

Smoke Damage at Saint Peter's Church

Thomas Egan, CR

February 1994

CRS

CONSTRUCTION REPAIR SPECIALTIES & INTERIORS INC.

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FORMAL REPORT / THESIS

ON

**SAINT PETER CHURCH
1234 FORREST AVENUE
SAN DIEGO, CA**

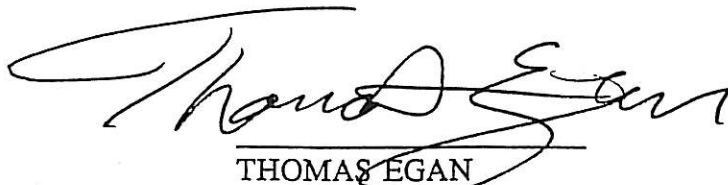
**CLAIM NO. 323K454W
OUR JOB NO. 9224335**

FEBRUARY 15, 1994

THE FOLLOWING IS A REPORT ON A CHURCH THAT WAS AFFECTED BY SMOKE DAMAGE WHICH OCCURRED BY A FIRE THAT ORIGINATED FROM THE ROOF STRUCTURE.

THE UNIQUE ARCHITECTURE AND CONSTRUCTION METHODOLOGY OF THE STRUCTURE, WITH SUSPENDED DOMED PLASTERED CEILINGS, ART WORK, AND THE POINT OF ORIGIN OF THE FIRE COMBINED CREATED A VERY CHALLENGING RESTORATION PROJECT.

SUBMITTED BY:


THOMAS EGAN

INVESTIGATION

After the initial inspection on August 5, 1992, I forwarded a letter, dated August 6, 1992, to ABC Insurance Company and Joe Green, President of Saint Peter Church. The letter expressed my concerns of the restoration project and that I felt other experts needed to be involved to properly assess the damage incurred by the fire and related smoke/water damage. I then sent a letter, dated August 12, 1992, recapping my phone conversation with Bill Smith of ABC Insurance Company. The letter included approximate costs for the actual inspection which was set for August 19, 1992. It included costs for all experts including myself, as well as materials needed for testing and equipment rental to insure a complete inspection (scissor lift, lighting, etc.) (see attached Document No. 20). No floor plans or any type of original building information was available to me. Also, I found that the original artist that the church had hired was now deceased. The only records that were provided for me were very poor kept, inconsistent and the most earliest date was March 19, 1973. The records were for various maintenance repairs which included mostly plumbing and electrical repairs. The poorly kept records proved to be absolutely no help considering the structure and art work were completed in 1926. The first 47 years of records could not be located by the church. My next approach was to contact the City for any permits that were issued to the church -- none were found.

INSPECTION

A thorough inspection of the church was made on August 19, 1992 by an investigation team consisting of Ed Laing and Tom Egan of CRS Construction; Bob Francella, Wood Refinisher; Mike Schneider, Arise Scaffolding; Richard Graff, Lead Glass Artist; and support staff from CRS Construction. Also present was Joe Green, President of Saint Peter Church and Bill Smith, insurance adjuster from ABC Insurance Company.

Halogen lighting was installed and a mobile 35 foot scissor lift was brought in. The team first inspected the attic area and the air handling system, which is where the fire originated (south elevation, first and second story roof structures). The south elevation roof cavity revealed charred wooden members and heavy smoke residue. The team then moved to the southeast roof cavity, where light residue was found and moderate smoke odor was observed on the domed ceiling behind the altar. The Madonna painting was then test cleaned using an extension ladder to inspect and test clean the domed area. The scissor lift was not able to access this area due to the stairs. The north side main room revealed light smoke damage. The south side main room directly below the attic area where the origin of the fire occurred, visible signs of mold and mildew growth were found after pulling wallpaper from the pillars and walls. Moderate to heavy smoke residue was found. The west end entry revealed heavy smoke residue, also included in this area were two bathrooms and one stairway leading to the choir loft. The north side attic area revealed no residue and slight smoke odor. The choir loft revealed moderate smoke odor and heavy residue was found above this area on the domed ceiling. In this area the organ was test cleaned also.

INSPECTION (cont'd)

The team then inspected the main area from 10' off of the floor reaching to the top of the dome which at the peak is 35' tall. Test cleaning included chandeliers, scroll work, icons (finished by gold leafing), murals on north and south elevations, approximately 10' west of the altar and the murals measured 6' wide x 20' tall. A hand painting of Christ was centered in the main room on the dome section of the ceiling. Approximate measurement of Christ is 25x30'. Tested and inspected at this time were the clerestory leaded glass windows on the north and south side main room. Moderate to heavy smoke residue was found throughout.

