

STORAGE SOLVED

SITUATION: When The Field Museum of Natural History in Chicago outgrew its collections space, it built a \$65 million state-of-the-art Collections Resource Center (CRC). The new facility drove the need for storage solutions tailored specifically to match the world-class CRC's unique purpose as both a collections repository and a premier research facility.

PROTECTING HISTORY

STRATEGIC SOLUTIONS HELP SOLVE COMPLEX STORAGE ISSUES, CHART NEW TERRITORY IN COLLECTIONS MANAGEMENT AND RESEARCH



DIVERSE STORAGE ISSUES

The CRC is home to 2.2 million objects and specimens for use by nearly 200 scientists and researchers of The Field Museum's Anthropology, Geology, and Zoology departments. The facility also serves as a working laboratory for researchers from around the world who study collections on site. The design of the two-level, underground 180,000-square-foot CRC, combined with the institution's goals, dictated the development of creative and adaptable storage solutions that would:

- protect and preserve collections for perpetuity;
- match the unique storage needs of collections from various departments, as well as the needs of scientists and researchers;
- capitalize on existing storage systems, including the use of age-old drawers, trays, cabinets and shelving;
- make the most of valuable CRC space; i.e. maximize storage capacity while maintaining accessibility;
- improve accessibility to objects and specimens, yet also leave adequate room for onsite laboratories and work areas;
- ensure the safety of employees and visiting researchers; and
- accommodate evolving collections and future growth.

A total of 10 dual-access HDMS systems in the anthropological area are configured with two distinct storage configurations on each side of the aisle. As shown below, one side of the carriage is equipped with a mixture of shelving, pullout racks, pullout trays and rolled textile racks. The opposite side is outfitted with cantilever shelving for added flexibility in storage.



One creative approach to storing 500 large specimen tanks in the zoology area includes a specially designed system with an additional 500-lb. capacity pullout tank drawer with removable load lip (shown left).

Additional large-specimen tank storage is found below banks of stationary cabinets (shown above). The cabinets provide storage of smaller specimen trays on the upper levels with room below to store tanks on dollies.

"We decided to work with Bradford Systems Corp. and Spacesaver based on their industry experience, capabilities and willingness to adapt. It's clear we made the right choice given the end result, which is a unique solution ideally suited to our collections."

Scott J. Demel, Ph.D,
Head of Collections Management,
Department of Anthropology,
The Field Museum

SPECIALIZATION ON A GRAND SCALE

The Field Museum turned to Bradford Systems Corp., a local member of the Spacesaver Group. Together with Spacesaver's planners and engineers, the team developed strategically designed solutions. The result is a unique mix of specialized storage systems engineered to match each collection manager's specifications, as well as the storage requirements of individual objects and groups of collections. The storage solution includes:

- Specially designed High Density Mobile Storage (HDMS) systems with an array of shelving, trays and cabinetry configurations of varied dimensions, as well as pullout drawers, trays and art racks. The mechanical-assist HDMS systems total 274 moveable carriages.
- Fixed shelving of virtually every grade, style and load capacity. All told, the CRC incorporates over 2,700 sections of shelving.
- Bulk and pallet racking with varied weight load capacities and heavy-duty cantilevered shelving for oversized objects.
- Uniquely designed vertical storage racks and custom sliding art panels.
- HDMS and fixed-shelving systems that incorporate trays and cabinets. In all, the CRC retained the use of 15,000 existing shelves and 250 cabinets.

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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 worktables for study.

A portion of the anthropology area is used to display collections for private tours. The displays are interspersed among office-grade fixed shelving of various widths, heights and weight loads as well as capacities. They also include lockable drawers for smaller objects.



Thousands of objects in the anthropology area are stored in HDMS systems totaling 111 carriages ranging from eight to 10 feet in height and 36 to 48 feet in length. The systems feature a combination of pullout trays, pullout drawers, art racks, textile storage and flat shelving in a wide variety of heights and widths to accommodate the diversity of the collections.



HDMS systems in the anthropology area feature unique design features, such as a specially built precautionary rain gutter system at the top of the units to route potential water leakage from the ceiling onto the floor and away from stored objects.



Customized mobile HDMS systems are used to store large anthropological objects. The systems are rated to accommodate objects as long as 25 feet and weighing up to 12,500 lbs. The HDMS units feature offset carriage controls for ease of forklift access.

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The advanced storage systems achieve the overriding goal of protecting history. The HDMS units in particular feature a host of enhancements designed specifically to protect collections. These include synchronous drive carriage systems to guard against vibration without compromising efficient use; customized drives that provide balanced movement even under unbalanced loads; reduced gear ratios for controlled movement; recessed anti-tip rails to provide stability; all-wheel guides; and inert paint finishes. Additionally, the systems in the wet collections area feature leak detection sensors within the rails.

In the end, customized storage solutions meet the museum's highly complex and exacting needs – allowing it to chart new territory with a state-of-the-art facility that sets the standard in museum collections and research.

Shelving in HDMS systems in the zoology wet collections feature specially designed front earthquake bars with label holders to prevent glass specimen jars from falling off and onto the floor. Custom-built side panels within the shelves separate specimen groups. Backsplash panels are also used where needed.



Adjustable vertical racks are used to safely store statues and totems. The racks feature brackets with safety harnesses that can be adjusted to each statue's dimensions.

