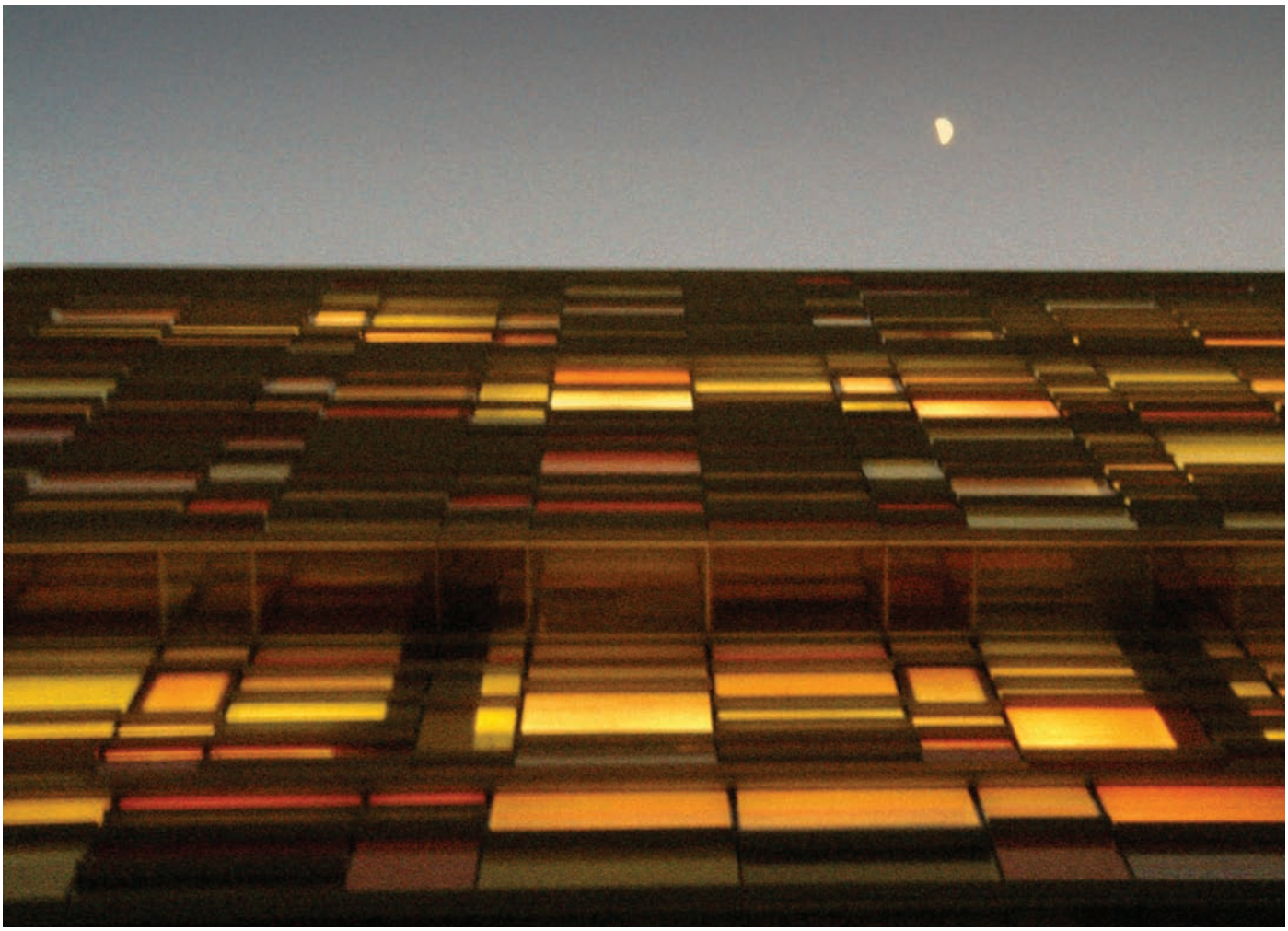
VECTORWORKS CASE STUDY

MANAGING A MULTIFACETED PROJECT WITH VECTORWORKS ARCHITECT



WITH THE HELP OF VECTORWORKS IN LA, TEC ARCHITECTURE REINVENTS THE TRADITIONAL OFFICE BUILDING MODEL ON THE INOTERA HEADQUARTERS AND PRODUCTION FACILITY IN TAIPEI.

