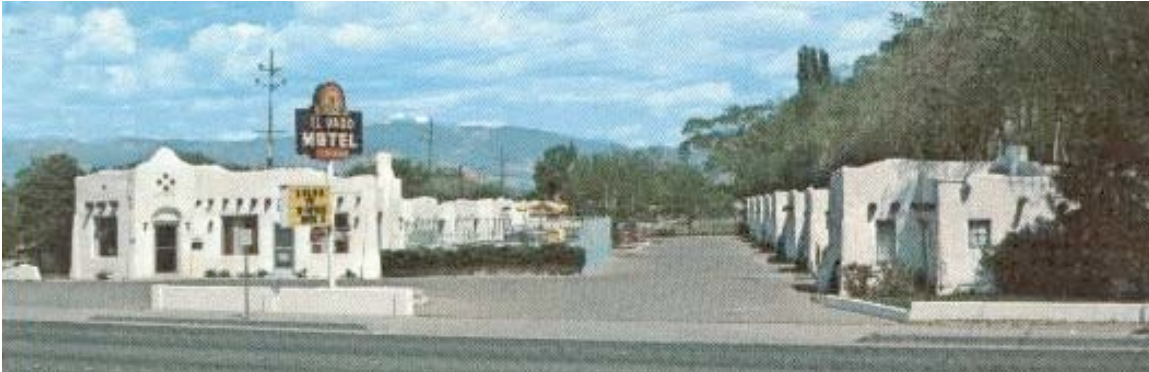


CROCKER & ASSOCIATES

COMPREHENSIVE ■ STRUCTURAL ■ ASSESSMENTS ■ TREATMENT ■ STRATEGIES

Response to Druc Engineering's Structural Evaluation of El Vado Motel Dated August, 2006



Submitted by Edward Crocker, Crocker & Associates
November 2, 2006

At the request of the City of Albuquerque Planning Department, Crocker and Associates conducted a review of the Structural Evaluation of the El Vado Motel and made a site visit on October 27, 2006. The purpose of the review was to satisfy certain questions that had arisen as a result of the evaluation, which brought into question the financial viability of stabilizing and restoring the historic structures.

During the field trip, access was granted freely to all of the interior spaces, as well as the grounds. Though not all of the rooms were individually inspected, those reputed to be in the worst structural condition were examined, along with 6 others.

As a result of these inspections, Crocker and Associates is able to draw some conclusions about the buildings from the point of view of a consultant and contractor that has restored many hundreds of adobe structures including many that had similar problems and were of a similar scope.

Observations

Where the Druc evaluation finds the overall condition “marginal at best,” our view is that the building assemblage is in remarkably *good* condition. Though we concur with many of Druc’s conclusions, we differ in a few fundamental aspects:

Footings. We find the footings to be adequate to the structure even though they do not meet current code. This conclusion is based on their overall good condition with failure occurring in only a few locations. The thickness and depth are clearly adequate to the loads based on their condition 70-odd years after construction. There are areas requiring underpinning, to be sure, but our evaluation prescribes approximately 20 piers to Druc’s 200.

We concur that the footings at wall bases need to be waterproofed throughout, and suggest that such work occur at the same time that site drainage issues are addressed.

Site drainage. We concur that drainage is poor and suggest that the entire courtyard be stripped of asphalt, the old swimming pool demolished, and the site graded to drain into infiltration galleries in the approximate area of the landscaping islands. If pavement is replaced, it should not abut the buildings by a margin of 6 feet.

On the rear of the buildings, redundant drains consisting of MiraDRAIN 6000 under a plaster stop at grade and inserted into a continuously slotted PVC pipe draining into drywells at the east end of the property would be effective.

We concur that downspouts must be redirected and suggest that they be incorporated into the solutions outlined above.

Wall failures. We note a few places where the walls have failed due to moisture invasion. In some cases, this is structural failure, and in some places it is not. It is structural only when it is bearing, as is the case in few places. Nevertheless, we see the adobe restoration as a very small component of the overall plan.

It is extremely important to note that where the adobes have been exposed, they are in remarkably good condition.

Bond beams. We again call upon the remarkably good existing conditions of the walls as testimony to the efficacy of the technology used in construction. Given the loads, even were the roof insulated and replaced, the 1½ plate is mitigating point loads on the adobes themselves and clearly has supported the dead and live loads over time. There are, no doubt, areas where the plate will need replacement.

