

ASSEMBLY REQUIRED

August 2024



THE WATER COOLER

The PEPM Group is completing the new Fulton thermal heater engineering project for a poultry processing and prepared food facility this month. PEPM provided the mechanical engineering for the new Fulton heater and pipe stress analysis using CAESAR II for the 8" x 200' thermal fluid pipes, and structural engineering for the Fulton building, as well as electrical engineering and 3D modeling and drafting. In addition, PEPM provided technical support for permit and fire suppression system and construction administration.

The PEPM Group is starting a bird chiller and red water chiller project for a poultry processing facility in Carthage, Texas this month. PEPM will provide full engineering services including structural, mechanical, ammonia refrigeration, and electrical engineering. As part of turnkey engineering services, PEPM will also provide 3D scanning and 3D Revit modeling and drafting services.

The PEPM Group is providing engineering analysis for natural frequency and structural engineering for two large cooling towers this month. The PEPM Group is a leading engineering company, specializing in large and complex air cooling tower engineering, including structural and mechanical engineering, stress analysis, and FEA analysis for projects throughout the U.S., including Alaska, and internationally from Canada to France and China. PEPM just completed engineering for multiple gigabay cooling towers, one the largest cooling towers in the industry.

For your structural, mechanical, electrical engineering, 3D modeling, and drafting needs, contact jpascual@pepmgroup.com, yzhang@pepmgroup.com, and admin@pepmgroup.com. The PEPM Group is a full engineering service company specialized in food process and energy industries and a leading engineering company for plantwide ventilation and air studies and has provided more than 30 ventilation and air study evaluation projects for multiple customers throughout the country.

ENGINEERING INSIGHT

Food Processing Plant Ventilation 9:

General

- Intakes are not near any combustion or noxious (rendering) exhaust stacks.
- UBC - Place the intakes lower than the exhaust stacks – 3ft min or raise stacks – 10ft above roof line (ARL).

ASHRAE – causes of poor IAQ

- Inadequate ventilation
- Poor intake and exhaust locations
- Filtration
- Intermittent airflow
- Poor air distribution
- Maintenance
- Excess exhaust

Possible harboring of Microbiological activity.

- Prevent buildup of moisture in occupied spaces (relative humidity of min 60% or less).
PROPER CLEANUP.
- Prevent moisture collection in HVAC components.
- Remove stagnant water and from mechanical equipment.
- Avoid use of water sprays in HVAC systems. Swamp coolers!
- Use filters with a min 50-70% collection efficiency rating.
- Find and discard microbe-damaged furnishings and equipment. We have successfully flooded a process area with Ozone.
- Provide regular preventative maintenance.



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WE ARE HIRING!

For a long-term fulfilling career, a caring, encouraging, and respectful working place, contact PEPM. Apply today at

www.pepmgroup.com/careers

- Lead or Senior Structural Engineer (Tulsa, OK) - 5+ years of experience. PE required.



IN THE KNOW...

August was named in honor of Emperor Augustus in 8 BC. The month was previously called Sextilis (Latin for sixth) as it was the sixth month of the 10-month-long ancient Roman calendar.

1981 Don Estridge unveils IBM's first personal computer, the IBM PC, at New York's Waldorf Hotel.

1942 The Manhattan Project commences with the aim of developing an atomic bomb.

1926 Weather map televised for the 1st time.

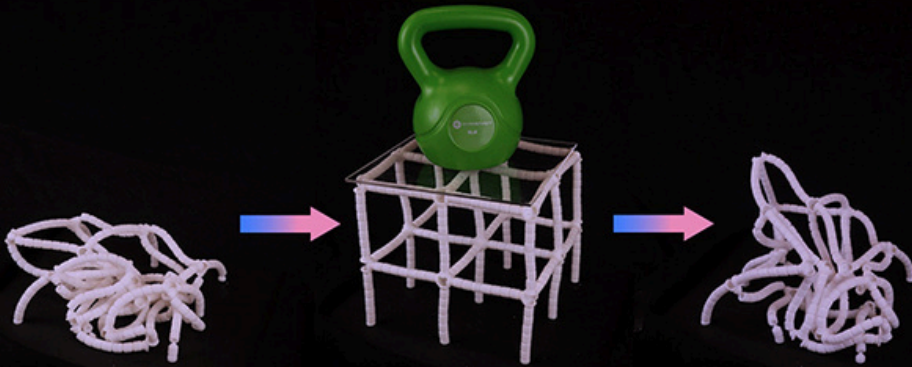
1908 Ford Motor Company builds its first Model T Car.

