

SHOP TALK

*From the Physical Plant Division of the University of Florida
www.ppd.ufl.edu*

Mission Statement:

We create and maintain facilities for the university community.

Chiller Replacement Helps Keep UF Cool

Summertime heat in Florida can be brutal without air conditioning to cool you off on especially sweltering days. The campus of the University of Florida requires a constant supply of cold air throughout the entire year, and especially during the summer months. Physical Plant's Systems Department has taken advantage of the colder part of the year (and accompanying downswing in A/C usage) to upgrade the campus' cooling power for the coming heat wave.

The major source for UF's air-conditioning needs are the chilled water plants on campus, eight in all. Each plant contains large machines called chillers and cooling towers, which remove heat from water using a refrigerant. The chilled water is then pumped across campus through chilled water lines into the buildings, and from there into air handling units. The air handling units contain coils which allow the chilled water to flow through; fans behind the coils blow the cool air coming off the coils through ducts and into rooms to bring the air



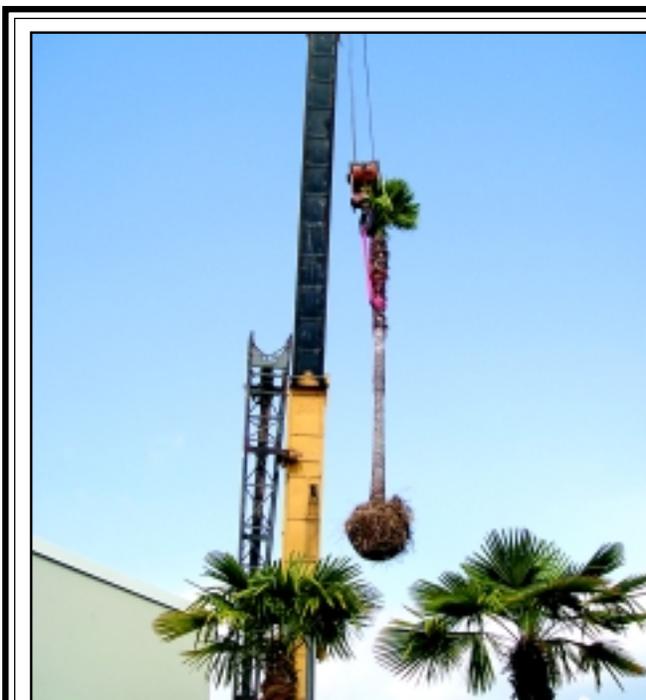
This 3000 ton chiller was recently installed in Chiller Plant II, off Mowry Road.

temperature down as necessary. Finally, after the chilled water has run its course through the air handlers within campus buildings, it is returned back to the chiller plants. It is then pumped back through the chiller, and the process begins again. Meanwhile, the cooling towers dissipate the heat on a separate circuit.

"Chillers have about a twenty-year lifespan," said Maintenance and Construction Superintendent Lacy Rabon of PPD's Systems Department. "This fall, winter and early spring, we've replaced or are replacing five units across campus, includ-

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Still Life With Crane And Tree

A crane operator airlifts a windmill palm tree towards its future home just outside the front doors of the Harn Museum.

The tree was one of three replacement palms recently installed by PPD's Grounds Department at the Harn. Grounds worked with students in UF's Environmental Horticulture program during the procedure.

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Exhibit Illustrates PPD's Involvement With Campus Museum

The Florida Museum of Natural History, formally established on the University of Florida campus in 1917, is an excellent public resource for observation and education on natu-

ral resources, pre-historic archeology, and human cultural heritage. Visitors to the museum can browse many fascinating, intricate exhibits dealing with a wide range of subjects. Much work goes on behind the scenes of these exhibits in order to keep the museum in top working order, and Physical Plant's HVAC Department is one of the biggest contributors to keeping things running smoothly.

Maintenance Specialist Tim Noland said, "The museum is a critical building for temperature control – there are so many artifacts there that have to be preserved in specific ways."