Exterior renders. The cementitious plaster on the El Vado Motel is, for the most part, original and for that reason alone needs to be accepted as integral to the buildings' history as well as its structure. The plaster was attached by a lath of chicken wire (not stucco netting) that was tied to the wall by means of wires that were embedded in the mortar joints during construction. It represents the finest technology of the day.

In our view, repairing the roof and parapets can save by far the majority of the exterior render. The Portland-based plaster should not be replaced with lime because the walls behind are still in substantially good condition.

Interior plasters. Most of the interior surfaces are in salvageable condition, needing only patching and minor repair work.

Vigas. We concur that the vigas, where exposed, need attention. However, we saw very, very few areas where the entire element would need replacement. In most cases, a non-structural splice on the outside would serve the aesthetic and historic requirements.

Conclusions

We strongly disagree with the recommendation that portions of the buildings be demolished. There are areas that can be shored while walls are repaired, but demolition is in no instance justified. Even at the east end of Building 2 where the footing or soils have failed, we would shore, underpin, lift and repair.

Because of the differences of opinion between Druc and Crocker concerning existing conditions, there is also a difference of opinion concerning the costs of remediation. Though we have not had sufficient time to compile accurate cost estimates, we can state that the Druc estimates seem high. For example, as underpinning contractors and A. B. Chance® certified installers, we note that the number quoted for this phase of the work is approximately \$170,000 too high.

In addition we note the following:

1. If the exterior plaster can be substantially conserved, as we believe it can, the estimates for replacement could be high by as much as \$100,000.
2. The viga repair/reinforcement is likely high by at least \$30,000.
3. Interior wall and ceiling repair appears high by as much as \$50,000.

Crocker and Associates recommends that the City of Albuquerque critically review the submission by Druc Engineering. It is our opinion that the buildings are not marginal but eminently repairable as significant historic structures and that such repair is likely well within economic feasibility.

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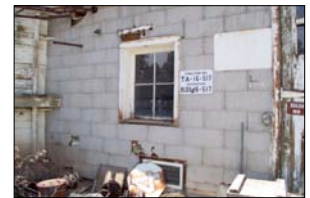
Crocker & Associates Selected Projects

Crocker & Associates is an architectural conservation and historic preservation firm that provides specialized consulting services to the owners and managers of historic properties. Services include assessments of current building conditions, recommendations for treatment strategies, preservation plans, materials analysis and specifications for historic fabric and finishes, and preparation of bid specifications.

In consultation with complementary specialists including architects, structural engineers, and material preservationists, Crocker & Associates offers a full array of services to clients. Consultants and staff are united in the view of buildings not as a collection of separate architectural elements, but as systems, inextricably linked to a site. Crocker & Associates is committed to recommending interventions that remedy immediate pathologies while respecting the broader structural and historical integrity of the structure.

Based in Santa Fe, New Mexico, Crocker & Associates works in association with Crocker Ltd., a general contractor specializing in restoration services and structural underpinning.

2005-2006. Los Alamos V-site. Provide on-site preservation expertise for stabilization and preservation of the V-site Assembly Building, one of the few remaining Manhattan Project buildings. Provide recommendation for restoration of historic materials. Los Alamos National Labs, New Mexico.



2005-2006. Baca County Courthouse. Design services and restoration plan for Baca County Courthouse and judicial complex. In association with Atkin, Olshin, Lawson-Bell, Architects. Baca County, Colorado.



2005. City of Tucson. Forensic research and expert witness testimony related to a claim against the City of Tucson charging water damage to adobe buildings as the result of leaking water mains. Tucson, Arizona.

2005. Marfa Hotel. Structural assessment and stabilization plan for two-story adobe. Marfa, Texas.

2004. San Cristobal Pueblo. Documentation, assessment and outline strategy for restoration and protection of 16th century Pueblo ruins. San Miguel County, New Mexico.





2004. CLM Farms. Structural assessment, HABS drawings, and outline strategy for restoration of ranch house built in the 1020s. Dell City, Texas.



2004. Digneo Moore House. Created process for material restoration of historic quoins. State Historic Register property. Santa Fe, New Mexico.



2003-2004. Palace of the Governors. Structural monitoring during demolition of adjacent building; design and use of different colored earthen plasters in the final render to highlight select features as an interpretive tool. National Historic Landmark. Santa Fe, New Mexico.

