

HEATWEB

CASE STUDY · HEAT NETWORKS & COMMERCIAL

Balgair Castle, Stirlingshire

Flood-proof outdoor HIUs on a biomass network

AT A GLANCE

CLIENT
Balgair Castle holiday park

LOCATION
Stirlingshire

SECTOR
Holiday park: lodges and static caravans

SYSTEM
Biomass heat network

HEATWEB PRODUCT
DIGI HIU in a CAMPER outdoor cabinet

The holiday park at Balgair Castle was one of our first jobs with outdoor HIUs. Each had to be flood-proof, run at reduced network temperatures and keep returns low at all times, so we adapted our DIGI HIU and designed a new cabinet for it.

The challenge

The park's lodges and static caravans take their heating and hot water from a biomass heat network. The site covers a large area, so the network runs at reduced flow temperatures with low return temperatures to keep pipework heat losses down.

Each HIU also had to sit outdoors and survive flooding.

What we did

- Used a variant of our DIGI HIU with a very close-approach, double-pass heat exchanger on the central heating to achieve the low return temperatures.
- Designed a new glass-fibre outdoor cabinet, the CAMPER, to house the DIGI and others in the range.
- Split the cabinet in two, with the connecting pipework and isolation valves in the lower compartment.



The CAMPER cabinet open, with the HIU above and the connections below.

What we found

- The close-approach, double-pass heat exchanger lets the HIU serve the central heating while keeping returns low, as the reduced-temperature network needs.
- The lower compartment lifts the HIU more than 600 mm off the ground, protecting it from flooding.
- The CAMPER is designed to house the DIGI and others in the range, giving the HIUs an outdoor home.



The plant building at Balgair Castle.

600 mm
height the HIU is lifted off the ground to protect it from flooding

2
compartments in the CAMPER cabinet: HIU above, connections below

1 yr
after handover, the site was running perfectly

The outcome

- A year after handover the site was running perfectly.
- All of the park's hot water and central heating comes from biomass grown in the surrounding area.
- Low return temperatures across the network keep pipework heat losses down on a large site.

About Heatweb. Heatweb Solutions is a UK provider of engineering support for heat networks and commercial HVAC: monitoring, fault diagnostics, technical compliance, optimisation, commissioning and maintenance.

Talk to an engineer

The full case study: www.heatweb.co.uk/blog/case-study/balgair-castle/

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