Data in Venice: Saving Outdoor Art

When it comes to preserving cultural heritage, few cities face a more daunting task than Venice. With limited conservation funds inevitably devoted to landmarks like St. Mark’s Cathedral or the Bridge of Sighs, thousands of pieces of public art that are an integral part of the city’s Renaissance legacy are all but overlooked.

Now a Venetian computer scientist has taken preservation matters into his own hands by creating what may be the world’s first computerized catalog of public art. With its automatic means of determining which pieces to conserve first and at what cost, the system may profoundly influence how cities go about preserving their statues, sculptures, and other outdoor artwork.

It all began when Fabio Carrera returned to his native city after studying computer science at the Worcester Polytechnic Institute in Worcester, Mass., and attended an exhibit on outdoor Venetian art. Sponsored by the Archeoclub d’Italia, a national conservation group, the exhibit showcased photographs of some of the most endangered of the city’s more than 3,000 pieces of public art. Hanging on the walls of buildings high over canals or down narrow alleyways, this so-called “erratic art” dates mostly from Venice’s Golden Age in the fifteenth century and includes coats of arms, high- and low-relief sculptures, tabernacles, and Leone Marciano, the St. Mark’s lion that is the symbol of Venice. The exhibit stressed how these pieces, which in some cases have survived since the time of Marco Polo, were now being lost to posterity because of weathering, pollution, neglect, and rampant theft.

To address this problem, Carrera started by creating two computer databases. In the first, he entered complete descriptions of each piece of outdoor art, including type, location, dimensions, material, and any bibliographical references to the piece in the historical litera-
ture. In the second, he added information on the condition of each piece, details he has been painstakingly collecting since 1991 with the help of Worcester Polytechnic Institute and volunteers from Earthwatch, a scientific field-research organization based in Watertown, Mass.

Carrera then wrote several customized programs that would combine information from the two databases and calculate the urgency and cost of conservation. The program ranks each piece in a conservation index based on the “weights” given to each of several physical factors—cracks, for instance, received a higher rating than grime. Another algorithm determines the priority for conserving each piece by combining the conservation index with the piece’s age, rarity, danger of falling or being stolen, and whether or not it had artistic, historical, or popular significance. A third program uses the basic costs associated with any restoration—an architect’s fee to assess the restoration needed, city taxes, and the price of the actual restoration—to come up with an estimate.

In the end, Carrera found that four of five pieces could be repaired at a cost of less than 9 million lire each (about $5,500), and that the entire collection could be returned to a semblance of its original glory for a grand total of about 11.5 billion lire, or $6.7 million.

The Power of Data

In an effort to make the system more useful to historians, architects, and conservators, Carrera gathered up all the data he had carefully stored and ushered them into a Geographical Information System. The GIS allows interested professionals to visually compare and contrast any information within the two databases. For instance, a conservator can instantly create a thematic map of all fifteenth-century art that includes symbols for each type of object, such as coats-of-arms. The symbols can assume different colors depending on the urgency of restoration; red shields, for example, may represent coats of arms needing urgent attention, while green circles may flag those in good condition. Photographs of each object, which Carrera’s crews shot on location and downloaded to a separate database, can also be called up on the screen.

The most important benefit of the system, Carrera says, is its ability to help Venetians become active in preserving their cultural heritage. For example, armed with his data, Carrera has approached specific individuals and groups for support, such as the gondoliers he hopes will fund restoration of a top conservation priority, a sculpture dubbed the Madonna of the Gondoliers. The system also guided him in instituting a neighborhood collection-box system. “We’re talking about only $3,000 to $5,000 to restore each piece, which is well within reach of collection boxes,” he says. The boxes will also encourage people living nearby to “pay more attention to the art they see every day and help to make these works a source of pride for the community.” He finds it appropriate “that a project on public art should result in a product that is itself ultimately accessible to the public.”

Carrera’s system has already drawn support from the Venice branch of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). According to Irina Ivanich Marchesi, head of Venice’s UNESCO office, the system could easily be used by similar organizations. In the United States, for example, the National Institute for the Conservation of Cultural Property joined forces with the National Museum of American Art in 1989 to launch Save Outdoor Sculpture. Known as SOS, the program approaches local, private, and public groups nationwide to solicit funding for documenting, restoring, and maintaining all publicly accessible outdoor sculpture. More than 200 organizations around the country have heeded the group’s call, and SOS clones have even sprouted in Argentina, Australia, Finland, the Philippines, Switzerland, and the United Kingdom.

To make Carrera’s system more effective, Marchesi suggests that he expand the survey to include information on why each artifact is in the shape it is in, which will shed more light on exactly what has to be done to remedy matters. The city’s superintendent of monuments has offered to teach Carrera’s field workers how to gather such information. Meanwhile, the New York-based Save Venice, Inc., one of roughly 20 committees around the world dedicated to preserving the City of Canals, approached Carrera last year about choosing which public-art conservation projects to support.

Emboldened by the early success of his efforts to promote conservation awareness, Carrera is about to launch the Venetian Committee for the Preservation of Public Art. The committee’s first projects will include producing a CD-ROM based on Carrera’s system as well as a series of guidebooks and postcards, sales of which will help fund restoration projects. “In the end,” Carrera wrote in the proceedings of a 1993 UNESCO conference on restoration, the foremost goal of that effort is to preserve the external art of Venice for posterity, “to ensure that these small yet significant details will continue to adorn the streets and canals, maintaining that intangible aura of mystery that makes every turn a pleasant and unexpected surprise and a visible testimony of the past.” —Peter Tyson