

# DAM SURVEY CASE STUDY

KaarbonTech Surveying were commissioned to produce an aerial survey of the Norton Fitzwarren Dam. Our client, an Environmental company, who deliver renewable energy and waste management projects in both the urban and rural environments, are responsible for maintaining the dam.

The dam itself is 450-metre-long and 5.25m high at its highest point, it is designed as a flood attenuation structure to prevent flooding in the village of Norton Fitzwarren near Taunton. When full it can impound 750,000 cubic metres of water. A 2.5-wide by 2.0-metre-high culvert allows normal flows to pass through the dam uninterrupted but limits the amount of water that flows downstream during abnormally high flows and thus reduces flood risk. The dam starts to impound when flows exceed the capacity of the culvert but it is only expected to fill to the top when a flood event with a return period of one in a hundred years is experienced.

The survey was to be flown using our lightweight SwingleCAM UAV. The UAV was chosen because it would provide a high resolution ortho-rectified single image of the dam and surrounding area.

Traditional aerial surveying would cost a significant amount of money, so the UAV provided an economical alternative and could be quickly deployed.

KaarbonTech are licensed by the CAA to perform aerial surveys within the UK. Our pre site and on-site survey and risk assessment was performed to check the area for obstacles and for landing and take-off points. The airspace was also checked to ascertain the airspace classification and whether permission would need to be gained in order to fly.

The dam itself is relatively small so the UAV only needed two flights to complete the survey. There was no disruption to near-by residents or the local wildlife and we were on and off site in a number of hours.

The resolution of the final imagery was 3cm GSD and this was then added to a CAD format and supplied to the client along with all the images of the flights.

The imagery was very well received and now the dam condition can be assessed using UAV at regular intervals to help pinpoint issues that a normal ground survey may not see.



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