The exterior and roof were inspected lastly after temporarily removing emergency board-up materials once inspected the areas were then boarded back up using support staff from CRS Construction.

The wide variety of the artwork tested including wall and ceiling frescos, murals, decorative borders, icons, and ornamental plasterwork (not requiring full scale restoration), responded well to a variety of fine arts restoration procedure developed on site, combining multi-procedural "dry" pre-conditioning, water based cleaning and clear water rinsing.

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AUGUST 19, 1992

SCOPE OF SMOKE / WATER DAMAGE (GENERAL)

PRIMARY SMOKE ODOR REMOVAL SPECIFICATION:

ATTIC AREA

DAMAGE IN ATTIC AREA FALLS INTO 3 CATEGORIES:

1. LIGHT TO MODERATE SMOKE DAMAGE WAS FOUND IN THE EAST ROOF CAVITY AREA.
2. SEVERE STRUCTURAL SMOKE DAMAGE WAS FOUND IN THE POINT OF ORIGIN LOCATED IN THE SOUTH ELEVATION FIRST AND SECOND STORY ROOF STRUCTURES.
3. SCORCHING OF SECOND STORY ROOF AND SUPPORTING SUPER STRUCTURE LOCATED IN THE SOUTH ELEVATION WHICH IS ADJACENT TO THE POINT OF ORIGIN.

ALTHOUGH DEMOLITION IS REQUIRED IN A CONFINED AREA, HIGH PRESSURE SUPER HEATED SMOKE INFILTRATED AND INUNDATED THE ENTIRE ATTIC AREA CENTERING FROM THE POINT OF ORIGIN TO SOUTH, WEST, AND NORTH ELEVATIONS. (SEE PHOTOS).

RECOMMENDATIONS

EAST ROOF CAVITY

ROUGH CLEAN VERTICAL AND HORIZONTAL SURFACES, SMOKE ODOR REMOVAL PRODUCTS WILL BE SATURATION SPRAYED ONTO EFFECTED AREA. TREATED AREA WILL BE COATED WITH AN ENCAPSULANT, A RESIDUAL GRANULAR ODOR COUNTERACTANT WILL BE APPLIED TO HORIZONTAL SURFACES, AND THE ENTIRE CAVITY WILL BE THERMALLY FOGGED WITH A SMOKE ODOR COUNTERACTANT.

SOUTH ELEVATION ROOF CAVITY

ABRASIVE BLAST STEEL I BEAMS, AND SCORCHED WOODEN MEMBERS ETC. TO REMOVE CHAR. ROUGH CLEAN VERTICAL AND HORIZONTAL SURFACES. SMOKE ODOR REMOVAL PRODUCTS WILL BE SATURATION SPRAYED ONTO EFFECTED AREA. TREATED AREAS WILL BE COATED WITH AN ENCAPSULANT. A RESIDUAL GRANULAR ODOR COUNTERACTANT WILL BE APPLIED TO HORIZONTAL SURFACES, AND EFFECTED AREA WILL BE SEALED WITH A PIGMENTED SHELLAC BASED SEALER.

TO INSURE THAT SMOKE ODOR REMOVAL IS PERMANENT, IT IS RECOMMENDED THAT THIS CRITICAL PHASE OF THE RESTORATION PROJECT BE PERFORMED BY FACTORY TRAINED AND INDUSTRY CERTIFIED TECHNICIANS. IN ADDITION, THE CHURCH AND ITS INSURANCE SHOULD REQUIRE A WRITTEN LONG TERM SMOKE ODOR REMOVAL WARRANTY.

SECONDARY

SMOKE ODOR REMOVAL SPECIFICATIONS

SANCTUARY RECOMMENDATIONS:

1. SMOKE ODOR COUNTERACTANTS ~~WILL~~ BE ADDED TO ALL CLEANING SOLUTIONS.
2. AIR SPACE ~~WILL~~ BE THERMALLY FOGGED.

HEATING VENTILATION AND AIR CONDITIONING SYSTEM DECONTAMINATION SPECIFICATIONS:

MAIN HANDLER

1. DISASSEMBLE AIR HANDLER FOR ACCESS TO SMOKE CONTAMINATED COMPONENT PARTS.
2. THOROUGHLY WET CLEAN AND DEODORIZE COMPONENT PARTS CONSISTING OF BLOWER, COILS AND HOUSING. LUBRICATE MOVING PARTS.
3. REMOVE SMOKE CONTAMINATED SOUND DAMPENING INSULATION AND REINSULATE AIR HANDLER.

