THE INFOAGE
MARCONIGRAPH

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Engaging Tomorrow's Leaders: AmeriCorps & InfoAge

Beth Ritter-Guth
beth.ritter-guth@ucc.edu • 908-497-4363

During the months of April and May, a 10 member AmeriCorps team will be volunteering their free time to help InfoAge. During the day, this team works as FEMA disaster relief crew. In the evenings, they look for community projects to support. They found InfoAge on the web and reached out to serve.

On their first visit to campus, the crew raked leaves at the Diana site and enjoyed a fantastic cookout compliments of OMARC. Jeff Harshman, Matt Capozzoli , and other volunteers gave a great presentation on the history of Ham radio and the importance of Ham radio on the future of communication. Steve Goulart and Ruby Zhao led the team on a tour of Camp Evans, and the crew was able to meet our resident artist, painter Patty Arroyo, and her faithful pup, Fozzy. Holly, one of the crew from Seattle, said that InfoAge was one of the coolest places she has ever been, and Hannah, another crew member from Oregon, has decided to spend her spring break volunteering for Dan Lieb in the shipwreck museum (by the way, we need a place for her to stay, so if you live nearby and can host her, please let Beth Ritter-Guth know!). The crew will be working with the Long Term Recovery Group, The Association of Old Crows, NJARC, and the Miniatures Museum. They will also rakes loads and loads of leaves!

AmeriCorps Volunteers at the TIROS Dish.

AmeriCorps is the domestic peace corps, and these young folks volunteer two years of their life to serving the American public. They receive a small stipend and college benefits, and many go into the military after their service is complete. We are honored to have them work toward preserving our history, and we are thankful to the groups that stepped up to host them: OMARC, AOC, LTR, and NJARC.

INVEST IN VICTORY
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SIGNAL CORPS ENGINEERING LABORATORIES
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One Senator's Personal Crusade May Well Have Ended At Camp Evans

Fred Briard
InfoAge • 732-202-8208 • fredbriard@yahoo.com

On October 20, 1953, Senator Joseph McCarthy visited Camp Evans accompanied by a high level entourage of civilian and military dignitaries in pursuit of evidence of possible communist infiltration or subversion at the top secret Army Signal Corps research facility. This is how it happened. For several days Camp Evans suddenly became the main theater of the cold war conflict in which the United states and her free world allies opposed the Soviet Union and the forces of communist totalitarianism.

Senator Joseph McCarthy holds a press conference in the former wireless operators lounge during his visit to Camp Evans in 1953.

Senator McCarthy's visit was front page news throughout the world and locally generated three days of front page headlines in the Asbury Park Press. The much trumpeted events was, therefore, very successful in generating the media frenzy that McCarthy relied upon to fuel his crusade, but as it happened on other similar occasions, he failed to bag communists. In fact, after the visit he was forced to concede that the staff at Evans was overwhelmingly loyal.

What no one could have known at the time was that Senator McCarthy who had used his position to portray himself as America's leading figure in fighting communist subversion and to intimidate his opponents into silence or submission was already past the peak of his power. The Eisenhower victory in the 1952 presidential canvas ended years of Democratic control of the White House along with McCarthy's usefulness of the national republican party who increasingly viewed his crude methods as an embarrassment to the new administration. To many, his decision to question the loyalty of the U.S. Army was a step too far.

