Georgia Chapter of APPA

Leadership in Educational Facilities

GAPPA News

September 2012

"People, Planet, Profit: Laying A Foundation for Tomorrow"

Jekyll Island new look! **The new convention center successfully hosted GAPPA 2012 Conference. Hurricane Beryl with 75 miles per hour wind forced attendees inside where they enjoyed spending more time with the vendors.**

We had 100 booths, 33 sponsors and plenty of attendees. GAAPA Board of directors approved twenty stipends at $800 each to help with conference registration fee and the travel expenses. The musical group Grape Vine entertained the crowd at Tuesday's banquet.

For a sample of photos from the convention, please check GAPPA web site. Then select Annual meeting: www.gaapa.org

"The 61st Annual SRAPPA Conference, "Connections" is going to be held in Lexington, Virginia on October 13-16, 2012. The 2012 event is being co-hosted by Virginia Military Institute's Physical Plant and Washington and Lee University's Facilities Management Office and will be held at numerous facilities on both campuses just a short walk into historic downtown Lexington." The web site is http://srappa2012.com/

Basis for Energy Savings from VFDs

How does variable frequency drives (VFD) work ?

All electrical power that is sent from the utilities runs at a certain frequency. This frequency is called a hertz. Most generally, the frequency that is delivered is 60 cycles per second, or 60 hertz (Hz). A hertz is best described as a full cycle or sine wave of electrical power. This is where the alternating current goes from zero to a maximum positive voltage, back to zero again and then to a maximum negative voltage and back to zero.

Variable frequency drives take advantage of this characteristic of electrical power by being able to slow down or speed up the cycles in one second or the frequency. Through a series of capacitors, diodes and an imbedded computer chip, the frequency drive is able to modulate speed while still delivering the full torque of power to the motor. The drive is able to not only vary the amount of frequency, but can also regulate the voltage that is being sent to the motor. It does this by delivering a full current to the motor. The current has a direct correlation to the amount of power that is delivered to the motor.

Principles behind making VFDs beneficial

For centrifugal (radial flow) pumps and fans, the affinity laws predict the impact of changes to certain operating parameters. We will concern this article to the fact that the break horsepower (BHP) varies as the cube of the speed (N). This means a small reduction in speed (N in RPM – rotations per minute) can produce a much larger change in horsepower.

BHP2= BHP1* (N2^3/N1^3)

From this we can see, if N2 goes down BHP2 will go down, but more so. These conditions would hold true for similar type fans.

Applications suited for the use of VFDs

For the VFD to be beneficial in reducing energy consumption, the possibility must exist for the pump or fan to operate at speeds slower than maximum speed or just operate at varying speeds. The chilled water (CHW) pump for a building using (CHW) for comfort cooling will serve as a good example. Here is a typical pump curve.

Fig. 5 below shows that the head curve for a radial flow pump is relatively flat and that the head decreases gradually as the flow increases. Note that the brake horsepower increases gradually over the flow range with the maximum normally at the point of maximum flow.

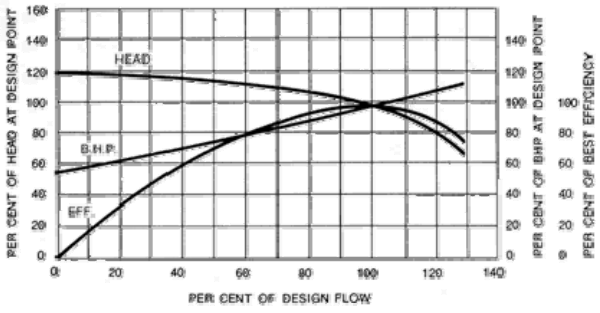

Fig. 5 Radial Flow Pump

Fig. 8 below shows a typical pump curve as furnished by a manufacturer. It is a composite curve which

(Continued from page 2)

tells at a glance what the pump will do at a given speed with various impeller diameters from maximum to minimum. Constant horsepower, efficiency, and NPSHR lines are superimposed over the various head curves. It is made from individual test curves at various diameters.

