

Spotlight

A publication of Spotts, Stevens and McCoy



JULY 2020 | SPOTLIGHT

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Our work touches everyday life.

From the water you drink to the air you breathe to the buildings and communities where you live, work and play.

Spotts, Stevens and McCoy is a family-owned regional engineering, environmental, and surveying firm serving local and global clients. We engineer solutions for a better world. Our work touches everyday life; from the water you drink, to the air you breathe, to the buildings and communities where you live, work and play.

EXPERTISE

- Building Engineering
- Site and Civil Engineering
- Survey, Data Capture and Modeling
- Water and Wastewater Engineering
- Construction Phase Services

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Now Introducing: *Energy and Sustainability Services*

Spotts, Stevens and McCoy (SSM) is thrilled to announce an expansion to our regional engineering, environmental, and surveying firm. SSM created a new Energy and Sustainability Services division, to be led by its new director, Paul Spiegel, PE, LEED AP. Spiegel formerly served as President of Practical Energy Solutions (PES), the West Chester-based energy consulting firm. This expansion extends the scope of the three existing divisions under the SSM umbrella: Facility Engineering, Environmental Engineering, and Civil Engineering.

PES and SSM have worked together for years, serving similar clients in complementary ways, and even more recently, sharing an office building. But it is the synergy and overlap of values and services that made this an opportune time to expand and introduce this new division.

Every day at SSM we look for new ways to grow our footprint, expand our services, increase our capacity, and escalate our opportunities to make an impact on the world. We believe in improving the quality of life for our clients, our employees, and for all of the people touched by the work that we do. It's this mission that drives the services and goals of the new division: transforming buildings into comfortable, efficient, healthy spaces to live and work.

“Environmental responsibility and creating a sustainable future have always been initiatives that guide the work that we do. It's only right to bring on a team that will stand with us in leaving the world a better place”, says Eileen Kaley, SSM Vice President and Chief Strategy Officer.

Several other members of the professional staff of PES will also be joining the team under the division, establishing a deep-seeded expertise in providing clients practical and creative energy management, consulting, education, and technical advisement.

Brian Kelly, SSM's President and Chief Executive Officer, commented, “This is incredibly exciting news for all of our clients, and especially for the communities that we serve. Combining our expertise is going to change the game for the services we offer and bring a new depth to the solutions we provide.”

Meet the Team

Energy and Sustainability Services

Energy consulting, evaluations, education, and strategic and technical advising.

ENERGY CONSULTING

- Energy Audits (ASHRAE I, II, & III)
- Building Simulation Modeling
- Operational/System Assessments
- Strategic Energy Planning & Implementation
- ROI/Feasibility Studies for Capital Projects & Renewable Energy Systems
- Benchmarking Studies
- HVAC Design and Sequencing

ENERGY EDUCATION AND AWARENESS

- Energy Conservation Education Programs
- Energy Cost & Consumption Tracking /Analysis

TECHNICAL ADVISING

- Grant/Loan/Incentive Management
- Energy Measurement & Verification
- Thermographic/IR Studies
- Renewable Energy Systems Analysis



Paul Spiegel, PE, LEED AP
Director, Energy and Sustainability Services

Paul has over 29 years of experience in building design, construction, and evaluation in the Philadelphia metropolitan region. His experience includes development and implementation of energy strategic master plans and comprehensive energy assessments for more than 150 educational, municipal, and commercial facilities. He is an adjunct professor of Engineering at Temple University.

"I believe in the power of people to make a difference. I believe in real, honest value. I believe in creative solutions to even the most challenging problems. I'm thrilled to bring my expertise, my experience, and my passions to supporting more communities and more clients."



Dianne Herrin, CEM, LEED AP
Senior Program Manager

Dianne has more than 13 years of experience providing technical research and strategic communications services as well as 10 years of municipal work in energy conservation, energy efficiency and sustainability. She authored the nation's first ENERGY STAR ordinance for new commercial construction. She led the Borough of West Chester through the first municipal, community-wide greenhouse gas inventory in Chester County and created/implemented the Borough's successful Climate Action Plan. Dianne is also the Mayor of West Chester Borough.

"My passion has always been protecting the environment. I love helping clients see their potential to save money and energy, while improving comfort and indoor air quality. I also enjoy communicating with stakeholders about the many ways they can achieve their sustainability goals."



Benjamin Pressman, PE BESM | Project Mechanical Engineer

Ben is a Certified Building Energy Simulation Analyst and has a deep understanding of building modeling software and methodology, energy auditing techniques, and HVAC systems operation. Ben holds an MSE in mechanical engineering from Johns Hopkins University.

