



Lighting Brings New Life to Chilean Churches

A LIGHTING PROGRAM REVITALIZES LOCAL COMMUNITIES THROUGHOUT CHILE.

MULTINATIONAL POWER UTILITIES TYPICALLY ARE NOT KNOWN FOR SUSTAINED investment in the revitalization of underprivileged communities. Enersis, the leading power utility for much of South America, however, is doing exactly that, with a massive illumination program called "Lighting Churches South of the World." Established in 2000 with the help of Fundación ENDESA, Enersis's Spanish parent company, and an allotted budget of roughly \$1.5 million, "Lighting Churches South of the World" has sought to bring new life to the people of Chile by lighting the heart of their communities—the church. To date, Enersis has funded the illumination of over 30 churches in Chile, covering all expenses related to design and installation of the lighting systems, including electrical upgrades. While Enersis's initial five-year agreement with Catholic Episcopal Conference, the governing body that regulates and maintains all aspects of the Catholic Church in Chile, will expire in December 2006, plans are in place to sign another five-year agreement.

Equally impressive as Enersis's financial support is the energy and talent invested in this project by architect and lighting designer Oriana Ponzini, and her five-person Santiago-based firm Iluminación Acústica. As the sole lighting designer for the Chilean program, Ponzini has been personally involved with every project, evaluating the unique conditions of each site and working in close partnership with church and local officials. For Ponzini, the design process begins with the community. No doubt because of her approach, the lighting installations have been extraordinarily successful, reintroducing these ecclesiastical buildings back into the local landscape, while creating a nighttime presence, illuminating long-lost architectural details and art work, and unifying and reinvigorating local communities.

Located in the small town of Castro, in the Chiloé Archipelago in the southern portion of Chile, Iglesia Castro is a good example of the program's success. Designated in 2000 as a World Heritage Site by UNESCO, the church, built in 1875, is



To date, over 30 churches throughout Chile have been illuminated through a program entitled, "Lighting Churches South of the World." Primary funding comes from Enersis, the leading power utility for much of South America. The lighting scheme for each church varies based on local need. The exterior and interior of Cathedral San Bernardo (above left) was one of several projects completed in 2001. The illumination of the Cathedral of Antofagasta (above right) was completed in 2003.

Castro's oldest and represents a fusion of indigenous and European architecture and culture. Accordingly, it was essential that the lighting program respect the unique character of the church. The façade of Iglesia Castro is clad with engraved tin panels, which originally served as ballasts in ships traveling to Chile from Spain in the late nineteenth century and left in Chile's coastal communities when the ships returned. To maintain the daytime brilliance of these painted tin panels, Ponzini used high-pressure sodium lamps for the yellow and metal halide for the violet, along with wallwashers to enhance their decorative engraving.