The Inotera Headquarters and Production Facility is nothing like your typical office building. When the owner of a silicon wafer fabrication facility in Taipei wanted a new home for its production plant and office space, tec Architecture had to think outside the box—quickly. The challenge was to reinvent the traditional office building model to make an architectural and cultural statement. And develop the schematic design for the 290,000 square-foot office building with its adjoining 200,000 square-foot production plant in just six weeks, with interior

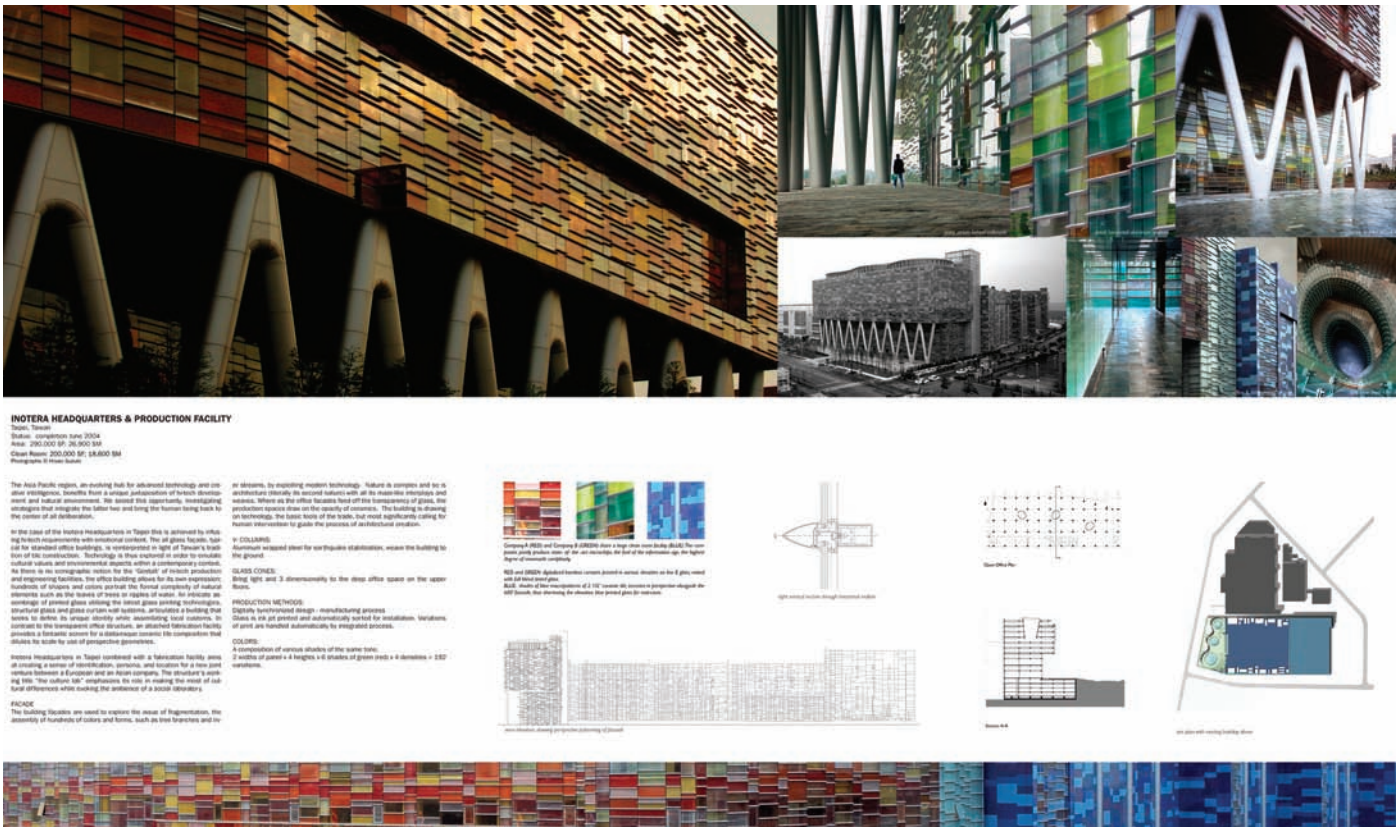
design to follow as the structure was being built. As with most manufacturing plants for commodities that are in high demand, the factory needed to be finished as soon as possible, so the owner could remain competitive with other market players.

The entire facility was completed in record time—twelve months—and with a small budget, so production could begin. VectorWorks Architect helped tec Architecture pull it off.