"I knew in college that I wanted a career in energy and sustainability. I love being able to have a direct impact on making buildings in our community comfortable, healthy and efficient. As a mechanical engineer, my focus is on environmental and energy sustainability and applying that to projects."



Lindsey Walaski, LEED AP | Project Mechanical Engineer

With a Bachelor's Degree in Mechanical Engineering and a Master's Degree in Sustainable Engineering, and a year working in the Sustainability Coordinator's Office at Villanova, Lindsey brings a broad range of experience to the team. She provides services from energy audits and modeling to curricular presentations in the classroom.

"I love to use my technical degree towards environmental protection and urban sustainability. My focus is finding opportunities for energy savings in buildings and designing educational programs to increase awareness of energy and sustainability. I enjoy using my experience in the energy sector to advocate for green building and renewable energy legislation."



Kate Lyons | Graduate Geologist

Kate will be graduating from Temple University in August of this year. She will be coming on board initially as an intern and then transitioning to full time designation after graduation.

"I have always been interested in how people interact with the environment. I enjoy working in the public service setting, and I have a passion for urban sustainability. Also, did I mention that I love data and working with GIS?"

CASE STUDY

County Government Gets a Triple Win with 3 Practical, Actionable Energy Projects

When a County government with more than half a million residents and 49 geographically diverse municipalities received a \$3.7-million federal Energy Efficiency + Conservation Block Grant, they turned to multiple contractors for renewable energy installations, transit programs, and other support.

Our new team members provided 3 key services:

Master Facilities Plan

Provided a master energy plan for 2 of the county's 3 primary campus operations. The plan included in-depth demonstration projects that focused on HVAC re-tuning, refining of BAS-controlled lighting schedules, justifying central plant HVAC deferred maintenance projects, maximizing fleet management efficiency, reducing laundry facility energy use, and conducting an employee Energy Conservation + Awareness Program. These projects alone will produce energy savings of up to 20% (\$480,000), even though the County recently participated in a large scale capital ESCO project, and sets the County on a cost-effective and energy-efficient trajectory for the years ahead.

Energy Efficiency Grant Program

Created, implemented and managed a \$700,000 municipal energy efficiency grant program that produced annual energy savings >\$150,000 in 33 small municipalities. Nearly two-thirds of the projects were interior/exterior lighting upgrades with average paybacks of 2 years without grant funds. Annual CO2 savings total over 1.5 million pounds. The program illustrated the multiple benefits of energy efficiency projects for municipalities with budgetary constraints. Services included municipal energy consultations, grant program creation/management, contractor support, and federal Davis-Bacon/Buy American enforcement.

Multiple Energy Management Toolbox

Created a practical, actionable Municipal Energy Management Toolbox containing targeted and proven actions that small local municipal governments can take to reduce energy use and create more sustainable communities. The Toolbox contains a menu of 50 building, transportation, infrastructure, water treatment/processing, and renewable energy initiatives tailored to this County, with clear guidance for implementation — including case studies, sample policies, model programs from other local governments across the country, and code reviews/recommendations.

SERVICES PROVIDED:

- Master Facilities / Fleet Energy Plan
- M + V / Energy Tracking
- HVAC / BAS Re-tuning
- Municipal Energy Efficiency Grant Program Creation/ Management
- Municipal Energy Management Toolbox

RESULTS:

This client was provided with a strong foundation of energy efficiency and conservation — a critical, cost-effective, and often overlooked aspect of any smart energy vision.

Energy and Sustainability Services

What it means for our municipal clients.

Our work touches everyday life in the communities we serve.

We are reinforcing our mission to make the world a better place today and for future generations by helping clients plan, design, build, operate, and protect their infrastructure, assets, and resources with the expertise and experience to help communities searching for answers to become more sustainable, resilient and adaptable to challenges:

- Energy Audits and Benchmarking
- Strategic Energy Planning
- Community Education and Outreach
- Energy Grant Management
- Utility Rebate Program Custom Applications
- Municipal Specification/Bidding Packages and Contractor Selection
- Carbon Footprinting and Reporting
- Carbon Reduction Planning
- Renewable Energy Feasibility Studies

Energy and Sustainability Services

What it means for our Commercial and Industrial Clients.

Saving money and reducing energy uncertainty is good business.

Our customary services for site and building infrastructure touch nearly every aspect of a company's carbon footprint, including water and waste management; comfort and process cooling, heating, and ventilation; electric supply, distribution, lighting and backup.

