

University of Bradford, *Horton D Building*

CONTRACT VALUE
£1.5m

BUILDING
Horton D Building

PROJECT DURATION
September 2011 to
March 2012

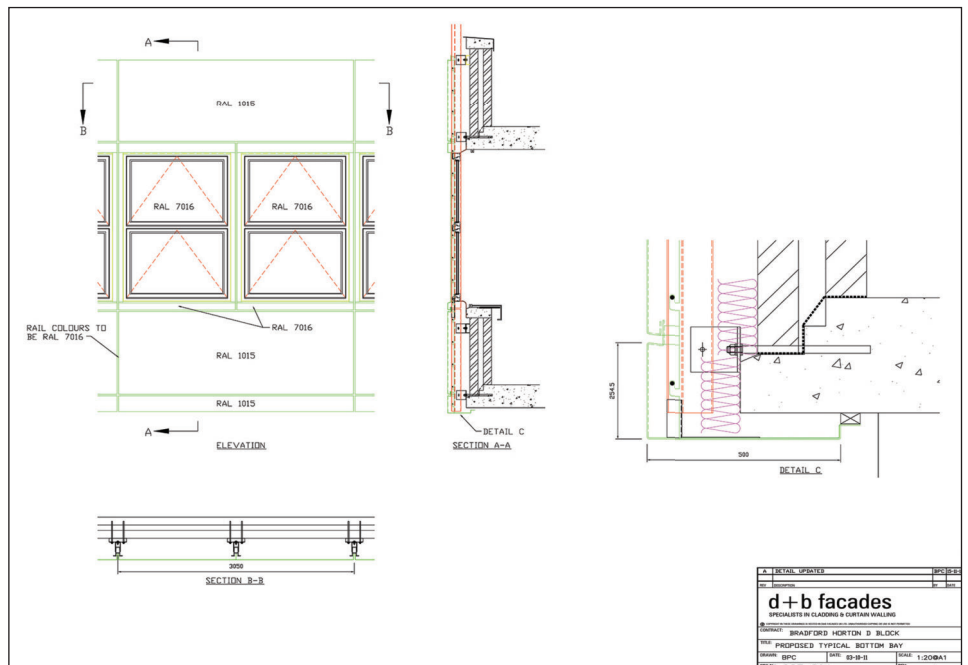
CLIENT
University of Bradford,
Peter McCluskey,
Project Manager,
Estates and Facilities



“The original 1960’s façade leaked heating energy at an alarming rate pumping CO₂ into the atmosphere, We have found that the aluminium cassette/NorDan window combination gives threefold value for money, the appearance of the facades is vastly enhanced, the airtightness is almost 100% and the insulation properties hugely improved.”

CARBON EMISSIONS

Over the 60 year life of the new overcladding system this building will save 27,500t of CO₂ emissions and £12.3m of heating energy cost, repaying the capital cost of refurbishment 8 times over, whilst providing modern, desirable accommodation, securing future demand for the University of Bradford.



A General Arrangement drawing for the system as installed.

The Horton Building at the University of Bradford is an exemplar of how best to sustainably reduce carbon emissions from dated building stock.

Background

10 years ago the original state 1960's oil fired boiler, heating system struggled to maintain min occupancy temp of 20°C during winter months and in cold snaps and required supplementary electric heating as it leaked heating energy through the single-glazed 1960's building envelope, pumping CO₂ straight into the atmosphere.

In 2009, as part of the proposed overcladding of the building, the University commissioned thermal modelling which was integrated into d+b facades' proposals to overclad and super-insulate the building. The result was that the old boiler and heating system would only need to work at c.10% capacity even in the coldest months thereby slashing carbon emissions and simultaneously transforming the building appearance and comfort levels to modern standards that will last for generations to come.

The old boiler is still working today with minimum maintenance and the 10 year energy savings have nearly repaid the capital cost of the overcladding and will do so many times over during its +60 year life expectancy whilst students and staff enjoy the quality accommodation.

Pete McCluskey, consultant Building Project Manager with The University of Bradford commented

"post-cladding, the existing heating system is virtually redundant."

Guidance issued in 2009 as part of the tendering process.