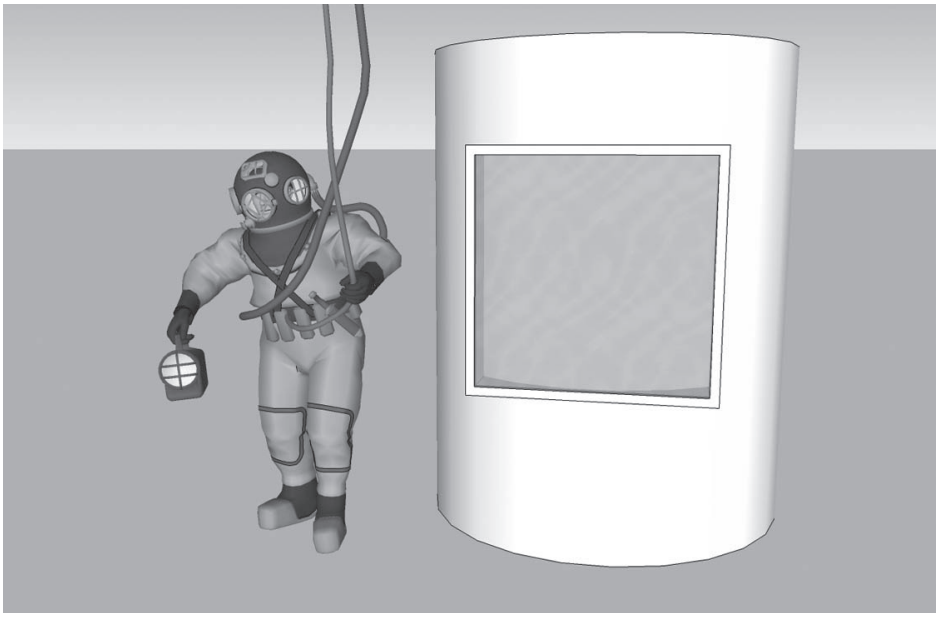
Today, visitors to InfoAge are able to visit the formerly closed and heavily guarded site of the top secret research facility that did much to enable the forces of the Free World to outwit the Soviet Union and to secure the eventual successful outcome of the Cold War. The room where Senator McCarthy was photographed during his momentous press conference is now home to a small and expanding exhibit interpreting the events of those fateful days in October of 1953.

The Diving Demonstration Tank Project - Part I

A report on our efforts to install an educational attraction in our shipwreck museum.

Dan Lieb
New Jersey Historical Divers Association, Inc. • 732-776-6261 • njhda@aol.com

A depiction of how the diving demonstration tank might appear next to a diver of average hieght in full hardhat dress. The tank would be integrated into an interpretive display describing our achievements in diving and the laws and principles that apply. The tank would be operated by NJHDA volunteers and special guests.



Introduction

A few years ago, an associate if mine mentioned that our shipwreck museum should cover more than just shipwreck history; it should cover the history of diving. I stated that we were not a divers' museum, but he stated that he felt it was not only important to describe shipwrecks, but how we explore them. For a shipwreck museum located in a science center, this was not an unreasonable suggestion. In fact, it had great merit.

Since that time, we have added a display case containing diving artifacts that showcase diving technology from 25 to 100 years ago. Also, we have contacts that are willing to donate or lend diving equipment to further expand this display and make it more comprehensive. We may even be able to acquire some "big iron," pieces like diving bells and small submarines. All of this may be used to further describe how shipwrecks - even deepwater shipwrecks - are explored and recorded.

Recently, I became aware of several diving demonstration tanks that could be made available to NJHDA to use in our shipwreck museum. The first was the tank fabricated by Fantasea Scuba. The second was the old Dosil's Scuba tank, and the third was a tank built by the owner of a contracting firm for an exposition in the 80's. The Fantasea tank is now owned by the New York State police. The Dosil's tank is owned by Lang's Ski & Scuba and may available for purchase, although the current price tag is out of our range of affordability. Despite an extensive search, the contractor's tank has vanished without a trace. Although we cannot fit such an attraction in our current museum setup, we will after we receive our final building assignment where we can really spread out and offer a world-class museum.

Overview

The exact need would be to enable us to describe to visitors (particularly school-aged children) those principles and concepts related to how and why vessels float and sink, and how these affect divers and submarines as we explore them.

We started out by building a display that showed an object being lifted off the bottom of a tank filled with water and sending it to the surface and back down to the bottom. This display described Archemede's Principle. We built the display out of an aquarium, an object that looked like a grindstone, a hand-operated air pump and a small plastic bag with a hose going from the bag to the pump. Perfect. The only problem was that every kid under six that played with it broke it. We needed to harden the display. We did this by substituting the hand-operated air pump with an electric pump operated by a momentary switch, a.k.a., a push button. This worked well. In fact, so well, we wore it out. Rather than re-build the display, we decided to look at other ways to describe the concepts and principles related to our subject.