"We have such a high range of climate sensitivity here," said Charlene Smith, Office Manager at the museum. "Every exhibit is unique – for example, we have historic objects made of wood in some locations, and the humidity must be kept higher in those areas to help preserve the wood. Conversely, other exhibits contain metal objects, such as ancient swords or axes, and these areas have to have lower humidity levels in order to keep the metals from rusting."

Besides its regular fixed exhibits, the museum routinely brings in "traveling" exhibits for limited periods of time. These exhibits are usually rented from other museums around the country, and frequently carry stringent requirements as to climate



Maintenance Specialist Tim Noland in front of the chocolate exhibit which he helped bring to UF.

control. A recent traveling exhibit detailing the history of chocolate serves as a good example of the meticulous work that Physical Plant puts into helping maintain such displays.

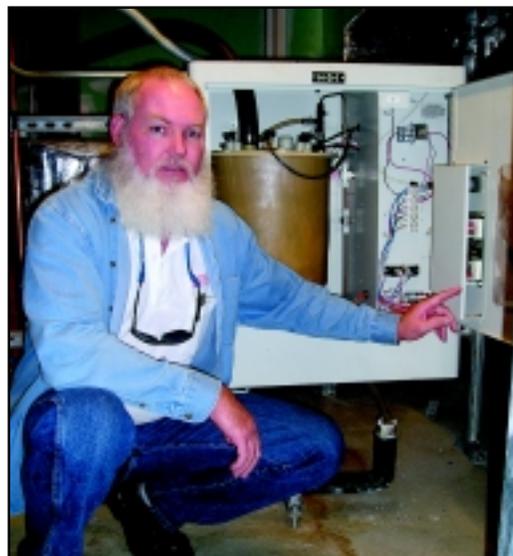
"This particular exhibit came to us from the Field Museum of Chicago," said Tom Kyne, FMNH Traveling Exhibits Coordinator. "In order for us to be able to host the exhibit, the Field Museum required that we submit extensive proof that our museum had the necessary climate controls and humidity range to keep the exhibit in good condition."

Tim Noland added, "I monitored the temperature and humidity very closely in the hall where the chocolate exhibit was to be displayed for over a year before we were approved to display it. I submitted these results to the museum staff in report form, and they forwarded the reports to the Field Museum. Also, in order to make sure the building's systems were up to the task, we upgraded several humidifier units. Finally, after the exhibit arrived, I did weekly climate evaluations, keeping close watch on any fluctuations or situations that might arise."

"Tim has really been a great help to us over the years that I have been here," said Smith. "He responds immediately to our calls, can troubleshoot virtually any problem we might have, and always provides friendly, pleasant service."

"With the museum being such an important building in terms of climate control, it's a big responsibility for our department, and one that I feel we handle well," said Noland. "They rely heavily on us to make sure that space is environmentally ready for these exhibits – not just certain halls, but the entire building."

For his efforts in helping to acquire and maintain the chocolate exhibit, Tim was nominated for a Superior Accomplishment Award.



Tim points out one of the new humidifiers installed in the museum's upstairs mechanical room. The humidifiers help keep humidity constant in the building.

PPD Works With Students On Tree Removal

Physical Plant performs many services to the University community, most of which are designed to go un-noticed. However, from time to time PPD departments have the chance to interact with staff or students in a more visible manner. One such instance of this was the recent removal and replacement of several dying windmill palm trees in front of the Harn Museum, in which PPD collaborated with UF's Department of Environmental Horticulture and gave students some "hands-on" experience in landscaping.

Landskeeping/Groundskeeping Supt. Marty Werts said, "We had two dead palm trees there and one that was stressed really badly, and we wanted to remove them and get that situation taken care of. At the same time, (Harn Museum Director) Rachel Nagy had talked to some people from the Department of Environmental Horticulture and they wanted to use this opportunity to give a couple of their classes a chance to get some real world experience with this type of problem."