4. REMOVE SMOKE CONTAMINATED AIR FILTERS AND INSTALL REPLACEMENT FILTERS.
5. CUT ACCESS PANELS INTO MAIN SHEET METAL TRUNKLINES AND PLENUMS FOR ACCESS.
6. THOROUGHLY WET CLEAN AND DEODORIZE INTERIOR OF DUCTWORK.
7. REMOVE SMOKE CONTAMINATED FLEXIBLE BRANCH DUCTING.
8. REPLACE FLEXIBLE BRANCH DUCTING.
9. GRILLS AND REGISTERS WILL BE REMOVED, THOROUGHLY WET CLEANED, DEODORIZED AND RE-INSTALLED.

HVAC SYSTEM WAS CONTAMINATED DUE TO FIRE RELATED PRESSURIZATION AND THE ALTERATION OF IONIZED SMOKE PARTICLES TO METALLIC SURFACES.

DAMAGED PLASTER WALLS

1. PLASTER PATCHING HOLES IN WALLS- SHOULD ATTEMPT TO MATCH ORIGINAL ROUGH FINISH AS CLOSE AS POSSIBLE.
2. SUBSEQUENT FINISH WORK-SHOULD ATTEMPT TO MATCH ORIGINAL PAINTED FINISH ON WALLS.
NOTE: IT IS HIGHLY PROBABLE THAT ALL OF THE PAINTED PLASTER WALLS AND CEILINGS ADJACENT THE FRESCOS WILL REQUIRE RE-PAINTING.

PRE-EXISTING CONDITIONS

CEILING FRESCO OF ~~JESUS~~: CHRIST

1. SMALL PATCH OF INCONSISTENT COLOR AND PLASTER TEXTURE ON NOSE.
2. PAINT CHIPPED RIGHT CHEEK AND HAIR.
3. GLOSSY HIGHLIGHTS ON BLUE ROBE.

WATER DAMAGE TO CEILING IN FRONT ENTRY UPPER DOME CEILING.
LOOSE BACKING ON ORNAMENTAL MURAL BORDERS IN VARIOUS AREAS.

CEILING FRESCO OF MARY (NOT TOTALLY ACCESSIBLE)

1. SEVERE WATER DAMAGE TO LOWER RIGHT OF FRESCO.
2. VISIBLE EFFLORESCENCE ON RIGHT ARM, CROWN, ABOVE RIGHT EYE, AND ON ROBE. NOTE: EFFLORESCENCE WAS TEMPORARILY REMOVED BY DRY BRUSHING WITH SOFT BRUSH.

SLOPPY PATCHWORK ON ORNAMENTAL SCROLLWORK. NOTE: MANY MORE PRE-EXISTING CONDITIONS EXIST WHICH CAN BE HIGHLIGHTED PRIOR TO COMMENCING FULL SCALE RESTORATION WORK.

CHANDELIER

THE LARGE CRYSTAL CHANDELIER IS AN AERIAL FOCAL POINT IN THE SANCTUARY. CLOSE VISUAL INSPECTION FROM A SCISSOR LIFT, REVEALED THE CHANDELIER IS HEAVILY SOILED. IT WAS IMPOSSIBLE TO DETERMINE THE CONDITION OF THE ORIGINAL ELECTRICAL WIRING.

TWO OPTIONS ARE VIABLE FOR CLEANING THE CHANDELIER.

OPTION 1

COMPLETE DISASSEMBLY OF THE CHANDELIER, SONIC BATH CLEANING OF THE COMPONENT PARTS, FOLLOWED BY RE-ASSEMBLY AND RE-INSTALLATION. SONIC BATH CLEANING OFFERS SUPERIOR PERFORMANCE, BUT DISASSEMBLY AND REASSEMBLY OF THE CHANDELIER IS RISKY AND BREAKAGE OR DAMAGE TO THE CHANDELIERS COMPONENT PARTS SHOULD BE ANTICIPATED.

OPTION 2

LOW PRESSURE STEAM CLEANING IN PLACE. ALTHOUGH THE CLEANING WILL NOT BE AS THOROUGH, THE PROCEDURE DOES NOT REQUIRE THE RISKY DISASSEMBLY AND REASSEMBLY OF THE CHANDELIER.