One thing we are good at in our museum is keeping things simple enough so that small children are not completely bored to tears. We can entertain adults with the history of china and earthenware, but we can also keep kids amused with stories of warding off pirates with cannons, three of which we exhibit in our museum's front room. It is important to engage children when they visit a museum. It is incumbent upon us to ask them if they know New Jersey has one of the highest concentrations of shipwrecks in the world, and did they know that there was (some) piracy off our coast. But, how best to describe why things float and sink? Why not have a diver in a tank of water with a communications setup showing them. Why not have a tank with a window in it so children can see in and the diver can ask children questions directly? "I have two objects in my hands. Which one will float and which one will sink? You, you in the back with the plaid jacket, which one do you think will sink if I let it go?" This is the kind of interaction we're looking for. This is a great way to engage kids and get them thinking.

The attraction – there's no other better way to describe it – should be an interpretive display in and of itself. The tank should appear somehow scientific or experimental. In short, it should be impressive. The tank should be situated in some sort of a "set." The front surfaces should discuss the history of diving regarding depths achieved throughout time. Also, a basic explanation of the gas laws and Archemede's Principle should be featured. The sides should have photos of divers in vintage gear with an explanation of how it works. Pieces of gear should surround the display or be placed nearby for viewing.

Basic Needs

The system requirements are fairly simple: a tank filled with water with a window for viewing in and out, a filter setup, a changing area, and a platform with a staircase leading to the top and a ladder leading into the tank. The area the facility takes up should be around twelve feet wide by 8 feet deep by 8 feet tall. It will require at least 7 feet of clearance over the top so a diver can stand in full gear. The platform will have to support the diver, the gear and two or three assistants. The users will all need to hold a basic scuba certification.

Our goal is to not only run demonstrations of concepts and principles, but also to be able to have divers demonstrate hardhat diving gear. Our hope is that the Historical Diving Society's vintage equipment user group will run regular demonstrations in the tank. Furthermore, the facility might also be used for testing certain kinds of diving gear.

One very important factor was size. Yes, size does matter. If we ran the tank operation outdoors, we could pretty much go with whatever we could afford to truck in. If we ran the operation indoors, we need to be able to fit it in something no larger than a garage door. Outdoors, we'd be limited to time of year. Indoors, we could operate year-round. I made the decision to look for a tank less than eight feet wide and around eight feet tall. Something no more than 2,500 gallons capacity would do just fine.

Search for the Right Tank

I spent about a year keeping an eye out for tanks and containers I passed while on the road just to get an idea of what might be out there for us to use. Size, shape and portability were all issues to consider when designing the facility. Once I had an idea of what I was looking for, I began an online search for availability and pricing. Tanks were ranging in the thousands of dollars and were well out of our range to afford. I knew whatever we bought we would need to modify to our specific needs. Construction material would be a big factor regarding modifications. Do we rivet things together, glue or weld them? We needed a construction material we could deal with on our own.

I originally settled on a holding tank I thought would meet our needs. At $1,700 it was relatively cheap, and made of plastic I figured it was a material we could work with. I also figured we could make a window frame out of fiberglass. When I spoke with Herb Segars, a fabricator who works with fiberglass, he recommended we go with an all-fiberglass tank. He said it would be easier to work with when mounting a fiberglass window frame to the tank. Used tanks should be available somewhere. I've known Herb for years and I trust his judgment. In addition to being a fiberglass expert, Herb is also a renowned underwater photographer.

