



CASE STUDY: MOSS



How a major construction management company used Skyward to launch safe, successful drone operations



THE ENTERPRISE

Moss is a national construction management company consistently featured among the ENR Top 100 Contractors (2017–2019). With 10 offices in Florida, Texas, California, and Hawaii, their portfolio includes high-rise construction, utility scale solar projects, educational centers, judicial facilities, police and fire stations, airports, maritime ports, and passenger rail projects.

THE SITUATION

As a major construction management company, Moss seeks out innovations which can improve deliverables, mitigate risk, and increase efficiency. As drone technology began to proliferate in the construction industry, employees at Moss became interested in adding drones to their operations. But Moss's safety department knew that launching drones on the jobsite without consistent standards for operations and procedures could result in significant risk.

THE CHALLENGES:

1. Find a way to launch a drone program quickly, safely, and in compliance with federal regulations and company policy while seeing meaningful gains in the field.
2. Adequately train and equip teams of employees—many of whom had never touched a drone—without spending months developing standards for training and operations.

FINDING SKYWARD

“One of the things that we encourage here at Moss is an entrepreneurial spirit,” said Ben Fritzsche, Assistant Project Manager at Moss and certified drone pilot.

This spirit led a number of Moss employees to ask about using drones for a variety of use cases across several departments. Rather than outsourcing drone operations to an aerial services provider, Moss embraced the challenge of deploying this new technology to the field—but only when it was safe to do so.

Scott Gerard, Vice President of Environmental, Health & Safety at Moss, began to look for a drone ops management solution which would enable Moss employees to safely take to the skies. That’s when he discovered Skyward.

“We started looking for a partner to help us with our written program—our standard operating procedures—and to manage our flights,” Scott said. “It became apparent to me pretty quickly that we could put together a program with the people at Skyward that would allow us to fly safely and compliantly. It just seemed like a natural fit.”

“Drones have changed the thermographic landscape in a way that I didn’t foresee when we first started using the aircraft around the company. Initially, I thought that we were just going to do utility inspections on vertical infrastructure, and that was it. I quickly found out that construction, mapping, and coal pile analysis were other practical uses in our solar practices.”

—*Scott Gerard, VP, Environmental, Health & Safety at Moss*

Skyward's Quick-Start Package

Moss purchased Skyward's Quick-Start Package for Enterprises, which includes the hardware, software, training, and support needed for major enterprises to certify, equip, and obtain value from a nascent drone program. The Quick-Start Package enabled Moss to train and equip a team of pilots within a matter of weeks—a process which takes many companies years.

STEP 1: Certification

Moss assembled a team of 15 employees from departments as diverse as Safety, Construction Management, Marketing, Building Information Management, and Warranty & Quality to have a stake in the fledgling drone program.

Each team member took an online training course through Drone Pilot Ground School, Skyward's partner in online training. The trainees then took and passed their Part 107 Remote Pilot exams to become FAA-certified UAS pilots.

"The online training itself was beyond awesome," Ben said.
"I was extremely well prepared for that test and didn't have a single issue. And I knew that if I did have any questions, I could reach out to Skyward."

PRO TIP:

When establishing a new drone program, obtain stakeholders from a variety of departments across the company.



STEP 2: Standard Operating Procedures

Included in the Quick-Start Package was Take Flight, Skyward's extensive set of standard operating procedures for a successful drone program. Skyward worked with Scott and the safety department at Moss to customize the package to Moss's specific corporate policies, needs, and use cases.

"It was about as 'Moss-ified' of a package as we could have hoped for," Scott said. "My gut feeling is that if it had been anybody else, I would've gotten a boilerplated package three or four hundred pages long, and 50% of it wouldn't have applied to what we were doing. But it appears to me that Skyward's team combed through it pretty carefully based on our needs and what our missions were going to look like."

STEP 3: Equipment

Skyward delivered drone kits for Moss's program, including best-in-class drones, tablets, batteries, and accessories. Skyward's Professional Services team provided a thorough hands-on introduction to the UAS equipment, covering everything from basic drone assembly to essential maintenance practices.

STEP 4:

In-person Classroom Sessions

After setting up equipment, the Skyward team provided a three-day in-person training. The core of the training was a comprehensive series of classroom courses on the A-to-Z of drone operations, including safety culture, weather, airspace, emergency preparation, incident reporting, and much more—all according to Moss's standard operating procedures. Moss pilots also learned how to use InFlight, Skyward's ground control station app, to plan routes, request airspace access, and perform flights.

"You could tell there was a lot of information to cover," Ben said. "I thought the Skyward team did a really good job steering us through the course, deciding what was important, and making sure we came out of there as comfortable and confident as we could be."

STEP 5:

Hands-on Training

A critical component of the training was hands-on flight practice. Each pilot conducted exercises in a nearby field using Skyward InFlight, practicing what they learned and strictly following standard operating procedures.

"There's nothing like hands-on," Scott said. "I can read it in a book, I can watch it in a video, I can use the simulator in the classroom, but there's nothing like going out to the field and flying practice missions under the watchful eye of the instructor pilots from Skyward. Our team had real instructors that have real life experience in front of them, telling them what to do, what to expect, and what to watch out for."

On the final day, each Moss pilot executed a practice mission of his or her own choosing from the ground up. They established a goal, planned a flight, checked airspace, followed checklists, flew the mission, and gathered the data—all according to standard operating procedures. Moss pilots used drones to capture 4K videos of the surrounding area, calculate the volume of rock stockpiles, and perform other sample operations.

THE RESULTS:

Rapid Deployment

Since completing the training, Moss has begun to deploy drones in the field, demonstrating the ways UAS can bring value to daily operations.

- Drones performed surveillance during a building demolition, assuring that no unintended damage was caused to surrounding property.
- During an underwater blasting project, drones were deployed to monitor the blasting zone and ensure marine mammals such as manatees and dolphins remained safely away.
- Using a FLIR thermal imaging camera, a drone created a thermographic map of a large utility-scale solar plant, enabling quick assessment solar panels' efficiency and identifying maintenance needs.

PRO TIP:

Every major enterprise, regardless of industry, will find dozens of ways to use drones to increase efficiency, safety, and access to data. Start by piloting one use case in order to refine processes and prove value.

CONCLUSION

Moss's drone program is still in early stages, but its usefulness is growing quickly. Success has resulted in additional interest from other employees and departments at Moss.

"I probably had six additional Moss people come to me and ask, 'How can I become a pilot to fly missions for my group or on my job? How do I get the Skyward training? If I go get my Part 107 certificate, can I get involved?'" said Scott.

Because they continue to use Skyward for management and support, Moss is prepared to scale up and see gains in safety and compliance.

"The app itself is phenomenal," said Ben.
"When I came out of the coursework I was really comfortable with the questions, but there was still some trepidation on my part that I might break an FAA rule. Skyward's software with LAANC integration gives me a lot of confidence."

POTENTIAL USE CASES:

Photogrammetry - extracting 3D data from 2D images

Leak inspections

Solar array inspections

Aerial surveillance during demolitions

3D construction mapping to compare actual construction progress to 3D planning models

Videography for promotion

Photography showing the view from an office window or balcony that hasn't yet been constructed

Pre-slab pour inspections

Post-tensioning layout verification

Find out how Skyward's drone workflow management system is helping companies innovate at skyward.io

Skyward can help you take your drone program further, faster.