

Storage solutions for the future

Climate controlled media preservation to last beyond a lifetime

The Challenge:

Pacific Title Archives, a major storage provider for the motion picture industry, required the construction of a climate-controlled vault in order to store film and various other media. This project required an advanced system that employed state of the art technology to keep the collection safe and secure so items would remain in flawless condition when accessed in the future.



The process of storing film is more nuanced than traditional items due to its delicate nature. Long-term archiving is a valuable commodity for motion picture clients because film can't be replicated but can be tampered with and ruined without proper handling. An industry term that is used to refer to films that become defective is "vinegar syndrome," which gets its name from the smell that the films expel. The actual condition is cellulose triacetate degradation, which is a result of high heat and moisture levels in storage areas. Should this condition begin to occur, one bad film emitting acetic acid would pose a serious threat to surrounding films. Essentially, a minor breach in safety precautions and proper handling could ruin an entire collection.



The Solution:

McMurray Stern was brought in to offer a design build solution, and manage the project as a general contractor. The vault would sit inside a warehouse facility and require the optimal use of space while still allowing ease of access to multiple clients. In addition, the storage unit needed to meet specific temperature and humidity requirements to ensure the preservation of film canisters for up to 75 years.

First, in order to secure the regulation of temperature and humidity in the vault, McMurray Stern contracted Dahlbeck Engineering to design a Munters Industrial Dehumidification unit for installation just outside of the vault vestibule. The Munters' dehumidifier removes moisture from the air through a desiccant rotor and guarantees precise humidity control by modulating face and bypass dampers. The vault is kept at 45 degrees Fahrenheit with a relative humidity of 25 percent. The low-temperature storage helps to preserve the film at a level where the humidity is manageable. The unit provides over four air changes per hour and removes pollutants and particles by Carbon and Hepa filtration.

The vault is regulated by a passive smart system, which automatically monitors climate activities and sends a notification if there is a breach or change of any kind inside. This provides a level of security that would allow for a quick response in case of emergency so that the contents will maintain their condition.



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An additional safety precaution McMurray Stern implemented featured a fire-prevention gas system which pulls oxygen from the vault in case of a fire. An important aspect of the fire-prevention unit is that it provided an alternative to a fire-sprinkler system, which was not an option because of the damage that a wet climate would cause to the film. "We presented the plan to the City (of Burbank) prior to proposing to the client," said Jim Burkart, Senior Design Consultant of McMurray Stern. "When you're building a climate-controlled vault from the design phase to execution, planning is critical."

Storage Solved:

Ultimately, McMurray Stern devised a customized high density storage solution that would archive a capacity of approximately 80,000 film canisters in a 2,300 square foot vault. "Maximum use of space is the biggest need to be able to store as many cans of film as possible," said John Bragg, Branch Manager of Pacific Title Archive, a company who has been storing entertainment media



since 1935. "Long-term retention of their content is what it's all about." The film, stored in canisters, is held on a total of 20 mechanically assisted mobile carriages inside of the vault that operate on a recessed-rail unit, manufactured by Spacesaver. The recessed-rail tracks are laid to allow the carriages to be easily navigated so the canisters can be accessed, while taking up a minimal amount of space.

Proposing a quick timeline and following through as planned was crucial to the construction of the storage vault. The project took two months to be completed, a quick turnaround that was tailored to Pacific Title Archive's requirements. "We're very happy with [McMurray Stern]," said Bragg. "From start to finish, they were perfect in everything. They did everything on time, actually finishing ahead of schedule."

To learn more about McMurray Stern's design build solutions, please visit www.McMurrayStern.com or call 1.800.499.6919



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