

## 40 Under 40

**Talent, dedication, energy: These words just scratch the surface when describing the young 2009 award winners.**

*By Dawn Reiss, contributing writer, and Amara Rozgus, senior editor -- Consulting-Specifying Engineer, 5/1/2009 1:00:00 AM*

The 2009 40 Under 40 winners are among some of the best and brightest minds in our industry. They've created in problems, both in North America and abroad. These young geniuses have won awards and risen quickly to the top projects—and their companies—into the spotlight.

But each person is more than just an engineer or a building professional. They give their time to local charitable or engineers, and work to enhance the industry by thinking differently. These winners have been molded by their upbringing on to younger professionals. This year's crop of winners is very diverse: they're musicians and athletes, scientists, fathers, writers and entertainers.

The following pages will make you think outside the box, remind you of what you can do to help others, and push you to what your age.

To nominate a young engineer next year, visit [www.csemag.com/40under40](http://www.csemag.com/40under40).



### Christian Agulles, PE, LEED AP, 38

Vice President, WSP FLACK+KURTZ, Las Vegas

New York Institute of Technology, BS Mechanical Engineering

Engineers are known for being resourceful, and Agulles certainly knows how. When he's not sleeping, he sings Motown "lullabies" of Al Green and Sam Cooke. When he's not overseeing a team of 17 as WSP FLACK+KURTZ's Vegas office director. As the lead HVAC engineer at the U.S. Embassy in Berlin, Agulles put his ingenuity to work again. The 200,000-sq-ft embassy sits on the historic site of the original U.S. Embassy near the famed Brandenburg Gate. Due to the site, this embassy did not match any of the standards applied to other embassies, which focus on constantly moving airflow to help keep trapped people safe. To prevent the migration of smoke from where the fire starts, forcing Agulles to lead HVAC engineer on projects like Miami's American Airlines Arena, Dallas' Alamodome, and Puerto Rico. Outside of work, Agulles, who has competed in Olympic-distance triathlons, enjoys spending time with his sons, vizsla dog Barclay, and wife Suzy.

### Kelly Altes, PE, 31

Senior Structural Engineer, KJWW, Des Moines, Iowa

Iowa State, BS Civil Engineering

"My job can be very high stress," said Altes, the structural department supervisor who enjoys kickboxing. "So I like to



Her other way to de-stress: watching reality and gossip shows. "I just can't get wreck," she said with a laugh. An avid skier with her husband Jonathan, Altes found the fun in structural engineering with gum drop and spaghetti-stick towers she built. Challenges came with the two-story, 130,000-sq-ft expansion and 144,000-sq-ft addition. The school had multiple floor elevations and existing drawings from previous renovations. Stairs with their numerous reference points. The biggest surprise came when the team found the future site of the addition—found two old heating fuel tanks. Because the fuel tanks had to be removed, shoring of the existing gym footings had to be completed prior to removal of the tanks. Altes played a role as the lead structural engineer for the Manifold Building, a part of the \$200-million addition that includes a 2,400-ton lake-coupled geothermal system.

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### Sachin Anand, PE, LEED AP, 36



Co-Owner, Principal, dbHMS, Chicago  
Delhi College of Engineering (India), Bachelor of  
MS Mechanical Engineering

Anand came to the United States in 1994 to pursue a master's degree in engineering. He worked for a heating, ventilation, and cooling design company—which he says he grew from 15 to 35 in 3 years. "Everyone outside of India is like, 'You're from India? You must be milk and honey,'" he said. "I was fascinated by the culture of the United States." Anand, an engineer who worked for India's Army Corps of Engineers, was drawn to energy modeling, finding "simple and elegant ways to do things." He says he's bringing back the old ways of doing things. Anand, an adjunct architecture professor at the University of Illinois at Urbana-Champaign, is Webber Landscape's LEED Platinum certified landscape architect. He says he can earn the \$1.80/sq ft federal tax credit for a 100,000-sq-ft project. Anand said the key to success is being a good listener.

Although Anand grew up playing cricket, he now enjoys cooking for wife Deneace and son Siddharth, 6, and frequenting the gym.

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### Oliver Baumann, LEED AP, 38



President, Ebert & Baumann Consulting Engineers Inc., Washington, D.C.  
University of Munich (Germany), Bachelor of Mechanical Engineering  
At one point, Baumann considered becoming a professional musician. "I'm glad I can play the trombone and tuba. Instead, he now strums the guitar to unwind at the end of the day." Baumann is one of last year's 40 Under 40 winners, with Billy Joel's "Piano Man" and Eric Clapton's "I'm Gonna Make You Love Me" on his list of favorite songs. German-born Baumann moved to the United States to start his own company, Ebert & Baumann, in 2001. The firm has more than \$1 million in revenue. Baumann and his firm are working on 10 projects in the United States and abroad, including the "Green Towers," nickname for the Gerhard-Mueller School in Hamburg, Germany. The school uses insulation, daylight harvesting, and groundwater for heating and cooling to make it a green building. Other projects include the Dubai Pearl and Moscow's Mirax Federal Center. Baumann is involved in ASHRAE committees as well as on an advisory panel helping to develop a residential energy code for buildings.