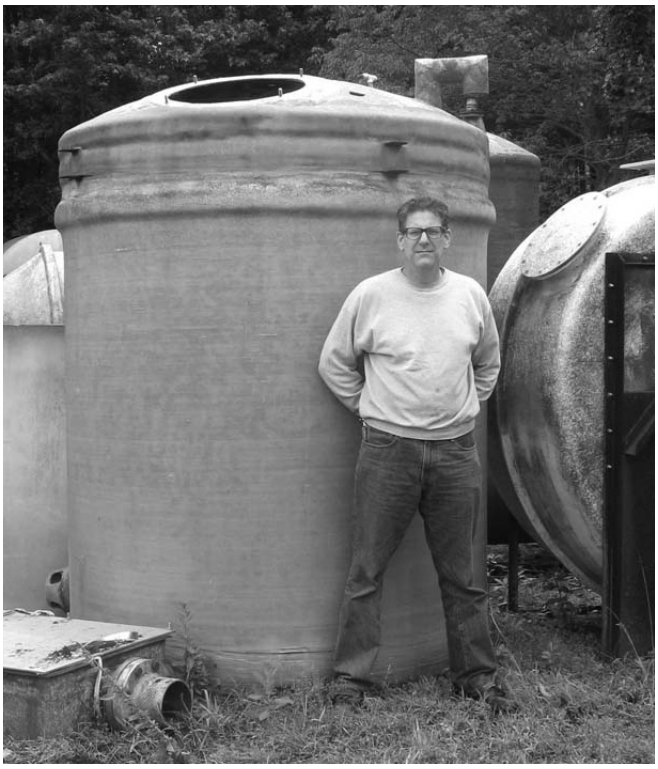
I began looking for used fiberglass tanks online. I quickly found that we could get exactly what we needed for about $1,000. Then, we'd need to fabricate the window frame, select window material, buy fasteners, wood for the display, etc. I decided to divide and conquer. First, let's raise the money for the tank. Then, we'll work on funding the window and frame. Then, move onto funding the exterior display and filter pump. We probably wouldn't need anything very big filter-wise, just something that would handle a small, backyard pool.

Funding the Tank

Raising money for the tank began in 2013 at the Ocean Wreck Divers annual flea market. There we began selling raffle tickets for two pieces of diving related equipment. One item was a set of diver travel luggage and the other was a dry suit inflator system. Both were generously donated by DUI in California. That raffle raised just over $900. Close enough to the goal of $1,000 to cover the cost of the tank. The $1,000 figure was a self-imposed budget. We wanted to raise funds, but we didn't want fundraising to go on and on if we didn't get close enough to our goal. With dollars in hand, we set out to find a used tank sufficient for our needs.

We found what we were looking for at EcReCon, a used process equipment bone yard in Penns Grove, New Jersey. Essentially, the yard contained the guts of shut down or re-tooled processing plants. The place is surreal! It's an adult toy store. If you've ever seen an electric mixing bowl that could process enough dough for a loaf of bread, picture a mixing bowl large enough to process the dough for 5,000 loaves of bread. Whereas the beater bar of the tabletop mixer might be about the size of your hand, the beater bar for this mixer would be the size of a dinning room

table! Everything in this yard was big. Big pipes and valves, big mixers… and big holding tanks. The few I first looked at were anywhere from 10 feet in diameter and 10 feet tall to even bigger sizes. These tanks could hold 10,000 gallons or more.



The author stands beside the tank NJHDA selected.

One in particular caught my eye. A 5,000 gallon tank that wound up simply being way to big for us to afford to ship. It was in-budget, but too big for us to fit in any door at the InfoAge Science Center where our shipwreck museum is located. It would have to be kept outside all year, and that would limit our use of the facility. Something smaller was called for.

I found another tank about six and a half feet in diameter and about eight feet tall. I contacted Fred Barthes, a diver I knew from the Historical Diving Society, and he told me the size was a small, but workable. I then spoke with Herb Segars who advised that the bigger the tank, the bigger the problem. That went for the window we wanted to install, as well. Besides, we might get into a bigger tank down the road, for now, this smaller tank seemed ideal.

Soon after, I returned with friend Mike Golub to pick up the tank. His truck, trailer and know-how made the job easy. Getting the tank onto his trailer was another story. No pushing and shoving the tank up the ramp would do. No, EcReCon provided crane service for that task. Seeing our tank dangling six feet in the air from a single cable was a thrill.

