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## Preservation and Restoration of Venetian Public Art

### From the Completion of the Public Art Catalog to the Active Restoration Process

An Interdisciplinary Qualifying Project  
Submitted to the faculty of  
Worcester Polytechnic Institute  
in partial fulfillment of the requirements for the  
Degree of Bachelor of Science

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## **Abstract**

Venice, Italy contains over 4,230 pieces of public art that must be maintained and restored to preserve the ancient culture. Past students have created a multimedia catalog containing each piece with physical information and condition assessments. The catalog was completed through this project with the incorporation of monuments. The Association for the Preservation of Venetian Public Art was created in order to use the vast amounts of information in the catalog to preserve each piece of public art in Venice.

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## Authorship Page

We, the project team, feel as though we have all shared equally in the creation of this project. Throughout the course of the term, we have all assumed responsibility for each section of the project. To make the document the best it can be, we split up the work and reassigned tasks as necessary.



# 1. Executive Summary

Many types of art exist in a society, but few of them are as visible and as fascinating as public art. Exhibits of public art subtly define the history of a society through multiple forms of display including sculptures, murals, and monuments. Since public art is available for everyone to experience, it has become one of the most beloved, but unfortunately sometimes ignored, parts of a culture. It also serves as a mechanism to attract tourists and create an interest in the culture. Public art is a fragile aspect of society that is constantly in need of preservation. Being exposed to natural elements, and without proper care and protection, the art deteriorates and loses its historical value.

One of the largest historical collections of public art in the world today exists in the city of Venice, Italy. This public display has been a source of pride for the Venetian citizens, but over the course of time the collection has not received proper care and is continuously deteriorating. Many factors, some unique only to the city of Venice, contribute to this decline in the condition of the art. Venetian public art runs the risk of being vandalized or stolen, or removed for renovations and not replaced to the buildings' structure. Also, there is no clear definition of ownership of art in Venice. Much of the art is located on private buildings which creates a question over whether the responsibility of upkeep lies with the owner, or the residents, of the building. Therefore, in many cases individual pieces of artwork are not cared for by anyone. Natural factors such as the moist salt air, unstable ground, and flooding also contribute to the deterioration.

UNESCO, or United Nations Educational, Scientific, and Cultural Organization, is an international trustee that provides an administrative framework to fund restoration projects in Venice, along with many other programs all over the world. The Venetian branch was created in 1967, after the worst recorded flood in Venetian history, in order to help protect and preserve the historic city. UNESCO, along with the private committees, works to raise funds in the effort to preserve Venice, but has little involvement in the actual restoration process. Presently in Venice over thirty worldwide private committees working under UNESCO contribute to the effort of the restoration of some of the most valuable pieces of public art.

The majority of the planning for a restoration is done by one of the several superintendent agencies, or *soprintendenze*. They employ experts on architecture and art whom direct restorations and suggest projects for the future. The process by which restorations are organized, however, is not perfect. There are two branches of *soprintendenze* from which jurisdictional problems sometimes arise: the *Superintendents for the Artistic and Historic Heritage of Venice* and the *Superintendents for the Architectural Heritage of Venice*.<sup>1</sup> The *Superintendents for the Artistic and Historic Heritage of Venice* is responsible for

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<sup>1</sup> n.d. UNESCO. Home Page. UNESCO. <<http://unesco.org>> Accessed 2003 June 16.

“movable art” which is any piece that is not permanently attached to a building or other structure; and the *Superintendents for the Architectural Heritage of Venice* is responsible for the protection of buildings and architecture.<sup>2</sup> Much of the public art in Venice could be placed under the jurisdiction of either branch due to the fact many pieces of public art are located on buildings but can still be considered removable. Despite the fact that the collection is so immense (currently over 4,200 pieces), individual pieces of art are considered to be of little value, thus, many times neither of the two *soprintendenze* are willing to take the responsibility to organize their restorations. Currently in Venice there is no attempt at restoration of public art as a whole and few attempts on a smaller scale by any individual owners. The majority of the public art being restored at this time in Venice consists of larger, more valuable pieces. Though the small individual pieces of public art are not very valuable, they are as a collection, and therefore should be preserved and restored.

The Venice Project Center (VPC) has been working to improve the city of Venice since it was founded in 1988. Much of the VPC’s effort has been dedicated to analyzing and collecting information on public art in order to preserve and restore it. Through past work with the VPC, students from Worcester Polytechnic Institute (WPI) have cataloged, recorded, and analyzed the majority of the public art in Venice, resulting in multimedia databases containing over 4,200 pieces of public art. The computerized catalog of erratic sculpture is an updated expansion of Alberto Rizzi’s original paper version, *Scultura Esterna a Venezia*. Entries in the database include a location, an entry

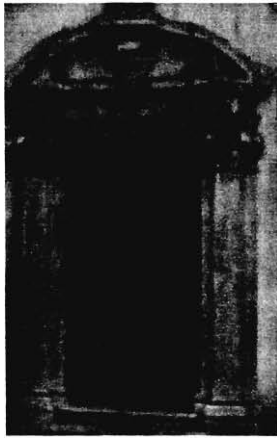


Figure 1: Portale

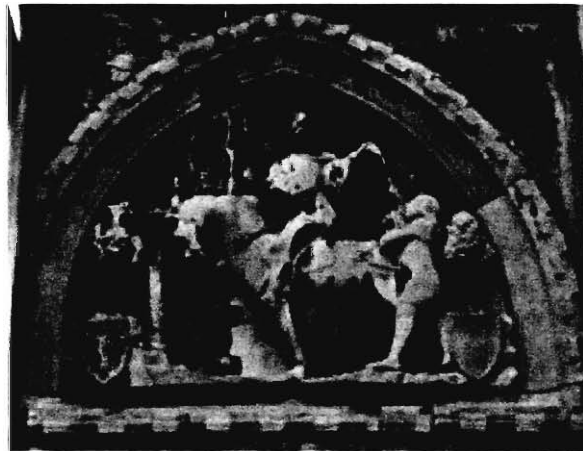


Figure 2: Lunetta

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<sup>2</sup> Bartos, E., R. Croteau, D. Lemmo, K. Salamon. *Portali e Lunette: A Multimedia Catalog for the Preservation of Venice’s Artistic Entrances*, 2002.

number, a condition report, and a brief description of the art. The multimedia public art catalog contains 2,930 erratic sculpture entries. Since its creation, five other multimedia catalogs have been created to expand upon it. The addition of catalogs for flagstaff pedestals, wellheads, keystones, monuments, *portali* (Figure 1), or artistic doorways, and *lunette* (Figure 2), the decorative artwork found in arches above doorways, has increased the total number of documented pieces to 4,230.

The computerized multimedia catalog has been nearing its completion but still did not include the self-standing monuments of Venice as of 2002. Moreover, the *lunette* catalog required verification and finalization, and the *portali* catalog needed to be expanded upon. Although much of the public art has been documented, the catalog still lacked any major form of utilization. Without standardized plans for public art restoration, the Venice Project Center has had no means of putting its catalog into use. An organized system for restoring the art is essential in order to utilize the collected information.

The creation of this system was one of the three major goals accomplished by this project. The first goal was to complete the multimedia catalog through finalizing the *lunette* section, expanding the *portali* section, and completing the self-standing monument catalog. The second was to catalyze the restoration of a piece of public art. The third was to create plan for a non-profit organization that would utilize the multimedia catalog to preserve and restore all forms of public art in Venice. These three objectives were completed from June 1 to July 31, 2003.

The expansion of the multimedia catalog began with the creation of a catalog of self-standing monuments in the historical center of the city of Venice and the neighboring island of Murano. The first task was to locate all of the monuments by systematically searching the area. This entailed walking the entire city and noting the locations with a brief description of each monument. Following the process of location, our four-member group returned to each monument in teams of two; one team was to concentrate on the collection of physical data while the other team completed condition assessments. The physical data forms, condition assessment forms, photographic documentation and naming codes were based upon previous year's Interactive Qualifying Projects (projects completed by WPI students in Venice to enhance and improve the city) catalog information. This was done to insure additions to the multimedia catalog would be as consistent as possible with the existing multimedia catalog. The physical data, condition assessment, and photographic documentation consisted of collecting a set of data for each element of the monument: base sections, statues, plaques, and artwork. Physical data consisted of facing direction, height, width, depth, material, subject, and any other general notes. During the condition assessment, plant life, missing features, endangered features, general comments, surface condition assessments, and structural condition assessments were recorded.

The expansion of the *portali* catalog and the finalization of the *lunette* catalog were done simultaneously. The locations of each *portale* and *lunetta* were cross-referenced in the field with printouts of the computerized multimedia catalog. The *lunette* catalog was very near completion and along with verifying the records all missing documentation was noted and added. The majority of the existing entries in the *portali* catalog contained only addresses and locations. These were revisited and a picture was taken of each *portali* in the city of Venice as its location was confirmed. Previously determined cataloging methods were not completed for the *portali* due to the limited amount of time and the vast number of doorways. The multimedia catalog for *lunette*, started in 2002, was verified and completed with physical and conditional assessments as well as photographs. The *portali* catalog, also started in 2002, was expanded upon to include photographs of all *portali* in the historical center of Venice.

At the completion of data collection, 70 monuments were located and cataloged in Venice and the surrounding islands. Since monuments had never before been studied, these monuments were brand new additions to the catalog. An interactive, multimedia catalog was created linking the collected data, photographs, and GIS (MapInfo) layers. The catalog is contained in a Microsoft Access database.

Once the catalog was complete, attention was focused on the creation of the Association for the Preservation of Venetian Public Art. This non-profit private organization incorporates all previous work on Venetian public art and compiles new information in order to develop plans for the preservation and restoration of the art. Teams have discussed this association in the past; however nothing is clearly documented as to what exactly the Association will entail.

This project worked to develop the basic structure of the Association, including a mission and objective, budget, sources of funding, and restoration programs and schedules. In order to decide on an appropriate structure for the Association our group has done extensive research on existing organizations with similar objective. We studied the examples of Save Venice Inc. and Venice in Peril to create a model for our organization. The Association for the Preservation of Venetian Public Art will be constructed with proper financial planning using these organizations as a model. The data in our results section as well as the previously created catalogs will also be utilized. Restoration costs were estimated by previous research and conducted in conjunction with UNESCO. We developed a list of the art in most dire need of restoration and most practical restoration factors. In turn, the Association will be able to help decide which art is to be restored and the best methods and techniques to use.

The framework for the Association is now complete and ready to be utilized. This includes posted job advertisements for the head administrative position, drafted bylaws, and restoration process guidelines. Various examples of promotional and fundraising materials were created:

calendars, brochures, and posters are several examples of materials that can be sold to supplement the costs of the Association's operating costs. Other fundraising ventures include placing collection boxes outlining the Association's goals in various businesses in and around Venice and accepting donations. Membership opportunities have also been created and distributed.

To help develop the methods of the Association, a restoration was organized to serve as a model for the process. A relief depicting an angel located in the *sestiere* of Cannaregio, on a building bordering the *Settemari* Rowing Club served this purpose. The members of this rowing club volunteered to help coordinate and finance the restoration of this piece of public art. Through working with architects, permission and guidelines for restoration from the *soprintendenza* were obtained. Once these were received, letters were written to the police as well as the owner of the building to inform them of the restoration. This particular piece required removal from the building, thus scaffolding was necessary for only a few days, waiving the standard fee. The Association will organize and oversee this entire restoration process while using it as a guide in the future. At the time of the completion of this project, the restoration is awaiting approval from the *soprintendenza*.

Along with the restoration of the angel, a preliminary island in Venice, one most in need of restoration, was selected based upon many years worth of public art data collection. This example, *San Nicolo dei Mendicoli*, in addition to aiding the Association, works to relay the numerous abilities of the catalog. A map layer was created showing all types of public art, including their subject matter and condition. Through this depiction, an island with a variety of unique art in need of restoration was selected. An entire island was selected since this is how the Association will conduct itself. Permission will be obtained in this fashion, and it makes the restorations more efficient. Steps are currently underway for the restorations for the art of this model island to take place.

A meeting with the *soprintendenza* led to the conclusion that they would work in partnership with the association, rather than above it. This greatly exceeded our expectations, as it initiated the actual founding of the Association for the Preservation of Venetian Public Art. The *soprintendenza* was greatly impressed with the wealth of information contained in the multimedia catalog as well as the level of pertinence the information had toward the actual restoration process.

The work done by WPI students over the span of ten years has finally come together to produce a catalog that is invaluable to the preservation of Venice. The restorations of the angel, along with the multiple pieces located on the model island, test the workings of the Association and display the wealth of information contained in the completed multimedia catalog. Through the continued collection of data and the creation of an association dedicated to public art, the existing collection in Venice will be preserved and treasured for years to come.

## 2. Introduction

There are many types of art that are seen in a society, but few of them are as visible and as fascinating as public art. Public art exhibits, and helps define, the history of a society through sculptures, murals, monuments, and various other forms of display. Being exposed to the elements, without proper care, this art deteriorates and loses its historical and cultural value. Public art is one of the most beloved aspects of a culture due to the fact that it exists for everyone to experience. Public art also serves as a mechanism to attract tourists and create an interest in the culture of a location.

One of the largest collections of public art in the world today exists in the city of Venice, Italy. The over 4,200 pieces of art have been a source of pride for the Venetian citizens, but over the course of time, this collection has not received proper care and is continuously deteriorating. Many factors, some unique only to the city of Venice, contribute to this decline in the condition of the art. In Venice there is no acceptable definition of ownership of the art that is located on private buildings. It is constantly debated whether the owners of the building, its residents, or a combination of both are responsible for its upkeep. Therefore individual pieces of artwork are not maintained by their true owners; also, there are no organizations willing to take full responsibility for the artwork collection as a whole, therefore it is not maintained. Additionally, Venetian public art runs the risk of being vandalized, stolen, or removed for renovations to the buildings structures and not replaced. Natural factors in Venice including the moist, salty air and other weather conditions such as flooding, contribute to the deterioration. Currently, in Venice there is no plan to begin the restoration or protection of the public art collection.

The Venice Project Center has helped to improve the city of Venice since it was founded in 1988. Through past work with the Venice Project Center, students from Worcester Polytechnic Institute have cataloged, recorded and analyzed the majority of the public art in Venice. A database containing information about the 2,930 external sculptures of public art already exists and can be accessed. Entries in the database include location, a condition report, and a brief description of the art. In 2002, a WPI project group completed the catalog of *lunette*, the decorative artwork found in arches above monumental doorways, and began a catalog of *portalì*, decorative artwork around doorways. They cataloged the type of art and the material of construction. Height, width, and elevation were also measured. Finally, assessments of exposure, cracks, surface condition, and structure were performed. The entire public art catalog does not consist solely of *lunette* and *portalì*; the Venice Project Center has a completed catalog of nearly all types of public art with similar entry styles. Categories include wellheads, flagstaffs, keystones, and various other types of external

sculpture. Over many years, students have studied the city to locate each piece of public art and collect its corresponding information.

Although the VPC catalog is one of the most extensive and sophisticated in existence, the current database did not include information about the self-standing monuments. Moreover condition assessments of the *portali* in the city were also incomplete. Although much of the public art has been cataloged, it continues to deteriorate and the catalog must be constantly updated. Lacking standardized plans for public art restoration, the VPC also has no means of putting its information into action. An organized system for restoring the art is essential in order to utilize the information that has been collected.

This project worked to accomplish two major objectives. First, data collection was expanded and continued to include and complete the self-standing monuments catalog and further expand upon the catalog of *portali*. In addition the *lunette* catalog was verified for consistency and completeness. Secondly, the team focused on the creation of the Association for the Preservation of Venetian Public Art. This non-profit, private organization will incorporate all previous work on Venetian public art and compile both the existing and the new data in order to preserve and restore all public art. The team aided in the creation of the Association by developing its basic structure including a budget, sources of revenue, restoration process, restoration programs, and restoration schedules. In order to formulate the plan for the Association, one piece of public art, an external sculpture relief, was used as a model. Along with this single piece, the process used to restore all the artwork of an entire island was preformed. Since a single piece of artwork is often not worth enough to be restored individually, the association will focus on an entire island at a time. These models were an important aspect of the project because they gave insight on the amount of time, effort, and money needed for the entire restoration process to take place. Along with this, the model served to demonstrate the vast abilities of the catalog in the preservation of each piece of public art in Venice.

### 3. Background

The city of Venice, Italy is unique in the vast amount of public art that is available for tourists and citizens alike to view on a daily basis. Venice houses over 4,230 pieces of public art in a land area of only 7.6 square kilometers, which is roughly the size of New York's Central Park. According to Save Outdoor Sculpture, the entire United States of America contains only 32,000 pieces of public art. The prominence of the public art in Venice plays a large role in the creation of the historic atmosphere of Venice. There are 2,930 different examples of erratic sculpture that can be found in Venice today.

Though many threats to the public art exist, efforts are underway to preserve the city and restore the ancient cultural pieces. Due to the age of the city, many of the pieces are in need of attention. Although individual, popular pieces of artwork found throughout Venice are cared for, public art is an aspect of the city that does not receive enough attention as a whole. To ensure the survival of the art, awareness must be raised among Venetians as well as tourists. One method of accomplishing this is through the preservation, restoration, and documentation of the collection. Computerized documentation of each piece and its corresponding condition is a valuable tool in the facilitation of this process.

