

ENER-G Combined Power - Powering the NHS

- 58 operational units across the NHS
- Fleet of engineers available 24/7 to keep you running
- Complete range of CHP units from 4 kWe to 7MWe
- CHP systems fully designed, assembled and tested at our on site facility in Manchester
- European leader in CHP technology
- Fully funded options available
- On-site demand reduction measures including:
 - Boiler replacement/optimisation
 - Water saving measures
 - Low energy lighting systems
 - Insulation upgrades
 - Pump & motor efficiency upgrades
 - Variable speed drives
 - BMS
 - Controls and Metering
 - Monitoring, recording and reporting



www.energ.co.uk/chp

Birmingham Heartlands Hospital

Project

- Need to reduce operational and energy costs
- Environmental concerns
- Backlog maintenance
- Ageing inefficient coal-fired plant
- Fuel choice restricted to coal
- Critical investment required





Heartlands site before measures



Old Coal-Fired Boilers



Old Coal-Fired Boilers

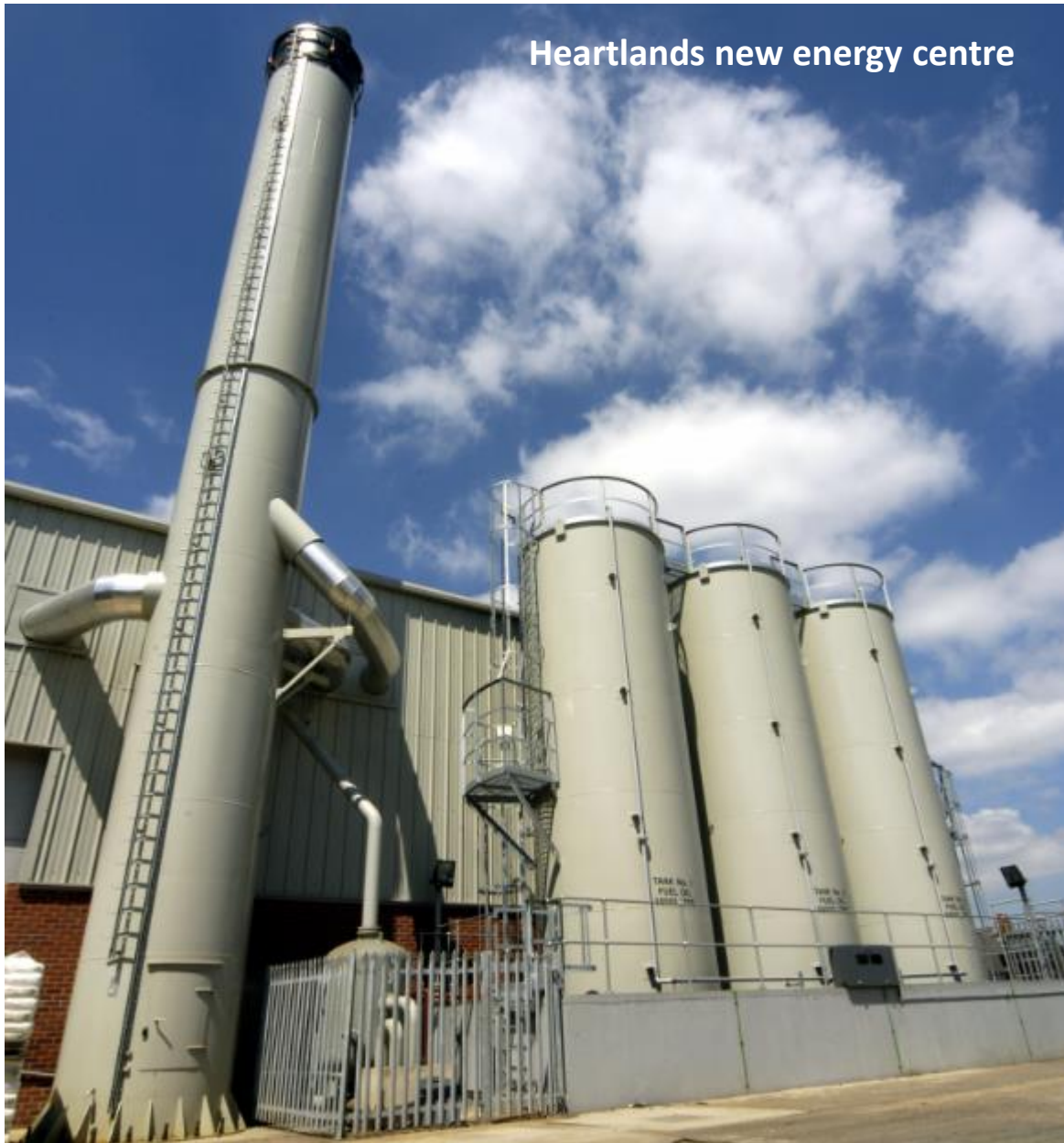
Birmingham Heartlands Hospital

ENER-G's Solution

- PPP project structure - self-funded from savings produced
- Clearance of backlog maintenance
- New natural gas supply to site
- New dual-fuelled steam energy centre
- High efficiency 1.1MW CHP system
- Demand-side measures including;
 - Lighting
 - Boiler replacement
 - Pump & motor upgrades
 - Variable Speed Drives



Heartlands new energy centre





New Gas-Fired Boilers in new energy centre



DANGER HIGH VOLTAGE
DANGER OF DEATH
CAUTION HOT SURFACES

WEAR EYE PROTECTION
WEAR EYE PROTECTION
KEEP CLEAR

ENERG
ADVANCED POWER

CHP system

Birmingham Heartlands Hospital

- Energy centre:**
- 1.1MWe, 1.26MWt CHP system
 - steam raising from waste heat and LTHW
 - high efficiency gas boilers
- Cooling (Trigeneration): 300kW
 - 15 years guaranteed performance
 - Contract signed May 2006
 - Commissioned Oct 2007 (7 years operational experience)



Tangible benefits

- Saving £688,270 per year
- Reducing carbon emissions by 1,627 tpa - 42% reduction
- Carbon Trust grant £403,000 - Community Energy Programme

Birmingham Heartlands Hospital

Saving £688,270 per year from:

Energy Savings

CHP	£225,627
Absorption Chilling, removal of coal drives, lighting and thermal insulation:	£39,210

Non-energy savings

Avoided Capital Charges:	£245,000
Labour saving:	£95,291
Subcontract savings:	£74,036
VAT Savings:	£9,106

TOTAL SAVINGS: £688,270

Continuous Improvement.....





Q&A

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