The independent expertise and project experience of our new Energy and Sustainability Services division will help our clients plan and execute meaningful, long term goals for climate accountability and cost reduction. And when your community sets aggressive goals to move towards using renewable energy throughout your municipality, we are there to help you develop a plan, engage the community, and break down the barriers to implementation of your long-term energy plan.

- Energy Auditing and Benchmarking
- Energy Modeling- for existing buildings or design support for new buildings
- Re-tuning HVAC and Central Utility Plant Operations
- Strategic Energy Planning, including long-term renewable energy plans
- ROI / Feasibility Studies for Capital and Renewable Energy Projects
- Energy Grant and Utility Rebate Management
- Carbon and GHG Inventories and Reduction Planning for Vendor Sustainability Programs
- Financing for Energy Projects
- Monthly, Quarterly, or Annual Tracking of Energy Performance

CASE STUDY

Corporate Campus Improves Energy Performance, Receives ENERGY STAR™ Building Certifications

Operational Assessments

Monthly monitoring and adjustment of HVAC control sequences in 2006-2007 cut energy use more than 10%. Total cost savings were over \$65,000 and the firm avoided more than 1 million pounds of CO2 emissions.

Energy Auditing

Performed campus-wide energy audits and provided clear justification for HVAC system re-tuning and certain capital investments. Identified additional annual savings of more than \$40,000.

Implementation Support

Provided independent financial and lifecycle analyses of lighting and heat pump upgrade proposals for 4 buildings, to ensure the best project choice, maximize ROI, and assure long-term operational efficiency. To date, lighting upgrades have been performed in 4 buildings, and heat pump upgrades have been completed in 2 buildings.

Ongoing Measurement + Verification

Benchmark and track monthly energy performance and savings by building, to assure client expectations are met or exceeded. Annual electricity (kWh) savings for the last 12 months ending January 2013 ranged from 20% to 42% per building.

ENERGY STAR Certification

Due to significant improvements in energy performance, 2 of the 4 buildings with retrofits qualified for the ENERGY STAR label in 2012. Validated the buildings' energy performance scores and managed the certification process.

Carbon Footprint

Most recently, performed a campus-wide carbon footprint, which captures these energy savings and provides a tangible measure of progress. This offers significant opportunities to demonstrate the firm's commitment to its employees, community and customers.

SERVICES PROVIDED:

- Operational Assessments
- Energy Auditing
- Implementation Support
- Ongoing Measurement + Verification
- ENERGY STAR Certification

RESULTS:

Total cost savings were over \$65,000 and the firm avoided more than 1 million pounds of CO2 emissions.

CASE STUDY

Energy Model Justifies High-Performance School Design

Built in 1954, the 274,000 sf Quakertown High School was recently slated for new additions and extensive renovations — including a high-performance building envelope and new mechanical and lighting systems. The A/E client intended to pursue a *LEED for Schools 2007* certificate and initially requested an energy building simulation model to obtain LEED points.

Since the A/E team anticipated critical questioning from stakeholders, the model was used to independently verify the cost-effectiveness of the design. The team used DOE-approved eQuest software to simulate utility consumption and costs of the base bid high-efficiency design, as well as multiple design scenarios with various deduct alternates removed.

The model, once created, allowed easy manipulation of the alternates and offered the A/E team multiple cost-benefit design scenarios to choose from.

RESULTS:

After reviewing the model-based cost-benefit analysis, the A/E team and the school district decided to pursue the base bid, while removing just one component (advanced daylighting controls).

This saved approximately \$400,000 in construction costs and allowed the team to reserve budget for LED lighting throughout the school, which will provide annual utility savings.

	Utility Cost \$/yr	Cost Change (\$/r) Vs. Base Bid
ASHRAE 90.1 Baseline Bldg.	\$567,476	\$ -
Base Bid—HE Design	\$304,616	\$ -
Alt 1—Remove Daylighting Controls	\$310,542	\$ 5,926
Alt 2—LED to Fluor/HID ¹	\$324,226	\$19,610
Alt 3—Ultra Clear Glazing ²	\$301,862	(\$ 2,754)
Alt 4—Cladding Insulation (5") ³	\$303,788	(\$ 828)

SUMMARY:

The eQuest modeling service supports LEED certification, informs value engineering decisions, and independently justifies the value of high-performance building designs.

By quantifying long-term costs and benefits of the deduct alternates for this project, the model-supported cost-benefit analysis helped the construction team cut costs while leaving budget for LED lighting.

This project is 44% better than ASHRAE 90.0-2007 and is expected to get 19 points toward LEED certification due to energy-saving measures.