Since 1988, over 350 students from Worcester Polytechnic Institute (WPI) have been working through the Venice Project Center (VPC) to complete more than 100 projects which all contribute to the preservation of Venice. One major aspect of the project center is the interactive multimedia public art catalog which commenced in 1995. The ultimate goal of these projects was to encompass all types of public art and assessments of each.

This project focused specifically on collecting information to create a complete documentation of the monuments in Venice, as well as collecting the remaining information for *lunette* and *portali*. These were the only remaining forms of art in the city not completely cataloged by previous project teams. The methodologies used for this process of *lunette* and *portali* mimicked those of the completed projects in order to create a compatible database while the monuments methodology was unique, but allowed for consistency with previous catalogs. Also, an association was planned for which would enable the utilization of this extensive source of information. The information contained in the completed catalog will be used by the Association in order to prioritize the restoration processes.

The non-profit organization was planned for through looking at existing models, including those that are run through the United Nations Educational, Scientific, and Cultural Organization



(UNESCO). Also, a restoration was performed to serve as an example of the process the organization would be responsible for.

### **3.1. Public Art in Venice**

Public art is a decorative, artistic element that can be viewed from a public area. It exists in many forms and can be found in various locations. From reliefs of famous *Venetian* family crests and coats of arms, public art covers Venice, helping to make it one of the most beautiful cities in the world. Each individual display of public art adds to a collection that is one of the largest in the world, and no piece should be neglected or deemed unimportant. To make the various public art projects completed in Venice by WPI students more manageable, the definitions of public art have been refined and focused into several categories. There have been public art projects done by WPI students on external sculpture, wellheads, flagstaffs, keystones, *portali*, *lunette*, and monuments.

### **3.2. The Catalog of Alberto Rizzi**

In 1966 Venice experienced the greatest recorded flood in her history. As a result, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) was founded; the general goal of this organization being to preserve any structure in Venice, including public art, under immediate threat. One of the first tasks of UNESCO was to begin funding for the development of a catalog which incorporates all the historical objects in the city. UNESCO specially selected a team of people to work on this catalog; one of them being Alberto Rizzi, an employee in the office of the *soprintendenza*. Once the requirements for the UNESCO catalog were completed he decided to complete a catalog of all public art on his own. As a result, he published two books on the subject: *Scultura Esterna a Venezia* (External Sculpture of Venice) and *Vere da pozzo di Venezia* (The Wellheads of Venice). Rizzi's catalog incorporates all public art in the categories of external sculpture, wellheads, *portali*, and keystones constructed prior to 1800. Since monuments were often erected more recently, they were not included in Rizzi's catalog. For each entry he developed a system for unique numbering and identification based on the building address, a brief description sometimes accompanied by a photograph, and a date for each piece based on his previous UNESCO research. This vast catalog was a base for the interactive computerized multimedia catalog that has been under construction for the past 15 years by students of the Venice Project Center.

### **3.3. The Venice Project Center**

The Venice Project Center (VPC) was formed in 1988. Every year students from WPI complete projects to help preserve and enhanced the city of Venice. Over its two decades of existence, the Venice Project Center has completed almost one hundred projects through the work

of over 327 WPI students. Projects on varied topics have been organized and completed, but a common theme throughout many of them has been public art. Through these projects the VPC has gathered abundant amounts of information on more than 4,200 pieces of public art. The projects done through the VPC were originally based off of Rizzi's work, and aimed to update and improve upon it. The VPC did so by conducting condition assessments and adding more detailed descriptions for all the individual pieces of art. A further improvement was made when the catalog became computerized. There are now extensive catalogs for erratic sculpture, flagstaffs, wellheads, *lunette*, and monuments. These are all interactive, multimedia, digital catalogs which have databases from Microsoft Access linked to a Geographical Information System (GIS) known as MapInfo. The catalog is also now available over the internet. The VPC has compiled the most complete digital catalog of Venetian Public Art in existence starting with external sculpture and public wellheads that were previously cataloged by Rizzi. Students first followed Rizzi's catalog to start, and then later expanded upon it by adding *portali*, *lunette*, flagstaffs pedestals, monuments, and keystones to the catalog.

### 3.3.1. Erratic Sculpture

The 1995 WPI project *Computerized Catalog of Public Art in Dorsoduro, Venice* defined erratic sculpture: "outdoor art, also known as public art, basically consists of the ornaments whose purpose is to decorate, for public display, the various buildings of the city of Venice."<sup>3</sup> This definition excludes those items that are part of the structure, such as columns, doors, and windows. All of the art pieces must be independent; they cannot be segments of large repeating designs that decorate an entire facade of a building. Some, but not all, of the art on churches is included. Even with such a narrow definition, there are still just shy of three thousand pieces of art found in Venice. Most of the erratic sculpture falls into eight categories: coats of arms, confraternity symbols, crosses, inscriptions, *patere*, reliefs, statues, and street altars; each of which is described in the following sections. The remaining public art falls under the following categories: wellheads, *lunette*, *portali*, flagstaff pedestals, decorative keystones, or monuments.



Figure 3: Coat of Arms

#### 3.3.1.1. Coats of Arms

<sup>3</sup> Beltran, Jesus M., Brophy, Erin E., Cardenas, Alex, *A Computerized Catalog of Public Art in Dorsoduro, Venice, Interactive Qualifying Project*, E95, Venice, Italy, pp. 19-20.

Noble families of Venice would often have a coat of arms sculpted on their buildings as a form of display of ownership and power. All have the basic shape of a shield, though they do vary in complexity. The styles span from gothic, to renaissance and baroque. Often the details were chiseled off when a family moved from its location and a new owner occupied the building. **Figure 3** depicts the coat of arms of a cardinal; it is one of 1064 different coats of arms, which are present in Venice.

### 3.3.1.2. Confraternity Symbols

Confraternity symbols had a similar function to the coats of arms in Venice. However, where coats of arms were representative of families, confraternity symbols were representative of the various *scuole* in Venice. They were placed on all buildings that had any association with a *scuola*. Various buildings which could have an association with a *scuola* and therefore have a confraternity symbol on it are the headquarters, or also any building or house owned by it. There are 196 confraternity symbols found throughout Venice.

### 3.3.1.3. Crosses

Crosses are sculptures found throughout Venice that are representative of the Christian religion. The three most popular styles are Greek, Latin, and Maltese. There are 74 crosses in the public art catalog in Venice.

### 3.3.1.4. Inscriptions

Inscriptions are carvings of words that memorialize or inform a person or event. The most common languages used in inscriptions are Latin and Old Venetian. Twenty-eight inscriptions have been found in Venice.

### 3.3.1.5. Patere

*Patere* are small reliefs found in Venice that have a Byzantine background. They are most often circular and display animals or plants. Some of the Venetian *patere* date back to the 1100's, while most were made some time between then and 1300. There are 1200 known *patere* in the world and 471 of them are in the city of Venice.

### 3.3.1.6. Reliefs

Reliefs are flat artistic sculptures which are raised from the surface. Reliefs are located on wall structures; there are two different types, high (*altorlievi*) and low



**Figure 4:** Relief depicting The Merchant of Venice

(*bassorilievi*). They are categorized by the amount of the figure that protrudes from the surface. A high relief sculpture has half or more of its depth protruding from the surface, while low relief sculptures are those with less than one half-protruding. There are 386 relief sculptures, shown in **Figure 4**, found on the walls of Venetian buildings.

### 3.3.1.7. Statues

Statues are carved pieces of stone that are not embedded in a wall but at the same time are connected to a building; for example, they can be found accentuating the roof line of an important building or church. Sculptures do serve a similar purpose as reliefs, simply decorative and artistic. There are 173 of these types of sculptures found throughout Venice.

### 3.3.1.8. Street Altars

Street altars are religious stations located throughout the streets Venice which give Venetians a place to give praise or worship. The most common themes of these altars include sculptures or reliefs of Christ, the Madonna, specific saints, and also any combination of the three. There are 108 of these available to the citizens throughout Venice.

### 3.3.2. Wellheads

Wells supplied the city of Venice with fresh water up until the nineteenth century. They can be found throughout the city in every *campo*<sup>4</sup>. Wellheads are artistic structures located above the underground well.



**Figure 6:** *Portale* in Venice

They are often made of Istrian stone and decorated with saints, family crests, inscriptions, or other forms of Venetian history. There

are 217 public wellheads, as shown in **Figure 5**, in Venice today, which were cataloged in 1995.



**Figure 5:** Wellhead in Venice

### 3.3.3. Portali

*Portali* are defined as doorways that contain structural artistic



**Figure 7:** *Lunetta* in Venice

<sup>4</sup> Knoph Guides: Venice. New York: Knopf, 2001, p.81.

elements, including artwork on the doorjamb and sculptures affixed to the top of the doorjamb. *Portali* were designed to create a sense of grandeur as one enters a building or courtyard. *Portali* were also designed to be unique, as many incorporated the coat of arms of the family that owned the building, as well as biblical scenes. There are 552 *portali*, as shown in **Figure 6**, located around the doors of Venice

### 3.3.3.1. Lunette

*Lunette*<sup>5</sup> are a unique subset of *portali*. *Lunette* are defined as the artistic elements located in an arch above outside doorways; they must utilize the entire arch. The main functions of *lunette* are to decorate an entranceway and to show status. Palace owners showed their wealth by incorporating *lunette* into the outer architecture of their homes with coat of arms, and other illustrative artwork. There are 71 *lunette*, as shown in **Figure 7**, in Venice.

### 3.3.4. Flagstaff Pedestals

Flagstaff pedestals, as shown in **Figure 8**, are often located in the squares throughout Venice. They are made up of a base and a body, along with the flagstaff itself. Flagstaffs are the supports for flagpoles which served the purpose of identifying a certain area of the city with a family, *scuole*, or other organization. The base keeps the structure off the ground, while the body contains the carved design, icon, or inscription. The flagstaff is the section that holds the flag; it is usually constructed of wood or metal. There are 57 pedestals throughout Venice, though three of them are enclosed in private courtyards and no longer public. Of the pedestals located throughout Venice; 35 of them contain flagstaffs.



**Figure 8:** Flagpole

### 3.3.5. Keystones

Another form of art is a decorative keystone. This is the stone placed at the top of an arch that helps to distribute much of the weight and helps the arch hold its shape. Many of these keystones were decorated with human heads, sometimes grotesque, to make the arches more interesting and ornamental.

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<sup>5</sup> Lunetta literally means “small moon” due to the crescent or semi-circular shape.

### 3.3.6. Monuments

Venice is a unique city, in that it has public art on almost every wall and around every corner. It is also unique in that there are very few monuments (*monumenti*) found in the squares and on the streets. As compared to the nearly 3,000 pieces of public art, the 600 *portali* and *lunette*, and over 200 wellheads, there are few monuments scattered throughout the city. The reason for this is that a Venetian law, which existed prior to the fall of the Republic, prohibited individuals from creating or displaying freestanding statues in public areas. This law was designed to keep equality among the families of Venice and ensure that no one family or individual was raised above any other. Another reason that there are not more monuments in Venice is the lack of land throughout the city. Because Venice is a small island, the houses were packed tightly into the waterfront and with one another. It would not have been feasible for

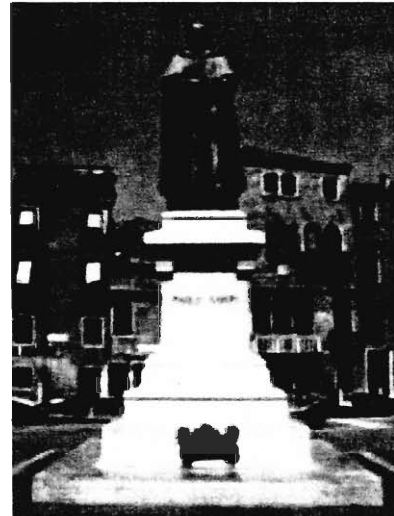


Figure 9: A Venetian Monument

Venetians to waste valuable land for the construction of monuments. Even now, after the law restricting their construction has been repealed, monuments are very rarely erected in the city due to the lack of available land. For these reasons, there are virtually no monuments built before the fall of the Republic in the 19<sup>th</sup> and 20<sup>th</sup> century. As a result, when categorizing public art in Venice, monuments were often passed over and not considered for entry into catalogs. One Venetian monument is shown in **Figure 9**.

### 3.4. Threats to Public Art

The majority of the public art in Venice is aging as rapidly as the city itself. As efforts are underway to preserve the buildings, streets, and canals, it is also vital to protect the art in order to maintain the essence of the city. It is important that the collection of public art be protected because from the many threats it faces, including theft, degradation, negligence, and vandalism.

There is evidence of theft as can be seen in comparing Rizzi's catalog of public art

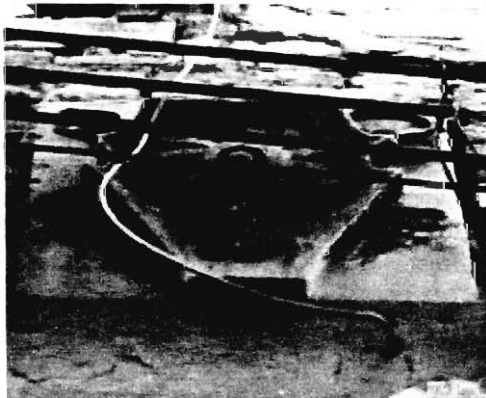


Figure 10: Public art deterioration

to that of the Venice Project Center. Rizzi put together a very detailed catalog of public art in Venice. Twenty nine entries in Rizzi's catalog were not able to be relocated by students from the VPC, this is approximately one percent of the entire collection<sup>6</sup>. Through comparisons with this catalog, we also can see how quickly the artwork is deteriorating. **Figure 10** shows the effect of time on the angel relief, constructed in Cannaregio in 1485. The pictures were taken over the span of 70 years, from the first in 1930, to Rizzi's in 1979, to the recent VPC catalog in 2000.

Degradation occurs due to both the natural decay of the material of the art, and the environment in which it is found. The atmosphere of Venice is unusual because of its heat and humidity in the summer and occasional freezing in the winter. The environment is not conducive to the endurance of stone due to the fact that many parts of the city are flooded multiple times a year. The consequences of being surrounded by water are that the sculptures are continuously hydrated and then dehydrated, causing decay in the stone elements. When this hydration occurs the seawater leaves salt deposits that contribute greatly to the rapid corrosion rate of the stone. Also, bacteria contribute to the decay of stone; the combination of the acid produced when they feed with air and stone results in water, carbon dioxide, and dissolved stone. Other acid producing organisms include algae, lichens, and moss which are often present on the artwork. Other sources of the acid corrosion are the birds of Venice. Much of the city, St. Mark's Square in particular, is infested with pigeons, their droppings containing an acid which promotes decomposition.

Venice is also famous for its tourists;



**Figure 12:** Wires on and around public art



**Figure 11:** Blackening caused by atmospheric pollution, and whitening produced by trails of rainwater<sup>7</sup>.

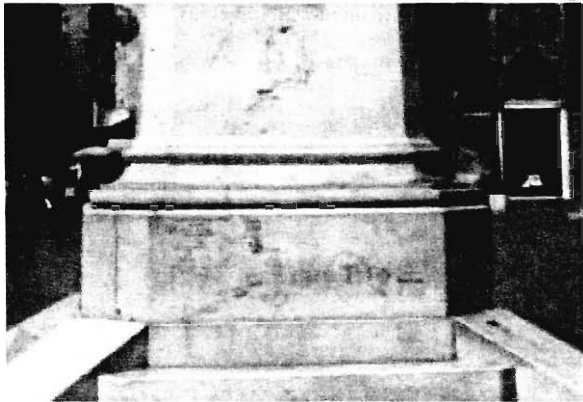
there are currently over 12 million each year. The high traffic of tourists creates wear and tear on the entire city, including the public art. Many forms of public art get touched quite often, and as a result are being rapidly worn down. The massive crowds of people bring deterioration to the city and the public art collection.

<sup>6</sup> Bender M., D. Finnegan, J. Koniers, K. Lee, S. O'Connor. *The Forgotten Art of Venice: Promoting the Conservation and Awareness of External Sculpture*. Interactive Qualifying Project, 2000.

<sup>7</sup> Amoroso Giovanni G, Fassina Vasco. *Stone Decay and Conservation: Atmospheric Pollution, Cleaning, Consolidation, and Protection*. Amsterdam; New York: Elsevier, 1983. 255 p.

Some of the decline in the quality of the art is a result of man-made pollutants which advance the deterioration of stone. Sulfuric acids are released into the air from industrial zones; when they are combined with moisture from humidity they convert calcium carbonate in the artwork to calcium sulfate, or gypsum<sup>8</sup>. This gypsum results in thick black scab on structures made of istrian stone seen in **Figure 11**, which is a type of limestone. This surface discoloration occurs with exposure to moisture, while at the same time, the interior of the sculpture is being corroded.<sup>9</sup>

Negligence and misuse of public art is common in Venice because it is a crowded city. People use it to hang their laundry, or as a bench, with no concern for the value of the art and the detrimental effects of their actions. **Figure 12** depicts when electric and telephone companies have



**Figure 13:** Vandalism to a monument

been known to nail wire to it as well, as past groups have documented in the database. Wires affect approximately 180 pieces. There is also vandalism, which further shows that the visitors of Venice and even many locals, especially the younger ones, do not give the public art collection the honor and respect that it deserves.

