Mounting Solutions:
Two Sculptures from the National Museum of African Art on view at the Smithsonian Castle.

A review of 3 mount challenges & 3 mount solutions

Keith Conway
National Museum of African Art

Artist: Adebisi Akanji, Oshogbo Nigeria

Artist Adebisi Akanji in 1971, photographed by the late

Dr. Roy Sieber

Cement Esso Petrol Station, Oshogbo Nigeria

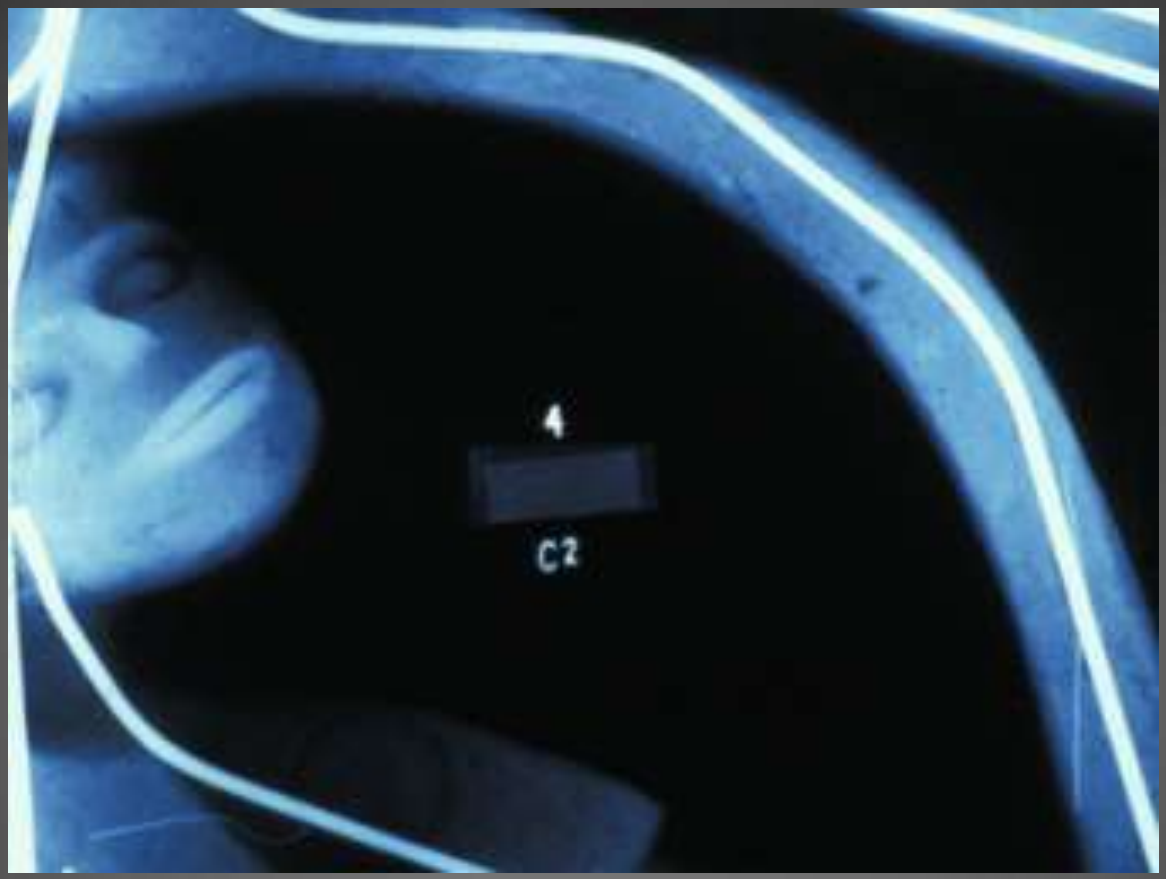
Displayed outside a garden in New York City for over 20 years, they had been commissioned by Waldemar Nielson, past president of
The African American Institute

20 years of outside exposure to the elements led to severe degradation and corrosion

Chlorides present in the ground water exacerbated the corrosion of the armature rebar. The chlorides bond with iron to produce Fe2 Cl3, a corrosion product that is difficult to remove.