The tank is loaded onto the trailer for transport to the author's home for modifications.

The ride home was fun. We stopped occasionally to check our load. While doing so, we noticed other trucks passing by with loads on them of all shapes and sizes. Some were covered with tarps while others were exposed revealing the strangest shaped devices and contraptions you've ever seen. I said to Mike, "You ever see those guys going down the road hauling strange and unusual things?" He looked right back at me and said, "We're one of them!" It seemed Mike and I had joined an elite club that day. Once home, it took only minutes to slide the tank off the trailer and onto my driveway.

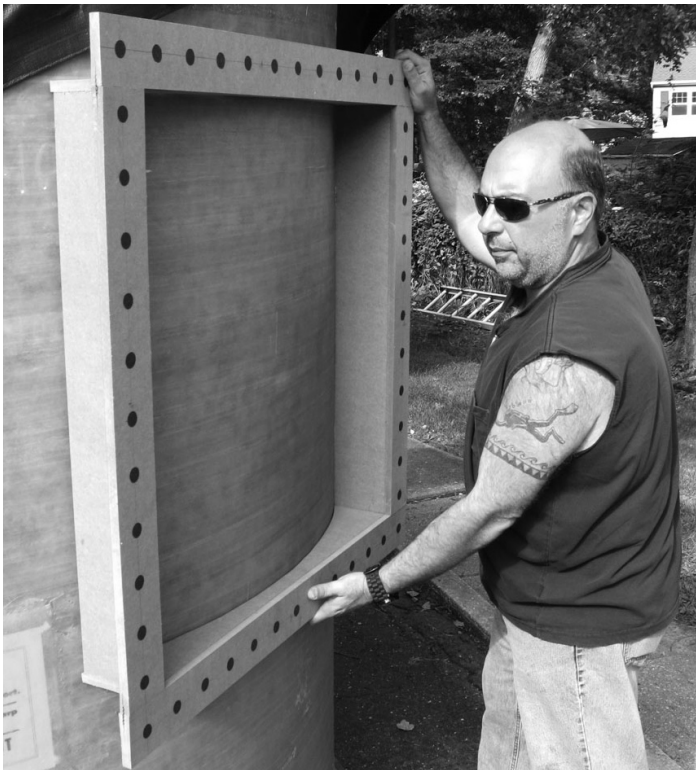
Fellow NJHDA associates Theresa Lieb and Neil Norrell inspected our newly acquired possession. We built a box-like frame around the base and packed it with sand to even out the surface under the tank. The next step was to test it by filling it with water. We knew if it had a leak, Herb could always advise us on how to patch it. It had already been patched several times before, so what's another patch job? Filling it with a garden hose took 5 hours. The dimensions of the tank revealed it would hold approximately 2,000 gallons. The water sat in the tank for two weeks. It barely leaked a drop. There is a small crack in the bottom, but Herb assured us it would be no problem to fix. The valves and cover plates we received along with the tank also held up great. It took only 45 minutes to drain the tank.

The Window Frame

Now it was time to create the final design for the window frame that would hold a large, clear sheet of transparent material. I'd already reviewed the available materials and selected an acrylic sheet one-inch thick. Harry Roecker, a friend and fellow diver, is an engineer. He calculated that we would be on the safe side with one-inch thick acrylic. While he also advised that half-inch bolts spaced three inches apart would be adequate, he was happy we decided on 5/8 bolts to do the job of holding the acrylic in the frame. With that settled, it was time to move on to the design of the frame, itself.

Herb suggested a design that would make adding extra support easier. His design called for a frame with a flange running around the outside. I thought a flange running around the inside would make more sense as the acrylic would press against it, adding to the seal. He pointed out while that might be true, if there was any chance of the acrylic bulging outward, adding a support frame would be easier. He then described exactly how to make the mold, or template, we would use to make the frame. The construction material would be fiberglass, the same material the tank is made from.