The conditions of Venice together with the historic, cultural, and aesthetic value of the

public art make the preservation of the city a high priority. Organization and planning is a vital element



**Figure 15:** Venetians battle a seasonal *acqua alta*

of this process. Currently there are many organizations working toward a common goal: to save the beauty and value of these ancient Venetian pieces.



**Figure 14:** Rippling waters of a seasonal *acqua alta*

### 3.5. *Historic Preservation in Venice*

<sup>8</sup> Amoroso. Stone Decay and Conservation. 123 p.

<sup>9</sup> Amoroso Giovanni G, Fassina Vasco. Stone Decay and Conservation: Atmospheric Pollution, Cleaning, Consolidation, and Protection. Amsterdam; New York: Elsevier, 1983. 258 p.



Many organizations have been established to preserve the city of Venice after it was submerged by floodwaters in November of 1966. The seasonal floods combined with a low-pressure system caused the waters to rise 1.2 meters above St. Mark's Square. The severity of this flooding can be seen in **Figure 15** and **Figure 14**. The city endures this seasonal flooding, known as *aqua alta*, or high water, and the condition is worsening as time goes on. These floods bring oily waters and leave behind a sticky black residue that coats the city.

The flood of 1966 claimed about 5,000 Venetian homes, but it raised awareness for the fragile city. The floodwaters have taken their toll on Venice as they have been occurring for hundreds of years. Until 1966, there was almost no concern for the deterioration of the city of Venice, and protection for the city's artwork was nonexistent. The erosion that had been occurring throughout Venice's history was only made worse by neglect.

After the flood of 1966, many organizations were founded and dedicated to the preservation of the city. UNESCO has played a vital role in the protection and preservation of Venice since 1967. UNESCO's goal is to protect the cultural and natural property of humanity. UNESCO has worked with many smaller private committees over the years, and has been actively involved in the effort to save the public art of Venice. In 1967, over thirty organizations were formed under the network of UNESCO with intentions of restoring and protecting Venice.<sup>10</sup>

UNESCO has a branch designed for the restoration of Venice called UNESCO – Private Committees Program for the Safeguarding of Venice. The Private Committees Program for the Safeguarding of Venice is made up of three components: *soprintendenze*, private committees, and UNESCO. These three branches work together to provide financial support, efficiency, and accuracy for all restorations.

Though private committees finance restoration projects, they seldom select items to restore. However, each private committee is free to choose what to restore with only a few restrictions: it must be accessible to the public after restoration; it must be of some monumental, artistic, historical, or cultural importance; it must have no other outside source of finance; and it is usually not privately owned.<sup>11</sup> The committees are fully responsible for the financing of a restoration project along with an association that acts as an interface with UNESCO; this association must execute all administrative tasks of restoration projects and coordinate the flow of information between UNESCO and the private committee.<sup>12</sup>

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<sup>10</sup> n.d. Save Venice. Hazen Polsky Foundation Inc. <<http://savevenice.org>> Accessed 2003 March 29.

<sup>11</sup> n.d. Venice in Peril. Home Page. The Venice in Peril Fund. <<http://veniceinperil.org>> Accessed 2003 March 29.

<sup>12</sup> Ibid.

The *soprintendenze* are in charge of planning and directing all of the restoration projects. *Soprintendenze* are responsible for conserving the city's architectural, environmental, artistic, historical and archaeological heritage; they guarantee that restorations are adequate. The *soprintendenze* work with experts on architecture and art that not only direct and supervise project restoration, but also suggest projects for future restorations.<sup>13</sup> Having the *soprintendenze* direct restorations increases efficiency which saves the sponsors money, while at the same time guarantees quality.

UNESCO acts as an international trustee which provides an administrative framework.<sup>14</sup> Each private committee must sponsor a project in full by putting the funds into a bank account with UNESCO. UNESCO then receives all invoices and pays the contractors when the project is sufficiently completed. A popular benefit of working through UNESCO is that private donors can receive tax breaks on money that is donated to a private committee. This system of checks and balances ensures also that all projects are completed correctly and funded sufficiently to prevent contractors or private committees from “cutting corners” to save money.

### 3.5.1. Soprintendenza

The *Soprintendenze* fall under the direction of the Ministry of Culture in Venice, known as The *Central Office for Environmental Architectural, Archaeological, Artistic and Historical Assets*. The office, along with the government of Italy has passed the majority of the laws with regards to protecting public art. The two branches most directly in charge of public art are the *Superintendents for the Artistic and Historic Heritage of Venice* and the *Superintendents for the Architectural Heritage of Venice*. The former deals with the

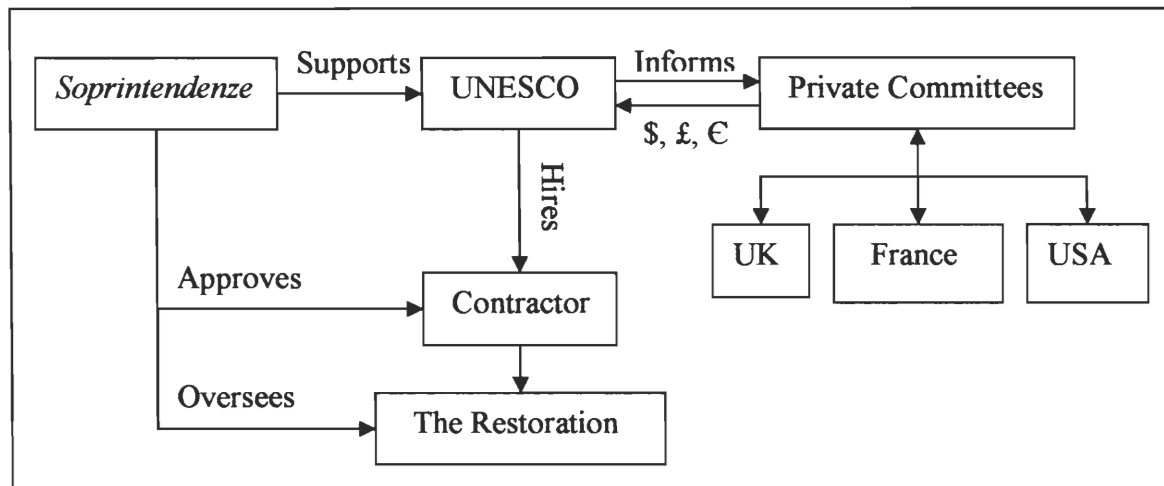


Figure 16: Restoration Process

<sup>13</sup> n.d. Venice in Peril. Home Page. The Venice in Peril Fund. <<http://veniceinperil.org>> Accessed 2003 March 29.

<sup>14</sup> Venice In Peril.

“moveable,” or not structurally fixed, art of Venice, and the later deals with the building structures of Venice.

### 3.5.2. Private Committees

Today there are over thirty private committees located all over the world that are helping to restore Venice. Each one of these committees collects donations and then puts the donations toward restoring a part of Venice. This network of private committees makes the restoration of Venice a worldwide effort. The following are two private committees that we have studied in order to get a greater understanding of the workings of the system

#### 3.5.2.1. Save Venice Inc.

There is already a private committee located in the United States called Save Venice Inc. Save Venice Inc. has completed over one hundred restorations in its existence, choosing items according to their artistic merit and urgency of need.<sup>15</sup> These restorations range in scale from individual paintings to entire buildings. Current projects of particular interest include the *Lamette of Saint Mark Healing the Cobbler* and *Saint Martin and the Beggar*.

#### 3.5.2.2. Venice in Peril

Venice in Peril is another private committee that is located in London which is creative regarding how it obtains donations. One of the most interesting ways of collecting donations is called PizzaExpress and the Veneziana Trust. PizzaExpress is a chain pizzeria in England that developed a specialty pizza called Pizza Veneziana<sup>16</sup>. Each time a Pizza Veneziana is purchased a portion of the money goes directly to the Venice in Peril fund. This system has verified its importance by raising over 500 euro for Venice in Peril.<sup>17</sup>

Venice in Peril has completed many restorations of different cost and sizes, but currently Venice in Peril is planning the restoration of The Portal of San Rocco Church. This is only one of the many projects in which Venice in Peril is involved. The restoration will include cleaning the *portali* and is estimated to cost about 15,000 *lira*. The funds for this project were obtained by a donation from the Martin Randall Tours Music Festival.<sup>18</sup>

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<sup>15</sup> n.d. Save Venice. Hazen Polsky Foundation Inc. <<http://savevenice.org>> Accessed 2003 March 29.

<sup>16</sup> n.d. Venice in Peril. Home Page. The Venice in Peril Fund. <<http://veniceinperil.org>> Accessed 2003 March 29.

<sup>17</sup> Ibid.

<sup>18</sup> n.d. Venice in Peril. Home Page. The Venice in Peril Fund. <<http://veniceinperil.org>> Accessed 2003 March 29.

### 3.6. Current System Inadequacies

Though all these organizations are working toward preserving Venice, their goals differ slightly from the focus of this project, in that we have focused strictly on public art. Public art as an entire collection is one aspect of Venetian history which is not given enough attention. This lack of concern stems from problems with jurisdiction and ownership.

In general each individual piece of public art is not as impressive as an entire building or a famous painting and therefore seen as not important. Each piece individually has little significance and therefore many pieces of the public art collection are neglected. It is only when public art is considered together, and seen as a whole collection, that the vast importance is understood. While each piece is valuable but often unnoticed, the entire collection is priceless.

#### 3.6.1. Jurisdiction over Public Art

There are laws in Venice giving the government jurisdiction over the artwork. Law 1089 of 1939, article 13 states that the art on public display cannot be removed, sold or defaced. However, due to overlapping definitions, no branch of the government has clear responsibility of enforcing such laws. Much of the public art collection is made up of artwork that is attached to the sides of buildings. This leaves the public art between the jurisdictions of two *soprintendenze* creating a lack of attention to the artwork. The Superintendents for the Artistic and Historic Heritage of Venice are responsible for movable art not attached to a building or other structure and the Superintendents for the Architectural Heritage of Venice are responsible for buildings and architecture. Public art does not clearly fall under either of these *soprintendenze* and is therefore neglected due to the fact that neither agency wants to take responsibility for the many items in the public art collection.

The art, in the case of *portali* and *lumette*, is on a building, and it is involved in the structure, placing it in the category under the architectural heritage branch; but it is decorative, which places it under the branch focused on artistic and historic heritage, or “moveable art.” This case is one of the many examples with fall into the gray area of the jurisdictional definitions. The art, in the case of monuments, faces a similar situation. Monuments, if attached to a building, can be considered part of the building or movable, and if monuments are not attached to a building they can either be considered structural or moveable. Both *portali* and monuments are in the gray area of the jurisdiction of the two *soprintendenze*.



Figure 17: Angel relief

#### 3.6.2. Ownership of Public Art

There is also a question of ownership. Buildings in Venice are often times not owned by a single person. In many buildings a different person owns each floor. This is

where a question arises: is a piece of art located on between the second and third floor of a building the property of the building owner, the second floor resident, or the third floor resident, or is it shared? No clear answer exists. This lack of definitive ownership also promotes neglect towards pieces of public art located on buildings. Everyone is willing to claim ownership of the art, but few want to pay for its upkeep or restoration.

### **3.7. Settemari Rowing Club**

A key factor in the development of an organization is the development of a model. The process the Association will be responsible for was illustrated through the restoration of a relief. The angel relief is located on a building next to the *Settemari* rowing club in the *sestiere* of Cannaregio. This angel is the target of the first restoration that students from the VPC will be involved in. The rowing club has graciously agreed to help with the funding of this restoration; one of the members will perform it as well. The process will be used to serve as a model for further work done through the VPC projects.

## 4. Methodology

This project focused on the existing collection of public art in Venice, Italy. The objectives were to continue adding information to the interactive multimedia catalog of the public art created by the Venice Project Center and to design an association devoted to the restoration of the cataloged artwork. Our project focused primarily on two types of public art: artwork around doorways and self-standing monuments. The information we have collected on these forms of public art has brought the existing database to completion, giving the Venice Project Center the most complete database of Venetian Public Art. With the completion of the database our team will now be able to assist in the development of a plan for an association that will be dedicated to preserving the public art in Venice.

*Portali* are entranceways to buildings and courtyards where artwork has been incorporated around a doorway, as well as on top of it. This definition includes doorways where sculptures are affixed to the top portion of the entrance as well as doorways where the artwork flows into the doorjamb. Entranceways where artwork is found above, but not attached to, the doors were not included in the scope of this project.<sup>20</sup> This definition was taken from the project completed in 2002, *Portali e Lunette: A Multimedia Catalog for the Preservation of Venice's Artistic Entrances*, so as to stay consistent with their work when entering the information into the computerized multimedia interactive catalog.

*Lunette* are artistic structures found in the arches above doorways. The decoration must take up the entire arch for it to be included in the definition. Metal work was also excluded from this definition. The *lunette* portion of the catalog was completed in 2002, but the locations and cataloged entries have been verified.

Monuments incorporated into the multimedia catalog were permanent, self-standing, three-dimensional structures that have no function other than to serve as a historical, commemorative or decorative landmark. Monument foundations had to be located on the ground level. Temporary art exhibits containing monuments, found in Venice during the time of our study were also excluded by



Figure 18: *Portale* in San Polo<sup>19</sup>

<sup>19</sup> Bartos, E., R. Croteau, D. Lemmo, K. Salamon. *Portali e Lunette: A Multimedia Catalog for the Preservation of Venice's Artistic Entrances*, 2002.

<sup>22</sup> Ibid.

this definition. This definition of a monument defined the scope of our project by creating a definitive number of items that needed to be cataloged.

With the computerized multimedia interactive catalog nearing completion, there was a need for a plan to utilize this valuable resource. The catalog served no purpose other than to research individual pieces of art. One aspect of the project was to use the information provided in the catalog to start a plan for an organization that would work to preserve and restore the public art of Venice. This plan includes funding sources, programs, budgets, and other logistics for the proposed organization.

Much of the planning for the organization has been based upon a single restoration. Through starting the restoration process of a relief of an angel (catalog number CN300), time estimates and cost estimates were obtained and applied to the organization plan.

#### **4.1. Continuation of Portali Inventory**

As previously mentioned, a group of students from the Venice Project Center began the collection of information for the *portali* section of the public art catalog in 2002. It was their plan to make two passes through the city of Venice and the surrounding islands of Murano, Burano, Torcello, and Mazzorbo. The first pass was designed to locate and take pictures of all of the *portali* in these areas and was completed in its entirety. The second pass was designed to conduct condition assessments of the *portali* as well as collect more specific data; this was only completed in the *sestiere* of Castello in the historical center of Venice. We reviewed the field form records located in last year's project's appendices to determine exactly which *portali* remained uncataloged and what information still needed to be collected. The field forms also included the address, so we were able to relocate the incomplete pieces.



**Figure 19:** Monument in Castello

### 4.1.1. Locating *Portali*

Once it was determined which information remained to be gathered, our team members visited and cataloged those *portali*. When gathering information each *portale* was given a unique code. In Venice every doorway has a separate address and all *portali* are found on doorways; therefore, the *portali* can simply be coded with the same address as the doors that they are found on. Prefixes for all of the *sestieri* or the islands surrounding Venice were included in each code along with the address number. For example, a *portale* coded as SM3245 would be address number 3245 located in San Marco. All of the *sestieri* or islands, and their corresponding codes are listed in **Table 1**.

Cannaregio	CN
Castello	CS
Dorsoduro	DD
San Marco	SM
San Polo	SP
Santa Croce	SC
Murano	MU
Burano	BU
Mazzorbo	MZ
Torcello	TC

**Table 1: Sestiere and Island abbreviations**

### 4.1.2. Photographic Documentation of *Portali*

To expand upon the *portali* catalog, photographs were taken to incorporate into the multimedia catalog. A picture was taken of each *portale* in

“JPG” format and named with the predetermined code. The photographs were all taken in portrait style so they would be compatible with the database.

As above, the picture for the *portale* located at address 3245 in San Marco would be named SM3245.JPG. All pictures were stored in a single folder called “Portali Pictures.”

### 4.1.3. Archival of *Portali* Information

The photographs of *portali* were linked with a Microsoft Access database containing the *sestiere*, address, and code of the *portali*. Forms were created to display the information and photographs of the individual *portale*.

## 4.2. Verification of the Lunette Catalog

*Lunette* are artistic, structural elements that are a unique subset of *portali*. In 2002 a group of WPI students created a catalog of *lunette*, and our group ensured the completion of this catalog. Revisiting the lunette and cross-referencing their locations, condition assessments, and photographs with the existing database completed this verification. In few cases, either physical or condition assessments were missing, so assessments were completed and data was entered into the existing catalog. Following the model of the 2002 research, we recorded physical data about each *lunette*, including dimensions, exposure to the elements, height from the ground, and location type. For consistency, we used the standards set by the previous group for this information gathering.