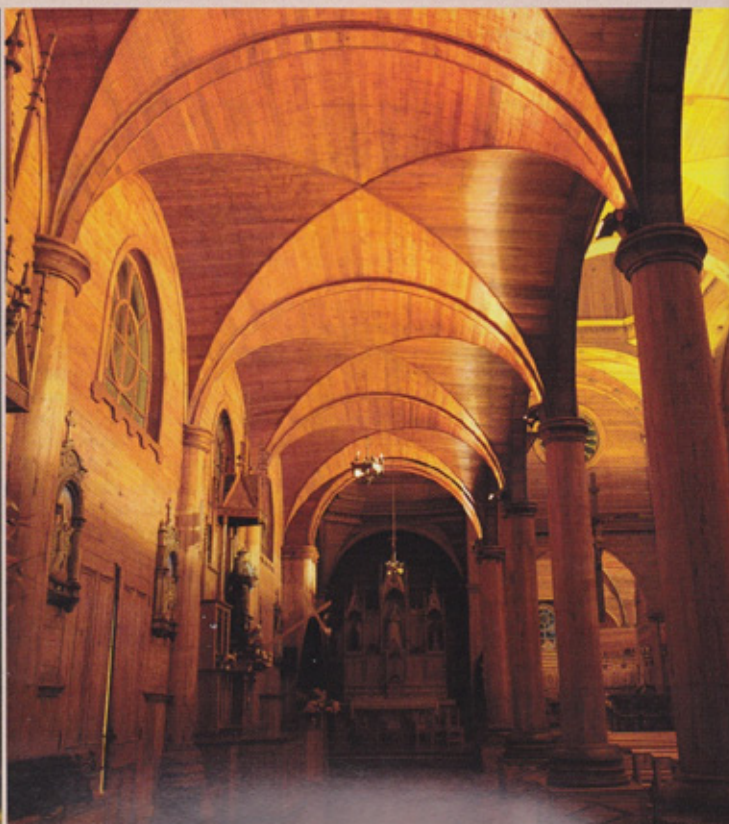
The church interior is constructed almost entirely of local woods. To accentuate the materials and construction method, Ponzini used indirect sources wherever possible and color temperature to delineate the different spaces and moods within the church. In the main hall Ponzini animated the white wood of the vaulted ceilings using indirect reflectors with 150W 3000K metal halide lamps, while in the main nave, the warmth and rhythm of the rosy wood arches is emphasized with recessed 70W high-pressure sodium reflectors tucked into the cornice. In the side aisles, column capitals disguise asymmetric indirect reflectors with 150W 3000K metal halide lamps, outfitted with orange film to similarly soften and warm the light. Finally, focusing attention on the altar, Ponzini used four 150W 3000K metal halide directional spot reflectors to brilliantly light the clerestory and add accent light on the altar and cross. As Ponzini describes, "I tried to put value into architecture by enhancing the architecture itself." The final result is a space suffused with glowing light that complements the extraordinary woodwork and welcomes

worshippers and visitors alike. Ponzini's lighting solution for Iglesia Castro provides the community with a place to meet at night and to gather for special events, important in this region of Chile where the year-round wet climate makes the church often the only large meeting space. Additionally, once the lighting was installed, the community's newfound pride in their church inspired them to improve the surrounding square, adding benches and landscaping. Now used for concerts, graduations, and other celebrations, Iglesia Castro serves as a literal and symbolic beacon for the community.

Another crucial aspect of this program is the use and promotion of energy-efficient products and practices. Ponzini says her primary objective is "to improve lighting quality, and that means to be energy efficient as well." For many of the projects, lighting control systems or multiple electrical circuits are installed to regulate energy expenditures. Lamp choice is critical as well. Ponzini primarily uses fluorescent, metal halide, or high-pressure sodium lamps, only specifying incandescent sources when necessary. While the lighting installation cost for each church is covered by Enersis, the day-to-day running of the lighting system is paid by the local community, making it essential to eliminate unmanageable maintenance expenses. In cases where a community is financially challenged, Ponzini and her team look for alternative energy solutions. For example, in Parinacota, located in the Andes, there was no money to light the small village's seventeenth-century church on a regular basis, so photovoltaic panels were installed to harness solar energy. These panels guarantee that the church will be illumi-