**Neal Boothe, PE, 38**



Vice President, X-nth, Maitland, Fla.

Georgia Institute of Technology, Bachelor of Electrical Engineering

When it comes to extremes, Boothe, a father of two, takes it to the top. He's gone Marine Corps Marathon, and likes to rock out on the electric guitar with his contemporaries Jimi Hendrix, and Eric Clapton. At work, Boothe oversees production for four of the charge of X-nth's East Coast technical market sectors (healthcare, mission crit and manpower in projects that range from renovations and additions to master Projects include: Madison County Medical Center, Medical College of Georgia Center in Naples, Fla. Boothe's biggest project is the \$1.6 billion (estimated) Q coordinator, he oversees 70-plus employees for the MEP design of the 3.5 million parking structures that are spread out over 160 acres and includes everything from a 10,000-seat soccer stadium. Boothe, who specializes in power distribution, emergency preparedness, and disaster recovery, has traveled to Florida and Mississippi following a string of hurricanes, including Katrina, to help

## Virginia Charter, 25



Consultant, Rolf Jensen & Assocs. Inc., L. Oklahoma State University, BS Fire Protection. Every engineer needs down time. For Charlie, college lacrosse athlete, who founded Okla snowboarding, off-roading on ATVs, hiking, Charter, who was named Oklahoma State a senior, has distinguished herself as a lead award in 2006 and has been appointed a protection engineers. As a fire protection contractor, architects, and other engineer and fire codes and the design intent of the Planet Hollywood development, she is in c

report, developing the master exiting drawings, and assisting in the commissioning of the smoke control systems. She is a member of the building committee for the 1.2 million sq ft Project CityCenter in Las Vegas. Charter volunteers with Adopt-A-Trail and the building committee when she's not playing with her dogs, Guinness and Bailey.

Michael Chow, PE, LEED AP, 39



Principal, Senior Electrical Engineer, Metro CD Engineering LLC, Worthington, Ohio Northern University, BS Electrical Engineering

This maverick can recite any line from the movie "Top Gun." His favorite: "Talk manages all know it well.) Chow's other passion is working on reducing light pollution. Marathon Oil employee is juggling nine LEED-certified projects. "It's about education," he says. "And showing them how it can be a win-win situation." Chow is part of a growing

shine only where it is wanted and needed, to help save energy and also benefit nocturnal animals whose body rhythms are disrupted by bright lights at night. "It's a waste of energy to have lights on in parking lots. To do so, Chow is trying to convince businesses to reduce their interior lights between 11 p.m. and 5 a.m. "It's a waste of energy to have lights on in parking lots. To do so, Chow is trying to convince businesses to reduce their interior lights between 11 p.m. and 5 a.m. "It is expensive to throw light out everywhere." An avid tennis player, Chow has made it his mission to help save energy and benefit nocturnal animals. He has played tennis with Andre Agassi, Pete Sampras, and Steffi Graf when he's not helping 7th- and 8th-grade girls use their engineering, math, and science skills to create a better world.

with his wife Heidi and their 3-year-old daughter Lily, who has affectionately nicknamed everyone in the family after other daughter, 2-month-old Ella, is now called "Sneezy."

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**Mike Ferreira, PE, 39**

Senior Fire Protection Engineer, Hughes Assocs., Baltimore  
Worcester Polytechnic Institute, BS Mechanical Engineering, MS Fire Protection  
Ferreira needs outdoor adventure, or maybe it's just that the outdoor world needs  
underground caves or exploring places like Cambodia's famed temple complex.  
improving fire safety standards to protect others during a disaster. Ferreira has  
submarines for the U.S. Navy and worked on the World Trade Center Investigation  
report for the National Institute of Standards and Technology. He's also worked  
Pentagon Shield system to help ward off biological, radiological, and chemical  
approach—by incorporating fire behaviors within a traditional building air flow and  
computer modeling. The method has been used in high-rise office buildings and  
England Patriots fan, Ferreira enjoys spending time with his wife Mary with whom he  
lives in Costa Rica, and their 3-year-old daughter Elena.

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**Phil Friday, PE, 35**

Principal, Senior Fire Protection Engineer & Fire Investigator, Harrington Group  
University of Tennessee, BS in Chemistry; University of Maryland, MS in Fire Protection  
Friday's love of fire—and learning how to extinguish it—started early. As a child, he  
set a tire on fire. During college, he lived at the Tri-Community Volunteer Fire Station and  
firefighters. He also spent time as a forest services wildland firefighter working  
Washington's Wenatchee National Forest on the East Slope of the Cascade Mountains.  
investigator, Friday now designs fire protection systems for mission critical facilities. Projects  
include the Keesler Air Force Base fuel cell hangar that services C-130 Hercules aircraft  
that will house nine training aircraft at the Naval Air Station in Pensacola, Fla., and  
serves as the president of the Greater Atlanta Chapter Society of Fire Protection.  
his wife Jennifer enjoys snowboarding.