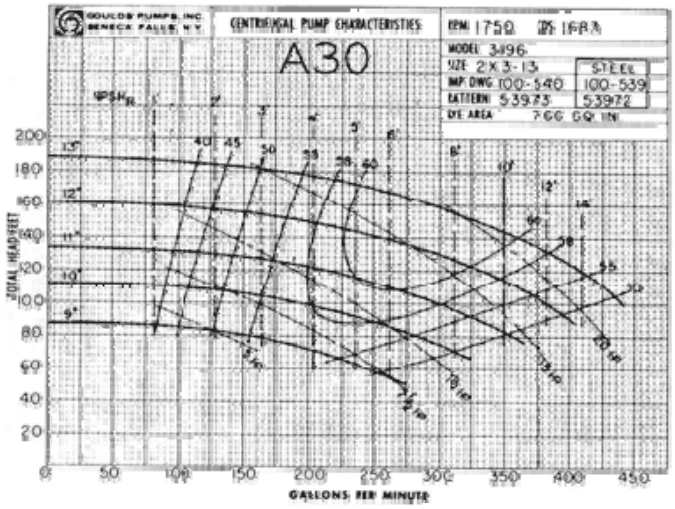

Fig. 8 Composite Performance Curve

The demand for chilled water throughout the year, the month, and the day will vary and the pump (& control system) must be able to vary the flow to meet the current need. The classical approach has been as demand decreased a control valve would close restricting flow, but increasing pressure or resistance for the pump to push against with the net effect being a decrease in flow. Follow on the sample graph above. If the pump was being asked for 100 GPM, it would see a resistance of 100 ft of head-pressure. As the flow demand decreased from the closing control valve, it would follow the head line (H-pressure – Flow curve) toward zero. As less horsepower is required, the efficiency suffers significantly

A VFD allows the motor (& effectively the pump) to slow the entire graph above changes. The new system graph will have new curves and the operating points similar to the original points on the first graph (relative to flow, BHP & efficiency). Thus reducing energy and maintaining efficiency.

References:

http://www.ehow.com/how-does_5191973_three_phase-motor-works.html

http://www.ehow.com/facts_7248750_do-phase-ac-motors-work_.html

http://www.ehow.com/how-does_4922386_variable-frequency-drives-work.html

http://www.gouldspumps.com/cpf_0009.html

Report submitted by Michael R. Leasure, PE
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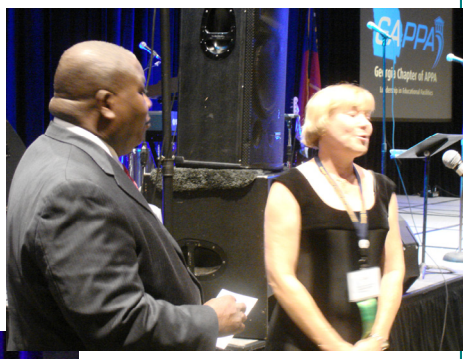
Eddie Woodhouse is retiring

A good bye and much gratitude to Eddie for all service he provided to GAPPA over the years. At the annual meeting, everybody wished Eddie a pleasant retirement.

Even though Eddie will retire from Columbus State University as Vice President fr Facilities, he plan to continue his involvement with GAPPA.



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Board Members Recognition
(2012—2014)

Congratulations to the new GAPPA Officers from Left to Right: Rod King, vendors rep; Casey charepoo, Ga Tech; Bill Halabi, Ga Tech; George Smith,Ga Southwestern; Todd Bermann, North Ga College; Harbin Farr,Waycross; Art Frazier, Spellman College; Ralph Johnson,University of Ga; Eddie Woodhouse,Columbus State.

Have you Checked gappa.org? It is full of information about our business partners, our annual meetings presentations, a ton of photos, job postings, and the history of GAPPA.