2002. The Albuquerque Museum. Condition report, assessment, and outline strategy for treatment for Casa San Ysidro. Corrales, NM.

2002. Leaden Hall School. Assistance with design of structural underpinning system for new school building built on the floodplain of the Avon River in Salisbury Close. Salisbury, England.



2001. State of New Mexico Historic Preservation Division. Consultant for development and publishing of New Mexico Historic Resource Manual and Survey Forms.

1999-2001. State of New Mexico Historic Preservation Division. Historic structure report and nomination of the Shrine of Our Lady of Lourdes as a National Historic Landmark. San Juan Pueblo, NM.



2001. State of New Mexico Office of Cultural Affairs. Condition report, assessment, and outline strategy for treatment of the Painted Kiva. Coronado State Monument, Bernalillo, NM.

1999. The Pueblo of Acoma, Cornerstones Community Partnership, and the Andy Warhol Foundation for the Visual Arts. Consultant for assessment of the San Esteban del Rey church and convent (ca. 1629). In association with Atkin, Olshin, Lawson-Bell Architects. National Historic Landmark. Acoma, New Mexico.

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Edward E. Crocker, Crocker & Associates Curriculum Vitae

PROFESSIONAL BACKGROUND:

- 1989 - Present: Contractor and consultant in architectural conservation.
- 1988 -1998: Technical Director, CORNERSTONES Community Partnerships. Project Responsibilities: Preservation of historic structures, specifically New Mexico's historic churches and various building typologies in the pueblos of Zuni, Acoma, Laguna, Santo Domingo and San Juan. Tasks included site and building assessments, formulation of preservation plans, design and implementation of monitoring systems, conducting training workshops in stone and adobe masonry, carpentry, interior and exterior finishes, site drainage, foundation stabilization and intervention documentation. List of projects (over 140) on request.
- 1984 -1990: General construction contractor in Santa Fe.
- 1983 -1984: Cowhand
- 1981 -1983: Contractor in western and central Mexico for development of ground water resources.
- 1971 -1981: Co-owner of drilling and ground water resource development business in New Mexico.
- 1962 -1970: Supervisor and staff, Museum of New Mexico, the School of American Research and the University of Pennsylvania Museum on archeological projects in New Mexico, the Grand Canyon, Arizona, and Tikal, Guatemala.

EDUCATION:

- Tulane University, 1971. Major in anthropology (Mesoamerican archeology), minor in Latin American history. Bachelor of Arts.
- Post-graduate: CRA Terre - Ecole de Architecture de Grenoble, France. The Preservation of Earthen Architectural Heritage. Certificate.

LICENSES and CERTIFICATIONS:

- NM CID #60296 ((licensed since 1984). Classifications: GB-98 (General Construction), EE-98 (Electrical), MM-98 (Mechanical).
- State Engineer Office #WD214 (water well drilling).
- A. B. Chance® Helical Pier® Certification.

CITATIONS:

- 2003: Old Santa Fe Association Award for Significant Contributions to the Historic Preservation of the City of Santa Fe.
- 2000: City of Santa Fe Heritage Preservation Award, *Preservation of the Unique Historic Character of Santa Fe*.
- 2000: New Mexico Heritage Preservation Award, *Outstanding Contributions in the Field of Historic Preservation*.
- 1998, April: AIA Architectural Research Citation for Cultural Form and Process in Building at the Zuni Pueblo. Co-principal researcher with Tony Atkin, Atkin, Olshin, Lawson-Bell and Associates, Architects, Philadelphia, Pennsylvania.
- 1998: New Mexico Historic Preservation Division, Outstanding Preservation Project Award, for the restoration of the Hapadina Building, Zuni Pueblo, New Mexico, with Cornerstones Community Partnerships.
- 1997: Building Innovation in Home Ownership Award, United States Department of Housing and Urban Development for Habitat for Humanity, Casas de Escudero project.

1994: National Trust for Historic Preservation, Preservation Honor Award for preservation of historic New Mexico churches, with Cornerstones Community Partnerships.

PROFESSIONAL SERVICE AND RELATED ACTIVITIES:

Conference Chair and principle organizer for US/ICOMOS 5th International Symposium, "Heritage Preservation as a Tool for Social Change," 2002.

Materials and Technology Consultant, Habitat for Humanity Casas de Escudero, 1997.