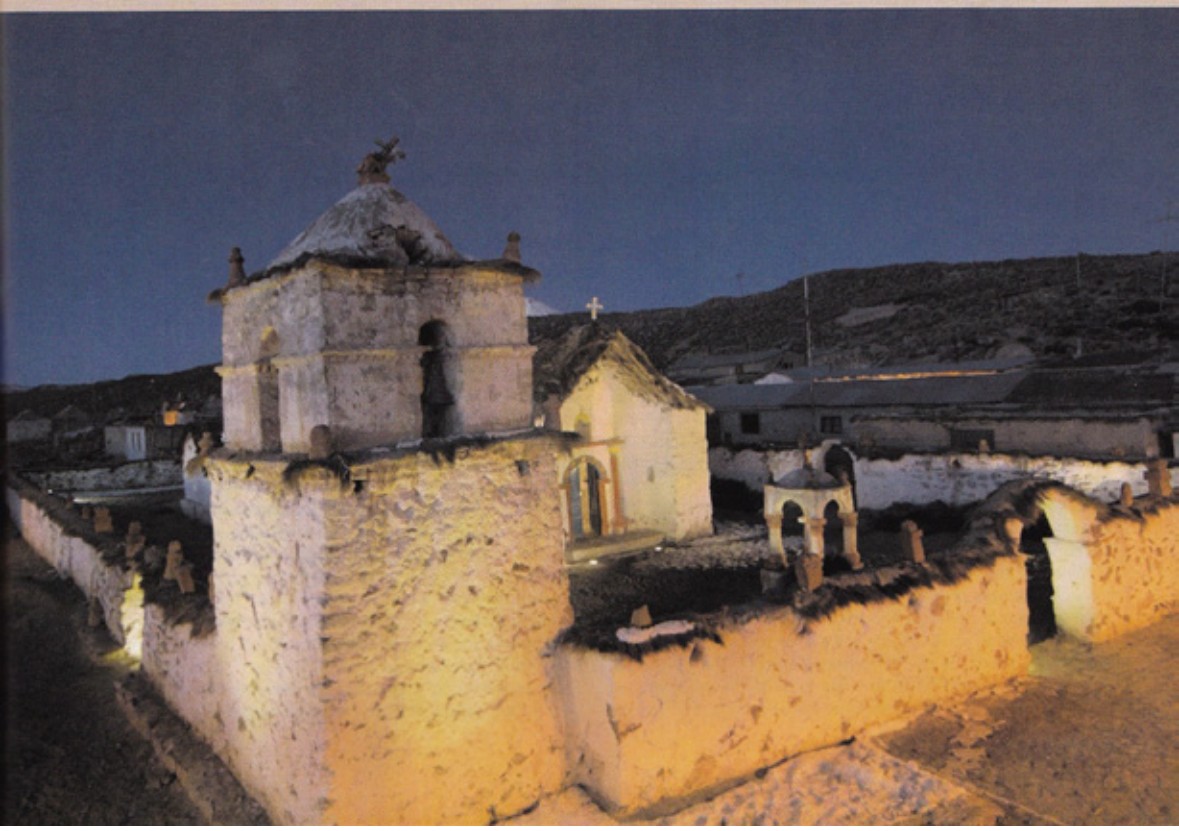


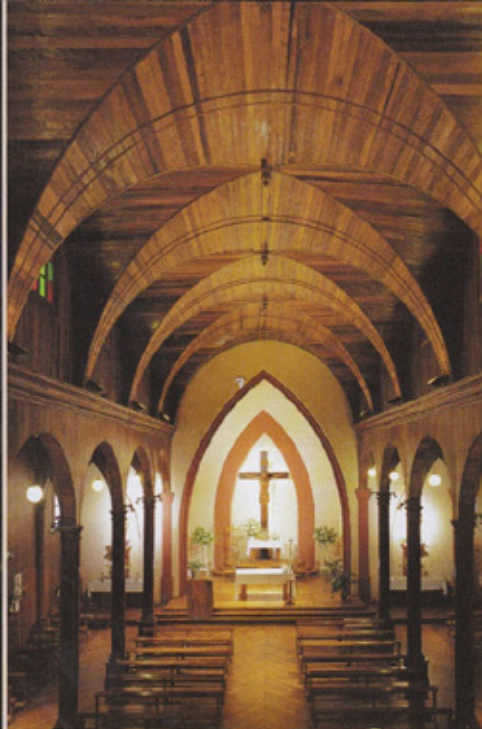
Formerly obscured in darkness, the Cathedral of Santiago (above) received a control system to reduce energy costs. Cool and warm color temperatures were combined to create contrast in the main nave. Iglesia Castro (below), built in 1875, represents a fusion of indigenous and European architectural styles. Inside, to accentuate the materials and construction method, indirect sources were used wherever possible, and color temperature was employed to delineate different spaces.