1903 Joe Pulitzer donates \$1 million to Columbia University & begins the Pulitzer Prize in America.

1888 Inventor William Seward Burroughs patents the adding machine.

1774 English chemist Joseph Priestley discovers oxygen by isolating it in its gaseous state.

1609 Galileo demonstrates his first telescope to Venetian lawmakers, including to the Doge (ruler) of Venice, Leonardo Donato.



ENGINEERS MAKE TUNABLE, SHAPE-CHANGING METAMATERIAL INSPIRED BY VINTAGE TOYS

Common push puppet toys in the shapes of animals and popular figures can move or collapse with the push of a button at the bottom of the toys' base. Now, a team of UCLA engineers has created a new class of tunable dynamic material that mimics the inner workings of push puppets, with applications for soft robotics, reconfigurable architectures, and space engineering.

- Inside a push puppet, there are connecting cords that, when pulled tight, will make the toy stand stiff. But by loosening these cords, the "limbs" of the toy will go limp. Using the same cord tension-based principle that controls a puppet, researchers have developed a new type of metamaterial, a material engineered to possess properties with promising advanced capabilities.
- Published in *Materials Horizons*, the UCLA study demonstrates the new lightweight metamaterial, which is outfitted with either motor-driven or self-actuating cords that are threaded through interlocking cone-tipped beads. When activated, the cords are pulled tight, causing the nesting chain of bead particles to jam and straighten into a line, making the material turn stiff while maintaining its overall structure.
- The study also unveiled the material's versatile qualities that could lead to its eventual incorporation into soft robotics or other reconfigurable structures.
- "Our metamaterial enables new capabilities, showing great potential for its incorporation into robotics, reconfigurable structures and space engineering," said corresponding author and UCLA Samueli School of Engineering postdoctoral scholar Wenzhong Yan. "Built with this material, a self-deployable soft robot, for example, could calibrate its limbs' stiffness to accommodate different terrains for optimal movement while retaining its body structure. The sturdy metamaterial could also help a robot lift, push or pull objects."

The HOT SPOT

AUGUST

AWARENESS DAYS



Feeding Mushrooms to Broilers Could Reduce Waste, Cost

Adding a byproduct of the button mushroom industry to broiler diets could boost sustainability efforts and save...

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Breeder Hen Diets Could Improve Progeny Performance

Broiler breeder hens fed an omega-3 supplement hatched progeny with increased body weight, breast weight and...

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Balance Needed in Poultry and Egg's Antibiotic Usage

Finding the right equilibrium of antibiotic usage in the poultry industry will reduce confusion on antibiotic related labels...

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New Construction Technology Releases: August 2024

From a smaller drywall robot to tech that helps builders comply with tougher green construction standards, this month's fresh...

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US Hotel Construction Pipeline Grows to New Highs

In Q2 2024, hotels in the total pipeline grew 9% annually, with extended stay remaining popular and upper midscale...

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WE WANT YOUR FEEDBACK!

endurgjöf (*Icelandic for feedback*)

To ensure a great newsletter, let us know what you think! Your ideas and stories can make this newsletter a truly engaging experience. Send your suggestions to yzhang@pepmgroup.com. Your feedback is greatly appreciated and valued!

GET PROPOSAL



Have questions about MEP, CSA, industrial refrigeration, process design, architectural,

or project management? Contact PEPM Group at yzhang@pepmgroup.com, admin@pepmgroup.com, call (918) 895-6766, or visit www.pepmgroup.com.

- AUG 1** Homemade Pie Day
- AUG 2** Computer-Aided Design Day
- AUG 3** Disc Golf Day
- AUG 4** Assistance Dog Day
- AUG 5** Green Peppers Day
- AUG 6** Farmworker Appreciation Day
- AUG 7** Lighthouse Day
- AUG 8** Cat Day
- AUG 9** Polka Day
- AUG 10** Bowling Day
- AUG 11** Sons and Daughters Day
- AUG 12** Truck Driver Day
- AUG 13** Left-Handers Day
- AUG 14** Navajo Code Talkers Day
- AUG 15** Best Friends Day
- AUG 16** Roller Coaster Day
- AUG 17** Honey Bee Day
- AUG 18** Helium Discovery Day
- AUG 19** Potato Day
- AUG 20** Lemonade Day
- AUG 21** Senior Citizens Day
- AUG 22** Bao Day
- AUG 23** Buttered Corn Day
- AUG 24** Can Opener Day
- AUG 25** Park Service Founders Day
- AUG 26** Dog Day
- AUG 27** Petroleum Day
- AUG 28** Bow Tie Day
- AUG 29** Lemon Juice Day
- AUG 30** Beach Day
- AUG 31** Bacon Day

