

Happy Accidents: Collateral advantages from developing major projects



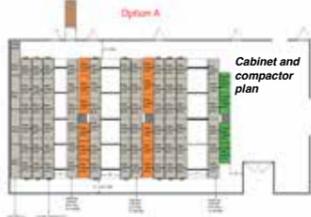
In 2013, using a grant from the National Endowment for the Humanities (NEH), the Section of Anthropology of the Carnegie Museum of Natural History (CMNH) developed a plan for renovating and reorganizing the storage for its 1.5-million specimen archaeology collection. The collection is kept in a renovated building (the Annex), formerly a car dealership, with the majority of the collection crammed onto the former showroom floor. The artifacts are housed in polystyrene boxes on open steel shelving, with plastic sheeting covering the fronts. The space is overcrowded, with no room for further collecting, and the surrounding areas cluttered with outdated computer equipment and decrepit furniture.



The collection and lab spaces “grew in place” since moving into the building in 1979, with new storage and lab space being shoehorned into existing areas. When the same staff has been in place for decades, they cease to really see the place and how it works. Bringing in an architect with “fresh eyes” for space planning has helped re-envision the storage arrangements, and find more efficient ways to use some areas of concern.



Space Planning

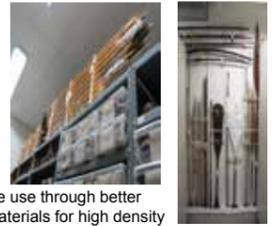


Archaeology collections currently stored on shelves with narrow aisles. Compactor system with Delta Design cabinets provides more efficient storage, better protection against environmental damage and greater physical safety.



Current storage

Planning focused on how to make the best use of available space, and to do so in an environmentally sustainable manner. It was determined that compact storage would yield the best results. Having better and taller cabinetry, eliminating 7 of 10 cross aisles, and creating better storage mounts should double the available storage space for the archaeology collection. All the Old World and Latin American archaeology collections are housed on the second floor in the Ethnographic collections area. Integrating those collections with the rest of the archaeological material makes more sense, and would enable the decompression of that crowded collection space, allowing for future expansion of both collections.



Improving space use through better methods and materials for high density storage. The plan is to use vertical spear rack storage (Science Museum of Minnesota image on the right).

Exploring more efficient ways to use space. This area was a research lab, but times change. A centralized space for constructing storage mounts is now more useful.



Creative use of resources



The floor load capacity had to be established. Having been through the traditional engineering process of having the floor drilled, we decided to try remote sensing. We were able to confirm that the floor had virtually no rebar in it, without a single hole being drilled.



Rethinking work culture. By moving away from organizing storage materials and equipment by discipline to one of function, we are promoting more sharing and less duplication among Annex dwellers.

Collateral advantages

Working with an outside architect and engineer raised the bar on problems with the building, issues that we had been “living with” (and complaining about) for years. The architect’s report lent credence to our requests. Repairs are being made and the building is being brought up to code.



Fluid collections

In 1978, when the building was being renovated, storage and a lab space for mammals fluid collections was created. The formal review by the architect and engineer brought the facility up to code and significantly reduced the odor of alcohol.

1. Removed grills venting into Ethnology storage, installed signs
2. Installed fire doors, door hardware and closures, emergency shut-off button
3. Installed exhaust fan to remove alcohol fumes from storage
4. Installed properly sized fire dampers throughout system, and installed fire rated caulk
5. Separated the fume hoods and air handling system between storage and lab



Environmental Sustainability

- Repairs to stucco to restore building envelope
- Repairs to the Mammoth Unit (HVAC)
- Setting regular maintenance schedule for HVAC
- Plan for new boiler
- Purchase infrared camera for FPO



Other:

- Removed obsolete chimney. In the process FPO sealed holes in the building envelope
- Plan to create an electrical closet. This will separate the main electrical panels from work space



CARNEGIE MUSEUM OF NATURAL HISTORY

ONE OF THE FOUR CARNEGIE MUSEUMS OF PITTSBURGH



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Dr. Sandra Olsen – former curator, grant writer, planner – This was all her idea. Thanks, Sandi!



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Moving Marine Mammals: The Smithsonian, CSS, Cetaceans and a Decade

The Smithsonian Institution's National Museum of Natural History is responsible for the largest collection of scientific specimens of marine mammals housed by any collection in the world including 6,500 specimens of cetaceans, 3,100 specimens of pinnipeds and 380 specimens of sirenians. Between 1996 and 2007 the Museum Support Center's Collection Support Staff (CSS) was responsible for cleaning, rehousing and moving the immense collection of skeletal specimens from various locations in the Washington, DC area to two hangar style storage buildings at an off site location in Suitland, Maryland, about 10 kilometers from the main museum.

Why Did We Move?



Above: Overcrowded and occasionally flooded storage in the West Basement of the Natural History Museum



Above: Poorly lit, and overcrowded storage of larger skeletal collections in the old Building 25

Existing storage locations had become seriously overcrowded. The West Basement storage area where smaller cetacean, pinniped and sirenean skeletal collections were housed also had a tendency to flood during severe storms. The buildings where larger specimens were stored were overcrowded, poorly lit and hard to access.

What took so long?

In addition to the difficulties presented by the large number of specimens, their size and the multiple storage locations we had a bigger problem.