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**Andrew Gorton, 31**

Associate, Papadimos Group, San Rafael, Calif.  
Columbia College, BA Audio and Acoustics; University of Cincinnati, MS Mechanical Engineering  
Maybe it comes from being a classically trained pianist. As a noise and vibration consultant, Gorton  
people miss. He tries to control the imperceptible movements within a building. In doing so, he finds  
machines, CT scanners, and electron microscopes, have accurate readings and images, down to the  
disturbance is a big disturbance," said Gorton, who specializes in noise and structural vibration.  
Arizona State University's School of Journalism TV studio space, which needed to buffer itself from  
Science Complex, which contains nano-scale research instrument labs within a challenging L-shaped  
two directions. An avid triathlete, Gorton is training for his first half-Ironman and enjoys chopping wood by hand. He  
Borders, where he taught people in Tanzania how to create water filtration systems out of found materials like a bucket.

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### **Tony Hans, PE, RCDD, LEED AP, 35**

Principal, Electrical Engineer, CMTA, Louisville, Ky.

University of Louisville, BS Electrical Engineering, MS Engineering

On and off the volleyball court, Hans knows how to get things done. Hans spec performance schools," including Richardsville Elementary, the first Net Zero Er largest solar photovoltaic system in Kentucky. He was also the project manage certified school in the state. A licensed engineer in 33 states, Hans manages p Indiana, and New York. He is the principal-in-charge on Houston's Spring Elen certification with its solar panel roof, geothermal HVAC system, wind turbines, athlete and father of three girls enjoys adventure racing in 6-hour multisport ou University of Louisville volleyball athlete, in college and still plays in three-on-tr a team that won the Kentucky Derby Festival Classic, the largest outdoor tourr

play against professionals.



### **Chris Hewitt, CEng, PEng, LEED AP, 35**

Partner, SMS Engineering, Winnipeg, Manitoba

University of Sheffield (U.K.), Bachelor of Engineering

Hewitt loves playing with fire. "Ninety-nine percent of the time I'm behind a des mud at a hog farm or at a fire in a house or factory," he said. "We just roll up or happened. If a fire investigator doesn't understand what caused a fire, they usu I come in." As a forensic investigator, Hewitt looks for the tiniest pieces of evid to a loose nut under the dash, where a small wiring problem led to several maj electrical engineer. As the lead electrical engineer, he is overseeing the \$250 r 1,600-space parking garage; and upgrades to an existing utility building (powe another project, Hewitt was dropped in the middle of the Thailand to work on a "The locals would routinely catch and fry up snakes," he said. "And I don't eat s hates flying, ended up meeting his Canadian wife Shauna at a German bar in month-old Charlotte.

### **Craig Hofmeister, PE, LEED AP, 38**



Vice President of Engineering Technology, Rolf Jensen & Assocs., Cary, N.C.

Worcester Polytechnic Institute, BS Civil Engineering; MS Fire Protection Engi

As a child, Hofmeister would light plastic toys on fire to see how they burned. F

watching ice hockey, in particular the Carolina Hurricanes. "If I had the opportu

said Hofmeister, who played hockey in high school, college, and men's league

communication among 22 worldwide offices about ideas and technology initiati

As the technical leader, Hofmeister worked on a fire modeling study for NASA's

Canaveral, Fla., to predict and help prevent damage if a solid rocket motor igni

Because rocket motor fuel is metal-based and doesn't require oxygen to burn, u

unique burning characteristics of the fuel to find usable data for heat release a

Hofmeister, a father of three, has been married for more than 15 years to wife

Sunday school and ushers at his church, and has ridden a camel at the pyrami

Tom Hudson, PE, LEED AP, 32



Technical Consultant, Green Building Services, Portland, Ore.

Oregon State, BS Mechanical Engineering

It's nearly impossible to live in Portland and not be involved in cycling. For Hudson, it meant creating a Roman-esque chariot out of 16-in. kid bike tires and the frame together. The reason: the Ben Hurt III Chariot Wars, an event in Portland's Minotaur Park where people pedaled while a friend fought off other competitors as a gladiator. For work, Hudson designs, fabricates, and verifies and analyzes equipment performance in existing buildings. At the First Unitarian Church in Portland, Hudson oversaw LEED commissioning for one of the first buildings in the United States. He required the design-build contractors to include energy efficiency measures and provided suggestions for direct digital controls programming, which improved the building's energy costs. Hudson, who helped two orphanages in Mexico install a farming system, has also delivered Domino's pizzas in Ireland on a 90cc Yamaha motorcycle.

