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Transformers at Alconbury

The private high voltage electricity distribution network inherited at our Alconbury Weald site was originally designed for a fully operational USAF Air Base with significant capacity built-in for future expansion and adaption as their requirements changed.
The network within the future Residential Key Phase 3 area comprised 24 electrical substations, containing transformers ranging in capacity from 500kVA to 800kVA whilst also being 50 years old. These old over-sized transformers are very inefficient because of the high electricity 'load loss' even when there is no electricity demand being drawn.

Contrast this with the far lower electricity demand required by a modern residential development given it will be built to meet stringent energy efficiency regulations and supplied by the latest transformers which have a negligible electricity loss when in operation.

In preparation for the Key Phase 3 residential development at Alconbury Weald and following the end of interim commercial uses of buildings, the number of substations have been reduced since 2019. In October 2023 a further 12 have been shut down leaving only 5 of the original transformers in place to serve the retained Heritage Area comprising the nuclear bunker and listed aircraft hangers. The removal of the transformers has led to a notable 90% reduction in consumption and cost of electricity associated with running a private high voltage network on the site.

The remaining five transformers are being replaced with smaller and more energy efficient 50kVA versions during 2025. It is estimated that the electricity savings that will subsequently accrue will pay-back the capital outlay for the new equipment within 15 months, making both environmental and economic sense.

"The removal of the inefficient transformers at Alconbury Weald represents a significant reduction in electricity consumption and the transformer replacement programme of the five remaining transformers ensures we minimise consumption due to transformer load losses and our overall carbon footprint" - Andy Brading