The screens were removed and transported back to the Smithsonian

The original concrete screens were replaced by replications from the original screens.



The concrete screens were analyzed, examined and x-rayed at the National Museum of African Art

Conservation treatments commenced

After months of work,
Conservation was completed

The mount #1 support was designed.

Here was the first challenge: how to support heavy, fragile objects that would eventually have hundreds of treatment areas, each screen weighing 350 pounds

An additional problem: the screens could not lay horizontal without the fear of fracture under their own weight. After close consultation it was decided that the mount could support the object with horizontal, vertical, & diagonal bars of stainless steel shaped like the object's artistic pattern and located behind the object.

The solution: support the object under 6 of its most robust areas, like supporting a person under their arms. The sculptures would be held at the top pr & pl corners, then the middle section at pl & pr support. Finally the base would be supported in 2 additional areas that could support weight.

Stainless Armature Mount supports from the back of the object.

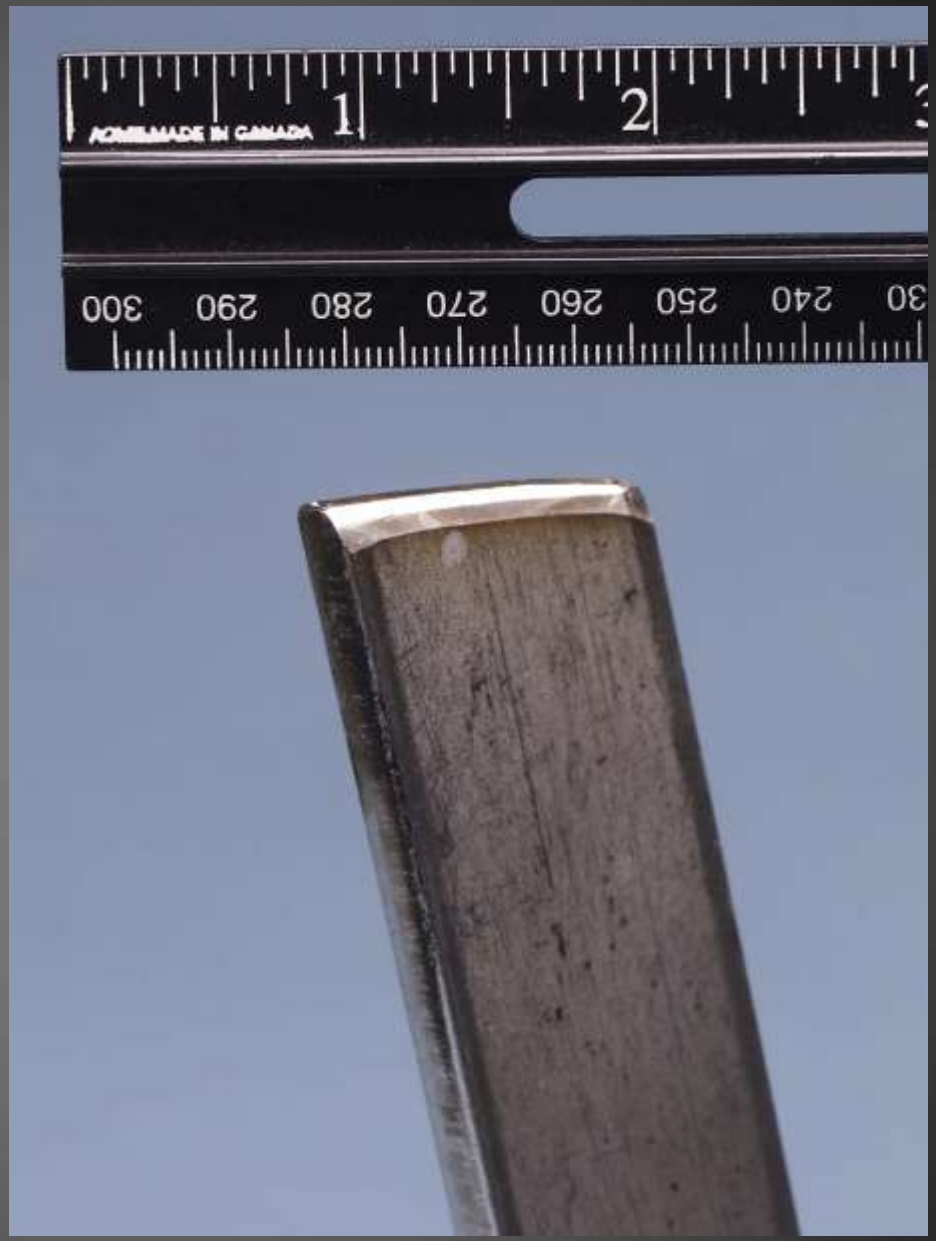
This offered vertical support for displaying and horizontal support for transport.