Erin Inman, PE, LEED AP, RCDD, 38



Senior Vice President, Primera, Chicago

Auburn University, Bachelor of Electrical Engineering; MBA DePaul University



The Batman movies made Chicago's Wacker Drive famous. Inman quickly learned how difficult it was to run power lines through the city. As director for the power service to the 48-story 155 N. Wacker building in downtown Chicago, Inman had to route power lines through 65 manholes in the middle of the night to avoid rush hour traffic. "It took a year and a half to get the lines in," Inman said. "And we had to come out of a manhole and route a 3-by-4 ft concrete duct bank underneath the street without hitting piers or bending it more than 270 degrees." This, of course, happened while a team of workers was demolishing the piers that supported the building. As the fast-track project began, the crew found abandoned equipment and debris everywhere. "It was a nightmare," said Inman, who also helped build a school and home on a mission trip to Haiti. "We had to go through a lot of stuff that wasn't being used anymore." A self-proclaimed "foodie," Inman is a Food Network junkie and enjoys gourmet cooking. She also enjoys watching Auburn and Bears football games with her husband Bill, son Austin, 12, stepdaughter Maggie, 14, and stepson Kyle, 16.

Scott Jenkins, EIT, 31



Associate Electrical Engineer, Spectrum, Salt Lake City

University of Utah, BS Electrical Engineering

Jenkins decided to show his appreciation for his wife Jamie this past Valentine airbrushed on. "It was a tramp stamp, a Valentine's heart with her name in it," Jenkins just couldn't pass it up. It was too funny." Jenkins is certainly known for his scientific gadgets. As an electrical engineer, Jenkins helped Westminster College Science adding daylight harvesting in all classrooms. His other projects include The Center for Energy and the Environment, a public/private partnership composed of Idaho State University, private industry and the Environmental Laboratory that is researching energy solutions, and the Dixie Foothills Gold Certified building. Jenkins started using a tablet PC, demonstrating at a symposium how it can reduce paper consumption and expenses, and create "on-the-fly" annotation of drawings.

Boy Scout troop leader, volunteers at the Utah food bank, and enjoys—much to the delight of his son Jaxson, 3, an helicopters around the house.

**Danna Jensen, PE, LEED AP, 31**

Senior Associate, Electrical Engineer, ccrd partners, Dallas  
Kansas State, BS Architectural Engineering

Jensen is the type of woman who will get the job done no matter what, even if "I was 26 weeks into my pregnancy so I had to stop and go to the bathroom a lot," she said. "I probably ate up 10 minutes of my race time waiting in line to go to the bathroom." She has worked on many health care facilities, office buildings, parking garages, religious centers, and residential developments.

Jensen's accomplishments include working as the project coordinator for the 900,000-sq-ft hospital for For the Children's Center and the 1.1-million-sq-ft C.S. Mott Children's Hospital and Women's Hospital in Ann Arbor, Mich., that is seen as one of the Year, and she is the company's go-to person for sustainability education, helping her co-workers become LEED certified. "In a male-dominated industry, you still have to prove yourself," she said. "But it forces me to stay on top of everything in my field." Jensen, who gave birth to her first child Kaitlyn on March 14, also enjoys singing bad karaoke, rollerblading, and wakeboarding and snowboarding.

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**Shaun Landman, PE, LEED AP, 38**

Associate Principal, Arup, San Francisco

University of Cape Town (South Africa), BSc Electrical and Electronics Engineering  
Being a team player and leader comes naturally to Landman. Born and raised in South Africa, he participated in college and in the 1995 and 1999 World Cup Qualifier tournaments on Zimbabwe's national team. Landman's early years as an electrical engineer were spent working on powerplants and mines in Zimbabwe. To see firsthand, find a figure named after him. Now, the father of four enjoys fishing with his boys and his sweetheart. Landman leads the electrical team in Arup's San Francisco office, working on Mart's experimental stores, incorporating sustainable ideas from cogeneration and photovoltaic panels. Landman got his start in Zimbabwe's capital, Harare, on the first major commercial development in the country at the time, and the first in southern Africa. Landman's design capitalized on the diurnal temperature swings to create a natural cooling effect at night, using nighttime temperatures in exposed concrete and vaulted ceilings and exhaust systems.

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**Stephen "Steve" Lieber, PE, 31**

Mechanical Project Engineer, Westlake Reed Leskosky, Cleveland  
University of Arizona, BS Mechanical Engineering

Lieber likes to joke that had he not been working as an engineer today he might have been a professional basketball player. "I was straight on basketball," he said. "I never played organized basketball. Instead, he's coaching his 8-year-old son's team, where his highest score is 273. Lieber's work accomplishments include renovating the Cleveland Clinic's new Center for Autism, a benchmark for environmental design. The son of a Rabbi, Lieber creatively reconfigured the HVAC unit, which couldn't be placed in the building's footprint due to constraints but needed to be hidden from the public's view despite the low-lying building. He hid the ductwork under the ground, and put a screen wall above and around the unit to hide it from views. The father of three enjoys cruising with his wife Nicole and their four children.