Energy and Sustainability Services

What it means for our Educational/Institutional clients.

Many institutions such as higher education, k-12, museums, and not-for-profit organizations were early adopters of strategic sustainability and energy conservation initiatives, and continue to provide leadership.

SSM has provided environmental and engineering solutions to institutions for over 40 years, and continue to fulfill our mission to help our clients' pursue their success by offering the expertise of the new Energy and Sustainability Services division. Having guided numerous institutions to identify, plan and execute sustainability goals, future generations will benefit from the strategic thinking of today's leaders:

- Energy Auditing and benchmarking
- Re-tuning HVAC and Central Utility Plant Operations
- Strategic Energy Planning
- Educational Programs that Engage Students and Staff, and Involve the School Community
- ROI/Feasibility Studies for Capital and Renewable Energy Projects
- Energy Grant and Utility Rebate Management
- Carbon Inventories
- Tracking of Energy Performance

Staff News



Welcome Aboard!

SSM is excited to welcome **Austyn Diaz** to the firm as a GIS Specialist in our Water Resources Department.

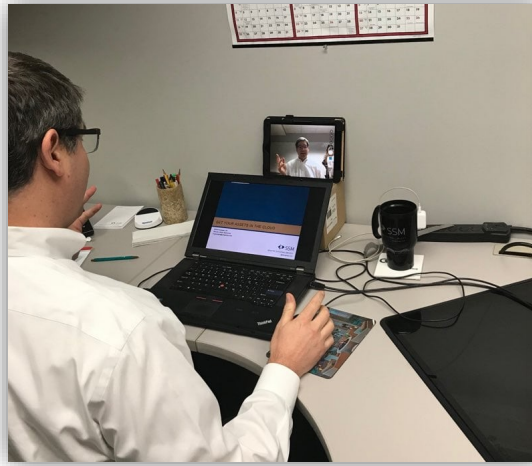
Austyn is a graduate of Indiana University of Pennsylvania with a BA in Geography/ GIS Technologies.

Happy Retirement Terry Reed!

This month we celebrated Terry Reed and his contributions to our firm.



“Over the past 5 decades, I have had the pleasure and good fortune to work with some outstanding people in great companies. The past 24 years here at SSM have been a highlight of my career. I want to thank each of you for being a part of my career. I truly cherish the friendships I have developed along the way.”



It's Virtual Conference Day!

Our water and wastewater team participated in the 8th Annual Berks County Water & Sewer Association's Virtual Conference.

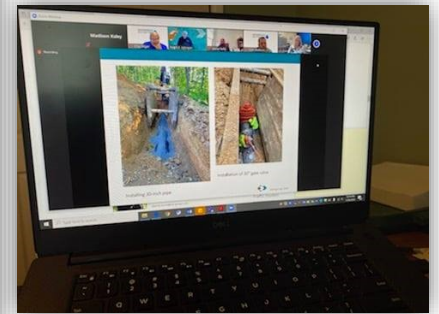
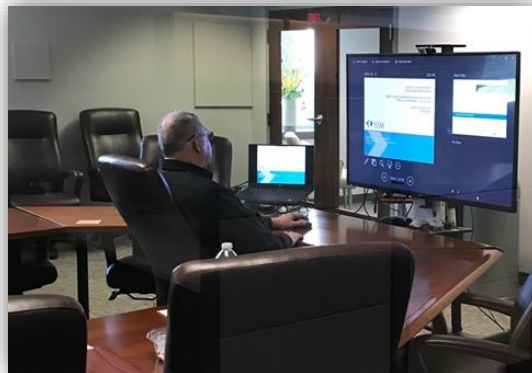
Serena DiMagno provided an EPA and DEP Legislative and Regulatory Update.

Ralph E. Johnson, PE presented about a Crisis Management Toolbox focused on Emergency Response Plan Updates, critical pandemic preparedness plan elements, exit and re-entry planning, maintaining the facility, and protecting the operators.

Al Guisepppe, PG discussed the advantages of cloud infrastructure as organizations prepare to react to new work place requirements during an emergency or pandemic.

FOR MORE INFORMATION:

Visit ssmgroup.com/presentations to download the sessions.



Opportunities at SSM - join the team!

Our work touches everyday life, from the water you drink to the air you breathe to the buildings and communities where you live, work, and play.

Visit ssmgroup.com for more information about these opportunities:

- Land Development Engineer
- Project Representative/Construction Observer
- Survey Technician
- Survey Crew Chief
- Graduate Civil Engineer
- Structural Engineer
- Senior Water Engineer
- Project Manager