A multi-faceted all-glass façade reinterpreting Taiwan's tradition of tile construction was the solution. This multi-faceted façade consisted of thousands of screen-printed glass panels of all shapes and sizes with 192 variations in color. The colorful patchwork approach was mirrored in tile for the production facility, which is located directly behind the office building.

TEC ARCHITECTURE WINS AIA HONOR AWARD

In 2006, The Inotera Headquarters and Production Facility received an AIA Los Angeles Honor Award for Design. The jury, which included Pritzker Prize winner Thom Mayne, called the façade and skin "amazing." The project has been on the cover of multiple international design and architecture magazines and has been referred to in the industry as "an instant icon of modernity," setting an example for "craftsmanship of the third millennium."



OFFICE AS CULTURAL ICON

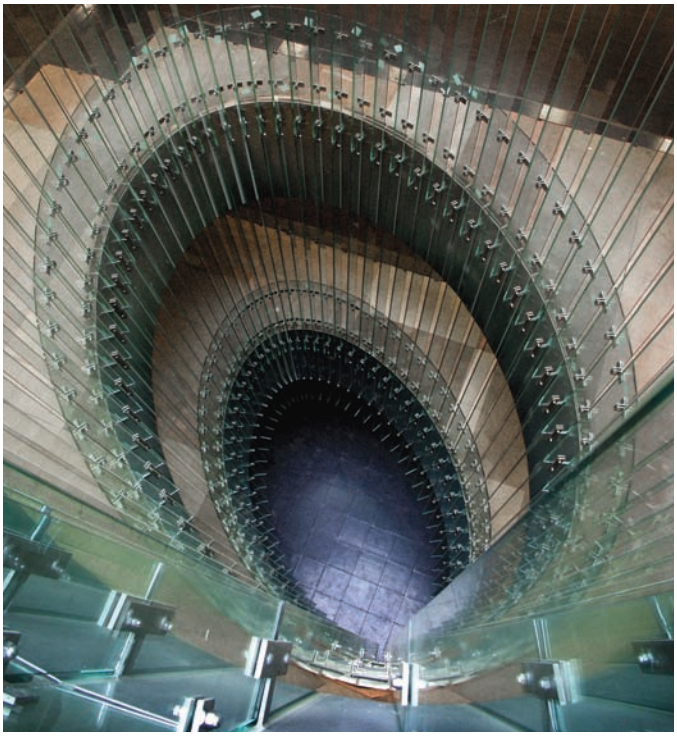
One of the architectural challenges tec Architecture encountered was trying to get such a massive building to read as a piece of iconographic architecture, according to Shawn Keltner, one of the project's main designers in the firm's Los Angeles office. The firm also has an office in Switzerland.

"When you have seemingly endless elevations the size of football fields, it becomes an exercise in time and concentration to section them off into glass pieces that are anywhere from 90 centimeters to 1.5 meters wide," Keltner explains. "VectorWorks' color options proved useful in this endeavor."

To break down the building's scale, the firm changed the gradient and pattern of the elevations, from beginning to end using the old trick of vanishing perspective.

"We developed a repetitive module to follow," he continued. "We had two different widths of panels, four different heights and six shades of green and red. Within that, we had four densities of each shade of green. So we ended up with 192 different variations of orange, red and green. That's 192 symbols in VectorWorks."

"From there, we devised a certain repetition, a grouping of these symbols, which we were able to manipulate large portions of the façade with, so



the in-field could repeat to a degree, because they had the same conditions," he added. "Then, when we got the building's edges, we created a custom layout of these modular panels against the edges."

The project's designers used VectorWorks and Adobe® Illustrator to create the patterns on the panels. They took images of bamboo shades and transformed them into abstract patterns using a mixture of hatches in VectorWorks. They exported the files into Illustrator to manipulate them again. Then they imported the files back into VectorWorks, so they could create PDFs to send to the glass manufacturer in Taiwan to fabricate the panels.