Reviewer for Federal Emergency Management Agency (FEMA) for publications on seismic behavior of "alternative" construction materials, including earth, 1996.

Consultant, The World Health Organization for training in ground water resource development in Uttar Pradesh, India, 1975.

MEMBERSHIPS AND BOARDS:

Professional:

ASTM Committee C-15 on earthen construction, 2001 - present.

New Mexico Construction Industries Division Earthen Code Committee, 2001 - 2002.

Trustee, US/ICOMOS (International Council on Monuments and Sites), 1999 - 2004.

New Mexico Seismic Safety Advisory Board, 1993 - 1997.

US/ICOMOS Specialized Committee on Earthen Architecture, 1992 - present.

Advisory Committee of The Getty Seismic Adobe Project (GSAP) of the Getty Conservation Institute, 1990 - 1997.

Other:

Vice President for Appropriate Technology, WATERLINES, developing potable water projects for small rural communities worldwide, 1986 - 1998.

Vice President, THE AHAU FOUNDATION, granting for research and publication on topics relating to the ancient Maya and their successors, 1997 - present.

Fellow, The Explorers Club.

SELECTED PROJECTS:

Rehabilitation and new construction, Gutierrez Hubbell House (listed on the NM State Register of Cultural Properties). Bernalillo County, NM, 2006 - 2007.

Structural analysis and plan for stabilization and restoration of Pitchfork Ranch, Meeteetse, WY. 2006-2007.

Roof renovation, Baca County Courthouse, Springfield, CO. Colorado Historical Society, 2006.

Structural stabilization of and installation of drainage for historic stone hogan, Hubbell Trading Post National Historic Site, Ganado, AZ. National Park Service, 2005.

Stabilization and exterior restoration of 19th century adobe and stone courthouse, Costilla County Courthouse, San Luis, CO. Colorado Historical Society, 2004 - 2005.

Stabilization and repointing of Oppenheimer House, Los Alamos, NM. Los Alamos Historical Society. 2005.

Stabilization and restoration of historic two-story adobe. The former Marfa Hotel, Marfa, TX, 2005.

Structural stabilization, monitoring during demolition of adjacent building, and traditional earth plastering of 17th century registered National Historic Landmark, Palace of the Governors, Santa Fe, NM. Museum of New Mexico, 2003 - 2004.

Exterior restoration of New Mexico State Historic Register property including quoin reconstruction and repair. Digneo Moore House, Santa Fe, NM, 2004.

Assessment, HABS drawings, and outline strategy for restoration of Figure 2 ranch house built in the 1920s. CLM Farms, Dell City, TX, 2004.

Documentation, assessment, and outline strategy for restoration and protection of 16th century pueblo ruins. San Cristobal Pueblo, San Cristobal Ranch, NM, 2004.

Restoration of ghost town stone chapel and outbuildings. The Christmas Morning Ranch, La Liendre, NM, 2003 - 2004.

Stabilization of adobe walls in historic property using helical anchors and adobe "baskets." Las Barrancas, Jacona, NM, 2003.

Underpinning with helical anchors of auxiliary structure on flood plain of Avon River in the historic Cathedral Close, English National Trust property, Leaden Hall School. Cathedral Close, Salisbury, England, 2002.

Specialty restoration services to protect historic murals, restore lime plaster and install drainage system. San Ignacio Ranch, San Ignacio, NM, 2002.

Specialty contractor for remedial treatment of lime plasters. Shakespeare's Globe Theatre, London, England, 2002.

Condition report, assessment, and outline strategy for treatment for Casa San Ysidro, Corrales, NM. The Albuquerque Museum, 2002.

Stabilization, underpinning, reconstruction and restoration of failed wall bases on two-story adobe structure. Seco Plaza complex, Arroyo Seco, NM, 2001.

Consultant for development and publishing of New Mexico Historic Resource Manual and Survey Forms. State of New Mexico Historic Preservation Division, 2001.

Historic structure report and nomination of the Shrine of Our Lady of Lourdes as a National Historic Landmark. State of New Mexico Historic Preservation Division, 1999 - 2001.

Condition report, assessment, and outline strategy for treatment of the Painted Kiva, Coronado State Monument, Bernalillo, NM. State of New Mexico Office of Cultural Affairs, 2001.