"Our department head, Dr. Terrill Nell, came to myself and Dr. Ed Gillman," said David Sandrock., Asst. Professor at Environmental Horticulture. "He told us the situation with the palms at the Harn and that Rachel Nagy had discussed it with him, and asked if we could look at it and evaluate its potential for a case study involving my Landscape/Turfgrass Management class and Ed's Arboriculture class. After we decided we were interested, we got together with Marty and outlined how we'd like to be involved in the project. PPD had already scheduled the trees for replacement, but they were very receptive to working with us and allowing us to get the students involved."

The professors had their classes evaluate the site and draw up their plans for the way the situation should be handled. The students then attended the actual tree replacement, performed by Physical Plant's Grounds Department, and Werts talked to the class and answered questions regarding the procedure. Sandrock and Gillman also plan to have their students monitor and observe the site and offer their input on how the trees should be managed over time.

"We really wanted to be able to keep the windmill palms out front, because they complement the architecture of the museum very well," said Nagy. "We're very excited that PPD and Environmental Horticulture were able to help, and the front of the museum looks so much better."

CHILLERS Cont. From Pg. 1

ing a 3000 ton Trane Duplex chiller at Chiller Plant II (west of Shands Hospital on Mowry Road). That's the largest chiller we've ever had to replace during my time here – the average chiller capacity on campus is about 1200 tons. Every chiller



The chilled water pipes running from the chiller are insulated with a foam/glass hybrid material, and then wrapped with an aluminum casing, to prevent energy loss and "sweating" from the pipes.

we've replaced is being replaced with a larger unit to increase our capacity. This campus keeps expanding all the time, and as new buildings come online we need to be able to stay ahead of the curve in meeting their heat and A/C needs, and increasing our chiller capacity allows us to do that."

Rabon, who oversees the operation of all UF's chiller plants, said that while the replacement period somewhat limits the cooling capacities of the respective plants, PPD's consumers will not notice any interruption in their air conditioning service. "We planned this operation for the months when our heat and air conditioning load is the lightest," he said. "We don't plan to have any interruptions in service even with the replacements going on – in the event of an emergency or spike in A/C usage, most of our chiller plants are interconnected, and we can open a few valves here and there and even out the load."

The list of replacement chillers includes three new chillers at Chiller Plant II, including the giant Trane chiller; a new chiller at the Southwest plant

(serving the Harn Museum area); and a new chiller is set to be installed at the Weil Hall Plant at the beginning of April.

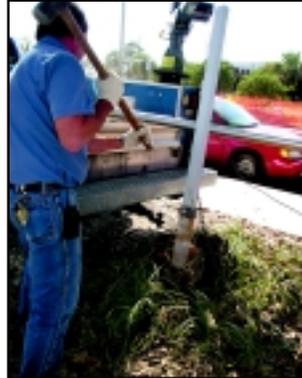
"With these new, larger chillers, our cooling capacity is better than ever," said Rabon. "Our customers can look forward to another summer at UF with ice cold air conditioning at their fingertips anytime they need it."

Ralph Giro, Assistant Director of Systems, added, "These replacement chillers are more efficient and environmentally friendly than their predecessors, which supports the University of Florida's efforts to become a global leader in sustainability."



Physical Plant Division
Personnel Services
PO Box 117700
Gainesville, FL 32611-7700

PPD Handles Speed Limit Sign Installation



Physical Plant has been hard at work replacing the old speed limit signs on campus with newer, easier to read signs. PPD Sign Shop employees Chris Roberts and Jim Tremplar have removed twenty-five old signs and installed new ones in their place. Here, they take you through removal and installation of a sign near the entrance to campus at Center Drive and Archer Road.

(1) Chris (left) and Jim break the old sign loose from its posts. (2) Using a 2000 pound winch attached to their work truck, the men pull the posts (which are rooted in cement) out of the ground. (3) When one post refuses to come quietly ("Some of these old ones have close to 200 pounds of concrete attached to them," says Chris), Jim uses a sledgehammer to speed the process. (4) After removing the old sign completely, Chris digs a hole for the new sign, then (5) sets it in place, measures the distance from ground to sign, and levels it off. (6) Jim then comes behind him and dumps concrete and water into the hole to anchor the new sign. (7) Jim and Chris beside the finished product!

