



University of  
St Andrews

FOUNDED  
1413



# Large Scale Biomass District Heating at the University of St Andrews

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# Outline

Large scale biomass district heating scheme -  
6.5MW biomass boiler, 23km of pipe,  
connecting 36 buildings.

- Drivers and timescales
- Justification behind the project
- How it was financed
- How it was procured
- Problems encountered

# Estate Overview

- Gross area of all buildings is 253,000m<sup>2</sup>
- 8,500 students
- 2,300 staff
- 149 Buildings
- 210 acres excluding farmland
- Oldest building is St Leonard's Chapel (1413)



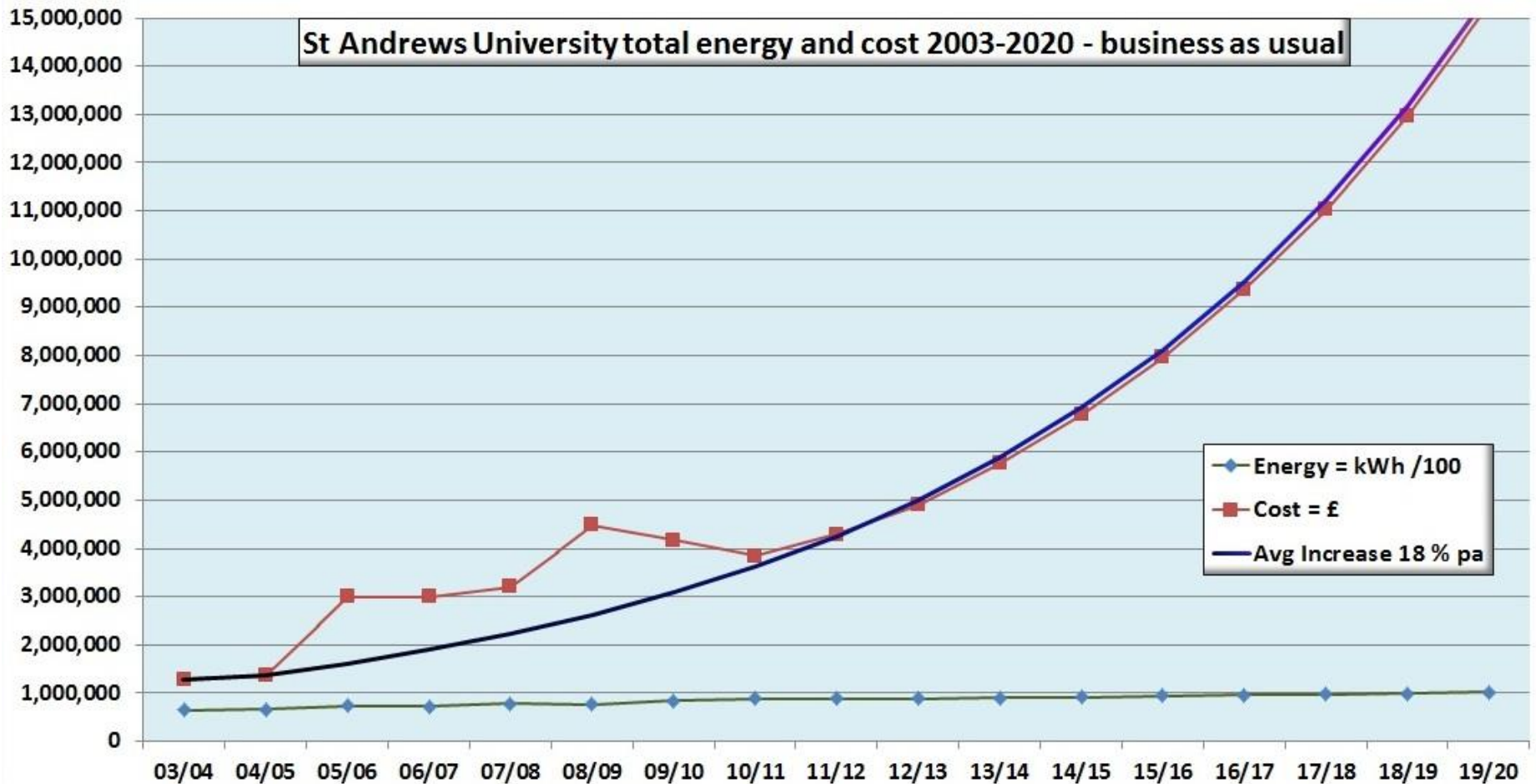
# Sustainability

- Carbon Neutral
- Zero Waste
- Transition University
  
- Smart Buildings
- Clean Energy
- Conscientious People





# Our Concern



# University Energy Use Summary

- Utility Costs rising 18% per annum
- Energy costs quadrupled in past 7 years
- Forecast costs of £20m per annum by 2020
- 5 year rise in energy cost equivalent to 120 FTEs
- Statutory duty to reduce carbon

# Timeline

- 2004 first Carbon Trust renewable surveys
