of Miami and South Florida and the dramatic coastline. As prominent beacons connecting the edges of Miami's downtown, the Children's Museum Park, Port Authority, and South Beach, the Sunspars are visible from afar, affording spectacular markers and navigational aids for both land and seaborne traffic. During hurricanes or heavy weather, they can be lowered to their horizontal configuration and used to evacuate people quickly. During programmed civic events and/or specific periods, any or all can be lowered, depending on the need to connect specific urban points.

The form of the Miami Sunspars is generated from the graceful shape of leaves on a palm frond. The tropical resilience of vegetation known for its ability to survive the most severe conditions is repeated in the multiplicity of the spars and in their kinetic nature. More importantly, however, the leaf embodies one of nature's more efficient processors of energy—engines that, in their own way, absorb light and transform it into energy and nutrients that move delicately within a network, and, in the process, make the continuation of life in other living beings possible. The Sunspars emulate this condition, building on Miami's ability to absorb life and give it back in an ever-evolving process of reinvention and regeneration.



"VectorWorks allows me to easily export image files, so I can quickly create graphics that can be imported into other programs with minimal need for adjustment at the receiving end."

Using NURBS and OpenGL renderings to test design alternatives VectorWorks allowed Rovira to quickly test several design alternatives.

"VectorWorks' ability to manipulate three-dimensional shapes using NURBS curves, quickly view OpenGL renderings and then turn these around into exportable shapes, made for a versatile process through which I could quickly test design alternatives and meet the project's deadline," says Rovira.

He finds a consistent advantage in VectorWorks' ability to control curvature with great precision and ease.

"The control handle action produces a very predictable method of curvature adjustment, which distinguishes VectorWorks very favorably from other vector-based programs, including Adobe Illustrator," notes Rovira. "I manipulated the Sunspars curvature very easily with VectorWorks. I also was able to calculate the structure's area, which will come in handy when calculating solar output as the design evolves."

He adds, "VectorWorks' ease of use and intuitive interface across the board allows for a much more efficient investigation of design alternatives that, in the end, allows for better designs to evolve. VectorWorks makes this process much more approachable than other programs I've been exposed to."

"The control handle action produces a very predictable method of curvature adjustment, which distinguishes VectorWorks very favorably from other vector-based programs, including Adobe Illustrator®."

SWITCHING FROM AUTOCAD

AutoCAD was the first CAD program Rovira used, and he was unsure initially whether it made sense for him to make the change to VectorWorks. However, he was soon sold.

"The VectorWorks learning curve was significantly less than AutoCAD's, and the intuitive nature of a program with a WYSIWYG interface paid its dividends in drawings that took infinitely less time to get them to look how I wanted them to look," he notes.

"VectorWorks' improved ability to import and export DXF and DWG also makes the shift from any other CAD program much less of an issue," he adds.

As for presentation materials, there was no contest.

"I have created entire brochures, competition boards, and presentations in VectorWorks, without any loss in quality and with much better control over line weights and layers—that ultimately results in a highly editable document."

"VectorWorks' ease of use and intuitive interface across the board allows for a much more efficient investigation of design alternatives that, in the end, allows for better designs to evolve. VectorWorks makes this process much more approachable than other programs I've been exposed to."

Taking advantage of an object-based environment Rovira looks forward to employing the VectorWorks object-based environment in future phases of design development, as he is exploring funding opportunities to further develop the proposal and generate 3D models.

"I am confident that VectorWorks' object-based environment and very simple, but powerful, symbol interface will prove as critical to this project as it has been to many others I have done," he affirms. "In a project of this nature, where a great many components will more than likely have to be custom, having the ability to globally adjust a symbol's dimensional qualities with one click will be indispensable. The built-in hardware and structural member libraries are a great asset as well; when combined with custom-made symbols, they make for a very powerful platform that allows me to explore design options very quickly."

For more information, contact Nemetschek North America, makers of VectorWorks, at 888-646-4223. Or, visit us on the web at www.vectorworks.net