**Abby Lippertman, PE, 29**

Associate, Electrical Engineer, ccrd partners, Dallas  
Kansas State, BS and MS Architectural Engineering

Lippertman likes to joke that she is a "classic engineering nerd" who enjoys getting in touch w  
desk," she said with a laugh. "And I've named a couple of them after people in the office." WI  
party at Medieval Times, she is busy designing electrical systems for hospitals and volunteer  
program. Lippertman recently served as the lead electrical engineer on Texoma Medical Cen  
Texas. Not only did Lippertman design the entire distribution system for the center, but she al  
book "The Toyota Way" as part of a Lean design process, and attended an eight-week book  
full-service hospital from the ground up. "I look really young and being a female electrical engineer sometimes catch  
enjoy proving myself." Lippertman, who was married at the Bellagio Hotel in Las Vegas 3 years ago, is expecting he

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**Brandi McManus, CEM, 32**

Global Energy Services Manager, Schneider Electric Buildings Business (TAC), Dallas  
Oklahoma, BS Environmental Engineering; MBA Southern Methodist University

Any time McManus travels internationally, she goes with a pre-scripted joke: "I know I'm an /  
really are the bad boys of the planet." She hopes to reduce the amount of energy buildings t  
who will help Schneider Electric customers make better choices and reduce building operati  
Buildings use one-third of all energy," said McManus. "So there is a huge opportunity to red  
presentation, McManus travels the world to places like India, China, Australia, and the Unite  
delivers webinars about the return on investment of energy efficiency, government regulatio

implemented examples, like how much using an efficient compact fluorescent bulb can save a company over its life  
valedictorian is a voracious Oklahoma football fan and loves Sudoku and her dogs, Monty and Einstein. She escap  
fireworks.

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**Kevin Miller, PE, 35**

Project Manager, ccrd partners, Dallas  
Kansas State, BS Architectural Engineering

Miller lived in Dallas and his future wife lived in Denver when they met in Las Vegas. "And  
with a laugh. Now they enjoy making horseradish until "we are both bawling." Miller won't r  
passionately talk about duck hunting with his chocolate Labrador Coco. "I tell my wife (Sar  
so I can go out hunting to put food on the table." Miller, a senior mechanical engineer, ove  
served as the project manger and senior mechanical engineer for the MEP design at the 1  
Women's Hospital in Ann Arbor, Mich. He designed a mechanical system with high-efficier  
could quickly convert an entire patient wing into a regional infection control unit where 100% of the air can be exhal  
an airborne infection in case of a pandemic outbreak from a disease like SARS. Miller earned ccrd partner's Engine  
is an ASHRAE member of the Dallas chapter.

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**Conrad Miller, 21**

Mechanical Designer - CAD Operator - BIM Specialist, Ron George Design and Consulting Services, Monroe, Mich  
The University of Toledo, BS Mechanical Engineering, December 2010



By far the youngest of the 40 Under 40, this college junior makes the 45-minute 20 hours a week. Miller's projects include St. Joseph's Hospital in Ann Arbor, Michigan, piping for the variable air volume system and plumbing that went to the patient load and a 3.57 grade point average. As an assistant project manager, Miller a medical gas at the University of Michigan's C.S. Mott Children's Hospital and V children, helped his father design an addition to the family's barn that sits on 11 school, and wants to know everything I'm doing," Miller said. "In return, it makes me a student member of ASME and Campus Crusade for Christ. He enjoys playing video games or "stupid comedies like 'Superbad' or 'Step Brothers.'"

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### Jim Nonnenmann, PE, 32



Plant Mechanical Department Manager, Stanley Consultants, Milwaukee, Wisconsin, University of Illinois, BS Mechanical Engineering

If it weren't for Nonnenmann, "The Pearl" might be another mirage. The one integrated district cooling plant. Nonnenmann was the project manager for the largest chilled water facility in the world that produces 130,000 tons of cooling. He used gradients to show the chilled water pumps weren't going to overheat. The cultural difference: "In the United States things are accepted at face value, while in the Middle East, things are accepted at face value, and then you have to back up your study." Because water is scarce in the Middle East, Nonnenmann had to use other water sources for the plant, while building on a limited amount of space since land on an island is at a premium. Nonnenmann is a churchgoer and enjoys escaping by float plane to Red Lake in Ontario, where he can fish for walleye, northern pike, and musky.

yourself and back up your study." Because water is scarce in the Middle East, Nonnenmann had to use other water sources for the plant, while building on a limited amount of space since land on an island is at a premium. Nonnenmann is a churchgoer and enjoys escaping by float plane to Red Lake in Ontario, where he can fish for walleye, northern pike, and musky.

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### Raj Patel, 37



Principal, Acoustic Consultant, Arup, New York

University of Southampton, BEng Engineering Acoustics and Vibration

For Patel, just listening to music isn't enough. It's about experiencing it, like music. As the lead consultant, Patel designed one of the world's greatest concert halls in Gateshead, U.K. The complex includes a 1,600-seat concert hall and a cutting-edge recording studio. Patel adapted with a wide range of musical or electronic instruments and performance techniques to perform or record at a facility with an "arts for all" mantra. Patel has consulted on various international projects, including the famed Art Basel, Whitney Museum of American Art in New York, and London's Royal Festival Hall. Patel has also consulted on various Olympics endeavors, including the 2008 Summer Games in Beijing. For Iain Forsyth & Jane Pollard's CD "Silence," Patel designed a mix-media classical orchestra at St. George's Hall in Liverpool that listened to silence. Patel's not playing the trumpet, bass guitar, or harmonica, he is cultivating bon

Jennifer on their yellow Vespa.