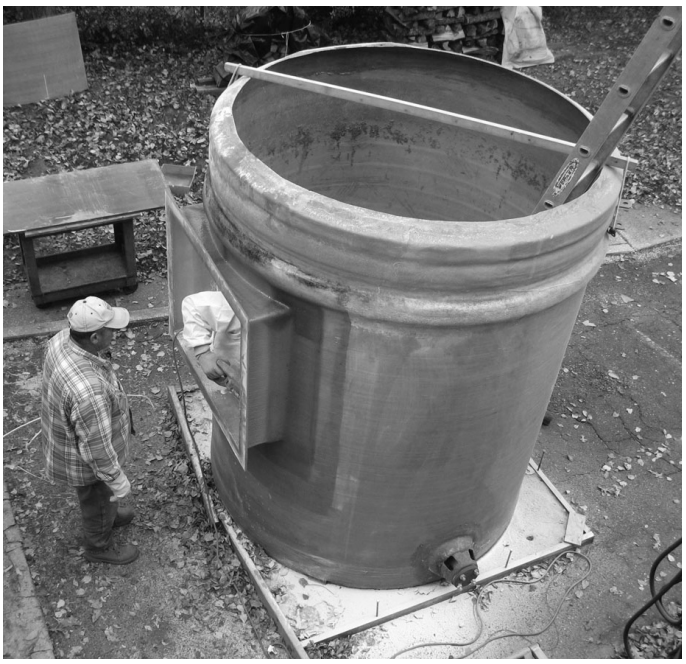
I made the mold as per Herb's instructions. Neil and I positioned the mold on the tank to give us the best idea as to where to place it with regards to the overall height of the tank. Adults and children would need to be able to see in, and the diver would need to be able to see out. We made sure we were happy with the placement for all involved.



Positioning the mockup of the window frame.

After the mold was made, I dropped it off at his facility, Fibrenetics in Woodbridge, New Jersey, so he could wrap it in fiberglass and make the frame. He said it would be easier to have his crew make it up for us than to make it ourselves. Neil and I were up to the challenge, but he insisted. Next, it was time to install the frame. Here, again, Herb decided it was better to have his crew handle the job. I couldn't thank him enough for his generosity. He explained that although he thought we could probably handle it, it was better to have his crew do the job instead of taking us thru Fiberglass 101. He was right.

The men showed up early one morning in the fall ready-to-go. They had me point out the spot to install the frame. They positioned the frame, scored lines around it against the tank itself, and cut a hole in the tank to match. They added layer after layer of fiberglass matting, building up a thick, secure attachment between the frame and tank wall. They worked quickly and were very professional. Jose Santiago did the fiberglassing while Fred Bonkowski supported him, feeding him supplies as he required them. When it was all done only two hours had passed. Jose said he was sure we could have done the job ourselves, but it would have taken us two days. I couldn't have agreed more.

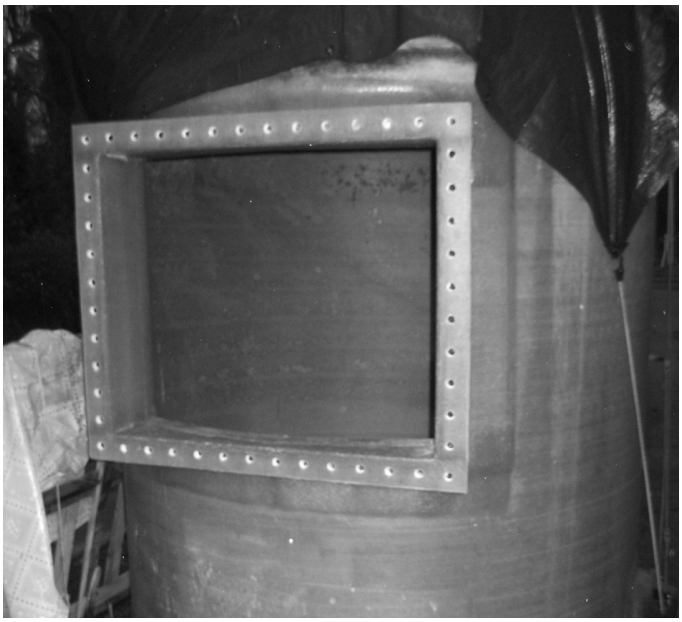


Installing the window frame.