For the Malpú Temple (above), an enormous structure surrounded by the ruins of an earlier church and a large esplanade, the absence of nighttime illumination forced the city to close the area at sunset due to safety concerns. The new lighting scheme creates drama after dark with a golden crown for the temple, and contrasting light on the interior and exterior of the ruins. An alternative energy solution was found for the Iglesia de Parinacota (below). Photovoltaic panels were installed to harness solar energy, which guarantee that the church will be illuminated by electric light at least 3 hours per day.





Churches throughout Chile vary in material and architectural style. The lighting schemes have been extraordinarily successful, reintroducing these important community buildings back into the local landscape, while creating a nighttime presence and focal point. Iglesia de la Union (above left) was one of several projects completed in 2001, and the Cathedral de Arica (above right) was completed in 2003.

nated with electric light at least three hours a day.

Even in the nation's most prestigious churches, energy efficiency is prioritized, as witnessed in the renovation of the lighting for the Santiago Cathedral. When Ponzini first visited the cathedral it was obscured in darkness, with no lighting in the side naves and only 1500W halogen reflectors over the altar. As a cost-saving measure, the cathedral's antique chandeliers and sconces had not been lit for decades. To bring these historic fixtures back to life, a control system was put in place to dim the lighting to ten percent of the full wattage, thereby reducing total energy costs. In the main nave, Ponzini contrasted cool against warm, washing the cove ceiling with 150W 3000K metal halide reflectors while the dimmed light from the decorative fixtures warms the body of the nave. The silver-engraved altar serves as a focus for entering visitors, with 150W 3000K metal halide reflectors, flooding the area with crisp light. For the side naves, Ponzini designed a discrete metal box to mount at the base of the ceiling arches and to fit a 36W 3000K, compact fluorescent lamp. Using the most efficient light sources and installations possible, Ponzini restored this ecclesiastical jewel to its original magnificence, allowing the people of Santiago to rediscover their cathedral.

One of the most remarkable transformations achieved through Enersis's program is that of the Maipú Temple on the western edge of Santiago. This enormous structure, surrounded by the ruins of an earlier church and a large esplanade, served as a landmark during the day but vanished at night. The absence of nighttime illumination forced the city to close the entire area at sunset because of safety concerns. Consequently, the goal for

Maipú was to not simply create an illumination program for the temple, but also to address security issues through the lighting of the esplanade.

Beginning with the tower, Ponzini used different types of light to articulate the expressive massing of the façade. A golden crown for the temple was created with 250W high-pressure sodium narrow-beam reflectors placed at the base of the upper columns. Ponzini visually supports this crown by illuminating the façade with ten 150W spot reflectors set in 60-foot-high posts located near the end of the colonnade. Adding drama to the approach of Maipú at night, contrasting light is used for the interior and exterior of the ruins. Recessed reflectors with 150W high-pressure sodium lamps bathe the interior walls with a soft glowing light, while 150W 4300K metal halide lamps confine the warmth and bring the texture of the ruins into sharp detail. The lighting of the ruins, juxtaposed with that of the temple, gives a tangible sense of the rich history of the site. With its new lighting program, the entire area of Maipú's esplanade has been returned to the public. Local clubs and civic and community groups now use this area as a space for gathering and celebrating. This is perhaps the ultimate goal of Enersis's program. As Ponzini says, "We give value to the community by giving value to the community center—the church." From bringing light for the first time to the church of Parinacota's underprivileged community to introducing a vibrant cultural life to the previously darkened and locked esplanade of Maipú, Enersis's "Lighting Churches South of the World" has made a remarkable contribution to the country and people of Chile. **MARGARET MAILE PERRY**