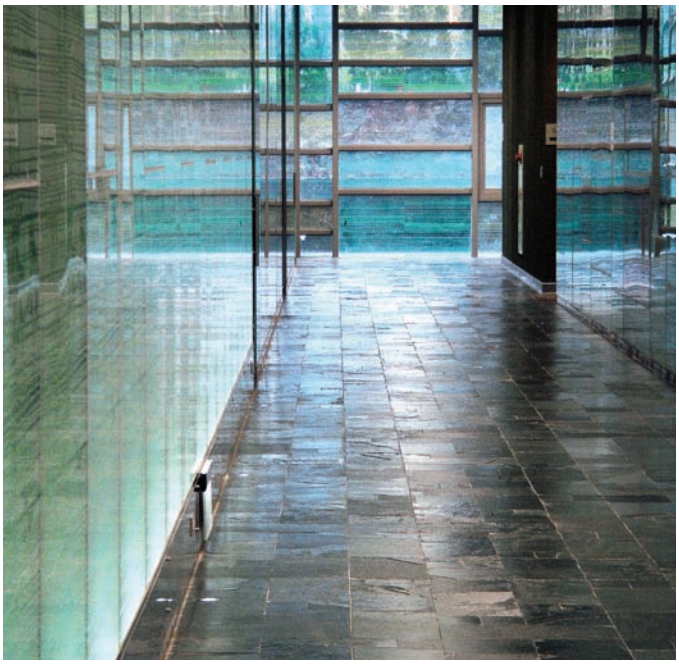
The glass manufacturer then screen printed the patterns onto glass panels with a protective layer of lamination. This provided protection against the elements for the screen printed images, preventing them from fading or chipping off.

PRECISION PERFORMANCE

Line weights and hatches in VectorWorks allowed the firm to check the patterns before they were printed.

"We had a three millimeter tolerance on the patterns, which means the screen printer couldn't print any line thinner than three millimeters onto the glass," explains Keltner. "So one way we could ensure those lines were correct was by using line weights and hatches in VectorWorks to guide line thickness."

Of course, giving a fabricator exact data also saves time and money. "Being able to provide the manufacturer with exact fields of printing permitted us essentially to keep a close eye on production every step of the way, even though we were in Los Angeles and the manufacturer was in Taipei," says Keltner.



MIXING HIGH TECH WITH HIGH CULTURE

The Asia Pacific region, an evolving hub for advanced technology and creative intelligence, benefits from a unique juxtaposition of hi-tech development and natural environment. Tec Architecture integrated these divergent components in the Inotera Headquarters by infusing hi-tech requirements with emotional content. The all-glass façade, typical for standard office buildings, is reinterpreted in light of Taiwan's tradition of tile construction. Technology is thus explored in order to emulate cultural values and environmental aspects within a contemporary context.

Hundreds of shapes and colors portrait the formal complexity of natural elements, such as leaves of trees or ripples of water. An intricate assemblage of printed glass using the latest glass printing technologies, structural glass and glass curtain wall systems, articulates a building that seeks to define its unique identity while assimilating local customs. In contrast to the transparent office structure, an attached fabrication facility provides a fantastic screen for a Dada-esque ceramic tile composition that dilutes its scale by use of perspective geometries. The structure's working title "the culture lab" emphasizes its role in making the most of cultural differences while evoking the ambience of a social laboratory.

NOT LOST IN TRANSLATION

Another challenge for such a large, overseas project was communication, especially since most contractors the firm worked with in Taipei used AutoCAD. These included the glass fabricator and Fei & Cheng Associates, the local architect of record. But communicating between VectorWorks users in LA to AutoCAD users Taipei wasn't an issue thanks to VectorWorks' file translation capabilities.

"We did a lot of importing and exporting on a massive scale and transferred data via FTP or CDs," explains Keltner. "Whether it was five drawings or 50, VectorWorks really made the process of sending such a large amount of data back and forth painless. We were able to communicate very well with other consultants within and outside our firm overseas. The VectorWorks translation process works exceptionally well." from VectorWorks into PDF, use Adobe Acrobat Professional to annotate them, and then e-mail the documents to other team members across the world as attachments. We created a standard workflow very easily out of existing software that enabled the whole design team to work together."

THE VECTORWORKS ADVANTAGE

When freelancers are hired to pitch in on fast-track projects such as the Inotera Headquarters, they can get up and running quickly on VectorWorks.

"We can train people who are proficient in AutoCAD to use VectorWorks in a week, whereas it can take a month or longer to learn other programs," says Keltner. "This upstart speed is extremely important to keep things running smoothly during the early stages of such large projects."

On this project, the firm was able to bring new people up to speed quickly. "Anyone from experienced architects to young environmental graphic designers could come into our office and pick it right up," he says.

"As a fiscally responsible firm, cost efficiency is always an issue," Keltner adds. "VectorWorks was the best option out there for this Macintosh® shop."

"VectorWorks is way ahead of the class as an inexpensive, yet highly functional program that can do just as much and more than the average architectural CAD program."