



Case Study

Burwell

Project: Substation Extension and Upgrade, Cambridgeshire

Client: Linxon

End User: National Grid

Services Provided: Civil Engineering
Building Construction

Summary:

Delivered a fully integrated substation extension within a live, environmentally sensitive site, balancing technical complexity, ecological compliance and long-term asset performance.

Scope of Works:

- Formation of a new substation extension platform, including bulk earthworks, repurposing of arable land, engineered fill and an integrated attenuation system to provide a stable, flood-resilient base for new assets.
- Construction of internal and external access infrastructure, supporting safe construction activities and long-term operational access.
- Reinforced concrete foundations for new and existing high-voltage equipment, designed to suit site conditions and operational loads.
- Installation of ducting, precast concrete cable troughs and earthing systems, integrated with the live substation to ensure safe and compliant service routing.
- Drainage and surface water management works, including ditch reprofiling, piped drainage and manholes to protect assets during extreme weather.
- Completion of external finishes, including substation gravel and tarmac surfacing, delivering a safe and durable operational compound.

Project complexities, simplified by Alpha:

- Ecologically sensitive site constraints, including the presence of protected species such as water voles. Works were carefully sequenced in close liaison with approved ecologists to comply with licence conditions and seasonal movement restrictions.
- Variable and unforeseen ground conditions, requiring close collaboration with the design team to adapt foundation and construction solutions and maintain buildability and programme alignment.
- Additional electrical protection requirements introduced during delivery, including secondary insulation measures to reinforced concrete elements to mitigate electrical interference and enhance long-term asset performance.



Project Outcome:

- ✓ **A stable and resilient substation** platform capable of supporting long-term operational demands.
- ✓ **Seamless integration** between new and existing live substation infrastructure.
- ✓ **Improved drainage and flood resilience**, protecting critical assets during adverse weather.
- ✓ **Full environmental and ecological compliance**, reducing regulatory and reputational risk.
- ✓ **Programme certainty**, achieved through proactive collaboration and early resolution of technical challenges.

