

Berks engineering firm at forefront in use of drones

By **JENNIFER HETRICK**

Special for Lehigh Valley Business



Snyder

It took a while to get off the ground, but flight is might for SSM Group Inc. of Wyomissing.

The engineering firm last December acquired its long-awaited drone, a DJI Inspire 1 Pro model. And just last month, SSM began using the

unmanned aircraft unit to benefit its clients.

Commercial use of drones translates to gathering more accurate and comprehensive data for land use and building projects in much faster time and from viewpoints which are not often feasible from the ground.

But a delay in the rollout of regulations for piloting and licensing from the Federal Aviation Administration kept commercial use of drones on hold because of the complex nature of protecting people's privacy, outlining safety guidelines and ironing out legalities.

Case in point, it was not until the end of August that the FAA devised its operator test.

"It took the FAA quite some time to come up with an airman's test," said Chris Snyder, SSM Group senior land surveyor.

Snyder finally had the opportunity to take his test on Oct. 7, when he passed. And fellow senior land surveyor Steve Smith took and passed the test on Oct. 31 so that SSM Group now has two staff members who can fly its drone.

THOROUGH USAGE REGULATIONS

Before the tests were developed, SSM Group used an FAA exemption to use its drone for work projects, but was not allowed to charge money to commercial clients to obtain the results.

Snyder noted the FAA has incredibly thorough drone regulations across circumstances of

SSM Group's drone operates above its Wyomissing headquarters.



PHOTO COURTESY OF SSM GROUP

operation for commercial use.

Some of the regulations, which often vary according to location, are related to height of flight, ground level, speed, weight, visibility, time of day and class of air space.

"At a landfill, the drone can't be over people who are not part of the project, like people in a pool or walking nearby, without them knowing it," Smith said. "They'd have to be a part of the project."

ADVANCED MAPPING

The drone's high resolution photography camera, along with a GPS device mounted on it, allow for advanced data collecting and aerial mapping.

Smith said an infrared camera for capturing thermal imaging information is a future purchase and that it will help to detect failures in electrical equipment or underground gas-line leaks.

The drone's complex battery system allows it to operate an estimated 12 to 18 minutes per charge, depending on air conditions and temperature as well as wind velocity, Smith said.

"We have a charger which can charge four at one time, and we have six batteries now," Smith

SSM GROUP INC.

- **What:** Provides engineering services of site planning, building, infrastructure, surveying, water and wastewater planning, environmental modeling and construction.
- **Locations:** North Park Road, Wyomissing; North Cedar Crest Boulevard, South Whitehall Township; and Camp Hill.
- **No. of employees:** 75.
- **Website:** www.ssmgroup.com.

said. "We are ordering another charger and six more batteries."

REDUCED ENERGY COSTS

Smith noted the drone enhances SSM's work in agriculture.

"Our new software program shows distressed vegetation," he said.

Data about these spots can be used to map and identify zones with problems.

A tractor can be driven to only spray over the relevant areas, cutting back fuel and chemical usage and saving money for a farmer, Smith said.

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CURRENT MAPPING

SSM Group Inc. has worked in South Korea, Mexico, Puerto Rico, Jamaica, St. Thomas and St. Croix.

But one of the first SSM Group clients to have access to the drone's data is the New Morgan-based 617-acre Conestoga Landfill operated under the national parent company known as Republic Services.

"In an operation like the landfill, the land-

scape on the site is changing daily because of placement of waste," Smith said.

"The landfill operation managers like to see a very current, up-to-date mapping of the facilities."

ACCESSIBILITY, EXPERTISE

Bryan Cleaver, environmental manager for Conestoga Landfill, lauded SSM's accessibility on-site and industry-specific knowledge.

"Even in the middle of a mass excavation, they can fly the drone to get the percentage of completion of the project, surveying stockpiles and gathering real-time information, which is valuable to us from an operations standpoint," he said.

"This is a unique industry with its rules and regulations," Cleaver said in noting SSM Group Inc.'s background in landfill operations.

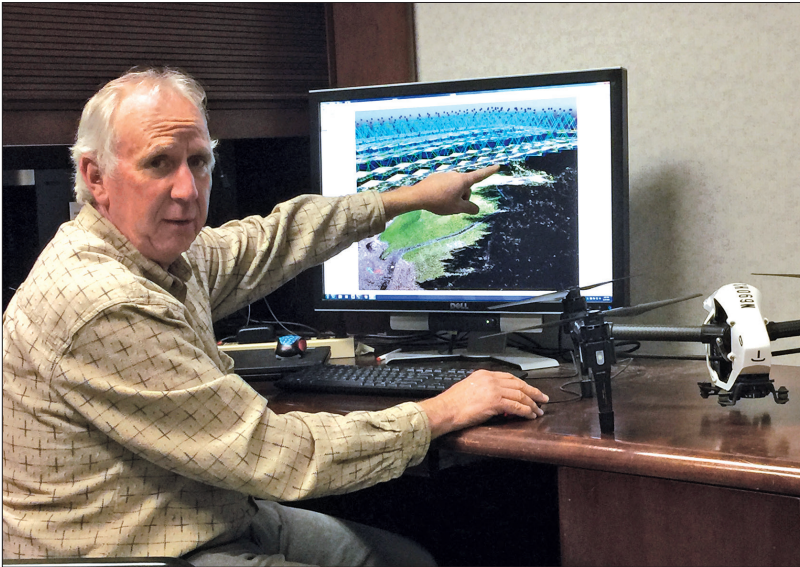


PHOTO COURTESY OF SSM GROUP

Next to the company's drone, Steve Smith of SSM Group uses Pix4D software to show the location of each aerial photograph. Pictured is a 3-D pixelated geographic map of a site.



The Pagoda, a landmark in Mount Penn, was photographed at 30 meters above ground with SSM Group's drone. Drones can photograph and capture structural details better than someone could do from the ground. - PHOTO COURTESY OF SSM GROUP

