The Story Behind The Storage



Renovated Space for High Fashion

Founded in 1969, the Museum at the Fashion Institute of Technology maintains five exhibitions a year with an extensive collection from the most well-known designers. A new staff in the early 2000s sought to gain accreditation form the American Alliance of Museums (AAM), a prestigious organization that recognizes museums that follow best practices. It was time for the museum to renovate the collections area to achieve their goal.

One of the main portions of the AAM accreditation process involves impeccable collections storage. The museum knew that expanding was out of the question so it was a matter of optimizing the available space. They decided that the best way to maximize volume would be to install compact storage systems from Spacesaver. A simple, clean layout with access doors creating a central aisle with easy access to the collections. The units were fitted with 4-Post shelving that was configured to optimize space on the interior.

Since the Museum at FIT continues to build its collection with the limited space available, the shelving is configurable without special tools to accommodate new collections. The Spacesaver system offers protection from dust, light, and discharge from overhead fire protection systems.







After years of preparation, renovation, rehousing, and organizing, the Museum at FIT received accreditation in 2012. The peer reviewers found the collections to be "well organized and carefully preserved."

Fashion & Physique

The "ideal" body is a cultural phenomenon that has changed throughout history to emphasize different shapes and proportions. The notion of a fashionable body creates an expectation in our minds that affects how we view and treat our bodies and the bodies of others.

Fashion has played and continues to play a huge role in the marginalization and glorification of certain body types. The fashion industry has always treated the female body as an object that is easily transformed by undergarments, extreme dieting, exercise, and even plastic surgery depending on the time period.

Before the twentieth century, the ideal figure consisted of a narrow waist to emphasize the curves of the female body. Women wore corsets and stays to emphasize this hourglass shape. During the eighteenth century, these garments were only available to the elite but technological advancements made them available to all classes and women were expected to wear them, including pregnant women. It wasn't until the start of the twentieth century, that the ideal, soft curvaceous body transitioned into a thinner, younger physique. Throughout the 1900s and into the 2000s, the thin and slender body standards



were maintained as the fashion standard. More recently, brands have tried to diversify and include a variety of body shapes, yet most runway models are still expected to be thin. However, the shift in inclusivity will continue to grow and we are in the midst of a fashion revolution.



Protecting Natural History

Preventive conservation efforts aim to reduce deterioration by providing a secure surrounding environment. This starts with the right type of storage to eliminate dust and debris build-up.

At the Field Museum in Chicago, Illinois, A HDMS system in the dinosaur and oversized collections room stores small- and medium-size fossils. The moveable carriages were outfitted with 72 cabinets to house existing and new wooden trays of three varying heights. Hinged doors help minimize exposure to light and dust while also providing locked security.

Large fossils are safely stored in custom-designed HDMS systems located in the dinosaur and oversized collections room. A total of ten, 23-foot-long HDMS carriages incorporate wide-span, heavy-duty shelving to accommodate pallets of fossils. Scientists use narrow-aisle forklifts to access the fossils, which are often transported to nearby work tables for study. Large fossils are safely stored in customdesigned HDMS systems located in the dinosaur and oversized collections room. A total of ten, 23-foot-long HDMS carriages incorporate wide-span, heavy-duty shelving to accommodate pallets of fossils. Scientists use narrow-aisle forklifts to access the fossils, which are often transported to nearby work tables for study.







THE STORY OF: Sue The T-Rex

This specimen has been invaluable to the paleontological community since the discovery. SUE has enabled scientists all over the world to do more detailed studies of the species' evolutionary relationships, biology, growth, and behavior than ever before. SUE has taught scientists about biomechanics and movement, dinosaurs' intellect, and even how much SUE weighed, says Peter Makovicky, the Field Museum's curator of paleontology. It's bones have taught us so much about Tyrannosaurus rex since the 2000 unveiling — we can't wait to find out what scientific discoveries this colossal skeleton will lead us to next.