The Armature Mount-Mountmaking begins: first the stainless for the mount had to be cut with a plasma cutter. This metal cutting system greatly improves the ability to cut many stainless components rapidly. Here is a basic plasma cutter & compressor system that was used.

During the cutting process, the tip & electrode touch the metal & the ionized gas is heated to plasma and the pressure from the compressor pushes the plasma through the work.

Grind away & shape flat surfaces, edges & welding bevels.

Bevel stainless steel edge before connecting with TIG Welding.



TIG: Tungsten Inert Gas. It joins stainless steel

Just a few Highlights

Beginning TIG, The Tungsten Electrode in action, the real view

TIG Welding the back and armature support for the Oshogbo Concrete Screens.

Fireproof bricks and fire resistant plywood template. Each piece of stainless carefully measured and joined.

Molten Stainless joins the metal at the molecular level.

Front armature support view pr

Front armature pl view

Rear armature view

Bottom support registration armature

The 2nd challenge: how to hold both the object and the armature holding the object for exhibition display, transport & storage? Solution: A stainless support frame.

The stainless steel support frame (75 lbs) was made, which provided support for positioning the objects in vertical upright for display and horizontal positioning for transport and storage.

The concrete screen & mount , (support # 1) were fitted together

The concrete screen & mount were attached to stainless frame, (support #2) Now over 400 lbs.

¼ -20 Screws attached the mount to the frame into threaded, drilled & tapped holes