### **4.2.1. Photographic Documentation of Lunette**

In cases where photographs were missing or not adequate, new photographs were taken. We took two pictures of each *lunette*. One is a close-up and one is a broad shot of the building and its surroundings. These photos were labeled with the code of the piece and “L” for the close-up or “A” for the broad shot to remain consistent with the 2002 labeling. The close-ups were taken in landscape while the photographs of the area were in portrait. These photographs were linked with the catalog as well. Pictures were in “.JPG” format and stored in a folder named “Lunette Pictures.”

## **4.3. Catalog of Monument Data**

Although monuments and *portali* are distinctively different, the process for locating and cataloging them is quite similar. The monuments were located by combing the historical center of the city of Venice, as well as Murano, on foot, as was done for *portali*. Before going out into the streets and looking for monuments, we became familiar with the areas where we planned to survey. Using maps and GIS systems we studied Venice and its surrounding island making special note of *campi* or parks where we anticipated finding monuments. We then systematically scoured each *sestiere* separately, walking each street. We also looked thoroughly in any squares or open areas such as parks where monuments are often found. We recorded, on a map, the places we visited and the locations of the monuments that were found. In this first pass, the following items on the field sheet were filled in: the code, the *sestiere* or island which the monument was located, the square the monument was erected in if applicable, the highest and lowest doorway numbers surrounding the monument, the direction the monument faces, and a brief description of the entire monument. This includes the number of statues and plaques, and a description of the subject of dedication, if available.

Once this first pass was completed, the monuments were revisited, and more substantial information was gathered. As with *portali* two team members recorded all physical information and took pictures, and two team members performed the condition assessment. Several data collection sheets, described in section 4.3.1, were created to record information while in the field.

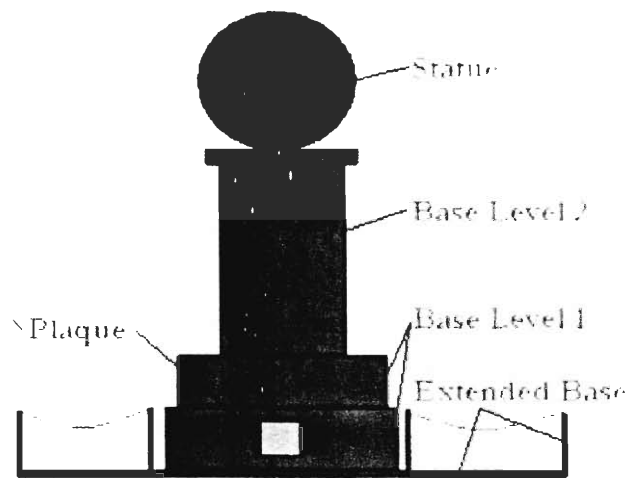
### **4.3.1. Field Forms**

We created three separate field forms for use in collecting data on monuments: general information, physical information, and condition information. The field forms were designed to incorporate information for the overall monument, separate parts of the base of the monument, the statues of the monument itself, and any plaques or inscriptions, as well as any additional artwork contained on the base. The “CODE” section is also the name of the monument with the prefix of the *sestiere* and the lowest address in the vicinity. This code was important for our field forms

because there are three separate sheets to coordinate. The first sheet was a general information sheet that was completed during the first pass through of the city. The other two sheets were for the physical data and the condition assessment. The way the forms were designed, we could record information about all the parts of the monument on the same form. It was not necessary to fill in all fields on all of the forms because not all fields were applicable to every section of the monument. Blank field forms are located in **Appendix A**, and the completed field forms can be found in **Appendix B**.

### 4.3.2. Sections of a Monument

In order to make our data collection consistent and reproducible, we defined various parts of a monument. These sections can be seen in **Figure 20** and described in the sections that follow. Monuments may contain one or more base sections, as well as any number of statues. Many of the Venetian monuments also contain inscriptions or plaques and separate pieces of art, commonly in the form of a relief. The majority of the monuments also have one or more statues. Complete data was recorded for each individual section or decorative part of each monument.



**Figure 20:** General sections of a monument

#### 4.3.2.1. Base Levels of a Monument

Often monuments contain a base and an extended base. The complete base includes the entire pedestal of the monument, and any section that would not exist without the presence of the monument. The base is divided up into various sections. The extended base is a part of the monument that extends out from the rest of the base sections along the ground. The extended base could range from a simple extra step up in the sidewalk or street to a chained off or fenced in area surrounding the monument. The remaining sections were divided into multiple sections if deemed necessary when assessing the condition.

### **4.3.2.2. Plaques and Inscriptions**

Any plaques and inscriptions located on the monuments were recorded verbatim. This information was used to help determine the subject of the monument, the age of the monument, as well as the historical importance. The plaque material type was determined based upon our inspections and knowledge of stone and metal types commonly used throughout Venice. When recording the information written on the plaques, ‘/’ was used to indicate the end of a line. This method was used in order to make the description replicable and more easily visualized. Other information that we noted when cataloging plaques and inscriptions is the style. The writing could be engraved, raised lettering, or of the relief style. Plaques were labeled as P1, P2, etc, working from top to bottom and right to left, starting with the front of the monument and working to the proper left, back, and proper right as described in the following section.

### **4.3.2.3. Proper Left and Right**

Directional orientation was determined with a compass, in the direction the primary statue faced. If there was no distinguishable front of a monument the direction most directly facing north was considered the front. The proper right and left was then determined. The proper right is the statue’s right hand side and the proper left is the statue’s left hand side. When looking at the front of the statue the proper right is the observer’s left hand side. Each monument was divided into four sides to record further information as far as the condition assessment was concerned along with plaque and monument location and/or orientation.

### **4.3.2.4. Monuments with Multiple Statues**

Some monuments contained more than one statue, defined as a subject of the monument. The most prominent statue, with the greatest base height was considered the primary statue and labeled with ‘p’ after the standard label. All sub-statues were labeled with the statue of greatest height above the ground being “s1”, and the numbering system continuing down as needed s2, s3, etc. A primary statue, which is the highest statue on a monument, would be labeled “s1p.”

### **4.3.3. Collection of Physical Data for Monuments**

Physical data includes all the quantitative as well as historical information collected for each monument. Along with the data collected on our field forms, multiple photographs were taken of each monument and stored in a database. All of our physical data is stored in electronic databases using Microsoft Access and Geographical Information Systems (GIS).

### **4.3.3.1. Naming Convention**

For monuments, the name was determined by the addressing system in Venice. The code was assigned with the method of “prefix and number” where the prefix corresponds to the *sestiere* and number is the lowest address in the vicinity of the monument. Since most monuments were located in squares, we walked along the sides of the square to find the lowest number. Monuments in streets were given the same number as the nearest addressed doorway. There were monuments located in parks and other areas not near any buildings with addresses. In these cases we gave the monument a name according to the location. If it was in a park, for example, we used the first three letters of the name of the park. The monuments were then lettered west to east, with this letter following the three-letter park abbreviation. In a case where there were more than twenty-six monuments in a single park we used a system of AA, AB, etc. Underscores (    ) separated the *sestiere* code, park code, and monument code for readability purposes.

### **4.3.3.2. Monument Locations**

The location of each monument was recorded with the naming code and also electronically recorded on a GIS system (MapInfo). To enter the location of the monument into the GIS system, each corner of the monument was marked into a map layer. Measurements were taken from each corner of the base to any known landmarks in GIS. In many cases, these are either buildings or canals. Measurements were taken from the main base of the monument as well as an extended base, if applicable. Two images of the location of the monument were linked with the multimedia catalog. One was the location of the monument with respect to the entirety of Venice and the other was the location in the immediate vicinity of the monument. The two images would appear next to each other allowing the user to locate the monument accurately and quickly.

### **4.3.3.3. Dimensions**

The length and width of each segment of the monument as well as the total dimensions for the monument were measured using a meter stick. The length and width of each plaque and relief were also measured. Due to the fact that monuments are often too high to measure by conventional methods, a laser device was utilized for obtaining the height of each segment and the total monument, as well as for all artworks and plaques out of reach. To ensure accuracy with the laser, reachable sections of monuments were measured with both the laser and the meter stick. The numbers corresponded, and the laser was deemed accurate.

#### 4.3.3.4. Cultural Information

Many monuments have plaques attached that include information such as names and dates. We recorded the inscription on each plaque or plaques located on each monument. This information has been used to further research each monument and include a brief historical write-up on each monument found in the catalog. The cultural significance and value has played a role in the prioritization of restoration for each monument. Much of the cultural information was obtained by case studies our group did on monuments. We researched monuments and looked through all applicable textbooks, informative books, and guidebooks for the appropriate information on monuments. Using the information we accumulated we wrote the most accurate and appropriate descriptions about each monument.

#### 4.3.3.5. Photographic Documentation of Monuments

Each monument required four or more photographs. The pictures are labeled with the name of the monument and a suffix indicated in parentheses. We took a broad picture of the front of the monument, the direction that the primary statue faces (-f), the back of the monument (-b), proper left of the monument (-l), and proper right of the monument (-r). Pictures of the statues were labeled with (s1, s2 etc.) If the statue was the primary statue, a 'p' would follow. Thus, if statue 1 was the primary statue, the code would be (s1p). We took a close up picture of each plaque, labeling it with the corresponding plaque number working from top to bottom and right to left (-p.)

The photographs were taken digitally at high resolution (2048x1536 pixels), reduced to 25% of their original size, and placed in electronic folders corresponding to the monument. For example, a monument located at Castello 6337 would have photographs located in a folder named "CS6337." The contents would include photographs "CS6337-f," "CS6337-l," "CS6337-b," "CS6337-r," and any other photographs of the other sections of the monument.



Figure 21: Relief with partially missing or endangered facial features<sup>21</sup>

#### 4.3.4. Condition Assessment

The condition assessment of the monuments includes documentation of missing features, endangered features, structural concerns, and plant life. Crack and surface condition rubrics were created (see **Table 2** and **Table 3**) in order to assure consistent condition assessments. The

<sup>21</sup> Amoroso Giovanni G, Fassina Vasco. *Stone Decay and Conservation: Atmospheric Pollution, Cleaning, Consolidation, and Protection*. Amsterdam; New York: Elsevier, 1983.

conditions of each segment of the base, each individual statue, each plaque, as well as any additional artwork were assessed separately. The percentage of the surface area in the worst condition was determined and ranked from 0 to 4. The rank of the remaining area will be given as an average of the rankings.

The two team members evaluating the condition of the monuments had to be consistent with each other and themselves. In order to do this, before starting any finalized assessments of monuments, they each performed separate condition assessments and compared their results until they matched. To ensure consistency among ourselves, we reassessed our first monument after a two day period and compared the results.

To evaluate the condition of the monuments, monocular lenses were used to aid the evaluators, especially on monuments that were out of range of normal vision. The evaluators took notes about any plant life and whether or not it poses a threat to the surface or structure of the monument.

#### 4.3.4.1. Missing and Endangered Features

In addition to assessing the cracks and surface condition, we recorded features of the piece that are either missing or endangered. A missing feature is a part of a monument that no longer exists. For example, as seen in **Figure 21**, the jawbone of the sculpture is missing. An endangered feature is a part of the piece that appears to be in danger of becoming missing, such as the chin of the sculpture. Without immediate attention, an endangered feature will soon be a missing feature.

#### 4.3.4.2. Crack Assessment

Since monuments must support themselves, structural cracks could become a threat to the stability of the structure; ergo, this is an important aspect of the condition assessment. The number of deep threatening cracks was counted, and the crack assessment was completed by the percentage of the surface the cracks covered. **Table 2** shows the rubric used when assessing these cracks, it is a modified version of the rubric used for *lunette* and *portali*.

0	1	2	3	4
No Cracking	Surface Cracks that do not pose as a threat to the structure STABLE	Structural Cracks that do not pose an immediate threat STABLE	Surface Cracks which would pose as a threat if the condition worsened STABLE	Deep Structural or Surface Cracks posing an immediate threat UNSTABLE

**Table 2:** Crack Assessment

### 4.3.4.3. Surface Condition Assessment

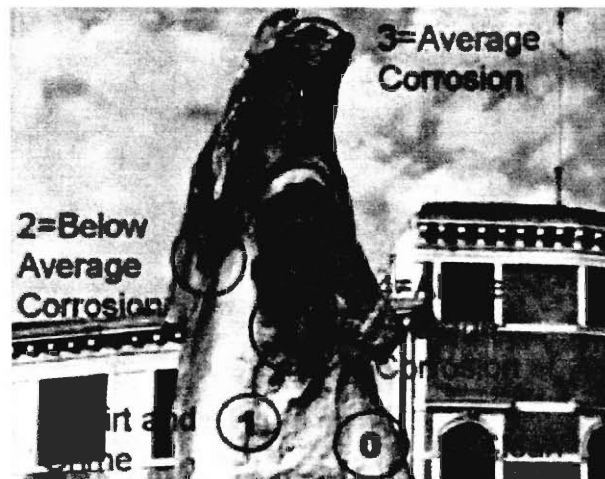
Surface condition assessments are performed to determine the aesthetic value of the monument. They are also a factor in determining restoration priority. Often the statue contains only dirt and grime, which could easily be washed off, while other more serious problems include discoloration of the base by deposits from the metal of the statue or endangered features due to plant life. **Table 3** shows the rubric used in this assessment. The rubric was modified from the *portali* report to remain consistent, yet account for differences in materials.

0	1	2	3	4
No discoloration, fading, corrosion, deposits, or vandalism	Evidence of grime/dirt	Slight damage caused by discoloration, corrosion or deposits	Corrosion, deposits or, discoloration which would cause a threat if left untreated	Severe corrosion or deposits, discoloration or fading which cause a threat to the structure

**Table 3:** Surface Condition Assessment

### 4.3.4.4. Ranking of Most Severe Damage

When ranking the condition of each monument we first ranked the part of the statue that was in the worst condition. Based on the conditions set forth in the *portali* section 0, we have conducted condition assessments of each statue and each base level of the monument. Through counting the number of cracks in each severity level we have made special note of the most severe parts of each portion of the monument.



**Figure 22:** Severity Condition Assessment

After we determined the most severe section we then calculated the percentage of the monuments surface area taken up by this portion. The remaining surface area of the monument was then cataloged under the same specifications. However, this section is expected not to be of severe nature.

## 4.4. Archival Documentation of Monuments

A new multimedia catalog was created for the monuments in Venice. All collected information, pictures, and maps of the locations are stored in the database and viewable in an eye

pleasing fashion. The database is easily navigable, and it is possible to view each monument and its various sections independently.

Over a period of 15 years, the Venice Project Center has collected information on all types of public art. Multimedia catalogs in the form of Microsoft Access databases have been created. These databases are stored individually with the project they are associated with, but it is difficult to find and use all of them at once. All of the prior databases, as well as the new monument database and the recently completed *portali* and *lunette* databases, were compiled together and incorporated into a single compact disc. This compilation will allow analysis and assessments for all types of art to be compared in a compatible fashion.

#### **4.5. Model Restoration Process**

It was necessary to locate an island in the historical center of Venice to be the first restoration project of the Association. To do so, thematic maps were created using GIS to identify the area with the greatest potential for restoration. Wellheads, flagstuffs, *lunette*, *portali*, monuments, and external sculptures were all included in the map indicated by unique symbols, and condition rankings assigned different colors to the symbols. The dark colored symbols indicate the worst condition while lighter colors signify a better condition. The uniqueness levels among the external sculpture were also assigned distinguishing symbols. The following maps, **Figure 23** and **Figure 24**, show the usage of the different colors and symbols.



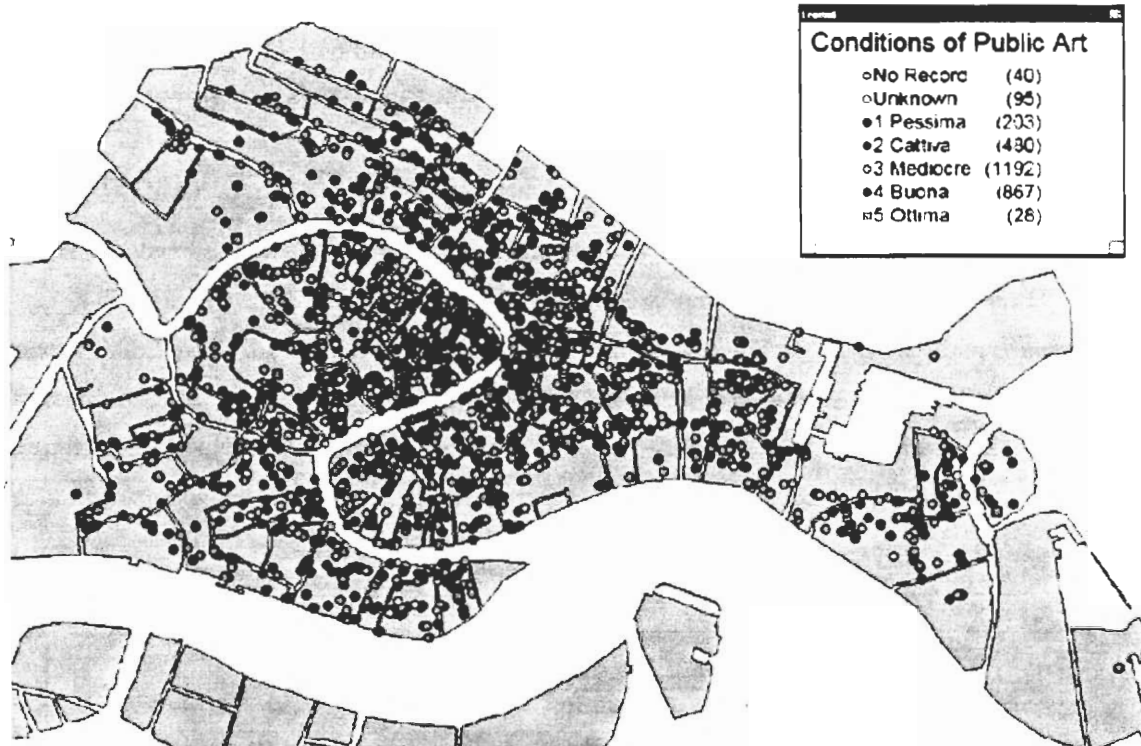


Figure 23: Thematic map of conditions of public art



Figure 24: Thematic map of uniqueness and condition of public art

Although uniqueness and condition are important to the restoration process, they were not the only factors in the decision. Areas with a variety of artwork were also considered to be of higher

priority in order stay consistent with the Association's mission to restore *all* types of public art. For our purposes, due to time constraints, a small land area containing a practical number of artistic pieces was also desired in order to have sufficient time to complete the process.

