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Disaster response for the Oklahoma City bombing

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As a result of the explosion at the Alfred P. Murrah Federal Building 19 April 1995, many properties of historical significance to the Oklahoma City community were damaged. The State Historic Preservation Office (SHPO) was located in the Journal Record Building, an historic building immediately north of the Murrah Building. The office was temporarily relocated, without office equipment, files or supplies, and some of the staff were hospitalized due to injuries sustained during the bombing. Although we had minimal resources of our own, our goal was to work with the City of Oklahoma City to assist the property owners within the bomb-affected area by assessing the damage to each historic building and offering direction for the steps they could take to repair and preserve their properties.

We consulted with the National Park Service, the National Trust, the Federal Emergency Management Agency (FEMA) and the American Institute of Architects to assemble teams consisting of preservation experts, architects and structural engineers who worked on a volunteer basis to produce written reports for individual properties based on site visits during the week of 15-19 May 1995. Coincidentally, Oklahoma's Seventh Annual Statewide Preservation Conference had been scheduled for the first week of May in Oklahoma City at a building a few blocks south of the Murrah Building. We used this forum as a gathering place for our preservation partners who came to assist, to inform the public about the extent of the damage and to introduce information and sources for information concerning preservation of these buildings.

After relocating, acquiring telephone service and securing administrative assistance with computers, etc., we defined the disaster area on a map and subdivided this area into zones of

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similar types of expected damage. Seventy-three National Register eligible buildings were identified; statistical information concerning current property owners and addresses was collected; and early reports about building damage by FEMA, various insurance companies and the City were collected. The State of Oklahoma, Department of Central Services, Risk Management Division (also located in the Journal Record Building) provided handouts with a checklist for immediate stabilization and updated telephone numbers for utility companies, and disaster assistance agencies. Information about emergency response for various recent natural disasters was studied and consolidated. The General Service Administration provided us with a chart to record specific information about damage. This chart was used as a model system for recording data by our damage assessment team. All of this information was adapted to our particular needs and organized in three-ring binders with schedules, locations and contacts for team members and general preservation information to refresh the memories of our volunteer professionals of currently recommended preservation practice. The Secretary of the Interior's Standards for Rehabilitation and the National Park Service's brochure explaining the 20% tax credit for certified historic structures were key tools for encouraging appropriate rehabilitation.



Figure #.1 The Alfred P. Murrah Federal Building after the bombing on 19 April 1995

All affected National Register eligible properties were of concern. However, because of the immediacy of the situation, we prioritized 19 properties and one proposed historic district, each with special historical significance and/or reported severe damage. Our teams were divided into four groups corresponding with four building types: civic buildings, religious buildings, small businesses and large commercial buildings. A cumulative damage assessment report was presented to the Oklahoma City, City Council and individual assessment reports with recommendations and general preservation material were given to

each property owner. This report was intended to be used as ‘a second set of eyes’ to supplement private insurance reports and to offer property owners hope that their buildings could be rehabilitated rather than demolished, as well as provide our best available sources about how to accomplish this goal. Later feedback showed that this report was used for a wide variety of unexpected purposes.

The National Park Service sent staff historical architects and structural engineers, and the National Trust contracted a structural engineer with preservation and disaster recovery experience, each assigned to a team. These preservation professionals wrote concluding remarks for each of the building types as well as summaries of the type of damage that they observed. All statements focused attention toward rehabilitation/restoration in an effort to counter the temptation to raze the buildings and build anew. Considerable effort was given to working with the City concerning code issues. We were fortunate that there was adequate federal funding for reimbursement for documented damage, as well as new construction that would bring the buildings into compliance with current code. However, discussions concerning potential problems planted the seed for consideration of new building codes that allow sensitivity to historic fabric to be adopted in the future. Our report addressed all issues short of actual cost estimates.



Figure #.2. The city center of Oklahoma City after the bombing. The Alfred P. Murrah Federal Building is located in the left foreground.

The members of the federal agencies on each of the teams were frequently asked by the media and various construction management organizations to address questions concerning estimated costs for repair. Questions concerning individual properties were directed to property owners and their insurance companies as appropriate and estimates for total damage were referred to FEMA.

Typical damage observed by our team was caused by a variety of forces. The explosion was like the winds of a tornado in respect to single directional lateral forces and positive and negative air pressure pockets expressed primarily in the loss of window glazing within a large area of the bombing site. Several of the churches were left with misaligned pitched roofing systems after the roof was picked up and dropped into its new position. The ground shook with waves of force like that experienced in an earthquake causing steel structural systems to move harmonically as the buildings lost masonry veneer systems, interior partitions and, in some cases, connections primarily at upper floor and roofing joists. Damage typical to floods including future problems with saturated masonry, mold and parasites, etc. was initiated by fire sprinkler systems responding to the blast by saturating the interiors of the buildings during evacuation, and additional water damage occurred in numerous buildings that remained open to the elements during the following months. The team was constantly amazed at the unpredictable and seemingly irrational patterns of damage and movement that extended 30 miles in three directions.

Evacuation was impaired by twisted suspended ceiling carcasses lining the corridors like barbed wire. Fire stair egress doors were blocked by debris at ground level because the doors swing out into the areas of damage instead of in toward the relatively clear fire stair landing. In the Journal Record Building, the congestion of people pushing outward on the door was not a problem until well after the first person found the door inoperable.

This disaster differs from the natural disasters discussed in previous presentations in that it was an intentional act of violence, directed at a specific target. The target was the government who typically acts as the avenue of assistance rather than the victim. The site was immediately roped off after evacuation and labeled a "crime scene" controlled by the FBI. All access in and out, including collected information or photographs describing the condition of the site, were screened. The lengthy process of collecting evidence took precedence over stabilization of the area. The terrifying nature of this incident attracted worldwide attention and an immediate national response. Public promises concerning reimbursement, recovery and justice came from high places, in many cases, prior to any realistic plan for fulfilling the promise. After the emergency response and stabilization of the area, those affected must begin the long process of rebuilding, in some cases, with the expectation that this can occur at an accelerated rate. The resulting frustration could be minimized by clearly defining areas of authority, processing written information concerning services and requirements for receiving these services, and making sure that this information is distributed to everyone concerned from a single source.