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### Brad Schaap, PE, LEED AP, 29



Corporate Director of Sustainability, Structural Engineer, Leo A. Daly, Omaha, Nebraska, Washington University in St. Louis, BS Civil Engineering; University of Texas, Austin, LEED AP. Schaap knows the stakes are high, even when he's not playing Texas Hold'em. "I'm a champion" by educating Leo A. Daly employees and clients about sustainability.

develop and achieve the 2030 Challenge, an international call-to-action to reduce fossil-fuel-based, greenhouse-gas 50% today and for carbon neutrality in 2030. As a lead structural engineer and sustainability coordinator, Schaap is story, 67,000-sq-ft laboratory on the Army's Maryland-based Aberdeen Proving Ground to achieve a LEED Silver certification. The building will be designed to withstand a 100-year flood, withstand a 100-year wind load, and withstand a 100-year seismic event. The walls and roof will be buffered with 6 in. of insulation, low-flow plumbing fixtures will reduce toilet water use by 60%, and company showers to a 1.6 gpm rate will decrease water use by 75%. The father of two, Schaap volunteers with many organizations, including the National Organization for the Rehabilitation of the Blind, and the Make-A-Wish Foundation, and has helped a sixth-grade student whose mother was shot by gang members.



### Michael Schwarz, PE, LEED AP, 31

Associate, HVAC Engineer, KlingStubbins, Philadelphia

Penn State University, Bachelor of Architectural Engineering

Schwarz admits that winning a Lego-building contest at age 6 might have paved the way for his career.

Now the former high school wrestler designs mechanical systems, with an emphasis on sustainability.

"Data centers use 1% of all energy in the United States," said Schwarz, who likes to point out that 1% doesn't sound like much, but it really is.

For a "confidential client" in Bridgewater, N.J., Schwarz is working on a new data center to support science and medical affairs. He also designed data centers for JPMorgan Chase and security devices for the U.S. Mint, the Federal Reserve, and the National Museum of American History. Schwarz is so passionate about sustainability that he's trying to find solutions on his own, outside of his day job. He's currently developing a new wind turbine design and writing a chapter in a new book about sustainable laboratory design. Schwarz also enjoys traveling with his wife Kristin, even if they have a hard time agreeing on what to do. "When it comes to movies, we are in agreement. We always agree on Phillies baseball," said Schwarz, who has a 1-year-old son, Ryan.



### Tina Schweizer, PE, LEED AP, 31

Mechanical Engineer, PEDCO E&A Services Inc., Cincinnati

University of Cincinnati, BS Mechanical Engineering

It started with a new project. Schweizer was the lead mechanical engineer for the new Cincinnati Children's Hospital Medical Center Liberty Campus. "They really live and breathe the outcome of their mission statement," she says. "They have a philosophy at every level. They are very detail-oriented." One example: the hospital is the first in the country to go beyond typical code requirements and improve infection control. Schweizer also volunteers for Cincinnati Walks for Kids to help offset the costs of building the Liberty Campus.

to walk and get coworkers to join her. For the past 3 years, Schweizer has led a team of colleagues in the charity walk, which has raised more than \$100,000 in a field of 400 fundraising teams. In her off time, the former high school shooting guard coaches a girls' basketball team and enjoys playing tennis and golf or watching almost any sport with her husband Dave, except NASCAR, "because he's a fan," she said.

### Crista Shopis, LEED AP, 36

Project Engineer, Taitem Engineering, Ithaca, N.Y.

Cornell University, BS Civil and Environmental Engineering

A former collegiate rower, Shopis spent 2 years in the Peace Corps helping rural communities in Paraguay earn greater independence. She helped the village children save 3 to 4 hours a day that had previously been spent hauling water. This allowed the children to go to school and to have more time to play. When she wasn't playing D.J. with her eight-tape rotation on a Paraguayan radio station. Now the mother of two is working on a new project that doesn't require compressors or refrigerant and has the possibility of a zero-carbon footprint. The theory: split the air stream into two paths. One path passes through a solar-heated coil, and then transfer moisture from the nonheated airstream to the heated airstream, effectively changing the air's temperature without using energy to heat it.



able to cool and dehumidify with groundwater. Shopis spends much of her free nonsectarian home schooling organization called The Northern Light Learning backyard.



### **Mark Skidmore, 29**

Vice President and Manager of Engineering, Arizona State University, BS Mechanical Engineering

Most people probably expect a good meal and conversation during a family holiday. For Skidmore, it's a solar panel improvement project. One Christmas, it was his mother's idea to do something for other holidays. Skidmore and his extended family have been working on the project for three years.

