

## On target – drone surveying the construction of a shooting sports complex

When the Municipal District of Taber constructed a new shooting facility, it employed Ventus Geospatial to provide its survey data. Ventus' eBee drone achieved low GSDs, remarkable vertical accuracy, and all more quickly than conventional surveying could achieve.

Over the past three years, the Municipal District of Taber's team has been busy constructing the Taber Shooting Complex, a world class sports shooting facility 8 km north of Taber. This new centre boasts 50 m, 100 m, 200 m and 600 m shooting ranges, a 3D archery range and an archery competition range. The project also involved constructing the site's roads and parking lots.

According to the Municipal District of Taber's project communications, the range's evolution was a little different to most, since construction took place during the past three winters rather than during warmer periods. The reason being the Municipality's goal of building important municipal projects all year round in order to best utilise its budgets and push along progress.



*A section of the orthomosaic produced following the project's preliminary eBee survey, showing the ground before any construction occurred.*

“The Municipality required a detailed topographic survey for the range's design and further surveys for quantity measurements”

### Several surveys

Owen Brown, the vice president of Ventus Geospatial, explains: “The Municipality required a detailed topographic survey for the range's design and further topographic surveys for quantity measurements. Using our eBee we supplied all of the project's preliminary survey information, used for the full detailed engineering design, and also in-construction surveys, which were used both to monitor progress and track quantities.” Brown adds that approximately 350,000 m<sup>3</sup> (over 12,000,000 ft<sup>3</sup>) of dirt were moved in total.

The client was looking to obtain absolute accuracies of below 6 cm due to design constraints and the tight grade lines that needed to be present within the project.

# Why senseFly

The Ventus team chose the eBee to collect its survey data, since the company owns and has now “vast experience” of using this platform. “We’ve provided high accuracy topographic data to many clients through using this drone,” Brown says. “We originally chose senseFly products because they allow us to create high accuracy, repeatable products, which is of the utmost importance when providing information for detailed engineering design or quantity measurements.”

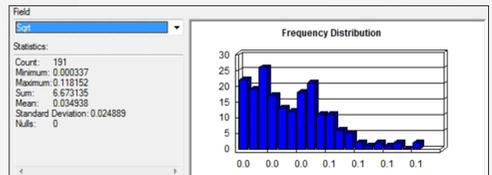
The survey deliverables that Ventus provided to the MD took two forms: RGB orthomosaics and .las format digital terrain models. These deliverables featured a ground sampling distance of 4 cm and vertical absolute accuracy of 3.5 cm.

“Our client was very pleased with the efficiency and accuracy our UAV produced,” Brown concludes. “The high-resolution nature of the data set was very valuable to the design process, with all features and areas of interest collected in one flight rather than having to mobilise survey crews to collect any additional survey information that was missing, or where more detailed information was required, a common issue with conventional surveys. As such our field time was cut substantially. The orthomosaic was also a large value add to supply alongside the survey data.”

“These deliverables featured a ground sampling distance of 4 cm and vertical absolute accuracy of 3.5 cm”

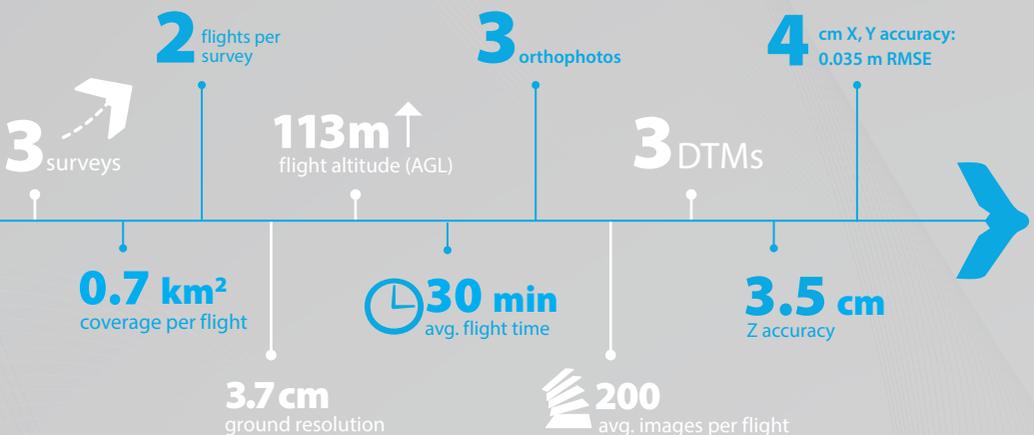


Phase two of the build, showing a completed archery range in the NE corner and a high-grade access road on the east side of the facility.



The project's vertical Root Mean Square Error (RMSEz) values, taken on March 23, 2016, from a direct comparison between RTK GPS test shots and UAV-acquired elevations—providing a picture of the system's overall surface accuracy.

## PROJECT STATISTICS



Get the newsletter: [www.sensefly.com](http://www.sensefly.com)

senseFly is a Parrot company. Copyright © senseFly 2016. All rights reserved. senseFly Ltd., 1033 Cheseaux-Lausanne, Switzerland

senseFly  
a Parrot company