Using the three factors, condition, uniqueness, and variety, a small area of an island was searched for on the map. After narrowing the search down to three potential islands, a group member went into the field to verify the catalogs and make a decision on which location would be the most practical and beneficial to our project and the Association's mission. When in the field, three additional factors were noted: height of the public art, space available for scaffolding, and foot traffic in the area. Due to the fact that this would be the first project of the Association, pieces of public art that were low to the ground and had ample space around them were desired. These factors would eliminate the cost of scaffolding and staging. After compiling all of this information, an island was selected to be the first restoration project.

## 5. Results

The major goal of this project involved locating and assessing the condition of all of the monuments, *lunette*, and *portali* in Venice with the ultimate goal of creating an all-inclusive multimedia catalog of public art. This project not only expanded the multimedia public art catalog but it also worked to start the Association for the Preservation of Venetian Public Art. Various types of information were collected in order to complete the catalog. The collected information consists of dimensions, conditions, and locations of the monuments found throughout Venice. This information has been used to begin a prioritization list for the restoration of the artwork. The angel relief served as an example of the restoration process. For this to begin, statistics, costs, and various other figures dealing with the restoration were gathered. Much of the compiled information from the entire multimedia catalog was used to layout the plan for an organization.

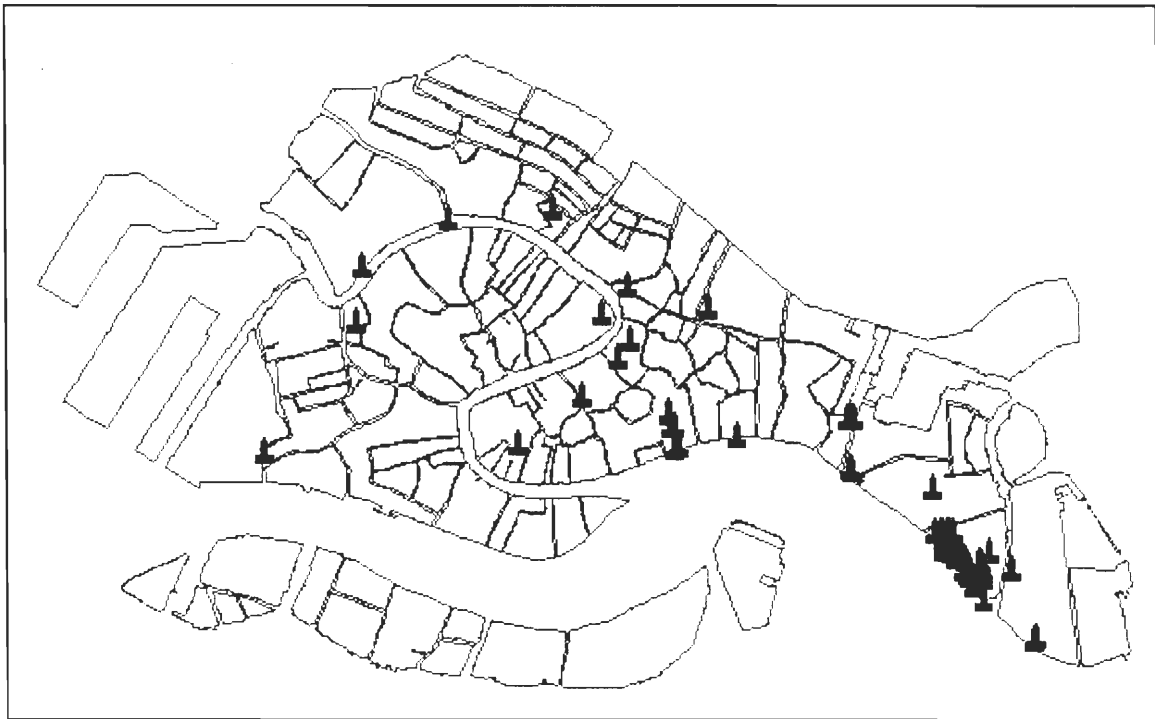
### 5.1. Monuments

The results of the monument catalog can be found in **Appendix B**, which is a collection of the completed field forms. The results from these forms included physical data as well as condition assessments for each statue, artwork, plaque and base that make up a specific monument. The physical data (artistic and historical information which does not change) includes locations, specific dimensions, direction facing, and materials. The condition assessment includes information on cracks, surface condition, plant life, missing or endangered features, and any necessary additional notes. The contents of the field sheets were entered into the electronic multimedia catalog in order to organize and present the information.

Along with the multimedia catalog, results of information having to do with the monuments of Venice were also shown in this section. This section was intended to show sizes, locations, materials, and conditions of the monuments in an understandable summary of our results. Specific statistics on individual monuments could be found in the multimedia catalog, and further use of physical and condition information was utilized in section 6, Analysis.

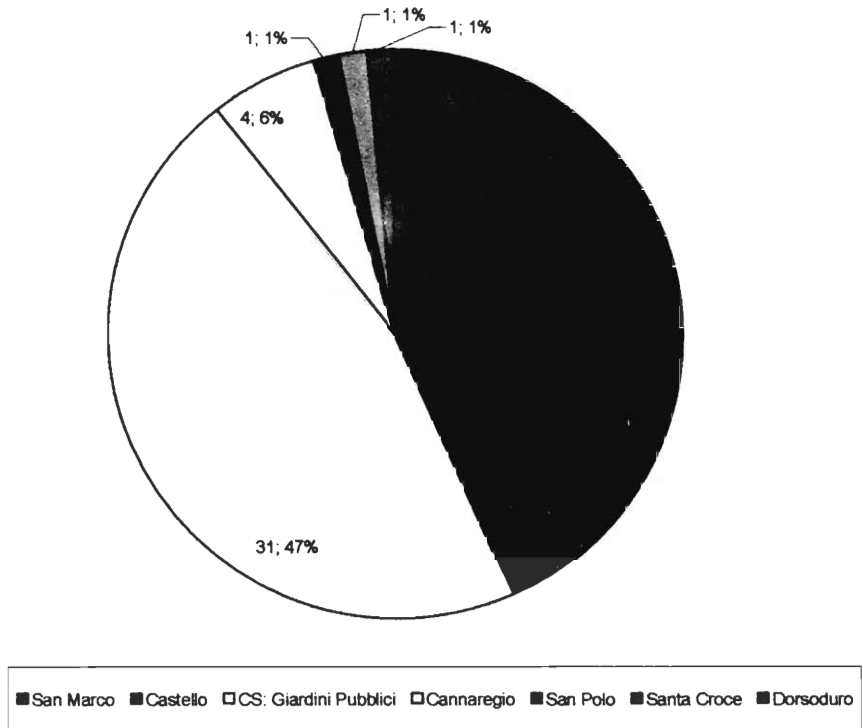
#### 5.1.1. Monument Distribution

Knowledge of the distribution of the monuments is an important factor to be considered for the restoration process, as it is more efficient to work in one area at a time. There were 67 monuments located throughout each of the six *sestiere* in the city and 3 on the surrounding island of Murano. The map below, **Figure 25**, displays all of the monument locations in the historical center of Venice. The distribution graph, **Figure 26**, below, shows that the greatest density of the monuments in the historical center is found in the *Giardini Pubblici*, or Public Gardens, located in Castello. Thirty-one of the 70 monuments are located here. San Marco and the remainder of Castello have the second greatest amount. Each of the remaining *sestieri*, Cannaregio, San Polo, Santa Croce, and Dorsoduro, contain fewer than five monuments.



**Figure 25:** Locations of monuments in the historical center of Venice

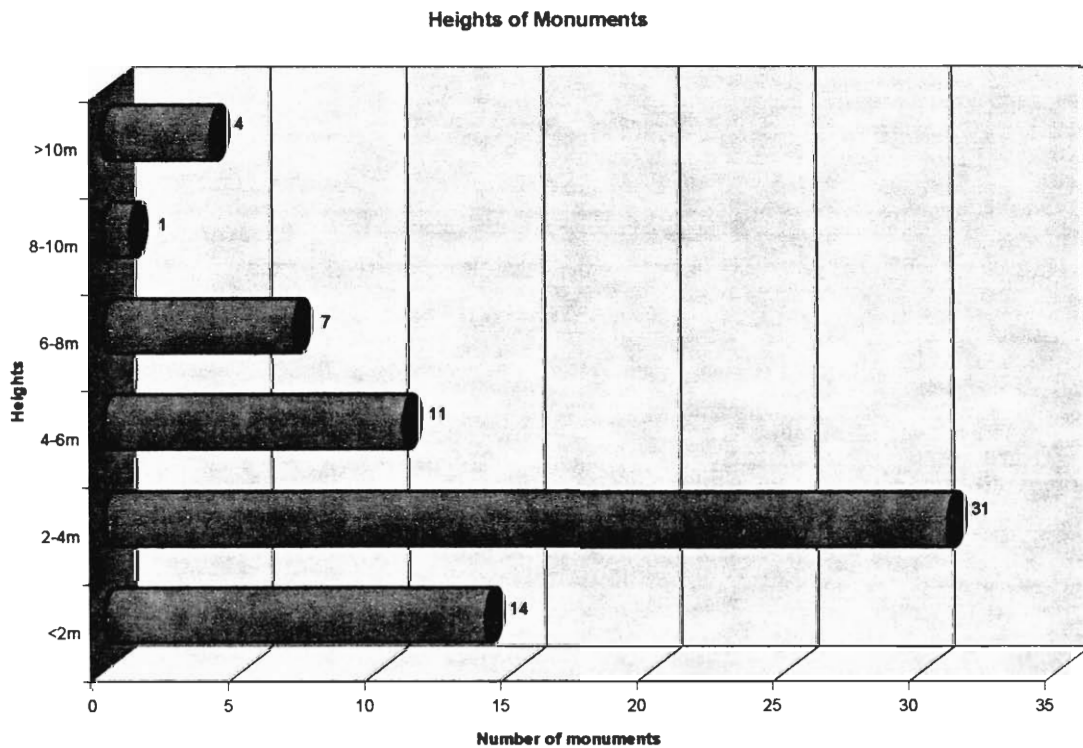
**Distribution of Monuments by sestiere**



**Figure 26:** Distribution of monuments in the historical center of Venice

### 5.1.2. Monument Sizes

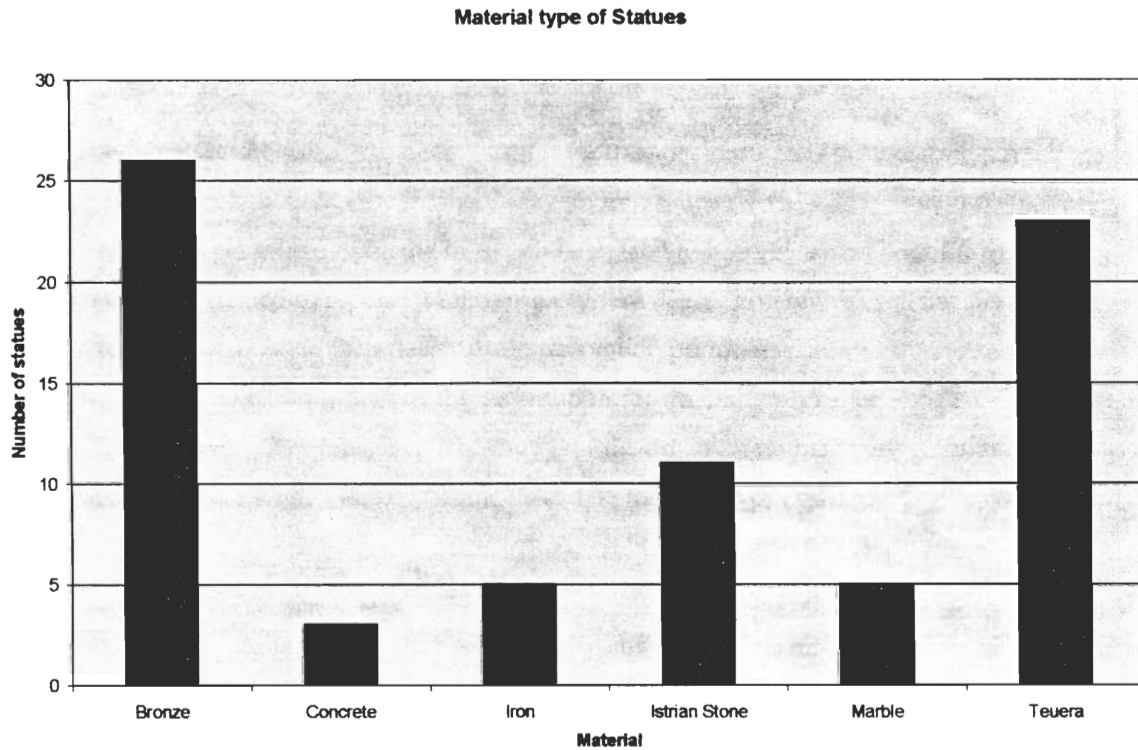
The height of a monument is important to the restoration process since the amount of



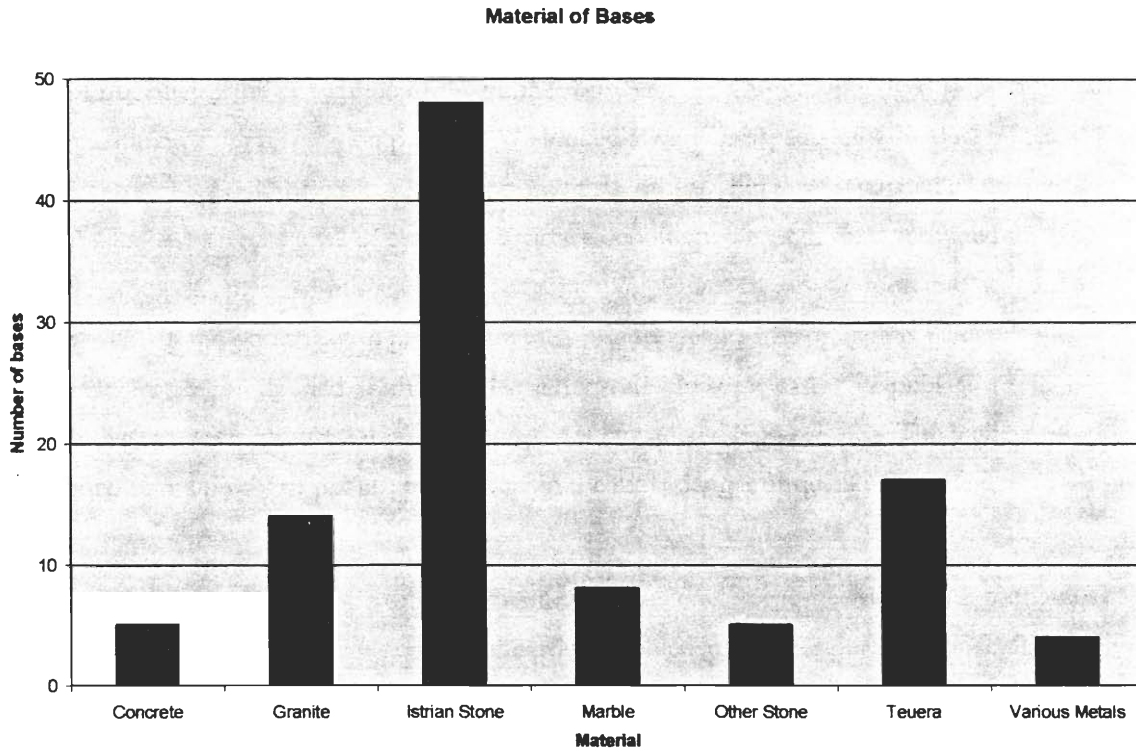
scaffolding needed would increase as the height of the monument did. **Figure 27** displays the heights of the monuments located throughout Venice. The majority of studied monuments are less than 4 meters in height, so a scaffold of 5 meters would be sufficient for most restoration projects.