- 2005 first report to PO on renewables – wind & biomass
- 2010 bought Guardbridge site
- 2012 OJEU procurement for biomass CHP externally funded





# Timeline – SFC bid

“This is a bold, ambitious project that supports the University of St Andrews target of being energy carbon neutral for energy by 2016. It is a step change in carbon footprint reduction. This is a ‘shovel ready’ project that delivers a saving of 360,000 tonnes over the next 3 decades”

2013 SFC grant funding £10m

European Investment SPRUCE Fund via Amber £10m

University Funding

# Project Objectives for University and Scottish Funding Council

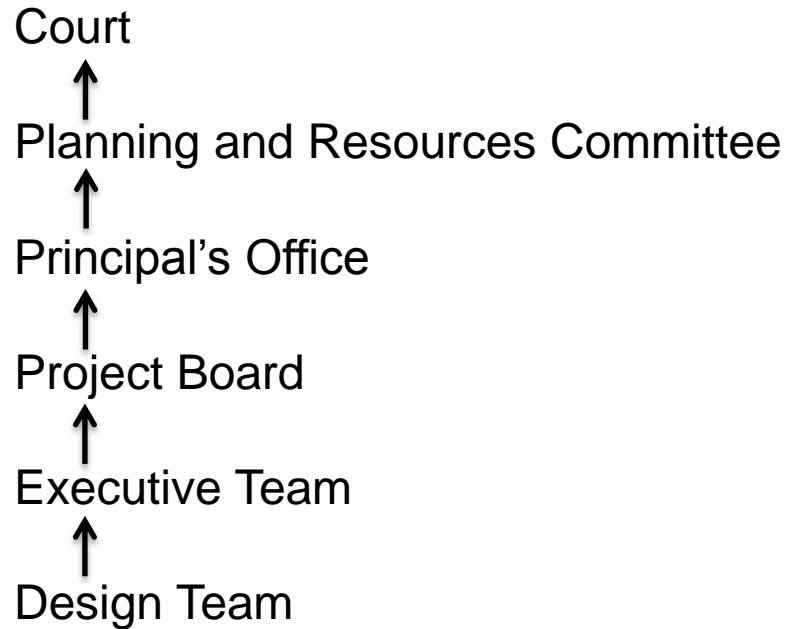
- Achieve a “step change” in carbon emissions
- Control energy costs
- Establish green supply chain with local economic benefit
- Project will be a low carbon exemplar and demonstrate the ‘learning journey’
- Implement the Guardbridge Guarantee – jobs and apprenticeships

# Timeline Biomass Project

- 2013 OJEU tender for heat only option
- 2014 Contract award to Vital Energi
- 2015 – 17 Installation of DH



