Energy Centre frequently asked questions

How does the Energy Centre work?
The Energy Centre will provide what is known as a Combined Heat and Power (CHP) solution, generating both heating and electricity from the same source.

The Energy Centre’s primary source of heat will be from the gasification of woodchips to create a natural synthetic gas that will be utilised with a combined heat and power engine to create heat and electricity. This will be the primary source of heat and power within the new development. The Energy Centre will also contain a supplementary boiler plant room containing natural gas boilers that will give additional heating capacity to cope with peak loads on the development.

The gasification of wood involves heating the woodchips in a low oxygen environment until it releases the natural occurring gas contained with the woodchip. This is then cleaned and cooled and will be used to power an internal combustion engine to generate electricity through an alternator and heat recovered from the cooling of the engine.

This technology has a number of proven benefits, achieving the perfect balance of reducing costs while maintaining superb environmental standards. It will also allow all our energy used to be from renewable sources.

What emissions come from the gas that is produced from gasification and subsequently burned in the CHP Plant?
Water vapours 50%, nitrogen oxide 15% and carbon dioxide 35%.

What waste is left by burning wood chip?
There is minimal waste left by the burning wood chip (ash - biochar) and this requires minimal cleaning.

What will the actual number of woodchip deliveries be per week?
This will be dependent on the woodchip supplier; however, we would anticipate a delivery cycle at full load to two to three times per week.

How many chimneys will be on the building and what is the height from roof level?
There will be a total of eleven flues and chimneys on the roof of the building:

2 x Gasifier – 2.4m high
3 x CHP exhausts - 3.5m high
6 x Boiler Flues – 2m high
Has the Energy Centre had planning permission?
Yes, this was approved in January 2013 by Welwyn Hatfield Borough Council. The application was received in September 2012 regarding the demolition of the existing student residences comprising of 1,059 bed spaces (Roberts Way, Butler Hall, Fern Hall, Chapman Hall, Broad Hall and Coales Hall). In its place would be the erection of 2,511 new student bedrooms arranged in 21 accommodation buildings; retention and extension of existing Telford Court; provision of social, administration, sports facilities (comprising sports pitch and multi-use games area); combined heat and power energy centre, and associated parking and landscaping. It was presented to the Planning Control Committee and endorsed the material planning consideration with planning applications. The University of Hertfordshire student accommodation online planning details which the Energy Centre was part of can be viewed on the [Welwyn Hatfield Borough Council website](https://www.welvahatfield.gov.uk), planning application reference number S6/2012/1928/PP.

What does BREEAM mean?
Building Research Establishment Environmental Assessment Methodology (BREEAM), is an internationally recognised standard for assessing, rating and certifying the sustainability of buildings.

What is True Carbon Zero?
The residences will be true zero carbon, which means that the amount of carbon emissions produced will be outweighed by the amount saved through the energy efficiency features included in the build e.g. the energy centre fuelled by renewable energy source and much improved insulation.

What will it look like once completed?
The exterior of the building will be clad to match the new student residencies. In addition, the side of the building that faces Bishops Rise will be a ‘living wall’.

(Artistic impression of the University’s energy centre).

For further information please contact us by email [2020estatesvision@herts.ac.uk](mailto:2020estatesvision@herts.ac.uk).