Space **Optimization** for a Diverse Collection



The Ingenium Centre in Ottawa, Canada is tasked with protecting and showcasing artifacts that make up the nation's science and technology collection. This diverse collection ranges in sizes from vintage cars to tiny electronice components. The need to make the artifacts acessible was top of mind but the amount of space was limited. By utilizing vertical space, we were able to maximize all the avilable space provided while handling

the storage with care. They found that one of the most efficient solutions was using Spacesaver's Nantucket Trays and Drawers on 4-Post shelving and extrawide trays on widespan shelving. The units were mounted on high-density mobile systems to save even more space.



"It's the first time I've had to think about how to stack carriages on mobile shelves." Helmut Klassen | Diamond Schmitt





A Relic of Canada's Car **Manufacturing History**

The Oldsmobile on display in the St. Catherines' museum is a representation of the automotive industry St. Catherines. Built in 1905, it was the first style built in the city and was manufactured in the first plant in Canada, which was built and designed for the sole purpose of automobile manufacturing. However, Canadian production stopped in 1907 due to a change in market these cars were seen as too big and expensive for the Canadian market.

Oldsmobiles were not made in Canada again until 1920 when the newly founded general motors of Canada began building them again. This rare Oldsmobile on display provides insight into the history of the start of the automobile industry. The protection and conservation of these cars are of utmost importance to continue telling the stories of the past.

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Creative Solutions for a Tight Fit

The Field Museum in Chicago, Illinois houses more than 25 million specimens and more than 12.5 million of these specimens are a part of the Division of Insects. The size alone calls for an extensive storage solution that aims to preserve the insects, which are extremely important to researchers worldwide.

Space was tight in the collections storage area which offered a challenge since the specimens needed to be kept secure but also allow enough space for researchers to access them.





- Because of ceiling height issues, the high density mobile cabinets were reengineered to fall within the 18.5" fire code regulation.
- A molded, fumigant-resistant, closed-cell elastomeric gasket with an adhesive back was mounted within a recessed steel channel around the door perimeter.
- The gasket provided a secure door seal protecting against air, water, dust and light, which is critical to the collection.
- Lift-off door hinges with a 180-degree swing allow for easy and complete access to the wooden drawers by researchers and collection managers.
- A three-point latching mechanism offers positive engagement at the top, bottom and center of the door, keeping it completely airtight against the elastomeric seal.

Xerces Blue Butterfly Extinction

DNA from 93-year old Xerces blue butterfly confirms the first US case of human-led extinction. This butterfly was last seen flying around in San Francisco around the early 1940s. At first researchers were unsure if the Xerces blue butterfly was its own species or a part of the silvery blue butterfly that shares many characteristics. This question had been unanswered for 100s of years and it was time to find the truth.

To see if it was its own species, researchers turned to pinned specimens stored in drawers at the Field Museum in Chicago, Illinois. By removing a small portion of the butterfly's abdomen, the DNA was sent off for testing. By comparing the Xerces blue butterfly to the silvery blue butterfly DNA, they quickly discovered that they were in fact two separate species.

"The study confirms that yes, the Xerces blue really did go extinct, and that insect conservation is something we have to take seriously." – Corrie Moreau, director of the Cornell University Insect Collections

Researchers note that there is an urgent need to protect insects due to a rapid insect decline all over the world. It might not seem like much, but there is a huge ripple effect across ecosystems that leads to bigger issues.



Preserving Paper-Based Archives to New Heights



To protect rare and historic U.S. literary treasures against deterioration over time, a team of experts set out to save the irreplaceable collections at the State Library of Pennsylvania. At the newly created Rare Collections Library, the storage solution needed to safely hold materials, accommodate thousands of materials with varying sizes and enable safe and easy access to collections.

Using the High-Density Mobile Storage (HDMS) systems to protect and preserve the irreplaceable materials, the team was able to exceed expectations set forth by leading experts in paper-based conservation. In particular, each unit links with the building's control system and is engineered to greatly minimize vibration and eliminate unnecessary movement.

Other features that minimize vibration and movement include:

- 1. DC drive motors on each carriage to ensure smooth acceleration and deceleration
- 2. Non-contact sensors that automatically control the distance between aisles
- 3. Dynamic braking system prevents a carriage from moving when it shouldn't

Specially designed features ensured that the storage systems would preserve and protect the collections for future generations.

