



Case study: Lincoln Courts

Boiler replacement project

Lincoln Courts is a modern waterfront accommodation complex, situated in the heart of Lincoln's student village. Owned and managed by the University of Lincoln, the complex is made up of 17 contemporary buildings featuring self-catered apartments, each housing five to eight students with certain apartments specifically designed for students with disabilities.

Brief

To provide detailed design, supply, installation, testing and commissioning of new gas fired, modular boiler systems, to serve student accommodation in Courts 15, 16 and 17.

Summary of works provided

Ancillary works to existing mechanical and electrical services in each plantroom were completed to facilitate boiler replacement. Mechanical works comprised boiler installation, main header distribution pipework, valves, pressurisation equipment and condensate discharge pipework. Electrical works included individual plant power supplies, BMS control interfaces, safety interlocks and control panel modifications.

Our inhouse consultant engineer designed the systems to integrate with existing site-wide Delta Controls BMS, and assessed the existing low temperature hot water (LTHW) distribution system serving each Court to verify the required heating load of the new boiler plant.



Client

University of Lincoln

Sector

Higher Education

Location

Lincoln

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The team needed to address several challenges, one being limited access to the plantrooms located on the top floor of each building and accessed via internal staircases.

Lift and shift equipment was used to safely remove and transport equipment to and from the plantrooms which included the use of stair-climbing equipment, mechanical material hoists and shifting skates.

All new plant and equipment needed to fit within the existing space allocations of the plantrooms, whilst maintaining the required spacings for individual concentric flue terminations. Our team chose a frame mounted, cascade boiler system to allow the plant footprint to fit within the allocated space and create space behind to route the individual boiler concentric flue systems.

All work on Courts 15 and 16 had a ten week completion schedule, however, Court 17 had a tight four-week schedule as returning students needed occupancy.

In response, our team developed a detailed project programme identifying key milestones and co-ordinating individual work packages, allowing successful completion of works on time and to budget.

As the existing boiler plant was no longer supported by the equipment manufacturer, the University was at increased risk of operational inefficiencies, unreliability, and potential downtime. The new boiler systems now provide the University with peace of mind and the modular design ensures plant redundancy should one of the boilers develop an issue.

Seasonal efficiency of the boilers is 95.44%, compared to an estimated 70% of those replaced. This has resulted in reduced gas consumption and operational savings, and the new boiler systems have a life cycle of 15+ years.

Outcomes

95.44%

seasonal efficiency

>15 years

life cycle

reduced ↓

gas energy consumption

Increased ↑

operational savings