Stabilization and repairs of Juan Jose Prada House (State Register), Santa Fe, NM. Installation of interceptor drain, manipulation of site and repairs of walls following catastrophic flooding, 2001.

Stabilization of severely damaged wall using adobe "cages" and replication of historic pebble-dash plaster in National Register site. Zia Diner, Santa Fe, NM, 2000.

Consultant and specialty contractor for restoration of Los Luceros Hacienda (ca.1820), Alcalde, NM, 2000.

Restoration of historic barn, blacksmith shop and outbuildings (ca.1880), Buena Vista NM, 1999 - 2002.

Historic structure report: The Our Lady of Lourdes Chapel and Shrine (1891), San Juan Pueblo, NM, 1999.

Consultant for assessment: The San Esteban del Rey church and convent (ca.1629), Acoma, NM. The Pueblo of Acoma, Cornerstones Community Partnerships and the Andy Warhol Foundation for the Visual Arts, 1999.

Contractor for assessment, consultant for restoration and sub-contractor for specialty work: The J. J. Hagerman Estate (historic property), Carlsbad, NM, 1998 - 1999.

Specialty contractor for foundation retrofits, conservation and specialty finishes: The Robert O. Anderson Estate, Picacho, NM, 1997-1998.

Consultant for earthen construction: Casas de Escudero, Santa Fe, NM. Santa Fe Habitat for Humanity, 1995 - 1997.

General contractor for earthen walls, specialty finishes and drainage systems: The Nathaniel Owings Estate (historic property), Jacona, NM, 1995 and 1998

General contractor for adobe repair and drainage systems: Rancho la Barbaria (historic property), Santa Fe, 1996.

Restoration/adaptive re-use of the Hapadina Building (1880), Zuni, NM. With Cornerstones Community Partnerships, 1997. *New Mexico Heritage Preservation Award, 1998.*

Documentation and preservation planning for Middle Village, the Pueblo of Zuni, NM. With Cornerstones Community Partnerships, 1995 - 1997.

Re-opening of historic quarries and coordination of training in traditional stone masonry, Zuni, NM, 1992 - 1997. *National Trust for Historic Preservation Honor Award, with Cornerstones Community Partnerships, 1997.*

Contractor for the analysis of soil/sand/polymer combinations for use in the preservation of earthen archeological sites. The Getty Conservation Institute, Los Angeles, CA, 1992 - 1993.

Restoration of San Rafael church, La Cueva, NM. With Cornerstones Community Partnerships, 1991 - 1995.

Stabilization of Nuestra Senora de Guadalupe mission church, Zuni, NM. With Cornerstones Community Partnerships, 1992 - 1993.

Restoration of La Capilla de San Antonio, Chacon, NM. With Cornerstones Community Partnerships, 1989 - 1990.
Restoration of San Jose mission church, Rociada, NM. With Cornerstones Community Partnerships, 1989 - 1991.
Archeology in narthex and structural stabilization of bell tower: Santuario de Guadalupe (ca.1787), Santa Fe, 1988.

SELECTED PUBLICATIONS:

Monthly column, "Understanding Adobe" in *The Santa Fe New Mexican*, Real Estate Guide. 2000 - present.
"Quality vs. Quality," Response to actions by the Historic Design Review Board, Santa Fe. *The Santa Fe New Mexican* February 3, 2002.
"Earth: The Thoroughly Modern Material." *US/ICOMOS Newsletter*, Summer 2001.
"Earthen Roofs in the American Southwest: Architecture as Cultural Mirror." *Detail Magazine*, Munich, June, 2000.
"Finding the Balance: Recalling Cultural Form and Process at Zuni Pueblo, New Mexico." Preprints for Terra 2000; Plymouth, UK, *English Heritage*, May 2000.
"Structuring the Discipline: The Conflict Between Theory and Practice in Architectural Conservation," with Eileen Rojas. Plymouth, UK, *English Heritage*, May 2000.
"The Secretary of the Interior's Standards for the Treatment of Living Vernacular Architecture," *Vernacular Architecture Forum*, No. 80, Summer 1999.
"Earthen Architecture and Incentive at Acoma Pueblo." *Cultural Resource Management*, Washington, D.C. NPS, 1999.
Selections in *Earthen Technology*, Santa Fe. Regular technical articles in *Designer/Builder Magazine*, 1995 - 1998.
"The Purpose and Mechanics of Lime Renders," Proceedings of 7th International Conference on the Study and Conservation of Earthen Architecture. Silves, Portugal, 1993.
"The New Mexico Community Foundation: Preservation Through Community Action," US/ICOMOS Committee on Earthen Architecture. Washington D.C., 1992.
"Straw Daubs: How Fiber Cuts Erosion," US/ICOMOS Committee on Earthen Architecture. Washington, D.C., 1992.
"Modified Sehalian Scaffolding In the New World: A Common Sense Solution," US/ICOMOS Committee on Earthen Architecture. Washington, D.C., 1992.
"What Price Santa Fe Style?" with Ed Boles. *Preservation New Mexico*, Summer 1992.
Santuario de Guadalupe Interim Reports: The Iconography. City of Santa Fe, 1991.