### 5.1.3. Materials

The material the monuments are constructed of was recorded since different substances age and wear in different ways. Additionally, different methods of restoration are used for different substances. Monuments are complicated in the aspect that the different sections are often composed of different materials. The following graphs depict the materials of the statues and bases of the Venetian monuments. Istrian stone is the most prominent of the base materials, while most of the statues are constructed of either bronze or *tenera* stone.



**Figure 28: Materials of statues**



**Figure 29: Material of bases**

#### **5.1.4. Surface Condition**

After assessing the condition for all sections of all monuments, it was determined that the majority of sections are mostly in good condition (rating 0 or 1). **Figure 30** shows the percentage distribution of the surface condition rankings. The results include all monument sections (excluding total monument). The surface condition is important to the prioritization of restoration as well as the active restoration process and the costs of restoration. The results show that the majority of sections of monuments have a good surface condition; however, there is a substantial portion of sections with poor surface conditions, but the good sections tend to outweigh the bad. Though a monument in overall good condition may have one or two sections in poor condition, they will most likely become insignificant to the overall assessment.

### Surface Condition Distribution for all Monument Sections

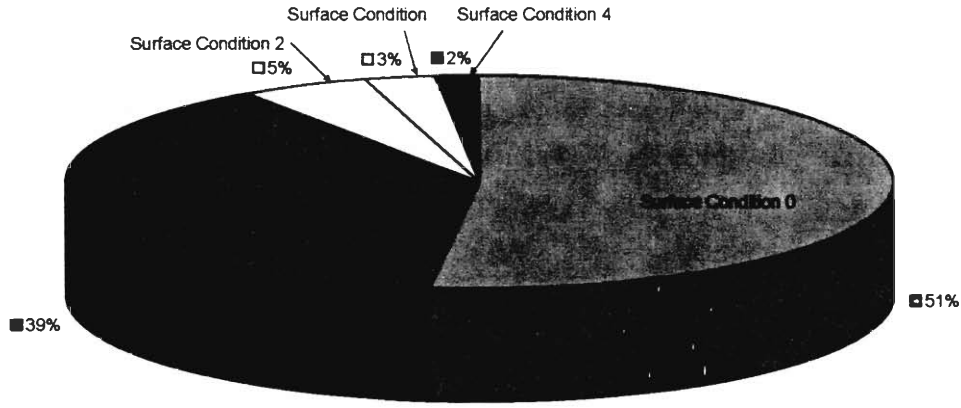


Figure 30: Surface Condition Distribution

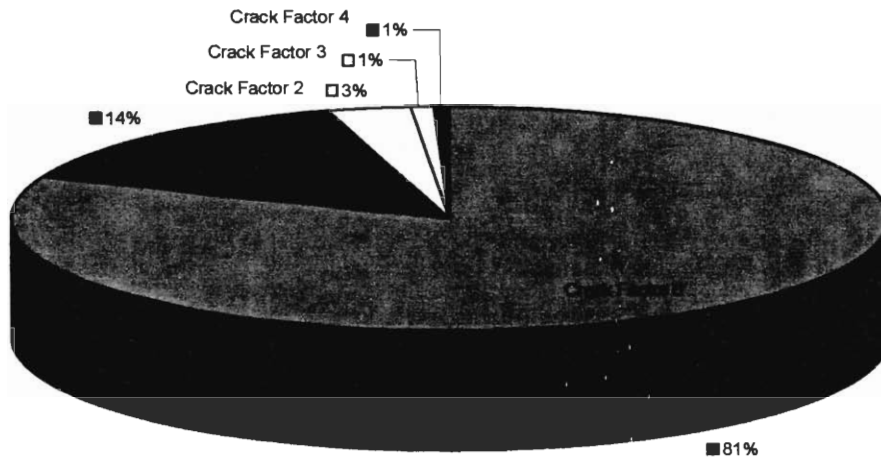
#### 5.1.5. Cracks Assessment

In the same fashion of the surface condition, the cracking on monuments was analyzed. The results are similar to the surface condition (most sections are 0 or 1) and can be found in **Figure 31**. All monument sections, excluding total, are represented in the figure. As for surface condition, the cracks factors represent the entirety of sections of all monuments, so the sections with better crack factors tend to outweigh the sections with worsened crack factors. The crack factor is important to

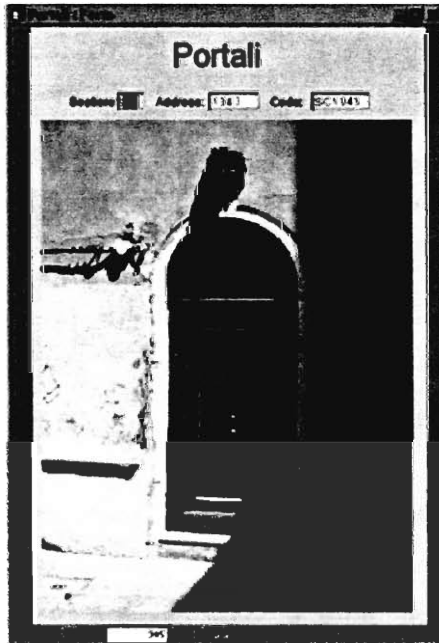


structural concerns and restorations.

**Cracks Distribution for all Monument Sections**



**Figure 31:** Cracks distribution



**Figure 32:** Example of *portali* database

## 5.2. *Portali*

The catalog created in 2002 was expanded upon in this aspect of the project. The field forms and printouts we used from the 2002 project, can be found in **Appendix C**. The maps associated with *portali* can be found in **Appendix E**.

The field work in 2002 located 552 *portali* in Venice and the surrounding islands. Of the 534 *portali* located in the historical center of Venice, we located 413 of them and took photographs. The condition assessments for the *portali* located in Castello were also completed in 2002. The photographs of the *portali* for all *sestieri* are located in a Microsoft Access database. The condition assessments along with photographs for Castello are located in the same database in separate table.

### 5.3. Lunette

The *lunette* catalog was completed in 2002 and verified in this project. The field forms, and other information associated with *lunette* can be found in **Appendix D**. The maps associated with *lunette* can be found in **Appendix E**.

Through collaboration with the VPC and the 2002 public art (*lunette*) group, we determined which *lunette* remained to be cataloged and photographed. We completed the physical assessments for two *lunette*, condition assessments for eighteen *lunette*, and took photographs of nineteen *lunette*. The completed catalog is contained in a Microsoft Access database, and a corresponding layer exists for MapInfo.

The *lunette* catalog has now been completed for the historical center of Venice and the surrounding lagoon islands. The locations of all *lunette* in the historical center can be seen in **Figure 33**. *Lunette* which are found on churches are indicated with a green star, and those on a standard entranceway are indicated with a blue star.



**Figure 33:** Locations of *lunette* in the historical center of Venice

### 5.4. Restoration

The second part of our results consisted of figures dealing with the restoration process of an individual piece of public art, in this case the “angel”. Specific information recorded and shown in easily understandable charts in order to shown specific costs and time estimates for each step in the restoration process as well as the steps completed prior to the start of the actual restoration.

## **5.5. Creation of the Association for the Preservation of Venetian Public Art**

This association has been thought about and discussed by teams of researchers in the past; however, nothing is clearly documented as to exactly what processes the Association will be responsible for. In order to develop the plan for the Association, we investigated the existing organizations in Venice. We have developed a financial plan, including fundraising events for the Association. Also, the tasks and processes the organization will be responsible for were created.

### **5.5.1. Planning for the Organization**

The organization needs to have a president who will be in charge of hiring people under him or her to form committees. To hire someone for this head position, we wrote a job advertisement which can be found in **Appendix F**. The advertisement was distributed at the college where students study historical preservation. Once the organization is established, the money for restoration, as well as salary will come from private donors as well as fundraising.

The organization will create an application for membership. The members will pay an annual fee, with more benefits to those who donate more. A newsletter will be printed out for every member. The members who donate the most will be invited to become a member of the board. Committees will be created to represent each of the *sestiere*. These committees will use the computerized catalog to aid in their decisions on restoration priorities.

The constitution and bylaws of the Association for the Preservation of Venetian Public Art have also been drafted. They are aimed to ensure that the organization maintains its original goals as well as a quality level of work. These documents can be found in **Appendix G**.

### **5.5.2. The Process of the Organization**

The process of a restoration has been planned for, with the details of each step documented. The organization will be responsible for performing each restoration through following the documented format. The process involves identifying pieces to restore, creating cost estimates, obtaining funding sources and materials, receiving preliminary permission from the and creating individual piece reports. Once this is completed, bidding and drawing a contract, along with supervision and a final check of the restorer's work must be preformed.

#### **5.5.2.1. Identifying Pieces**

The first part of the process which the organization will perform is the identification of which pieces will be restored. There are many factors to be considered in making this decision. The

condition assessments conducted on the public art in Venice contained in the Public Art Catalog were analyzed, and will play an integral role in this decision. This analysis was used to create a method of prioritizing the restoration of the public art in Venice. Our group judged all pieces of art to prioritize the order of restoration process. We looked at various aspects of individual pieces of art to see which pieces should be given a higher priority than others. First, we separated all the pieces of art with the highest severity level of cracks and surface condition. Second, we determined the pieces with the highest percentage of this severity level. Other important factors we took into account when determining the prioritization process are the presence of threatening factors like endangered features or plant life not defined on the 0 to 4 severity scale. In some cases, the public art is in a condition that is not worth restoration; these were not considered high priority. The highest priority was assigned to the pieces of public art that were in the most danger of quickly becoming significantly worse.

Along with need, there are other factors to be considered in this decision. The contiguity of the pieces is observed; this will cut down on the price involved in the transportation of scaffolding and restoration materials. The likelihood of receiving funding is also taken into account since finances are likely to be a limiting factor in the progress of the organization.

### **5.5.2.2. Cost Estimation**

For each piece to be restored, the cost of this process will be estimated. Using equations developed in past research it is possible to estimate the cost of restoring each piece of art. There are many factors to be taken into account in this equation. The surface area of each piece will be calculated along with an assessment of the damage. The cost of the architect fee, restoration process and materials, along with miscellaneous fees will be determined as well. The organization will purchase its own scaffolding; however, if it needs to remain standing for more than one day, fees are charged and must be taken into account.

### **5.5.2.3. Funding Sources**

As in all organizations, finances are a very integral part of success. For this association, a financial flow of money is necessary for the mission of restoring public art to be achieved. The fundraising ventures of the other organizations we studied will likely be modeled by this association as well.

#### **5.5.2.3.1. Residents and Businesses**

There are many possible sources funding to be found throughout Venice. Building owners, as well as shop owners in the area will be solicited for funds. The feasibility of this comes from the idea that through restoration, the area will be improved and popularized which would in turn draw crowds. By Venetian law, building owners can be forced to fund the entire restoration. Also, the people who reside in the area could be approached, since the restoration would improve their immediate surroundings. Finally, there are pieces which could be considered to be of special interest. For example, there is an external sculpture with subject matter involving a German Shoemaker Guild. In a case such as this, the German consulate could be contacted and asked for a donation.

#### **5.5.2.3.2. Donations**

Private donations will be accepted from those who wish to aid in the funding of restorations. In addition to this type of donation, it is the hope that collection boxes can be created and placed in and around the city of Venice in various business or tourist locations. These collection boxes will be decorated with the logo of the Association, pictures of current restoration projects, historical information about the art being restored, and information about the Association. The money collected from these donations will directly aid in the Association and further expanding the restoration process.

#### **5.5.2.3.3. Promotional Materials**

Publications of brochures will also be used to obtain funding. The Association will publish a catalog that will contain a description of the restoration, and visual documentation with before and after pictures. Along with this, information about the restorer and those who contributed donations, or aided in the process in any way would be added to the catalog. Prototypes of promotional materials such as posters and calendars have also been created, and are a feasible option for production and sale to help fund the restoration process. These prototypes can be found in **Appendix H**. More detail about the promotional materials is located in section 7.2.1.2.

#### **5.5.2.4. Preliminary Permission**

The *soprintendenze* initially give out permission to perform restorations area by area. They will grant permission for restoration, in general, for an entire island at a time, which is only the first step. Once this is obtained, they must approve each individual piece and the process it will undergo.

### **5.5.2.5. Individual Projects**

Once it is determined which piece will be restored, a specific process must be performed. Documents that contain specific physical information along with condition assessments must be created. Also, pictures and maps showing the artwork and its surrounding area must be obtained. This information, along with cost and time estimates, must be distributed to the *soprintendenze* as well as the prospective restorers. The owner of the building must also be informed, as well as the police. If scaffolding is required to be up for more than one day, a permit from the police must be obtained.

### **5.5.2.6. Bidding**

The prospective restorers will then submit their estimates to compete for the job. The jobs will be distributed to the lowest bidder. It is also possible to use students to perform the simpler restorations. This would give them experience and be cheaper for the Association. The students would, however, need supervision.

### **5.5.2.7. Contract**

Once the restorer has been selected, a contract will be drawn up, then inspected and approved by the Association. At the signing of the contract, the restorer will receive ten to thirty percent of his or her pay. The contract will ensure that the work is completed with quality and in the appropriate amount of time.

### **5.5.2.8. Supervision**

The progress of the restorer will be checked periodically to insure that the work being done is of high quality and following an appropriate schedule. Also, if the restorer is a student, a supervisor will be hired to train and aid them. There also must be a final check once the restoration is complete to make sure the entire job was done correctly.

### **5.5.2.9. Public Relations**

The final step of the restoration will be to unveil it to the public. For each completed restoration, a ceremony will be performed to acknowledge the restorer and the donors. These ceremonies will also serve as fund-raising events for future projects, as well as advertising the abilities of the catalog. One of the challenges of the organization is developing a method to give credit to the restorer and the donors who made the restoration possible. Venetian law does not allow additional plaques containing this information to be displayed with the public art. A possible solution of this is

to make moldings of the art for those who helped with the funding. Plaques could then be added to these, and they could be distributed as gifts.

### **5.5.3. Process Model**

One of the ultimate goals of this project was to have a restoration preformed, which will serve as an example of what can be done with the information the VPC has compiled since 1995. The extensive catalog that has been created contains information on numerous pieces of art; all of this information can be put toward the same goal of restoration.

The second part of our results consisted of figures dealing with the restoration process of an individual piece of public art, in this case the “angel”. Specific information was recorded in order to show costs and time estimates for each step in the restoration process as well as the steps which must be completed prior to the start of the actual restoration.

The process described in the previous section can be seen in the following flow chart. The restoration of an angel relief was used to fine-tune this process as well as to document it for the use of the Association.

## Restoration Steps

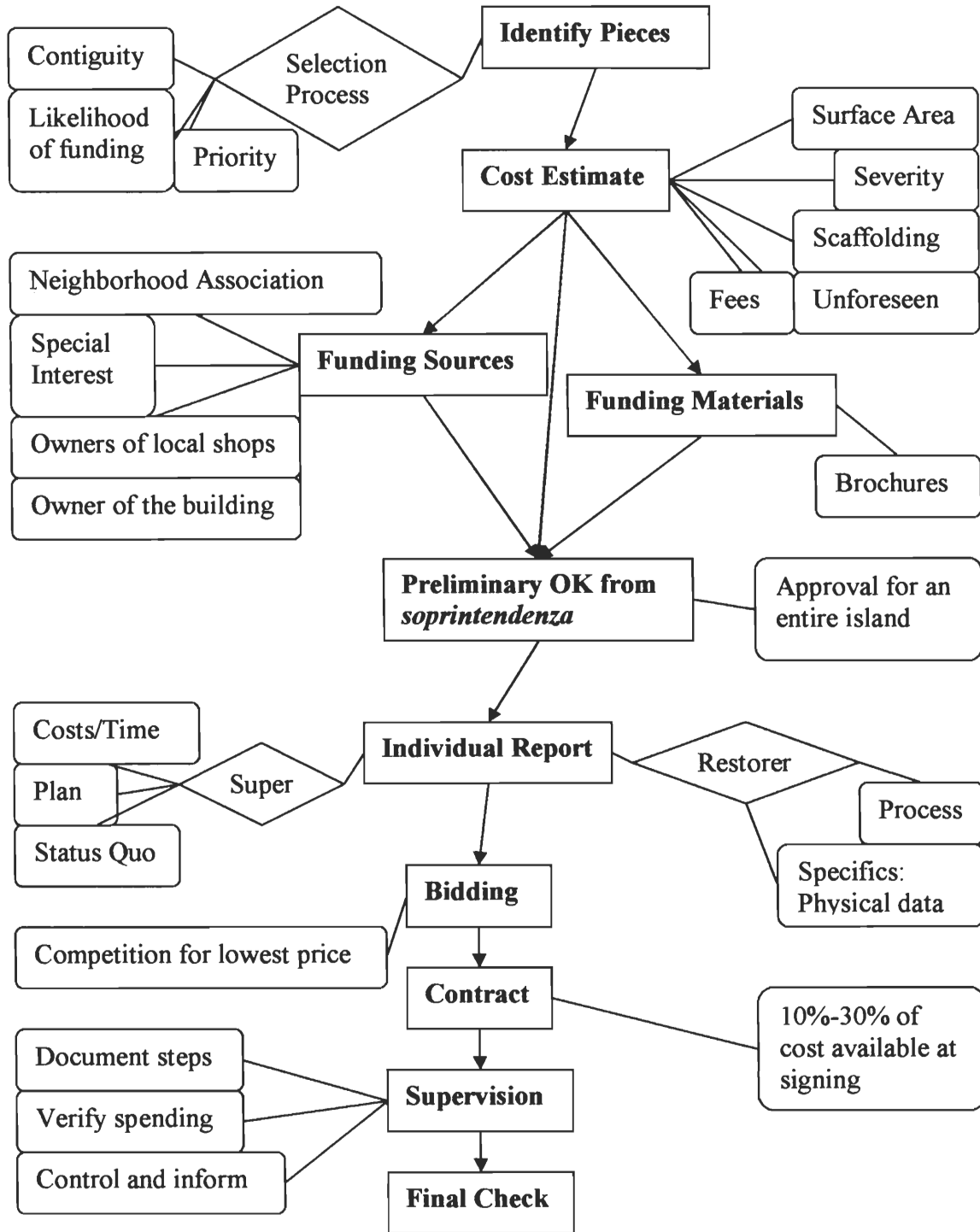


Figure 34: Process Flow Chart



### 5.5.3.1. Restoration Process of the Angel

A relief of an angel (catalog number CN300) located in the *sestiere* of Cannaregio was the first restoration process we began. The process serves as a model for the Association for the Preservation of Venetian Public Art. The angel is located on the building adjacent to the *Settemari* rowing club of which Professor Fabio Carrera is a member. The rowing club provided the funds for the restoration, and one of the members is inline to perform the restoration. Some preparations had been started before the beginning of our project process. Work within the rowing club and the VPC lead to a draft of a letter to the *soprintendenza* asking for the proper permits, a letter to the Venice police asking for permission for overnight scaffolding for the restoration work on the angel, and a letter to the owner of the building asking him for permission for all the work that needs to be done. Upon our arrival in Venice, the angel had been covered with a temporary protective covering to prevent further destruction.



