

SAPPHIRE® SYSTEM PROTECTS NATIONAL TREASURES

Application Case Study



Ceiling-mounted agent discharge nozzle and notification device.



Manual release stations for the vault and library are housed in the mechanical room.



OVERVIEW

Preserving the nation's history is a goal of paramount importance to communities and historical societies across the United States. One such establishment is the Daughters of the Republic of Texas Library, part of the historical Alamo site in San Antonio, Texas. This unique library is open to the general public and contains non-circulating collections pertaining to the storied history of San Antonio, the Alamo and State of Texas' fight for independence in the 19th century.

Situated within the actual Alamo compound, the library serves as an important resource for history scholars as well as a point of reference for educators, students and interested visitors. The singular collection consists of rare books, art and photographs and primary source documents, including two copies of the Texas Declaration of Independence, of which thirteen copies are known to exist, and an 1827 map of Austin's colony drawn by Stephen F. Austin.

In December 1999, the library suffered an accidental discharge of its fire suppression system, which was originally installed two decades earlier. Fortunately, no loss or significant damage was incurred by the discharge, but the cleanup process was substantial and costly, prompting discussions by the Board of Trustees to replace the system with a more modern, efficient and environment friendly product that would assure the protection of the library's precious holdings.

The board undertook a feasibility study that included a comprehensive review and assessment of available fire suppression systems, along with a survey of 24 local and national repositories with special collections, and input from representatives of the San Antonio Fire Department and State Fire Marshal's office. As revealed in the study, an overwhelming number of facilities used a wet pipe system, but the library was reluctant to go that route because of potential damage from an accidental discharge.

APPLICATION/DESIGN CRITERIA

The Daughters of the Republic of Texas Library needed to enhance protection of its precious holdings and national artifacts. Upon completion of the feasibility study, the board retained the services of ANSUL®, a premium brand of Tyco Fire Suppression & Building Products. The system chosen as the best option to meet all their specific needs was the ANSUL SAPPHIRE® clean agent fire suppression system.

The defining advantage of the SAPPHIRE fire suppression system is that it utilizes a chemical agent that looks and feels like water, but evaporates as soon as it's deployed without leaving

a trace of residue or dampness. The SAPPHIRE system is ideally suited for the protection of libraries, archives, and document repositories as it can be discharged on books, precious artifacts and other delicate items without causing harm. In fact, electronic equipment can even be fully submerged in the SAPPHIRE agent and still function properly.

Importantly, in addition to preserving valuable assets from common effects associated with water damage, the system is environmentally safe, having zero ozone depletion potential and is not toxic to people who may be on location during activation.

PROJECT SCOPE

As the library is housed within a structure of historical status, the goal was to seek out a replacement that would work with explicit regulatory codes and actual structure limitations, as well as the budgetary parameters of a non-profit organization.

The primary goals of introducing a new system included the following:

- Protect valued historical library works from fire and minimize collateral damage in the event of a fire
- Replace the existing, outdated protection system with a cost-effective solution that worked within established building parameters
- Adhere to regulations set forth by the Texas Historical Commission and reflect coding of a landmark property
- Incorporate a suppression system that does not use water, and is non-toxic both to humans and the environment

Two teams installed the SAPPHIRE system and auxiliary equipment. One team removed the old halon piping and installed the larger piping for the SAPPHIRE system. The second team added new smoke and fire sensors necessary for cross zoning, and rewired the smoke and fire alarm system. Ninety percent of the installation was completed within 15 days. The system became fully operational 67 days from beginning the installation.

The ANSUL SAPPHIRE system cylinders contain 3M™ Novec™ 1230 Fire Protection Fluid for total flooding applications. The agent has 0.0 ozone depletion potential, an atmospheric lifetime of five days, and a global warming potential less than 1.0 (compared to Halon 1301 that has a GWP of 6900).

CONCLUSION

The ANSUL SAPPHIRE system—installed throughout the Daughters of the Republic of Texas Library, support offices, and library vault—provides continued fire protection of the irreplaceable art, photographs, books, documents, and maps representing the cultural heritage of Texas. The two-phase installation was approved by the Texas Historical Commission and the Texas State Fire Marshal's Office.

The new fire suppression system has proven popular with various key constituents, including donors, scholars, and city leaders. They appreciate that the contents of the library continue to be protected by a state-of-the-art fire suppression system that does not cause damage while still being environment friendly. In addition, the SAPPHIRE system has helped the library maintain its current insurance underwriting status by demonstrating positive steps have been taken toward lowering risk to the collection from potential fire and the effects of a fire suppression system discharge.

“The SAPPHIRE system is our insurance policy,” said Leslie Stapleton, Library Director. “The numerous items contained in the library are irreplaceable, many one-of-a-kind, and vital to the education of future generations. The community appreciates the efforts and direct in-kind support of ANSUL who helped install a fire suppression system that has met our numerous and specific requirements. Fire safety has always been a concern for us—the SAPPHIRE system just lets us breathe a little easier.”

If you have questions about the SAPPHIRE system, or any ANSUL product or service, call ANSUL Technical Services at 800-862-6785 (U.S. and Canada) or 715-735-7411 (International). Also, visit www.ansul.com.

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CLEANGUARD® clean agent fire extinguisher provides manual backup.