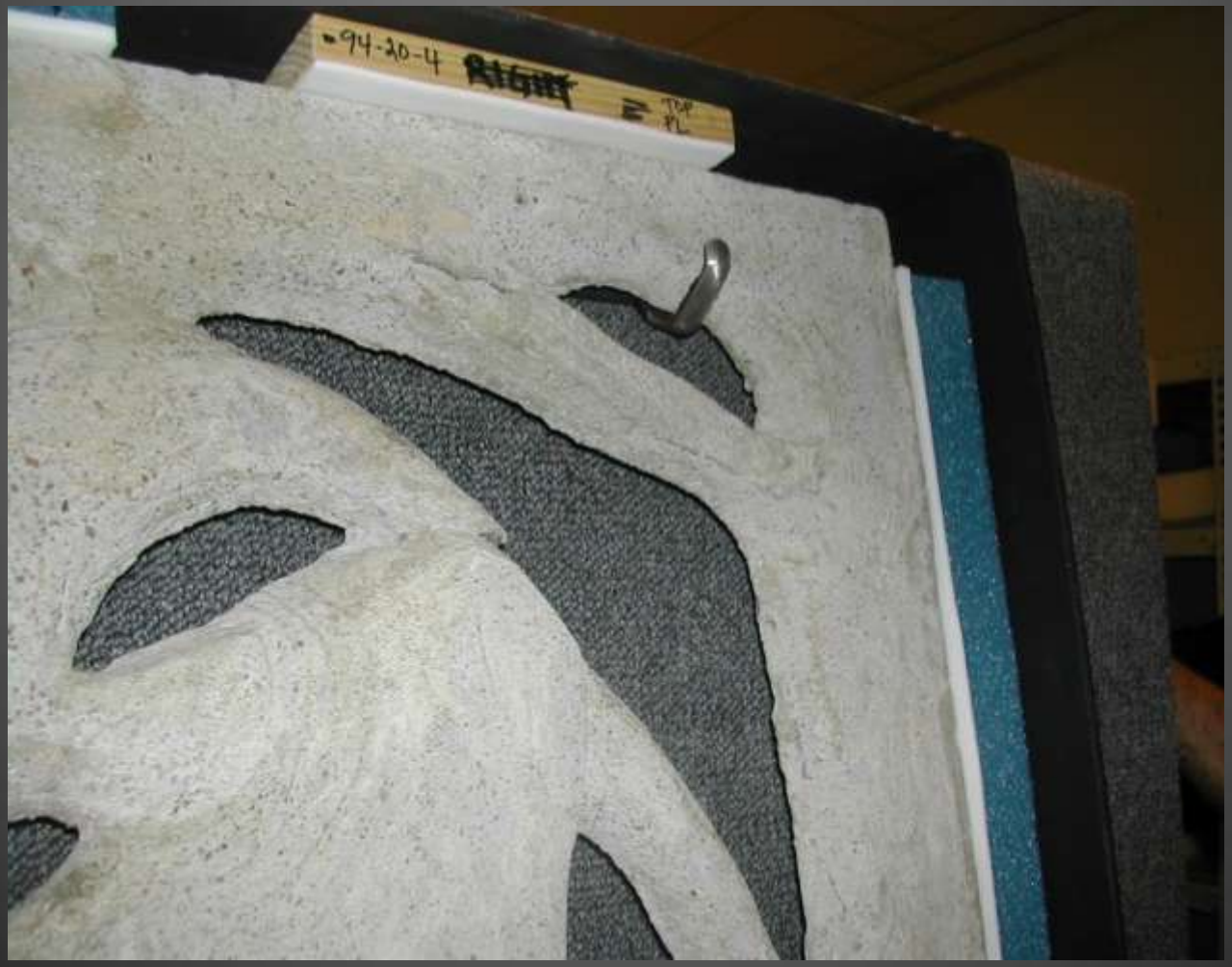
Exhibition Name: A Concrete Vision, Oshogbo Art in the 1960's

Smithsonian National Museum of African Art

Year 2000.


steel frame
concrete screen
steel armature
NMAfA Concrete Screens
94-20-1 to 4, back view

Screens traveled to London, (Tate Modern Museum): Packed & shipped with support armature mounts (#1), & steel frames,(#2).

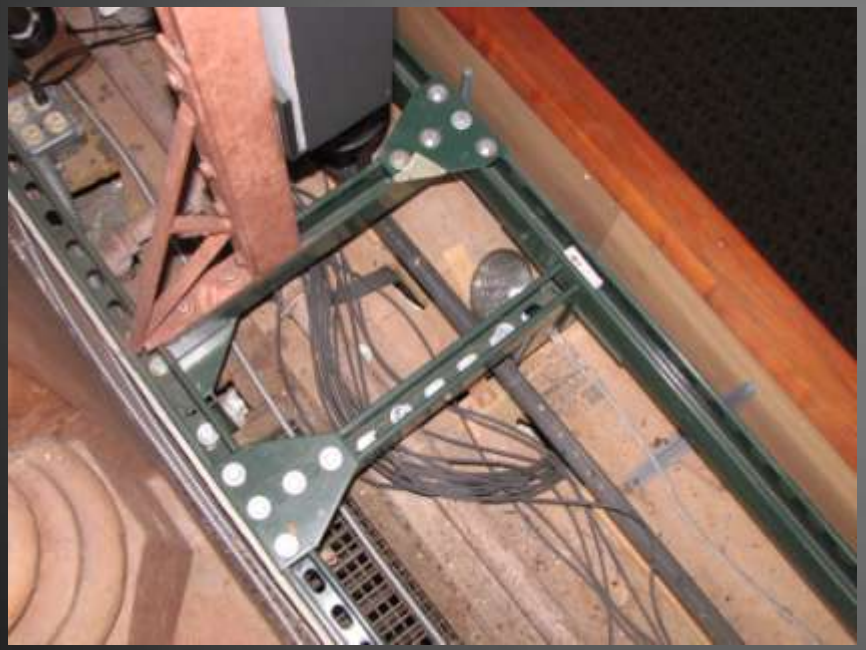


Smithsonian Castle 2005, challenge & solution #3.