WATER DAMAGE

FINDINGS:

1. WATER USED TO SUPPRESS AND EXTINGUISH THE FIRE IN THE CAVITY ABOVE THE CEILING AND WITHIN THE STRUCTURES WALL MIGRATED VERTICALLY DOWNWARD INTO THE WALL CAVITY AND ORNAMENTAL PLASTER WORK.
2. TESTING WITH A MOISTURE METER CONFIRMED THAT THE WALL AND ORNAMENTAL PLASTER WORK HAS EXCESSIVE MOISTURE CONTENT AT THE TIME OF THE TESTING.
3. THE LOWER FACE OF THE ORNAMENTAL PLASTER SCROLLWORK IS COATED WITH MULTIPLE LAYERS OF OIL BASED PAINT, AND IS ACCENTED WITH A COATING MADE FROM METALLIC GOLD COLORED POWDER IN A CLEAN TRANSPARENT BASE COAT.
4. RUNS ARE VISIBLE IN THE ORIGINAL CLEAR COATING. REPAIRS HAVE BEEN MADE TO THE GOLD COATING ON THE ORNAMENTAL SCROLLWORK AND HAVE TAKEN A GREENISH HUE. THE UPPER FACE OF THE ORNAMENTAL PLASTER IS UNFINISHED AND IS STREWN WITH WET FIRE RELATED DEBRIS.
5. ADDITIONAL WATER RELATED GREEN OXIDATION IS VISIBLE ON THE GOLD COATING ON THE ORNAMENTAL SCROLLWORK THROUGHOUT THE DAMAGED AREA.

6. MOLD IS GROWING ON THE WALL UNDER THE VINYL COVERING, AND MOVING INTO THE WALL CAVITY.
7. THE WOODEN OAK BASE MOLDING HAS SWOLLEN AT CORNER JOINTS.
8. VARIOUS HANGING ARTWORKS IN THE EFFECTED AREA WERE TESTED FOR MOISTURE CONTENT. ONE PIECE OF ARTWORK HAD AN EXCESSIVE MOISTURE CONTENT, AND WAS MOVED TO A SAFER LOCATION.

RECOMMENDATIONS:

1. TEST WATER DAMAGED ORNAMENTAL PLASTER AREA AND IMMEDIATELY INSTALL A DEHUMIDIFIER TO DRY THE PLASTER MOLDING.
2. REMOVE VINYL WALL COVERING FROM WALLS IN WATER DAMAGED AREA.
3. WASH VISIBLE MOLD FROM WALLS AND APPLY SUITABLE BIOCIDES.
4. DRILL 1/2" DIAMETER HOLES IN PLASTER WALLS TO FACILITATE INTERIOR DRYING.
5. APPLY WOOD PRESERVATIVES TO INTERIOR OF EFFECTED WALL CAVITIES.
6. CHECK WATER DAMAGED ARTWORK FOR LATENT DAMAGE.
7. BE SURE THAT PLASTER IS DRY PRIOR TO REPAIRS AND REFINISHING.
8. THE ARTISAN PERFORMING REPAIR WORK ON ORNAMENTAL PLASTERWORK SHOULD PRE-QUALIFY HIS RESULTS.
9. FLUORESCENT LIGHT FIXTURES ON TOP FACE OF ORNAMENTAL PLASTER WORK SHOULD BE REPLACED DUE TO WATER DAMAGE.

ARTWORK

THE WIDE VARIETY OF THE ARTWORK TESTED INCLUDING WALL AND CEILING FRESCOS, MURALS, DECORATIVE BORDERS, ICONS, AND ORNAMENTAL PLASTERWORK (NOT REQUIRING FULL SCALE RESTORATION), RESPONDED WELL TO A PROPRIETARY FINE ARTS RESTORATION PROCEDURE DEVELOPED ON SITE, COMBINING MULTI-PROCEDURAL "DRY" PRE-CONDITIONING, WATER BASED CLEANING AND CLEAR WATER RINSING.

STAINED GLASS WINDOWS

THE INTERIOR FACE OF THOSE STAINED GLASS WINDOWS NOT REQUIRING EXTENSIVE REPAIR WILL BE WET CLEANED AND DEODORIZED.

EXHAUST BLOWERS AND DUCTING
(IN MAIN ATTIC)

1. WET CLEAN, DEODORIZE AND LUBRICATE.

ELECTRICAL OUTLETS AND SWITCHES

1. REMOVE SWITCH PLATES AND COVERS.
2. CLEAN OUTLET/SWITCH WITH NON CONDUCTIBLE SAFETY CLEANER.
(UNSPOT).
3. DEODORIZE WITH COMPATIBLE SMOKE ODOR COUNTERACTANT.
4. ISOLATE SWITCH WITH CAULKING AND FOAM GASKETS TO ALLEVIATE
SMOKE RELATED CORROSION AND INSURE PERMANENT ODOR REMOVAL.

ORGAN

1. APPEARS TO BE IN GOOD CONDITION. REQUIRES LIGHT INTERIOR
CLEANING, WET CLEAN AND POLISH EXTERIOR. SERVICE CHECK
BY ORGAN TECHNICIAN.