# Project Governance











Guardbridge DHN Pipe









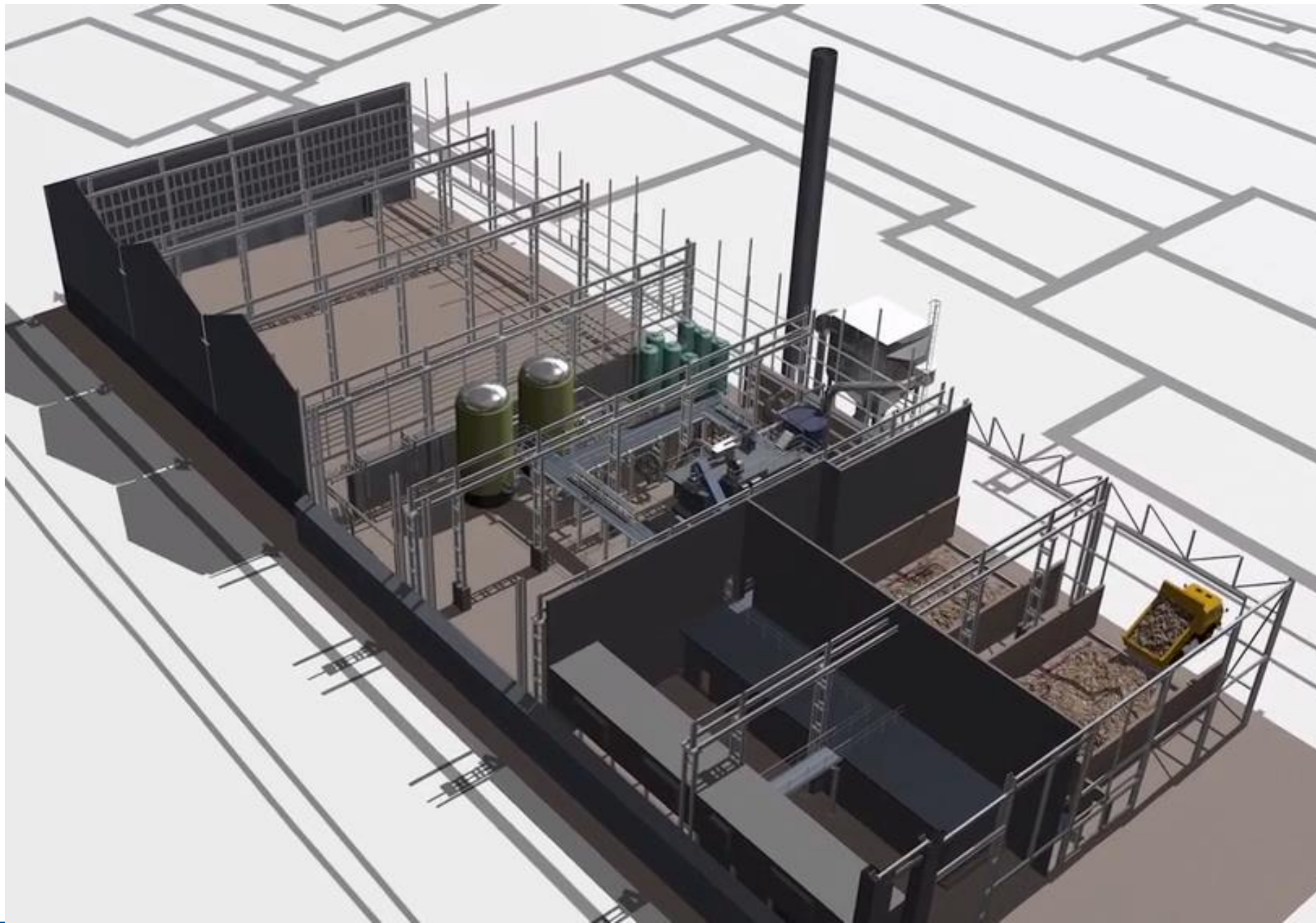


























**Jernforsen Boiler Complete**









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