GAPPA.org

North Georgia College and State University and Gainesville College To Merge

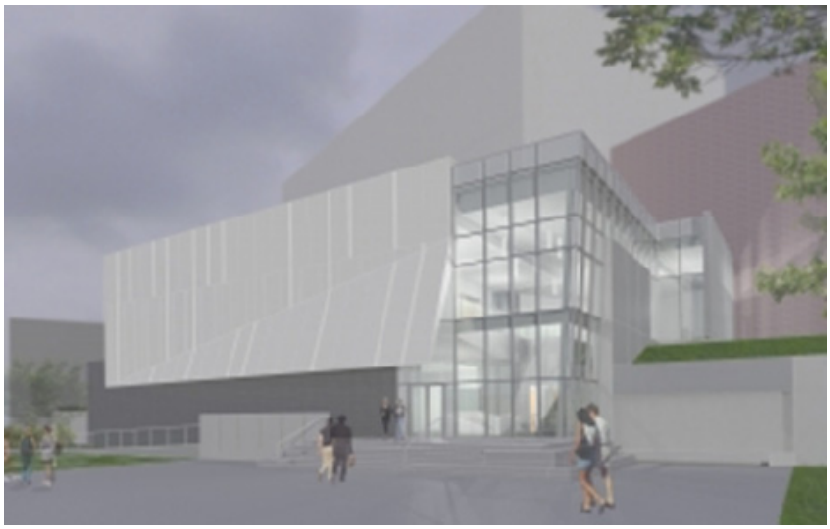
The Board of Regents of the University System of Georgia elected in January, 2012, to consolidate Gainesville State College and North Georgia College & State University to enhance higher education and degree completion opportunities for Georgians. The consolidation is expected to become effective in January, 2013. The official name of the combined universities has been released and will be the University of North Georgia. Our consolidation is one of four being implemented across the state. The new university logos, colors, and mascot have yet to be determined.

As far as the Plant Operations / Facilities organizational structures are concerned, it is anticipated that both GSU and NGCSU Plant Operations divisions will remain mostly intact as currently organized after the consolidation takes effect in January. In this scenario, both Directors of Plant Operations will be reporting directly to the AVP of Facilities for the new University. The final complete organizational structure of the new Business and Finance Department has not been released yet and is still under consideration by the Consolidation Implementation Committee.

Source: North Georgia College and State University Website

GAPPA Donates $1000 to "Save The Turtle Foundation"

New Construction at Kennesaw State University



The Science Laboratory Building is a five story, 74,203 square foot laboratory addition to the existing Science Building. It is nearing completion with the ribbon cutting scheduled for October 25.

The addition will provide space for the College of Science and Mathematics biology, biochemistry, biotech and chemistry departments instructional and research laboratories. It will include 15 biomedical research labs, 7 teaching labs, 26 faculty and administrative offices, 4 conference rooms and 4 data server rooms. The labs feature chilled beam systems, a first for KSU. The building is designed to LEED Gold certification level.

Construction has also begun on the Bernard A. Zuckerman Museum of Art which is an addition to the Dr. Bobbie Bailey & Family Performance Center. When complete the building will serve as the principal art museum on campus. It will be a two story and 9,000 square foot structure with a sculpture gallery, an exhibit gallery, art storage and preparation spaces. Ground breaking is scheduled for September 26th and construction is expected to be complete in April of 2013.

Minor Losses Can Equal Major Repairs

By Chad Jenkins, North Ridge Restoration

We all know that it is common to have a leaking pipe, a toilet overflow, or a slow leak from a drain line in all commercial buildings. What we are not aware of is the devastating effect that those issues have (if not treated properly) on the "health" of a commercial building.

Today, buildings are constructed with tight envelopes and new green material for insulation. This method creates a lot of dead air space. You wouldn't think a simple slow leak be a big deal. Ceramic tile, grout, and sheet rock are porous which means they can absorb moister.

If the source of the water goes undetected for awhile, the wall cavity can become saturated or even hold water. If the drywall stays saturated and not mitigated correctly, the wall cavity becomes a breeding ground for microbial growth.

In most commercial restrooms an egg shell or latex paint is common. This type of paint is used in these areas to help resist high humidity and some direct affects of water. This type is basically a layer of plastic over the drywall. The water wicks (soaks) up from the bottom, and it cannot travel back out.

In most cases, you would never know the affects of this particular water loss. These little problems become a major deal because of improper mitigation. This will result in doubling the original projected dry time. If the projected dry time is 3-5 days, you can count on that becoming a 7-15 day microbial remediation job.

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Waycross College

Founded in 1976, Waycross College is an associate degree institution within the University System of Georgia. The College offers 15 programs of study along with cooperative programs from four-year colleges and universities. Students receive a strong academic foundation that will help them achieve their ultimate college and career goals. The attention, support and guidance offered by Waycross College faculty prepare students for a smooth, successful transition into the next phase of their academic journey. In addition to academics, students enjoy plugging into clubs and organizations as well as supporting Swamp Fox athletics. Men's basketball was established in 2009, and women's softball followed in 2010.