"It's about getting together and working toward a common goal," he said. It's a reality that Skidmore is helping to create.

Working in the solar industry is something Skidmore's college professors told him he would never do. "It's not something that's going to become a reality in his lifetime. "People just assume solar is too expensive, because that's what we're taught," said Skidmore, who works for SunPower Solar Electric. Instead, Skidmore has made it his personal mission to change that philosophy. He installed 12 solar panels on his home in 2007, saving him approximately \$400 a year. He served as a project manager for Frito-Lay's installation of 200 kW solar panels on its corporate headquarters in 2008. As a Habitat for Humanity volunteer, Skidmore helped install panels on five homes. "Money can be mismanaged and is not always well spent. It's better to give your time to someone."



### **Jeff Staub, 35**

Application Engineering Manager, Danfoss, Baltimore, Maryland  
Virginia Military Institute, BS in Mechanical Engineering

To put himself through college, Staub hitchhiked through Alaska. He arrived at the University of Alaska Anchorage in 1994 and started working as a deck hand on a "Deadliest Catch"-style 42-ft deep-sea fishing boat. He worked 12-hour days, sleeping two or three hours a night, Staub would work for weeks, returning for a break. "I've been gone for months at a time," he said. Now, Staub now oversees a team of 12 application engineers who work to make products more reliable and energy-efficient in everything from vending and ice machines to supermarket refrigeration racks to commercial environmental control systems.

After working as an application engineer for Danfoss, Staub trained a team of six engineers who were launching a new product: thermostatic expansion valves that can increase the efficiency of refrigeration and air conditioning systems by 30% over the government rating. Staub got his edge these days by riding a Honda Shadow motorcycle around the Bay with his wife Kristin and their three children.

### **Rich Stump, LEED AP, 38**



Vice President and Project Principal, Stanley Consultants, Muscatine, Iowa  
University of Illinois, BS Architecture; Massachusetts Institute of Technology, Masters of Architecture

For Stump, it's all about finding balance and a way to kick-start the day. "For some people it's coffee, for me it's a run. I wake up every morning, I'm not focused." With the seven-day-a-week schedule Stump typically keeps, he travels to 10 countries, many of which he has drawn on his sketch pad. His other way to relax: singing karaoke. "It's a great way to meet people," he said. Stump's role as a U.S. Army National Guard captain has helped his company drastically expand its client base; re-enter Yemen, a country he had never been to before, and win new contracts in Italy, Japan, Guam, and the United Kingdom. Stump has led his company to meet the Libyan government's needs for construction management services to the Libyan government as part of its ambitious \$70 billion oil and gas project. "It's great to meet a person from another country, face to face, it helps break down barriers," he said. "It's very easy to stereotype and become friends."

**Robert Sty, PE, LEED AP, 34**

Project Manager and Senior Mechanical Engineer in Technology Studio, Smith University of Illinois-Chicago, BS in Mechanical Engineering

This second-degree Judo black belt knows how to get into the game. In college on to be a two-time Pan American Judo Champion in 2005 and 2006. But his r bison in South Dakota and winning a pair of Phoenix Sun tickets in a three-mail moves by jumping into the air and landing in the splits. For a “confidential client existing 56,000-sq-ft mission critical data center that needed to “build-out” its piping systems in addition to providing business development for the Technolo Banner Page Hospital’s eight-bed, 10,000-sq-ft emergency department addition 267,000-sq-ft mixed-use building, which is slated to be the first building in Arizona also served as the 2006-07 president for the ASHRAE-Central Arizona Chapter MDA’s Jerry’s Kids, and works in the ACE mentorship program. He is engaged wedding scheduled in October.

**Paul Switenki, PE, 38**

Associate, Mechanical Engineer, Arup, San Penn State University, Bachelor of Architecture Civil Engineering

Though he lives in California, Switenki knows hockey since age eight and has coached the engineer, the Mound-Westonka (Minn.) High designing, integrating, and coordinating lo and arts and culture industry. As the project construction of the 97,000-sq-ft 1,800-seat Arts on University of California-Davis’s campus Academy of Sciences building in Golden Gate Park incorporates exhibit space, aquariums, pla

offices. He's also helped Arup deliver a templated hospital design for Kaiser Permanente. Currently, he's the lead project manager for California San Francisco's Mission Bay Medical Center, which incorporates a 289-bed acute care hospital, a 180,000-sq-ft energy center. Switenki met his wife Birgit on a sea kayaking trip in 2004. They now enjoy exploring playgrounds with

**Brandon Tinianov, 39**

Chief Technology Officer, Serious Materials, Santa Clara, Calif.