Figure 35: Relief of the angel

Interest from the rowing club in restoring this piece of art became stagnant when the estimated cost of the project rose to €2.500 after finding out that the wall around the angel was also in a deteriorated state. After meeting with a restorer we were able to determine appropriate restoration procedures. The angel was taken down from the building so that it could be given a special deionization bath. The protective covering on the angel was replaced with a stronger class of Japanese paper in order to keep the angel intact when removing it from the building. Additionally, the owner of the building did not want the piece to be removed due to the fear that it would not be replaced. Our mission was to rekindle interest by updating the information and setting up a new meeting with the *soprintendenza*. This new information, including maps, pictures, descriptions as well as a revised method of restoration can be found in **Appendix I**.

## 5.6. The Selection of an Island for Restoration

After reviewing the maps produced through GIS, three areas with potential for restoration were located. Areas on the islands of *San Pantalon* and *San Nicolò dei Mendicoli* and another island in San Polo were the three potential restoration locations. Each island met the criteria of the selection: a wide variety of public art in below average condition while also remaining unique.

*San Pantalon* was eliminated as a possible island for restoration immediately. Many of the pieces of public art were high off the ground and or in locations which were not easily accessible.

Also, the island was very crowded, as the streets were lined with shops and the thin roads were crowded with pedestrians. The restoration process would have to deal with each of these different issues as it was carried out. As this is the trial run for the Association, it was decided that the process should be kept as simple as possible. There would need to be much more planning in order to restore all the public art in the area. This island would require planning and coordination on a higher level than is currently desired.

The area in San Polo was slightly more promising than *San Pantalon*, however, the variety that the Association is looking for was slightly lacking. There were many unique pieces of external sculpture in relatively poor condition, but the island did not have strong representation from the other forms of public art. The wellhead and flagstaff in the area were in good condition and the area did not contain any *lunette*, *portali*, or monuments.

*San Nicolò dei Mendicoli*, an island in the *sestiere* of Dorsoduro was determined to be the ideal place for the Association to begin. The wide variety of the area includes a monument, a wellhead, a flagstaff, a *portale*, and fifteen different forms external sculpture, including some with human features in poor condition. The maps, **Figure 36** and **Figure 37**, show the island and the individual pieces with their types, condition, and uniqueness levels. The island consists of a quiet neighborhood with the majority of the artwork located less than three meters above the ground. The amount of scaffolding needed will be minimal and there ought to be no businesses that will be interfered with during restoration. Another benefit will be the spacious working environment allowing for the

restorations to be completed without interfering with daily life.

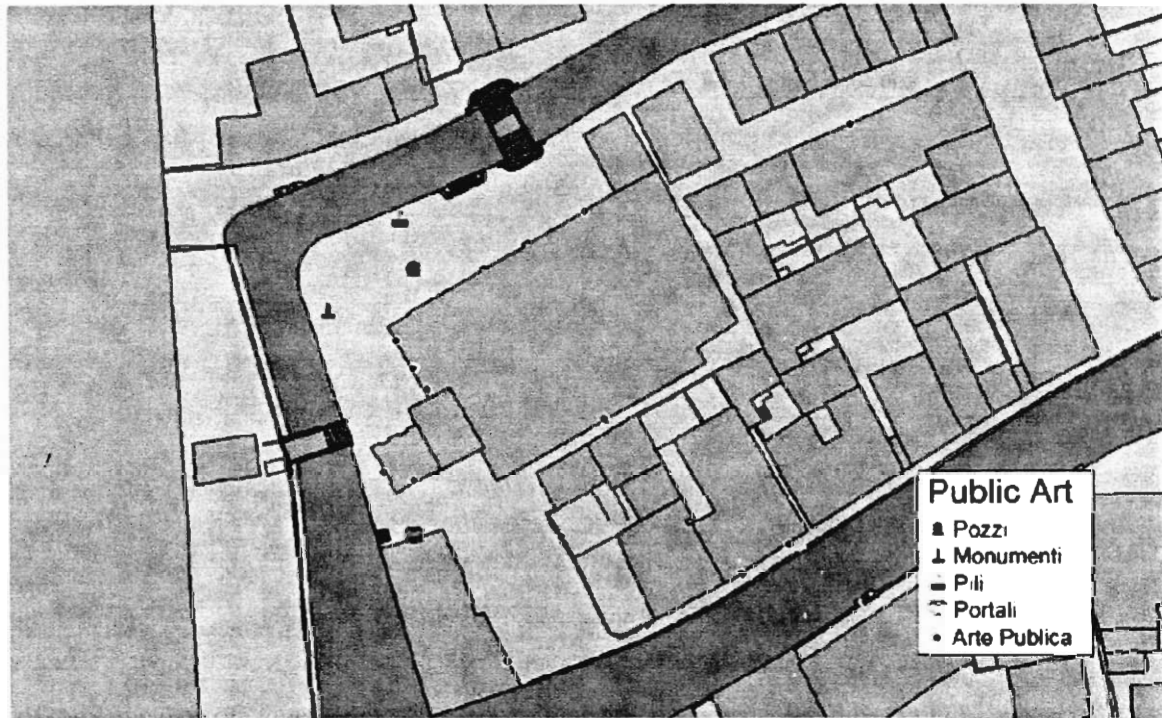


Figure 36: Locations of public art on San Nicolò dei Mendicoli

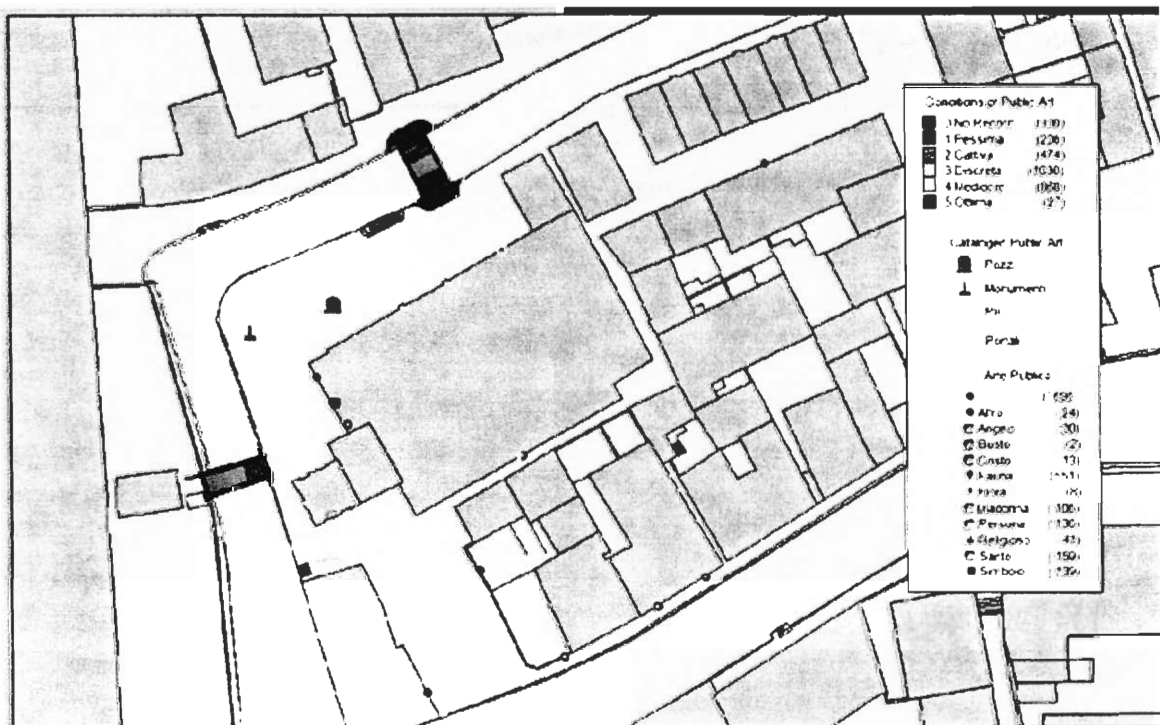


Figure 37: Uniqueness and condition of public art on San Nicolò dei Mendicoli

### 5.6.1. Cost Estimation for *San Nicolò dei Mendicoli*

Once the island had been selected, printouts of the catalog, including the pictures, were



**Figure 38:** Wellhead on San Nicolò

obtained for each piece of art; this packet can be viewed in **Appendix J**. The architect we have been working with, Emanuele Armani, met us on the island, and he developed time and cost estimates for each restoration.

Additionally, he provided a detailed description of the restoration process for each individual piece. The most immediate concern involves the wellhead located on the island, seen in **Figure 38**. It is in poor condition, and since the roads are presently

under construction (at the time of this project), now would be an ideal time for the restoration to be completed. The wellhead needs a new foundation and the insertion of stainless steel rods to prevent further cracking. Though the piece does not need cleaning the cost is estimated to be about €13.000, with approximately €9.000 of this going toward consolidation. The estimated time of restoration is about one month. The analysis of the piece was documented and will be turned in to the *soprintendenza* as a part of the proposal. A similar assessment was created for each piece of art on the island. A brochure including this information was put together and can be seen in **Appendix K**.

## 5.7. Soprintendenze

A meeting was arranged with the *soprintendenza* to get approval for our suggested methods, as well as display to them the information in the computerized online catalog. Both the island restorations and the angel were discussed, and well received. The office was impressed by our comprehensive, easily navigable, online database. We were informed that the records we had collected were more than sufficient to satisfy our goal of obtaining approval.

## 6. Analysis

It is important to analyze the collected information and determine which public art is most in need of restoration. Since monuments were the primary focus of our public art data collection, they were the primary focus of the analysis. In addition to monuments, however, all public art was prioritized to locate an area of the historical center of Venice which is most in need of restoration.

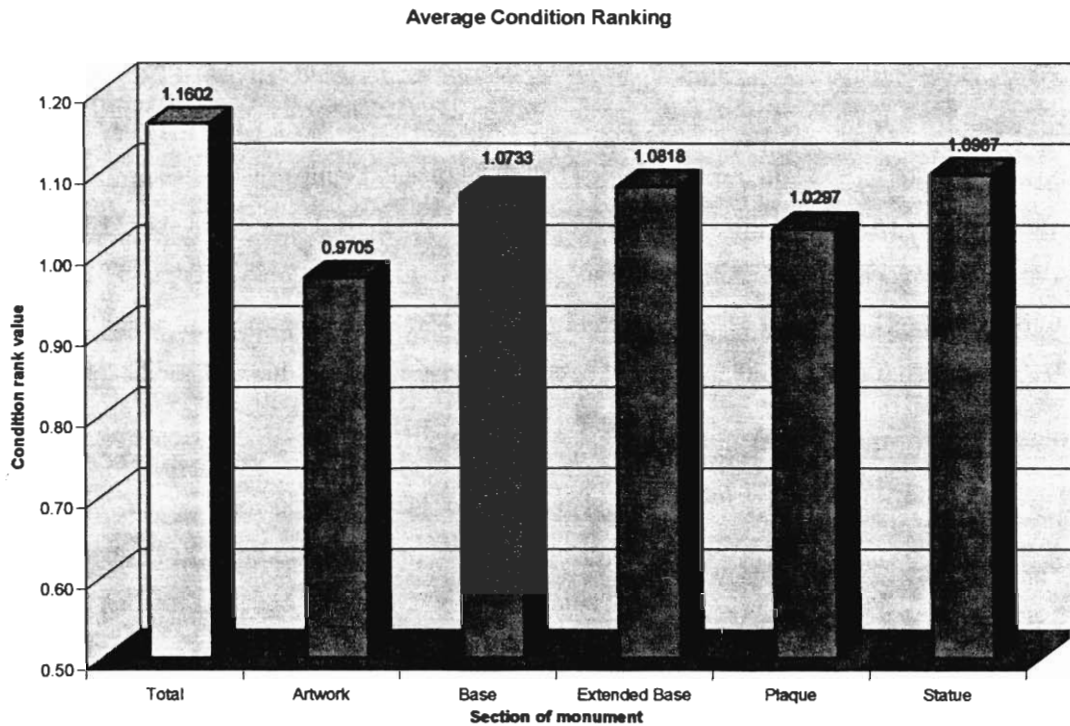
### 6.1. Monument Condition Ranking

In order to prioritize monuments for restoration by condition, it was necessary to develop an equation to correlate all collected data. The equation incorporates the surface condition assessment, cracks assessment, endangered features, and plant life on the monument. SC0, SC1, ..., Cracks0, Cracks1, ... are the collected percentage values for the cracks outlined in sections 4.3.4.2 and 4.3.4.3. Important endangered features are ones such that if they became missing, they would endanger the structure or visual appearance of the monument to a point it could not be easily recovered. A trivial endangered feature is one that would not have overwhelming detriment to the monument if it became missing. The percentage of plant life was recorded on the field form as well and converted to a decimal.

$$\text{Condition Ranking} = (SC0 \times 0)/100 + (SC1 \times 1) /100 + (SC2 \times 2) /100 + (SC3 \times 3) /100 + (SC4 \times 4) /100 + (Cracks0 \times 0) /100 + (Cracks1 \times 1) /100 + (Cracks2 \times 2) /100 + (Cracks3 \times 3) /100 + (Cracks4 \times 4) /100 + (1.5 \times \text{Number of Important Endangered Features}) + (\text{Number of Trivial Endangered Features}) + (\text{Percentage of Plantlife}/100)$$

**Equation 1: Condition Ranking**

The condition ranking was calculated for each individual section of every monument. Following this calculation, each monument was prioritized based upon the results of the condition ranking. This prioritization was done by taking the condition rank for all sections and calculating the mean of these values. For example, if a monument had two bases, an extended base, a statue, and two plaques, the condition rankings for these six sections would be averaged for the entire monument's condition ranking.



