Roof and facade inspections Using drones for Facility Management



After heavy storms, damage reports for roofs and facades become very frequent. Defects in the roof skin or the building shell can cause lasting damage to the buildings and it is absolutely necessary to avoid them!

Preventive roof and facade inspections with the assistance of drones is both sensible and necessary. Roofs and hard to reach areas can be surveyed within a few minutes and fully automatically by using drones as part of our TFM services.

The drones deliver real-time images that can be analyzed and stored. Regular routine inspections allow early recognition of changes to the surface of your building.

Your added value:

- Quicker and more resource-efficient use of drones instead of time-consuming and risky roof inspections by people
- Data integration in CAFM system for seamless maintenance documentation
- Flexible operation in winter for monitoring snowcovered roofs
- Regular autonomous flights to obtain up-to-date
- Quick repair of damages thanks to immediate data analysis of recordings and initiation of repairs



Our forward-looking concept includes the following steps:

- Obtaining a take-off and landing permit, which forms the basis for all further steps
- During post-processing, sensitive data such as faces or license plates is censored
- The drone is insured at all times
- The image material will be used exclusively on local

data carriers stored in the respective camera

• The take-off and landing site is chosen so down winds caused by buildings are not flown through

Technical details of the high-performance drone:

- Six rotors allow an especially stable flight even if one rotor fails
- High-resolution images (20MP resolution per recorded image); through image stitching, resolutions greater than 100MP are an option
- Video recordings (resolution of 4K and 60 images per second)
- No transfer of data and metadata to third party servers
- Autonomous flights

Further areas of use:

- Complex measurements and mapping of factory halls and company facilities through quick and precise 3D mapping
- Thermal images to quickly localize any areas where energy is wasted
- Identification of securing points and roof drains; animals and nests

Services in detail:

Thermal Imaging

Identifying water pockets under the roof cladding or facade cladding:

- Ad-hoc analysis by certified thermographs
- Indicator for approaches to thermal-energetic building optimisation

Damage analysis

Optimized and fast damage detection and analysis through tailor-made solutions:

- Video recording as time-optimized solution for narrow buildings
- Acquisition of still images at predefined positions by programmed flights
- Post-processing and stitching of images in the "Leadec post-processing laboratory"

3D-mapping

Specific and optimal recording for the creation of a 3D model:

- Centimetre-accurate measurement due to special trajectory configuration
- High level of detail due to cross-flight at 90° angle
- Transfer of a virtual 3D model



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