In 2005 the acting Secretary requested that 2 Oshogbo sculptures be exhibited in the newly renovated area of the Smithsonian Castle called “The Commons”

Presenting challenge #3: How to elevate two 400+ lb objects over 16 feet in the air safely over both wood cases housing priceless artifacts and the public.

Solution: A double steel track system was installed to support mounts for objects. The sculptures were mounted on steel easels (support #3).
The easel is firmly bolted to a steel assembly that is grounded into the Castle floor, between the casework.

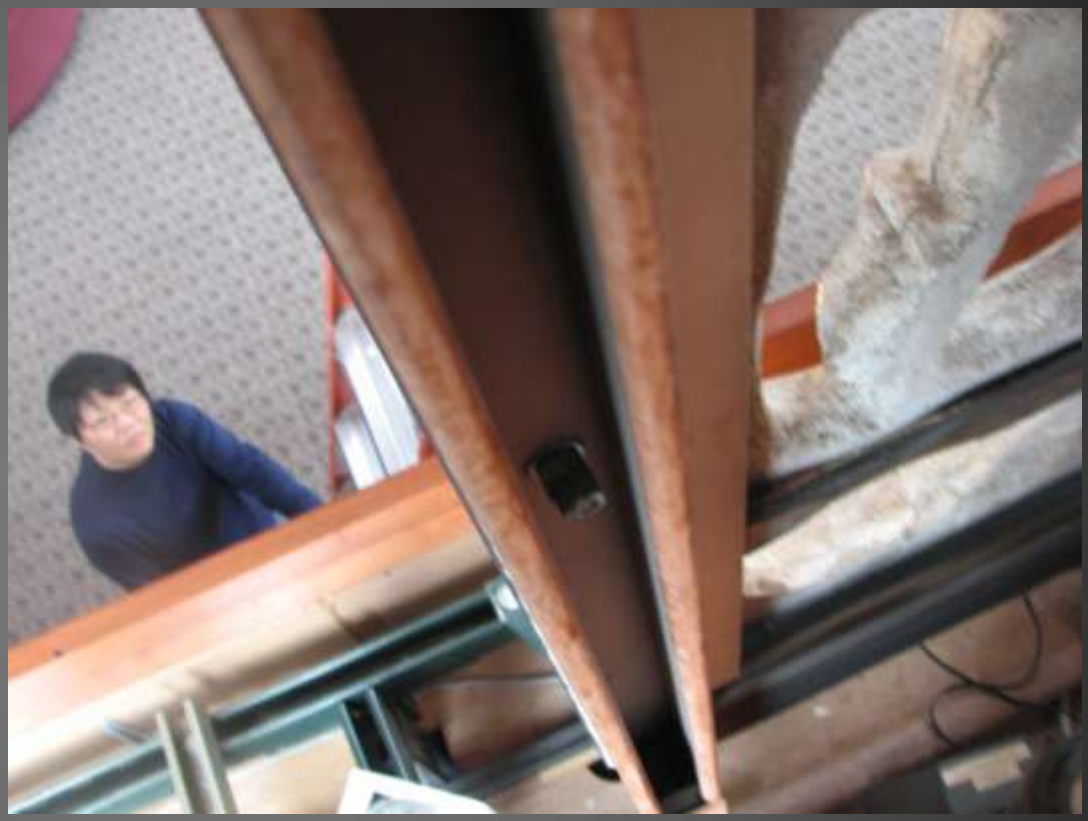


Installation of the Akanji Concrete screens

The installation of the screens required careful measurements a power forklift fitted with a custom lifting rig for both screens & the talented Smithsonian installation crew

When the Concrete Screens, armature mounts, & steel frame were moved from the forklift, they were placed on the easel and were supported by a steel shelf bolted to the steel easel frame.

Doubled nut rear attachment from the steel easel to the Stainless steel frame



A rear view shows all 3 mount solutions in action.

1.) **The stainless mount armature:** supporting the object from underneath in 6 robust places & when in a horizontal position.