RECENT INVITED LECTURES:

Non-Invasive Underpinning Technologies in Historic Settings, International Seminar on Structural Analysis of Historical Constructions – Possibilities of Numerical and Experimental Techniques. Padua, Italy, November 2004.
Structural Underpinning of Earthen Buildings, Terra 2003. Yazd, Iran, November 2003.
Heritage Preservation as a Tool for Social Change, Introductory remarks for US/ICOMOS 5th International Symposium. Santa Fe, April 2002.
Earthen Architecture and Seismic Codes: Lessons From the Field, ICOMOS. Istanbul, Turkey, November 2000.
The National Parks and 'Preservation': Enhancing the Paradox, The George Wright Society. Asheville, NC, 1999.
"Imbued with a Message from the Past". . . *Some Thoughts on Conservation and Change*, National Council for Preservation Education. Baltimore, 1999. (pre-published)
Preservation and Local Knowledge: Conserving the Event (panel), The National Trust for Historic Preservation. Santa Fe, 1997
Authenticity and Local Knowledge: Conserving the Event, Inter-American Symposium on Authenticity. San Antonio, 1996. ICOMOS & The Getty Conservation Institute (published).

Preservation and the Architecture of Hope, University of Pennsylvania. Philadelphia, 1994.
One Step Forward, Two Steps Back: A Continuing Evaluation of the Roll of Preservation in Community Development, Terra '93. Silves, Portugal, 1993.
Preservation as a Mechanism for Social Change, Graduate Program in Historic Preservation, School of Fine Arts, University of Pennsylvania. Philadelphia, 1993.
Myth, Preservation and Community, Graduate Program in Historic Preservation. School of Fine Arts, University of Pennsylvania. Philadelphia, 1992.
Adobe Vernacular in New Mexico and the Need for a Subjective Approach to its Preservation: A Cultural Argument, Association for Preservation Technology. Philadelphia, 1992.
Understanding the Constituency: Community Involvement in Historic Preservation, Association for Preservation Technology. Philadelphia, 1992.

SELECTED GRANTS AND AWARDS (complete list available):

Partial recipient as contractor for CORNERSTONES Community Partnerships:

The National Endowment for the Arts, Design Arts Program: "Survey of New Mexico's Historic Churches." (1986 - 1992, \$235,900)
The National Endowment for the Arts, Design Arts Program, for support of program in architectural conservation. (1993 - 1998, \$245,000)
The National Trust for Historic Preservation, general support. (1987, \$40,000)
The World Monuments Fund: "Restoration of the Historic Churches of San Rafael de La Cueva and Nuestra Señora de la Candelaria de Doña Ana, New Mexico." (1990 - 1992, \$125,000)
The New Mexico State Historic Preservation Division: "Preservation of the Historic Church of San Rafael de La Cueva, New Mexico." (1990, \$20,000)

As Sole or Principal Recipient:

Samuel H. Kress Foundation Fellowship for Advanced Training. (1993, \$1500)
City of Santa Fe, New Mexico: "Research on the iconography recovered during excavations at Santuario de Guadalupe." (1990, \$1900)
The Historic Santa Fe Association: "Advanced Training in the Conservation of Earthen Structures." (1990, \$500)
Samuel H. Kress Foundation Fellowship for Advanced Training in Conservation, (1990 CRATerre-EAG course, \$1000)
Wardle Family Foundation: "Development of Ground Water Resources in the Guaymi Reserve of Western Panama." (1991, \$5000; 1992, \$15,000; 1993, \$15,000; 1994, \$7,500; 1995, \$7,500)