

Unmanned Aerial Vehicles (UAVs)



USING THE 'SURVEYING INSTRUMENT OF THE FUTURE' TODAY, FOR GREATER ACCURACY, EFFICIENCY AND SPEED.

UAVs, or drones, have become Pöyry's 'eye in the sky' in recent years. From surveying to 3D modelling and photogrammetry, drones have become a crucial part of our digital portfolio that directly benefits our clients' projects.

CLIENT NEEDS

Pöyry's use of drones for surveying and 3D modelling help address key challenges at the onset of a project. For example, inaccessibility of project sites, security hazards or stringent entry requirements can all add significantly to the cost and time of project delivery.

Drones now enable surveyors and engineers to map practically anywhere, anytime. With the minimum level of exposure in terms of safety and capital expense, photogrammetric surveying through the use of drones enables Pöyry engineers to create 3D models based on collected images. Ultimately, this benefits our clients' projects through greater efficiency and effectiveness.

THE INDUSTRIAL APPLICATIONS OF DRONES

Surveying and 3D modelling

The surveying team in Switzerland, one of Pöyry's engineering centres of excellence, initially used drones for pre-construction aerial shots in project sites. Three years ago, the team decided to use UAVs for capturing images to meet photogrammetric specifications and bundle block processing.

Nowadays, drones are being used across the Pöyry group, particularly in **Europe, Latin America** and in **Southeast Asia**, for aerial photo and video production, mapping, and 3D modelling.

In **Finland**, Pöyry conducts photogrammetric processing of digital images, generating 3D

spatial data and geodetical calculation that enables them to transform data to the correct coordinate system. Drones in Finland have been used to model industrial areas, speed up scanning of larger properties and provide video footage of areas which are difficult to access from the ground. Advanced surveying in underground facilities such as tunnels, shafts, storages and spaces are also being developed, using specialised drones.

In addition to photogrammetry, Pöyry in **Brazil** is also developing ways to present projects using drones, especially useful for brownfield projects. The country's Architecture team uses drones for animating, video editing, simulating, rendering, compositing, and motion tracking and allows them to render and model complex scenes.

Safety in Hazardous locations

Recognising Pöyry's growing drones competency, the Energy **UK Team** developed a safety case for the use of UAVs on nuclear hazard sites. The study identified hazards and risks and suggested safety management systems and also included a route map, which identifies procedures and permissioning documents for requesting a flight.

Renewable Energy

In **Italy**, Pöyry experts use drones for Hot-spot detection in large scale PV plants and in monitoring the status of blades in wind farm projects, which has profound effects on the efficiency of such tasks for renewable projects such as these.

Through the use of drones, owners of PV or wind plants can quickly analyse and check the presence of potential damage without affecting operation. The use of drones for such renewable projects enables clients to save money and time. In some cases 80 to 90 per cent of the plant, can be quickly analysed from drone surveys, freeing up time for more in-depth analysis of the critical 10 to 20 per cent of the plant where accurate and detailed analysis is essential.

CLIENT BENEFITS

Accuracy. Delivers accurate base maps in a very short time and at a fraction of the cost of more traditional methods.

Visibility and Efficiency. Drones support progress monitoring and thus contribute to an enhanced review process and better administration for all parties involved.

Speed. The safety and convenience that comes with using drones also leads to faster development time, significantly impacting the speed of project delivery.

ABOUT PÖYRY

Serving clients across energy, industry & infrastructure, together we deliver smart solutions and work with the latest digital innovations. 5500 experts. 40 countries. 115 offices.