Perforation helps eliminate stratification of highly filtered air – and allows for more precise environmental control. It also boosts the circulation of a clean agent mist, and aids in extremely early detection of a potential fire.





World War I Posters Fueling Patriotism

The State Library of Pennsylvania holds around 258 World War I posters that speak to the United States war efforts during the early 1900s. These posters helped fuel the fires of patriotism that carried the U.S. from an isolated nation to a partner with the Allied Nations in Europe.

Various posters were created to encourage citizens to purchase

Liberty Bonds to help pay for the United States' war efforts. Other major themes included: recruitment into the Armed Forces, the Red Cross, as well as numerous posters directed at women for their important roles. Full of color and dramatic symbolism, these posters were created to influence patriotism and the will to sacrifice for the United States.







Storage **Design** for Historic Undersea Equipment

The Naval Undersea Museum in Keyport, Washington is part of the Naval History and Heritage Command (NHHC). The NHHC was founded in 1800, and for over two centuries they have been preserving U.S. Naval history.

Unique to the museum, a collection of U.S. torpedoes that includes modern Mk 48 and Mk 50 weapons, torpedo tubes from USS Tecumseh, and even Howell Torpedoes. These large artifacts weigh up to 600 lbs. and are not easy to store. Maneuvering around the shelving with a forklift was dangerous and too difficult.

To more effectively store these unique artifacts,

a powered ActivRAC® 16 system was installed to replace the static, industrial shelving. By implementing the new storage solution, the aisles were eliminated which freed up space for forklift access and maneuverability. The racks move with a push of a button and aisles are equipped with multiple safety systems to ensure secure storage.

The shelving used in conjunction with the ActivRAC® system can also be reconfigured to accommodate for other uniquely shaped items. By switching over to ActivRAC® mobile shelving, the museum was able to go from storing 66 torpedoes to 110, still accommodating aisle access.





The Howell Torpedo



The Howell Torpedo was the first self-propelled torpedo developed by the United States. After the U.S. declined to adopt the English Whitehead torpedo and instead set out to develop their own. Lieutenant Commander John A. Howell, the head of the Department of Astronomy and Navigation at the U.S. Naval Academy, began developing his locomotive torpedo in 1870.

There were two key improvements that Howell introduced to existing torpedo technology that made the difference for these torpedoes: (1) propulsion by a heavy flywheel spun before launching and the other, and (2) installation of the flywheel to also function as a gyroscope and stabilize the torpedo. These incredible engineering features became the defining characteristics of this torpedo. The torpedo could be fired from tubes submerged in water or above the water's surface with good accuracy and pace. By 1898, thirty-five Navy torpedo boats carried Howell torpedoes.



John A. Howell

Visible Storage Reflects Artists' Environments

The art displayed in the John Michael Kohler Arts Center is intended to be experienced as a whole rather than singular pieces. Many of the current objects featured at the Art Preserve were formerly stored in the John Michael Kohler Art Center's underground storage and in off-site warehouses. The main goal of the Art Preserve was to consolidate these works under one roof, make them more accessible, and display them in their intended environment.

The design team wanted the building to reflect the artists' creativity. The building is made of the same materials that the artists use in their work, like stone, wood, and concrete. The goal was to design creative visible storage solutions throughout the building.

Visible art racks form "walls" in the facility to create an immersive experience and allow staff to change out works on-the-fly. A small compactor system of movable walls was implemented to accommodate future additions. Plus, oversized drawers and trays securely store small items close to an artist's other works along with flat file cabinets that preserve and organize small objects and works on paper. The end result is an engaging and dynamic facility with room to grow.



Mary Nohl: A Life's Work

Mary Nohl was born in Milwaukee, Wisconsin and graduated from the School of the Art Institute of Chicago. After teaching for public schools in Baltimore, she returned to her cottage on the shore of Lake Michigan and devoted her time to art making. Nohl's interests were diverse and refused to be confined by artistic categorization. Using her surroundings for inspiration, she combined various materials to create her pieces of art. She described herself simply as, "a woman who likes tools." After Nohl's death in 2001, the Kohler Foundation, Inc. took on her life's work. Now, the Art Preserve in the John Michael Kohler Arts Center has the honor of preserving her work for future generations.