Larger cetacean collections housed in an older, asbestos insulated building had become contaminated by asbestos fibers. A microburst tornado destroyed part of one building and compromised the structural integrity of the whale storage building. Safety measures required the careful decontamination of collections and their movement to temporary storage in another building while the previous buildings were rebuilt from the ground up.

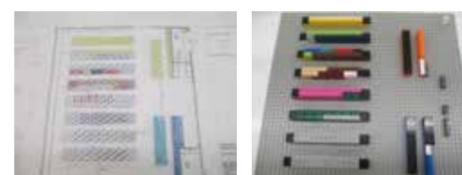
Any other complications?



How do you move 10,000 of something so fragile 10 kilometers? We used the containers they were already stored in, the drawers, carefully padded with bubble wrap and foam and placed back in units on carts with pneumatic tires.



The collection also includes quite a few fetal whale skulls which are as fragile as the finest porcelain but fairly heavy. To move each piece was individually wrapped in buffered tissue, then bubble wrap and carefully packed in foam boxes for travel.



Planning space for new cases required thinking in 3 dimensions to plan the order and wrap for the cases. Legos, with one stud representing one 1/4 unit case turned out to be our best planning solution.



Whales are really big! Just to move many of the larger specimens onto their new cradles we needed to rig them on a crane outside the building. Moving things between the old storage and new sometimes just took a whole lot of people power and a nice day.

After the move:

Larger cetaceans are housed in Building 26 at the Garber Facility



Above and below: Vertebrae and ribs carefully aligned on open shelving



New storage in Building 26



Above, left, below: Custom cradles hold skulls, many vertically to maximize space use.



Above: New cases were placed individually on raised blocks

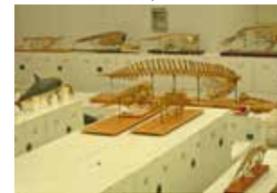


Above: Cases were filled with cleaned specimens in new boxes.

Smaller cetaceans and mounted skeletons are housed in Building 25



Above: Bases were constructed for previously hanging mounted specimens.



New Storage in Building 25



Above: The beautiful, and BUSY, new workspace in Building 25.

THE WORLD MOTH COLLECTIONS

7 months into this 2 year project and over 50,000 specimens have been catalogued.

19th Century Collections:

- T. A. Chapman (Europe)
- J. G. Pilcher (Sikkim, India)
- W. W. Saunders (World)
- A. R. Wallace (Asia, Australasia)

20th Century Collections:

- N. S. Brodie (World)
- T. A. Chapman (Europe)
- L. Doncaster (World)
- W. A. S. Lamborn (Africa)
- H. Rowland-Brown (Europe).

CONSERVATION

During cataloguing of the collections we have undertaken remedial conservation work including:

- Pest management
- Removal of verdigris
- Stabilizing loose body parts and damaged wings.



Drawer of Limacodidae



Wallace specimen

LINKS WITH OTHER MUSEUM PROJECTS

- Training volunteers working on the Jones Icones project.
- EPA Cephalosporin Internship to work on the Sudanese butterfly collections.



Owen Collection from Sudan

TYPE SPECIMENS

Over 50 putative Types have been discovered, they include those of Walker, Hampson, Guenée, Strand, Druce, Newman and Swinhoe.

THE LEPIDOPTERA PROJECT

(Hope Entomology Collections)
G. Allnatt and M. A. L. Carter

A large scale collections management and curation project.

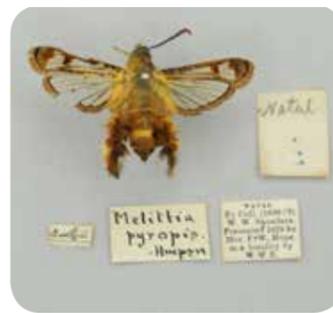
The first phase is re-arranging, cataloguing and digitising the collections. As well as undertaking labelling and remedial conservation of specimens where required.



Urania sloanus, (Cramer, 1779)

EXTINCT SPECIES WITHIN THE COLLECTIONS

We have found five species of extinct moths, including:
Poko Noctuid Moth, *Agrotis criniger*.
Kona Giant Looper Moth, *Scotorythra megalophylla*.
Jamacian Sunset Moth, *Urania sloanus*.



Hampson Type



Druce Type

PERSONAL HIGHLIGHTS



Molly Carter

- Finding Darwin specimens and researching 'lost' types
- Using the historical collections
- Facilitating researchers, students and artists.

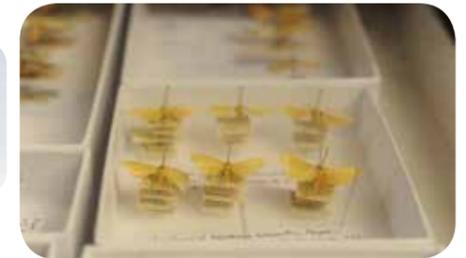


Gina Allnatt

- Discovery of specimens collected by Henry Walter Bates
- Discovery of Castniid moth and letter written by A. R. Wallace
- Finding and researching 'lost' types and extinct moths in the R. C. L. Perkins Fauna Hawaiiensis Coll. collections.



Specimens collected by Darwin



FUTURE GOALS

- Photographs and associated metadata will be made accessible online.
- Entire Lepidoptera collection databased to species level.
- Amalgamation of butterfly collections.