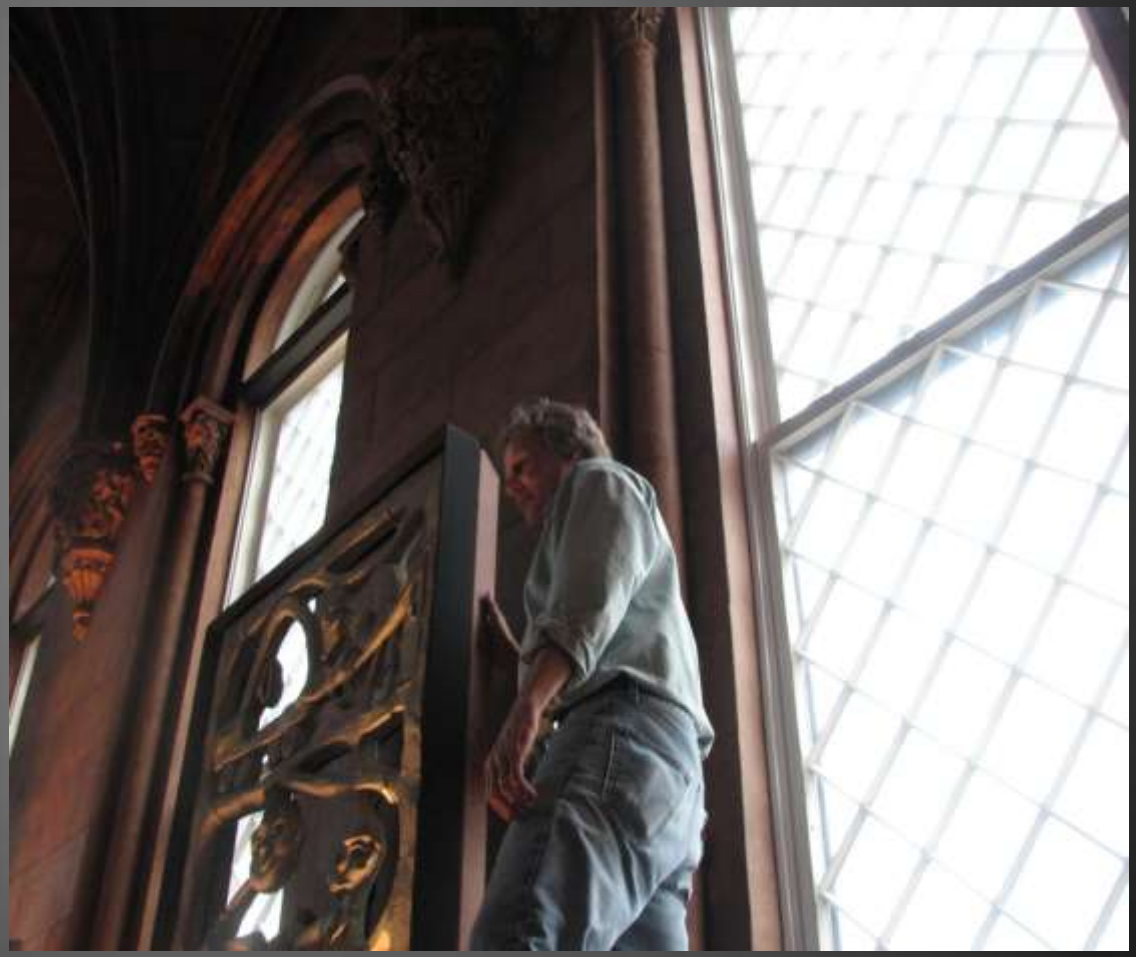
2.) **The stainless frame:** attached to the mount now supports the stainless armature

3.) **The steel easel mount:** (tan colored) supports and is attached to the stainless frame that supports both mount and object.

Rear armature view shows the 3 mount solutions, the easel has an angle cut

The seismic mitigation test

On August 23rd 2011 Washington DC experienced a 5.8 earthquake. Although the Smithsonian Castle towers suffered some damage, the mounted objects in the Commons area including the Akanji concrete screens remained firmly in place and suffered no damage.



The Smithsonian Institution Castle, Washington DC, today 2012