



Drones – and the data they supply – are playing an increasingly important role in the construction industry. The team from Microdrones highlights five ways in which drones are currently being used on the jobsite in the construction industry.



Five ways Microdrones being used in the field

Unmanned aerial vehicles (UAV), particularly the totally integrated mapping solutions from Microdrones, are reinventing old ways of doing business. Through innovation, drones are making business operations easier in multiple industries.

In the US, The Federal Aviation Administration (FAA) released rules on commercial drone usage in 2016, helping industrial applications of UAV technology to flourish. Drones are being used all over the world though, in developed and emerging markets alike. Here are five ways the team from Microdrones is changing the game in the construction sector.

1. HELPING TO MANAGE CONSTRUCTION SITES

Direct georeferencing systems, such as the mdMapper1000DG, can precisely map corridor projects such as roads, canals, pipelines, and other linear infrastructure. Drones can efficiently monitor progress and track volumes and stockpiles, and can create real-time project overviews for better safety, planning, and collaboration. Improved job tracking reduces labour and materials waste for construction companies.

There is a lot of waste in construction, including both materials and time. In fact, the American Institute of Architects estimates building-related waste contributes 25% to 40% of America's solid-waste stream. With construction spending in the US totalling \$1.13 trillion in 2016, those losses translate to over \$160 billion in waste.

What does all this mean? There is a tremendous

opportunity to save money, since even small gains in efficiency can translate to meaningful savings. Integrated drone mapping packages can help. Construction firms around the world are quickly learning that using Microdrones' complete mdMapper solutions can help them reduce waste, while saving time and money.

2. DETECTING METHANE IN GAS PIPELINE INFRASTRUCTURE AND LANDFILLS

Methods for detecting gaseous hazards, specifically methane, have transformed drastically over the years. The mdTector1000CH₄ from Microdrones is an aerial methane inspection package that employs an unmanned drone and a Pergam gas sensor to provide safe, reliable, and cost-effective methane detection. The hardware is fully integrated with tablet software that makes it easy to plan a mission, fly it, and

visualise the methane spots in both real-time and post-flight.

Microdrones engineered the mdTector1000CH₄ as a lightweight vehicle that can be easily deployed in almost any scenario. It is equipped with a robust Pergam sensor that boasts detection limits of 1 – 50,000 ppm × m, and a detection speed of 0.1 seconds. The advanced, field-tested mdTector1000CH₄ is a low-cost yet superior innovation for gas detection while removing the dangers to human safety associated with traditional methods.

“Methane gas detection is a practical and natural application for commercial drones,” says Mike Hogan, sales director, Microdrones. “The gas and infrastructure market has been eagerly anticipating a solution like this, and I'm glad that Microdrones is filling that need with a proven package.”

Drones can map corridors where new infrastructure, such as power lines, will be placed





Using drones to detect methane is a much safer and more accurate way to do it

systems are

3. SURVEYING FLOOD ZONES

Direct georeferencing (DG) is a method of connecting aerial images to their position on the Earth and putting them together in the most precise possible order to reduce the time surveyors must spend on mapping projects.

In many cases, DG reduces or eliminates the need to install ground control points. The Riverside County Flood Control and Water Conservation District recently tested the mdMapper1000DG on their project. With the UAS system, the team drastically reduced its field time investment and cut aerial flight costs.

4. INSPECTING STRUCTURES THAT ARE DIRTY, DANGEROUS OR DIFFICULT TO REACH

There are many success stories of using drones for aerial mapping, one of which is mapping a full dam in Canada. Because of hazards, it was prohibited to establish GCP's on the dam, yet there was a necessity to map and analyse the structure. A few hours of flying and data processing produced a pointcloud mapping product. It was the perfect solution for the job.

5. CORRIDOR MAPPING ROADS

Corridor mapping is frequently used by utility or transportation companies to assess an area where new infrastructure, such as power lines or train tracks, need to be built. As the global demand for energy grows, a fast and accurate method of surveying old infrastructure, and planning for new, is needed. Corridor mapping allows this to be done far faster and with less man-power than traditional survey systems.

Corridor mapping involves surveying along linear structures or locations, such as roads,

Using drones can help the construction industry decrease waste

railways, and power lines. Microdrones' mdMapper1000DG is ideally suited to corridor mapping, giving the user precise control with more accuracy and safety than fixed wing aerial options. The mdMapper1000DG integrates Microdrones' high performance UAV platforms with advanced sensors and software, offering the user a complete, integrated package.

The mdMapper1000DG also features direct georeferencing. This technology does away with the need for ground control points, saving an incredible amount of time and effort when preparing to map, while still delivering survey-grade accuracy.

■ Want to know more about how a fully integrated drone package could help your business? Visit www.microdrones.com to talk to an expert



JOB SITE DURABILITY. PROFESSIONAL RESULTS.



The mdMapper1000DG from Microdrones combines our robust, weather resistant UAV with a fully integrated photogrammetry direct georeferencing system. You can avoid installing ground control points (unless you want to install 1 or 2 to check your work for quality control). Collect your images and post-process them in a fraction of the time, following an end-to-end software workflow. Sound interesting?

Complete this easy online form to start a conversation with us: lp.microdrones.com/ic



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SITECH South is proud to offer complete UAV packages from Microdrones that include everything construction professionals need for surveying, mapping, and other aerial applications.