

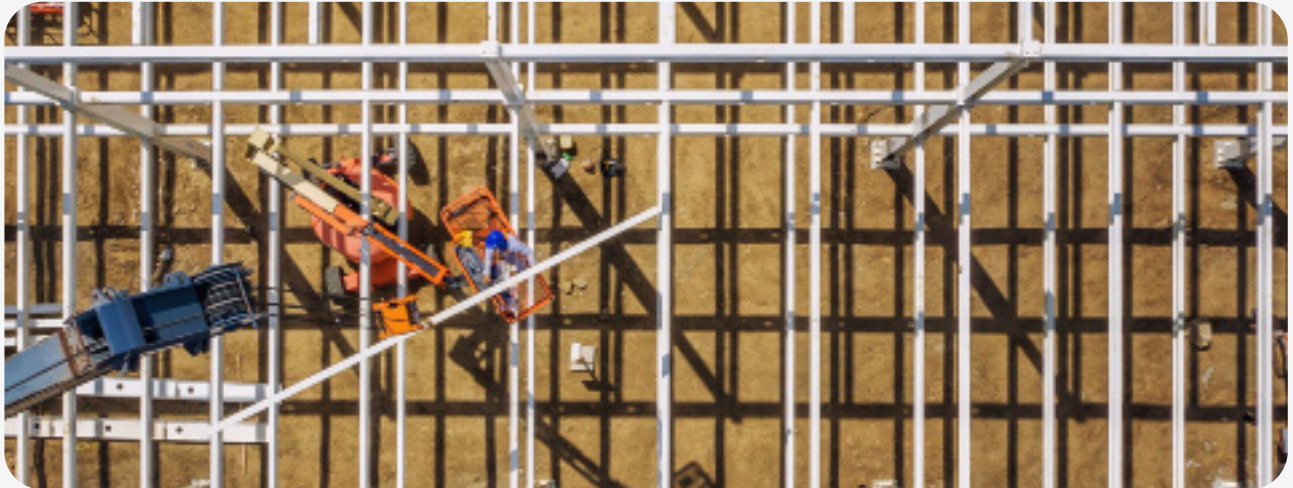
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Monitor Construction Sites More Effectively

QUICK GUIDE

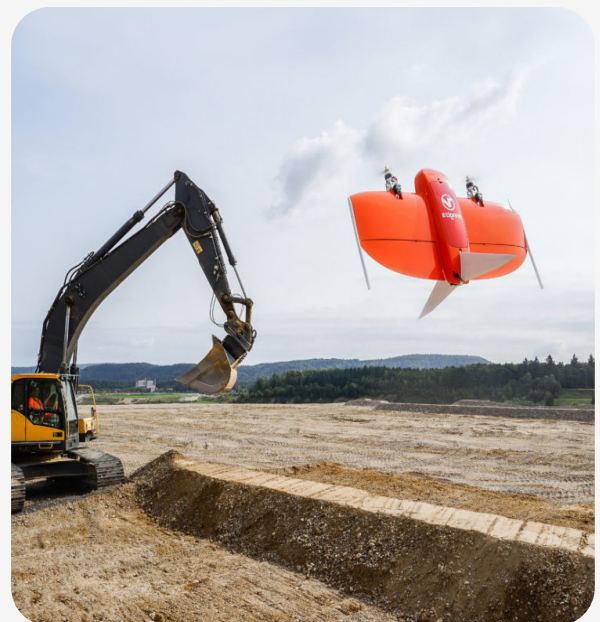
Challenges

In the construction industry, meeting deadlines and respecting costs are continuous challenges. For example, these can be due by unforeseen site constraints or a change in the order of tasks followed by an unexpected event. Thus, it can be difficult to respect budgets and schedules, and cost overruns are frequent. Drones are becoming popular to monitor construction sites as they allow to gather up-to-date data more frequently.



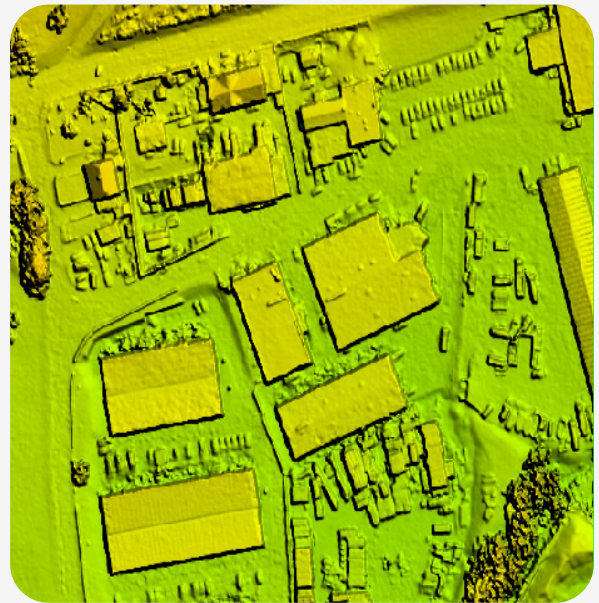
Collection

Drones offer major advantages to collect imagery due to their low cost and ease of use. Multi-rotor or fixed-wing platforms can be flown, depending on the resolution required, the size of the area to be covered and operational constraints. To ensure absolute accuracy, high-precision GPS are often combined with correction technologies such as RTK or PPK for direct georeferencing. It is also possible to use ground control points consisting of physical targets placed on the ground for which the position is measured prior to flight.



Processing

The collected data can be quickly processed by Correlator3D™ software to create different mapping products. The use of a high-end photogrammetry suite allows not only to save processing time, but also to generate the most accurate results possible. These include digital surface, terrain models (DSMs/DTMs) and point clouds at high densities as well as seamless orthomosaics. Using fast software leads to quick turnarounds for large areas and can even allow processing drone projects directly in the field on a laptop.



Interpretation

The rapid generation of elevation data and orthomosaics at very high resolutions and accuracies provide surveyors and site managers with advanced knowledge on construction sites. Once the information is collected and processed using Correlator3D, the models generated can be used to support construction activities, both operationally and logistically. Whether to measure distances, elevation differences or to extract contour lines, the elevation data represent a rich source of information. Volumetric calculations can also be performed to determine, for example, the volume of excavated material. Orthomosaics provide an overall snapshot of sites, allowing to monitor work progress.



Benefits

The use of drones combined with advanced photogrammetry software offers major advantages to monitor construction sites. The access of sites is facilitated, especially when steep slopes or tall structures are present. The progress of projects can also be easily and more frequently monitored, removing the need to send technical teams on the ground and reducing the associated risks. Combined together, these advantages lead to cost reductions compared to more traditional terrestrial surveys.



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