Waycross College has 136,714 square feet of building space situated on approximately 153 acres of beautifully wooded and landscaped property. The property includes two lakes, fitness and walking trail, tennis and racquetball courts, and a gymnasium. The campus abounds with flora native to Southeast Georgia and the local area.

Current Physical Facilities

The current campus buildings include:

Administration Building

Educational Building

James Dye Student Center

Physical Education Building

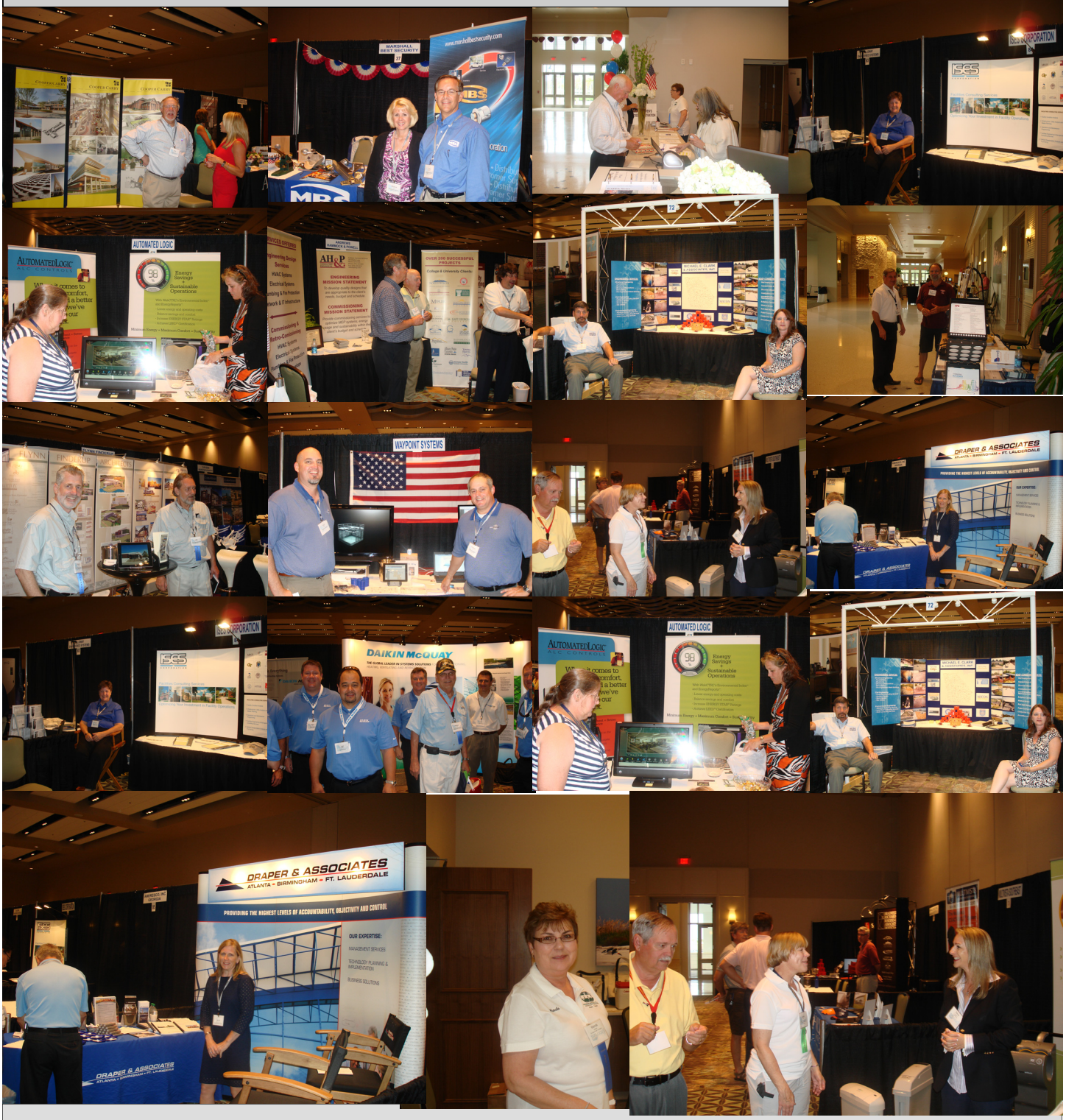
Physical Plant Building

GAPPA 2012 Annual Meeting

Trade Show


Carrier
CPPI
WAYPOINT SYSTEMS
MBS
DAIKIN McQUAY
PARRISH
High Performance Academic Builder