**Figure 39:** Average condition rankings for monuments

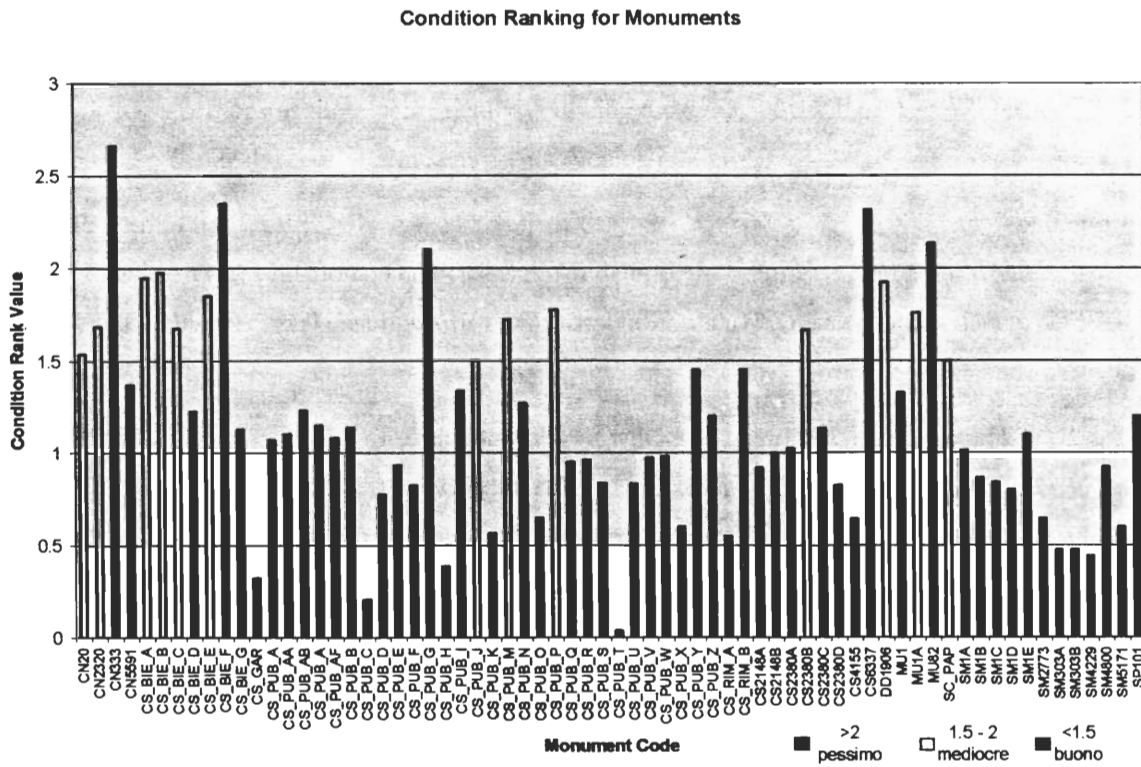
The average condition rankings for all sections of monuments as well as the total monument average ranking are shown in **Figure 39**. Compared to all other sections, with the exception of extended bases, there are far fewer pieces of artwork on monuments. Only 37 artworks exist compared to the next largest amount of plaques at 69. The lower amount of artworks is possible reason for their lower condition assessment. Not as many of them exist, so they are weighted lower on the scale when calculating all condition rankings. **Table 4** shows the code of the five monuments in worst condition, according to the described condition ranking, and their condition rank values.

<b>Monument Code</b>	<b>Condition Ranking</b>
CN333	2.662
CS_BIE_F	2.35
MU82	2.133
CS_PUB_G	2.1
CS_BIE_B	1.975

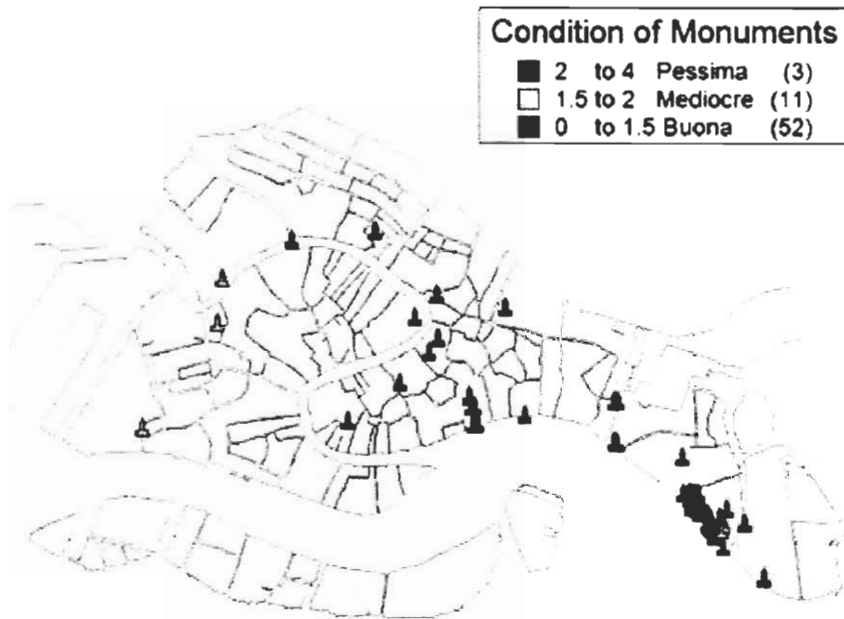
**Table 4:** Codes of five worst monuments with condition rankings

To visualize the conditions of monuments, a chart was created with their condition rankings associated with their codes. Monuments with a condition ranking above 2.5 were considered to be in the worst condition, or *pessimo*. The middle ranking was between 1.5 and 2: *mediocre*. Monuments in

good, or *buono*, condition had a condition ranking below 1.5. In **Figure 40** below, the conditions are indicated in red, yellow, and blue, respectively. The map, illustrated in **Figure 41**, shows the distribution of the conditions of the monuments in the historical center of Venice.



**Figure 40: Monument condition rankings**



**Figure 41:** Condition of monuments in the historical center of Venice

The majority of the monuments in the *Giardini Pubblici* and *Giardini Biennale* are constructed of the same type of stone, *tenera*. This type of stone, as documented in the condition assessments, develops few cracks. While not all monuments made of this stone had little or no cracking, the



**Figure 42:** *Giardini Pubblici* and *Giardini Biennale* monument conditions

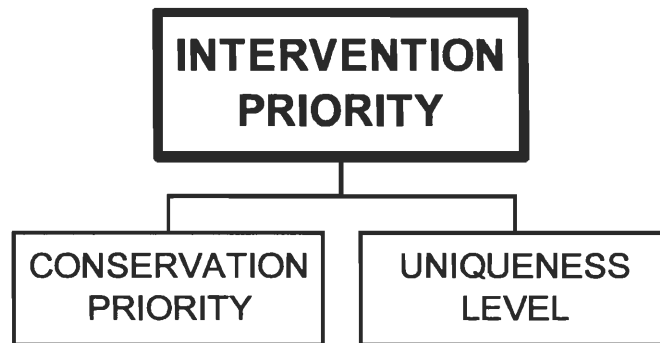


majority were relatively crack free. When calculating the condition rank for monument sections, as seen in **Equation 1**, cracks were an important factor. The lack of cracks in the *tenera* stone explains why the majority of the monuments in the two gardens are in good overall condition. However, since cracks are not the only factor in determining the condition rank, there are several monuments in these two areas that are in worse condition. **Figure 42** displays a closer view of the *Giardini Pubblici* and *Giardini Biennale* and the condition of the monuments located there (the location of these Gardens in Venice is in the southeast corner, shown by the large grouping of monuments in **Figure 41**.)

## 6.2. Determining Intervention Priority

There are many different attributes that need to be looked into when deciding on a prioritization list for restorations. Professor Fabio Carrera, while studying in Venice, Italy, created a list of possible attributes that can be weighted when deciding what artwork should be protected or restored. Each of the many attributes falls into several categories or meta-attributes: physical criteria, artistic criteria, historical criteria, social criteria, emergency criteria, vulnerability criteria, restorability criteria, and uniqueness criteria. These attributes are simplified into two, most significant, measurable categories: conservation priority and uniqueness level, seen in **Figure 43**. The plan of action for the Association was decided upon based upon these two attributes of public art.

In order for condition to be used as a measurement of priority, it must be displayed on a scale. Past IQP project groups in Venice working with public art assessed conditions using similar scales. Each entry in the catalogs was given a priority within its category. Scales also exist which can be used as measurements of uniqueness levels; an example of this is the work of John Ruskin<sup>23</sup>. He determined that works of art containing human or religious features or aspects were the most



**Figure 43:** Restoration Priority<sup>22</sup>

unique and therefore should be held at the highest status. On Ruskin's scale, human features would be followed by those of animals, flowers, plants, and geometric shapes, respectively.

<sup>22</sup> Carrera, Fabio. What Cultural Heritage Do We Preserve and Why? Doctoral Research Paper. 21 May 1997.

<sup>23</sup> Carrera, Fabio. Is the Lamp of Memory still Burning? Memory in Architecture and Urban Design 15 December 1998.

A final consideration involves the possibility that it is too late for the pieces of art to be restored to a recognizable form. In some cases, no matter how much time, effort, and money is spent on a piece, the results will never reach a level of satisfaction. Historical value is also taken into account here, as it is more important to restore a meaningful monument than a simple geometric shape. This judgment must be made on an individual basis, and it is impossible to establish a set standard.

This process of analyzing the art by taking each important facet into account will be common practice among members of the Association. It is vital to the preservation of the art that the pieces which require the most attention receive it. Following this method each piece of art should be preserved before it reaches the point that nothing further can be done to save it.

### **6.3. Accomplishment through Models**

The models produced through this project accomplished the major goal of showing the success and potential of the multimedia catalogs. Through the utilization of information gathered over the past decade, the act of preservation of Venice's public art is finally underway. The Association is ready to be established, and through this, each piece of public art in Venice will be restored.

There are five basic steps in the process of restoring public art. The first is preconsolidation, which is not always required. It is necessary only when there is surface flaking on the piece in order to not cause further damage during the cleaning process. Cleaning is the second step, of which there are four possible methods. The cost of this depends on which method is used as well as the size of the area requiring cleaning. Graffiti is also taken into account in this step since extra solvent is required. The third step is consolidation. In this process the joints are sealed. Any old glue is removed, and the fresh is pumped in. The fourth step is to apply putty to any cracks and holes found in the piece of art. Finally surface protection is applied to prevent future damage.

The preceding steps may be put together in different combinations for different pieces of artwork. The Architect Emanuele Armani determined the steps required for each piece of art on the island of *San Nicolò dei Mendicoli*. The analysis of each piece is documented in the following section.

#### **6.3.1. San Nicolò**

The preparation of documentation for an entire island, as well as each individual piece of public art is the exact process which will be carried out for each piece of art that will undergo restoration. The multimedia catalogs, as well as the map layers which were created, are tools which together, contain all necessary information for the selection process to be completed. The following information was collected for each piece. A sample of this condensed information was also put into

a brochure to help raise awareness to use as a fundraising tool. This brochure can be found in **Appendix K**.

### 6.3.1.1. Wellhead

The wellhead will require holes to be drilled across the structural cracks and the insertion of stainless steel rods to prevent further cracking. The smaller surface cracks will be repaired with fiberglass. Though the piece does not need cleaning, as it has sulfated, the cost is estimated to be about €13.000, with approximately €9.000 of this going toward consolidation. The estimated time of restoration is about a month because the base needs to be removed in order to repair the foundation.

### 6.3.1.2. Monument

The lion monument, code DD1906, **Figure 44**, will take approximately €5.000 and two weeks to restore. The cracks must be cleaned and consolidated. Further assessment must also be performed to ensure that the monument is stable and that there is no flaking or softening of the material. The scaffolding will cover a meter of the ground surrounding the monument since the monument is 3.34m tall. The scaffolding fee is about €1.500.



**Figure 44:** Monument on *San Nicolò dei Mendicoli*

### 6.3.1.3. Flagstaff

The flagstaff, **Figure 45**, requires cleaning and some consolidation along with a coat of surface protection that is projected to last for five years. Also, the city seal is missing from the flagstaff; a similar one will need to be located and used as a replacement.



**Figure 45:** Flagstaff on *San Nicolò dei Mendicoli*

### 6.3.1.4. External Sculpture

This relief of San Nicolò, **Figure 46**, *Arte Pubblica* number DD193, was crafted in the 1300s and is thought to still hold some of its original paint. For this reason, aggressive cleansing is not recommended. Instead, only water and a sponge will



**Figure 46:** Relief of *San Nicolò*

be used to remove the black grime. If it is discovered that there is no remaining paint however, chemicals will be utilized. As long as the relief does not require removal from the building, its restoration will take 1-2 weeks and cost about €1.000.

One of the coats of arms, piece number DD198, has a unique condition. There is a build up of copper residue on the piece, but it will only require regular cleansing techniques. Either the residue will come off, or it is there permanently. Funding for this €500-1000 project will be requested of the family the coat of arms represents, Venier.

Piece number DD187, which is a carving of San Nicola, San Girolamo, and San Sebastiano, will need drastic preconsolidation. The piece is much deteriorated, almost to the point where it is beyond repair. This piece will cost upwards of €1.000, but needs to be restored immediately before it is too late.

Many of the other pieces of external public art will just need to be cleaned, consolidated, and sealed. These small pieces of public art will cost somewhere around €500 and take less than a week to restore. This situation was the case for small pieces of public art in the area.

## **7. Conclusions and Recommendations**

The two distinctive goals of this project were to expand upon the existing public art catalog and formulate a plan for an association which would be dedicated to preserving and restoring the public art in Venice. Several conclusions and recommendations, outlined in this section, have been reached after achieving these goals.

### **7.1. Public Art Catalog Completion**

With the completion of this project, the catalog of Venetian public art is closer to completion than it has ever been. All that remain to be studied are the residual uncataloged *portali* and any other miscellaneous pieces of art that may have been overlooked over the years. It would be possible to complete all *portali*, and perhaps prioritize conditions of all public art from all databases onto a single scale, in one final project. The newly prioritized list could be used directly by the Association for restorations.

### **7.2. Creation of the Association for the Preservation of Venetian Public Art**

It is the hope that now, with the framework, process, and details of the Association clearly documented, a follow up group can put the plans in action and create the Association. The beginning step would be to solicit a head administrator using the job advertisement and description. With these plans in place, the Association can be started, and it can begin to restore Venice's public art. Various recommendations on fundraising methods are outlined in the following section.

#### **7.2.1. Fundraising Methods**

As with any organization, finances are extremely important. In this particular case, money is needed primarily to finance restorations but also to pay personnel and advertise. In addition to accepting donations, other methods of fundraising have been devised. All fundraising will directly benefit the Association's goals.

##### **7.2.1.1. Collection Boxes**

Boxes representative of the public art in Venice have been planned for. They shall be decorated with pictures of art in need of restoration as well as the logo of the Association for the Preservation of Venetian Public Art. There will also be a short explanation which reads, "Please help fund the restoration of public art in Venice. Your contribution is greatly appreciated. For more

information please contact the Venice Project Center at 041.523.3209.” Storeowners will be asked for permission to have the boxes placed on their counters. The profits will go toward the Association and restorations as well as educational materials. It is hoped that these visible boxes will also increase awareness among tourists as well as the people of Venice.

### 7.2.1.2. Promotional Materials

Venice is well known for its tourists, and the Association will use this fact to raise funds for restorations. Tourists often purchase items that represent a unique facet of the city they are visiting. For Venice, public art is one such feature. Through selling different types of products representing the art, money will be raised, but appreciation will be increased as well. Restorations, as well as increasing appreciation are the two major goals of the Association. All of the produced items will be offered to members of the Association at a discounted price. Complete prototypes for the following products can be viewed in their entirety in **Appendix H**.

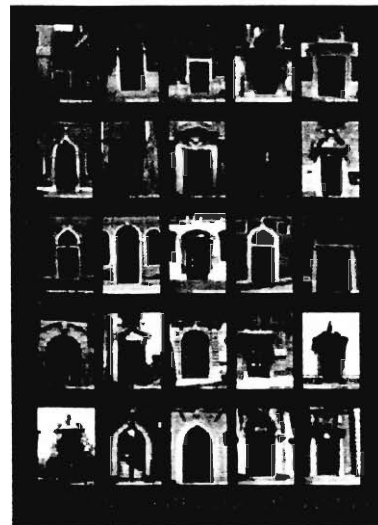


Figure 47: Portali poster

#### 7.2.1.2.1. Posters

Posters will be created for different types of public art, since they are a lasting, visual method of remembrance. Posters of monuments or *lunette* will also include a brief description of their history and significance. There will also be posters with compilations of artwork, based on a theme, whether it is by subject or type. For example, the doorways of Venice could be organized as seen in **Figure 47**.



#### 7.2.1.2.2. Monument Calendars

The construction of the calendar will be very similar

JANUARY						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

2004

Figure 48: Monument calendar

to the posters, with common goals. Each month will have a picture of a piece of public art, along with information about its construction and significance. We have created a “2004 Monuments Calendar” as an example, as can be seen in **Figure 48**. Along with this, it is hoped that in the future various types of collections will be put together. The 2002 public art project group has also constructed a similar calendar for the purposes of the Association.

#### **7.2.1.2.3. Newsletters and updates**

A collection of information showcasing the work of the Association will be compiled once every two years. Pictures from before and after the restorations will be included, along with costs, methods used, and acknowledgements of those who made the restoration possible.

#### **7.2.1.3. Solicitation**

The restorations will be preformed by island, since this has been determined to be the most efficient method; therefore it is possible to raise funds in the localized area. Once the pieces are categorized, business owners, residents, and religious institutions will be appealed to. For example, a piece with religious subject matter will be presented to a church in the area, with the hope that they will be willing to contribute financially to its restoration. Similarly for pieces of art located on buildings occupied by businesses or residents, they will be asked for donations for restoring the art located on the building in which they reside. Being a direct part of the restoration may give them a sense of pride in the art on their building.

### **7.3. Partnership with the Soprintendenze**

At the conclusion of this project, the paperwork for the models has been submitted for final approval, and discussion of forming a partnership with the *soprintendenze* is underway. The multimedia catalogs have been completed to include all necessary documentation. After a decade of work, the planning and creation of the Association for the Preservation of Venetian Public Art is now nearing its final stages. Our goal of working under the *soprintendenze* was exceeded, as they proposed a system of working in partnership. Through this partnership, the catalog will be our primary source of information. Yearly meetings will be scheduled with the *soprintendenze* to discuss the workings of the preceding year, as well as formulate and finalize a plan for the upcoming one.

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