Trimming the frame to the shape of the tank.

Funding the Acrylic and Frame

While the window frame was being made, we used crowd funding to raise the money we needed for the acrylic. GoFundMe was the outfit we decided to use. We were not only able to raise enough to cover the cost of the acrylic, we were also able to cover the cost of drilling the holes and shipping it. Furthermore, the Ocean Wreck Divers diving club wanted to make a significant donation to the project. They covered the basic costs of building the platform needed to get in and out of the tank.



The window frame installed with all bolt holes bored.

When it came to bolting the acrylic sheet to the frame, Herb advised us to use strips of flat metal to spread the load out as far as possible. We used two-inch wide by 1/8 inch thick steel stock to do this. I carefully set up a template on my drill press and drilled 48 holes in the four, long strips. Herb also recommended a gasket manufacture that made a custom gasket for us at a very reasonable rate. We were all set. Now all we needed to do was to deliver the tank to InfoAge and set it all up. The delivery went smoothly, but the set up will have to wait until NJHDA receives its final building assignment.

Delivery to InfoAge

Mike Golub and his sons Adam and Ben, along with Neil and I, moved the tank from my driveway to a building NJHDA uses as a museum support facility. It will be safely stored here until we are able to expand our museum.

The delivery crew: left to right are Neil Norrell, Mike Golub and his sons Adam and Ben.

If we get access to a suitable building, we could operate it sooner than later. That would create a draw for our museum and InfoAge, alike.

Partnerships for Progress: Academic Grants and InfoAge

Beth Ritter-Guth
beth.ritter-guth@ucc.edu • 908-497-4363

Funding museums is never an easy task. Grant partnerships help us to raise the funds we need to impact progressive change. Recently, we have applied for two more grants. The 1776 Historic Preservation grant bid, if funded, will help us restore 75 windows on campus. Another grant through Buckminister Fuller will restore one of the DDUs on campus.

Looking ahead, we have a National Science Foundation (NSF) grant partnership developing between InfoAge, Princeton University, Rutgers University, Union County College, and the Ocean-Monmouth Amateur Radio Club. This grant partnership will provide funding to restore the TIROS dish to working order and will provide funding for student scholarships, research assistantships, and access to this technology to underserved school children.

Another NSF partnership is brewing between InfoAge, Rutgers, and Brookdale Community College. This will help fund a solar classroom to teach children about the future of solar energy and sustainability.

The National Endowment for the Humanities (NEH) also offers some grants that will help restore the Marconi Hotel and other campus structures. The National Endowment for the Arts (NEA) will help support resident artists. Most importantly, we will be working with the Department of Education in NJ to help create grant bids that support teachers and students in Wall Township.

As we look toward sustainable grant funding partnerships, we are also looking to connect with larger museums for support. We are applying to become a Smithsonian partner and a NASA lending site. All of these activities will help InfoAge reach a wider audience, and will provide the necessary support to sustain our mission.

InfoAge
Science/History Center
at Camp Evans, Wall, NJ

InfoAge Science History Learning Center and Museum
2201 Marconi Road • Wall • NJ • 07719

732-280-3000 • www.InfoAge.org

The Newsletter of InfoAge

Inside this issue...

Save The Dates

Ocean Monmouth Amateur Radio Club
Hamfest/Armed Forces Day
Saturday May 17, 2014 6AM to 2PM
2300 Marconi Road, Wall

InfoAge Fine Art festival
Saturday May 17, 2014 10AM to 6PM
2201 Marconi Road, Wall

New Jersey Antique Radio Club
Summer Swap Meet
Saturday July 26, 2014 7AM to 1PM
2201 Marconi Road, Wall

For more information about these events, such as admission costs and times,
call 732-280-3000 *or visit us online at* ***www.infoage.org****.*

The Information Age Learning Center (InfoAge) received a General Operating Support grant from the New Jersey Historical Commission, a division of the Department of State.