University of Bradford

Sustainable buildings design specification

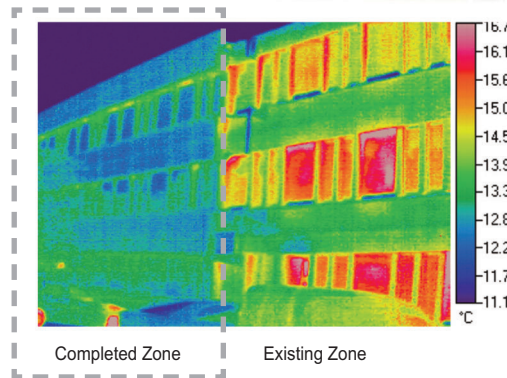
1. Introduction

The Ecoversity programme at the University of Bradford aims to embed the principles of sustainable development across the whole of the Institution. The creation of a more sustainable Estate through the construction of green buildings and the refurbishment of existing building is fundamental to this vision. The transformation of the campus with new sustainable buildings demonstrates commitment to Ecoversity principles as well as offering enriched learning and teaching opportunities.

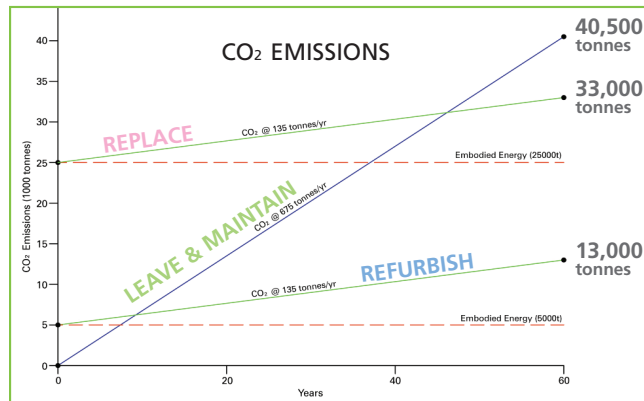
Incorporating sustainable development in every aspect as the lives of staff and students at the University – including the buildings they work and live in – will help create a more informed, aware, knowledgeable and engaged staff and student body. The aim is to create exemplar spaces that are beacons of sustainable development which bring people together for learning, support, networking and dissemination.

Designed with the principles of sustainable development at their core new buildings on campus will help establish the aim of a 'transparent campus'. This concept is about using our buildings and facilities as opportunities for learning and teaching on sustainable development. This will be achieved through the use of signage, plaques and interpretation boards within our buildings which are clearly linked to the Ecoversity vision.

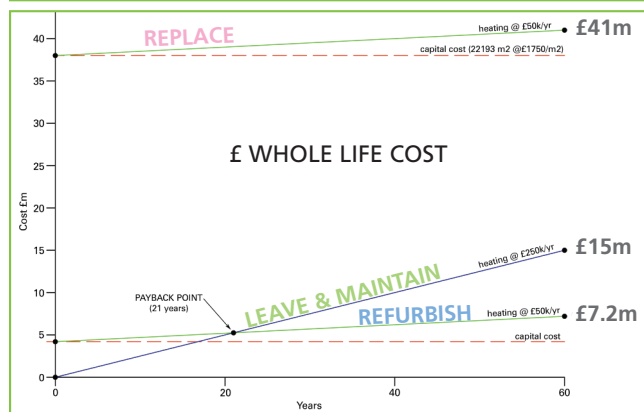
This sustainable buildings design specification sets out the University's policy for sustainable construction and will ensure that sustainable design principles are incorporated into all projects from conception through to construction and operation. Tender documents and contracts will embed these standards through unambiguously worded requirements. Project management will ensure the designs are delivered through all stages of projects, and commissioning will demonstrate compliance against performance targets.



Sample thermal imaging shows significantly less heat loss in the area covered by the cladding mockup.



Horton Building Fig 1 carbon emissions



Horton Building Fig 2 whole life cost



Retro fitting new building envelopes to existing building stock will go a long way to meeting government targets to cut emissions from public buildings, schools and hospitals.



KEY OUTCOMES

Building life extended by more than 60 years

Heating energy consumption reduced by 70%

Operational carbon emissions reduced by 70%

Embodied carbon preserved

Contemporary quality accommodation for generations to come

Capital payback in c.10 years from savings in heating energy alone

No requirement to replace heating system

All delivered whilst the building was fully occupied with minimal disruption

The result speaks for itself, evidence of **how to save carbon, get payback and provide quality accommodation.**