Tulane University, BS of Mechanical Engineering; University of Texas, MS of Mechanical Engineering; Colorado School of Mines, PhD in Mechanical Engineering. Tinianov jokes that he was raised by wolves. By the time he was 15, Tinianov had moved out of his home and was “take me.” Helped by scholarships, Tinianov put himself through college by waiting tables at New Orleans’s famed L’Orangerie. “I was the only one who wasn’t a professional waiter,” he said. After college and a brief stint as a mechanical engineer at a drywall manufacturer for six months in a 1973 AMC Jeep, reading books and camping outside. He now has his doctorate and is a product development and commercialization of QuietRock drywall, the construction industry’s leading soundproof drywall in the drywall, which uses 80% less energy in the manufacturing of its core than gypsum drywall and uses 85% post-industrial waste. Tinianov has worked on the first LEED-Certified low-income community housing complex in San Jose, Calif. He is married with two children.

**Ari Tinkoff, PE, 36**

Vice President, X-nth, Maitland, Fla.

Penn State, Bachelor of Architectural Eng  
It's a good thing Tinkoff chose the profess  
but I hated chemistry," said Tinkoff, who n  
open heart surgery. It's also good that he  
only once. President Ronald Regan was c  
was told 'don't go behind the blue curtain,'  
and my locker was only four lockers behin  
backpack away and two guys stopped me  
Tinkoff, a father of two, enjoys going to the  
He serves as the Director of Business Dev  
worked as the project manager for Epic S  
Originally, the fast-tracked building was su  
changing five different times over the cour  
growing needs. The other challenge: typic  
weeks every year, user groups from all ov

population swells to 10,000. That meant adding air valves to the dedicated outdoor air system that could modulate to occupants in the building.

**Mike Walters, PE, LEED AP, 31**

Sustainable Market Leader, Affiliated Engineers (AEI), Madison, Wis.

Milwaukee School of Engineering, BS Architectural Engineering

You could say Walters was sparked by science at any early age. He was 10, p  
to adjust a light to see the court better. "I was standing in water when I grabbed  
with a laugh. "I didn't understand, and I wanted to know why." These days Wal  
helping Cornell University—which produced 320,000 metric tons of carbon in 2  
With five main initiatives: go green on all new development, transition from fos  
energy conservation efforts in existing buildings, and a transportation demand  
carbon offsets. "It's a lofty goal because of the scale of Cornell's research facili  
campus to contribute," Walters said. "It can't just be a technology fix." A fan of  
national parks with his wife Hilary and their two children. Despite living in Wisconsin, he likes the Washington Reds!

national parks with his wife Hilary and their two children. Despite living in Wisconsin, he likes the Washington Reds!

**Jeremiah Watson, PE, LEED AP, 34**

Associate, Plumbing Engineer, TRO Jung|Brannen, Memphis

University of Memphis, Bachelor of Science

Watson jokes that when he passed the PE exam he thanked God in his driveway for a long time. Now he's using th  
oversaw the plumbing and fire protection for the Salvation Army's Ray & Joan Kroc Community Center in Memphis.  
Silver certification, includes pools, a chapel, exercise area, theater, classrooms, and more. Watson's biggest challe  
building to reuse in a gray water system for the toilets. "I was trying to do something new and innovative and it was  
creatively route the piping halfway through the ceiling and below ground to spread it out to achieve the proper slope  
is the president of his college fraternity's (Omega Psi Phi) Shelby County alumni chapter where he raises awareness

the NAACP, St. Jude Children's Research Hospital, Habitat for Humanity, and youth ministry at Shiloh Baptist Church and tutors low-income students about some of the most outgoing engineer they've ever met."

Nate Wittasek, PE, LEED AP, 36



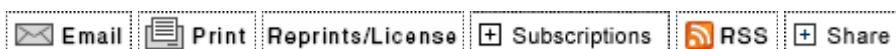
Associate, Fire Protection Engineer, Arup, Worcester Polytechnic Institute, BS Civil E. When it comes to work and play, Wittasek, collegiate rower loves kayaking, running, a grapes in the hopes of making his own wine. “big picture guy,” also loves to cook, play more of an art,” Wittasek said. “My dad was an artist who made ceramics. I learned from him. Fire Discipline Leader, Wittasek is trying to firefighter-assisted emergency evacuation emergency. Wittasek, who has worked as Guggenheim Museum in Abu Dhabi, and this new concept in West Hollywood’s Pacific forward,” Wittasek said. “But it is controversial. elevators in a fire. But having elevators designed out by cutting the evacuation time in half.”

Curtis Yokoyama, SE, 38



Principal Technical Specialist, Fluor Corp., Aliso Viejo, Calif.  
California Polytechnic State University, San Luis Obispo, BS Architectural Eng  
Yokayama jokes that when he comes home from Fluor, the work begins. "I'm M  
children—with wife Christi—who range in age from 7 years to 11 months. "My j  
and I'm the one who gives the kids their bath and puts them to bed." During the  
large multidisciplinary projects, typically in the energy and chemical industries i

facilities. As the engineer of record, Yokoyama oversaw all design aspects of building a natural phenomenon barrier nuclear plant. The barrier will help prevent 300 mph tornado winds and flying automobile debris from destroying the house training class for new Fluor hires to ensure they understand building codes and the design of industrial structures. The fanatic who is notorious for starting—but not finishing—projects around the house. After 9 months, he is still trying to now stands.



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