Trade Show



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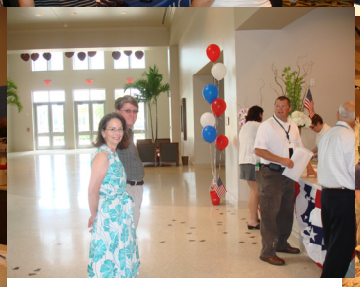
GAPPA 2012 Annual Meeting













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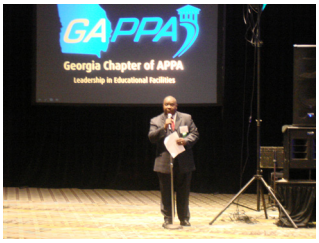
GAPPA Annual Meeting



It Is All About Education and One Man's Journey

Following high school in 1956 I began a ten-year career with General Telephone and Electronics in Marion, Ohio. I began as a Lineman progressing to a Senior Engineer. During that time, GTE instituted a training program for College Graduates. This group of men spent a period of time in each department being trained by the employees in the various positions and at the end of the program they were placed in supervisory positions. As I participated in the training of this group I found myself very uncomfortable training someone who might become my boss. At this point I submitted an 'Employee Suggestion' suggesting the Company award a .05 cent and hour increase in salary to each employee at the successful completion of an advanced education course related to the job. GTE responded with what is known as the 'Tuition Reimbursement Program' where any employee who completed a college class with a grade of C or above could be reimbursed for the cost of the class.

Thus began my college career. I began at The Ohio State University Branch Campus and then a year in the Army found me at Fort Stewart, Georgia and taking classes at the University of Georgia. At this point GTE wanted to move me again back to the central office and I declined and became an employee of Ohio University in their Physical Plant Department as Telephone Communications Manager. Here I completed my BBA in 1970 and was open to new horizons. I left OU to join Virginia Commonwealth University to become Assistant Registrar. I also completed my MBA during this time.
1976 my family and I what went to West Georgia College where I was the Registrar. Here again we established a computerized Student Information System and upgraded administrative operations. In 1985 I moved to the Physical Plant Department as Assistant Plant Director where MIS and an Energy Management System for the campus was my focus. I remained in Physical Plant and IT until retiring in 2000.

GAPPA was established in 1984 and I have been attending since 1985 I have been privileged to participate every year to date along with my wife, children, and grandchildren. The first meeting at Unicoi State Park in Helen, GA, then moved to Jekyll Island and the Holiday Inn for many years and then to the current location.

Again, GAPPA is all about education and renewal and being able to take back to our institutions the newest information available in improving and maintaining our facilities, the latest in architecture, and the most up-to-date information in landscaping. Hearing speakers we would never have had the opportunity to experience on our own. Sharing experiences with employees from other institutions and solving problems collectively. Over the years I have never left a GAPPA meeting that I was not enriched, refreshed, and excited about the wonderful information I had to take back to my campus. I think the thing I will treasure the most about my GAPPA meetings is the life-long friends my family my family and I have made over the years.

Well, I retired in 2000 and continue working on my farm of 43 acres raising a few cattle, cat fish, making hay and have built a three hole par-three golf course. I also spend a lot of hours mowing a lot of grass. I attend a local coffee group named the "ROMEO" Club (Retired Old Men Eating Out) where we solve the problems of the world and I also continue to play Golf with the West Georgia Seniors. My wife and I have taken several cruises and continue to visit our Ohio relatives at least once a year. Some of you may remember our grandchildren coming with us to the GAPPA meetings but as you know they all grew up. Carlee is 20 and she will be a Junior at Kennesaw State University studying Communications and Citizens Media. Sam is 14 and going into the 9th grade. He is our baseball player.

I would encourage employees to take advantage of every educational and social opportunity offered in their area of expertise. It will pay big dividends in their career.

In closing please let me pay tribute to the founders of the GAPPA organization. These men had certainly the forsight in their planning and understood the need for employees from all institutions to come together and share and learn and grow together.

Thanks for asking

Merald E. Thomas (Tim)
University of West Georgia Facilities, Retired