Combining Collections

The new American Civil War Museum combined the Museum of the Confederacy and the American Civil War Center which were two very different collections. The aim of the new museum was to tell the full story of the Civil War and use the extensive collections of artifacts from both sides. Space was limited and the staff needed to find a way that would preserve the artifacts, optimize the available space, and provide room to grow in the future.





Swords

The swords and scabbards in the museum's collection vary in size and shape. The staff did not want them taking up too much space, while still keeping them organized. The Spacesaver solution had foam mounts and steel supports mounted inside shelving unit frames. The supports can be moved along rails while the foam supports can slide from left to right. The foam mounts were custom cut to provide secure storage.

Saddles

Another major storage challenge was the museum's saddle collection. The large and heavy saddles are extremely vulnerable to damage and decay. In order to protect the saddles while also optimizing space in the climate-controlled collections area, Spacesaver designed sturdy steel mounts for the saddles and adjustable steel brackets to provide full support for the stirrups. The stirrup brackets can be moved up and down and locked in place to relieve pressure from the straps. The mounts and brackets are compatible with Spacesaver's cantilever racking system, which offers even more flexibility.





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THE STORY OF:



The 15th Amendment & the Right To Vote in America

The Bill of Rights described some civil rights for citizens, however it left the definition of what makes up a citizen to the states. Without Federal rules in place, it left a huge discrepancy between states' voting rights. In the first 50 years of the 1800s white male Americans boasted about their government being one of the freest in the world — despite women and people of color being able to vote.

In an 1864 speech given by Frederick Douglass, he demanded that not only slavery be abolished but that black men are citizens and have the right to vote. The Emancipation Proclamation permitted the United States to enlist Black men in the army. However, Black men and women were still not considered citizens and still could not vote.

In 1865, the 13th Amendment ended slavery, however it still did not explicitly grant citizenship to the formerly enslaved. It wasn't until 1869 that the 15th Amendment was ratified by states which made fundamental changes in American political life. However, states still found roundabout ways to continue to deny the right to vote.

Climate-Controlled & **Custom** Storage

Shared preservation facilities are becoming increasingly popular as museums look for more efficient ways to preserve their collections. Using overcrowded storage areas that were not specifically designed for collections care or conditions. The need for better collections storage became apparent back in the 1970s, but it wasn't until 30 years later that they got to work. Spacesaver's solution offered them a modern, climate-controlled shared facility with custom storage systems.

The new shared preservation facility is by far the biggest and most technologically advanced facility in the state. It holds 500,000 artifacts and 200,000 books in nearly 200,000 square feet. It also features state-of-the-art climate control systems, modern security, and storage equipment that was designed specifically for the facility and the collections.





Cold Storage

Microfilm masters, 16mm film, videotapes, and other items that require cold storage are stored in a room that's kept at 40 degrees and 35% relative humidity. To prevent damage from condensation, a transition room is used to acclimate the items that need to be moved to or from cold storage.



Carriages & Drums

Heavy and large objects present specific storage challenges. To keep them protected, organized, and accessible, they are stored on RaptorRAC[™] Widespan Shelving mounted on high-density Spacesaver Systems.

Framed Art

Art screens are the preferred way to store framed paintings and other hanging art. The facility has two types of art screens: wall-mounted art screens for smaller collections, and nested art screens on carriage-and-rail systems for a larger collection that needed to be compactly stored in a limited space.



Textiles

Depending on the specific storage needs of particular flags, quilts, clothing, and other textiles, objects are stored either in oversized drawers, on rolled textile racks, or on hanging rods. These solutions prevent the creases that can form if the textiles are folded.



THE STORY OF: Historic Blueprints

The Wisconsin Historical Society was founded in 1846 and it serves as both a state agency and a private membership organization. It serves to maintain, promote, and spread knowledge regarding North American history with an emphasis on the state of Wisconsin. The late 19th century was a time of great economical growth so it was only fitting that Wisconsin would set its place in the Midwest by erecting a magnificent building that exemplifies the power and wealth of the time.

Because historic

blueprints are fragile and can contain chemical residues, original plans for government buildings and mansions are stored in non-off-gassing steel flat-file cabinets.





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