EAUC Annual Conference **University of Leeds 23 – 25 March 2015**

CHALLENGING CONNECTIONS

Incorporating the Student Sustainability Summit, Further Education Sustainability Summit and Transformational Leadership Summit

Workshop 3: De-mything the HEFCE Revolving Green Fund. Achievements, Experience and Lessons Learnt over Four Rounds

Chaired by: Andy Nolan, Director of Sustainability, University of Nottingham

Speakers: Paul Gibbens, Higher Education Policy Adviser, HEFCE; Lucinda Tyser, Salix and Russell Smith, University of Bradford

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CHALLENGING CONNECTIONS

De-mything the HEFCE Revolving Green Fund

hefce

SALIX
SOLVING ENERGY EFFICIENCY FINANCE IN THE PUBLIC SECTOR

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Estates and Operations

Revolving Green Fund

Estates and Operations

- Interest free loans for energy efficiency projects
- RGF 1-3 £61m

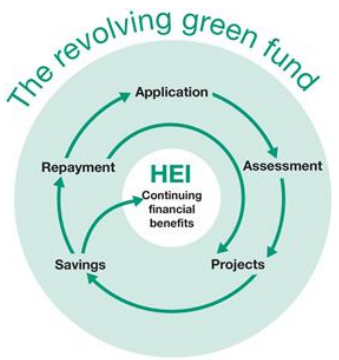
  117 programmes and 17 large projects at 130 universities

  Annual savings of £19m (and rising)
- RGF 4 £30 m

  Water projects included

  Programmes of up to £750k

  Large projects of up to £2m



RGF4 Process

- £34 million available
- Announced June 2014
- Deadline for applications Oct 2014
- Awarded funding in January 2015
- Complete projects by Dec 2016

Features of a successful application

- Description of the projects
- Clear and realistic savings calculations
- Management of the projects
  - Internal and external project teams
  - Risk assessment and mitigation measures in place
- Benefits for the sector
- Commitment to carbon reduction

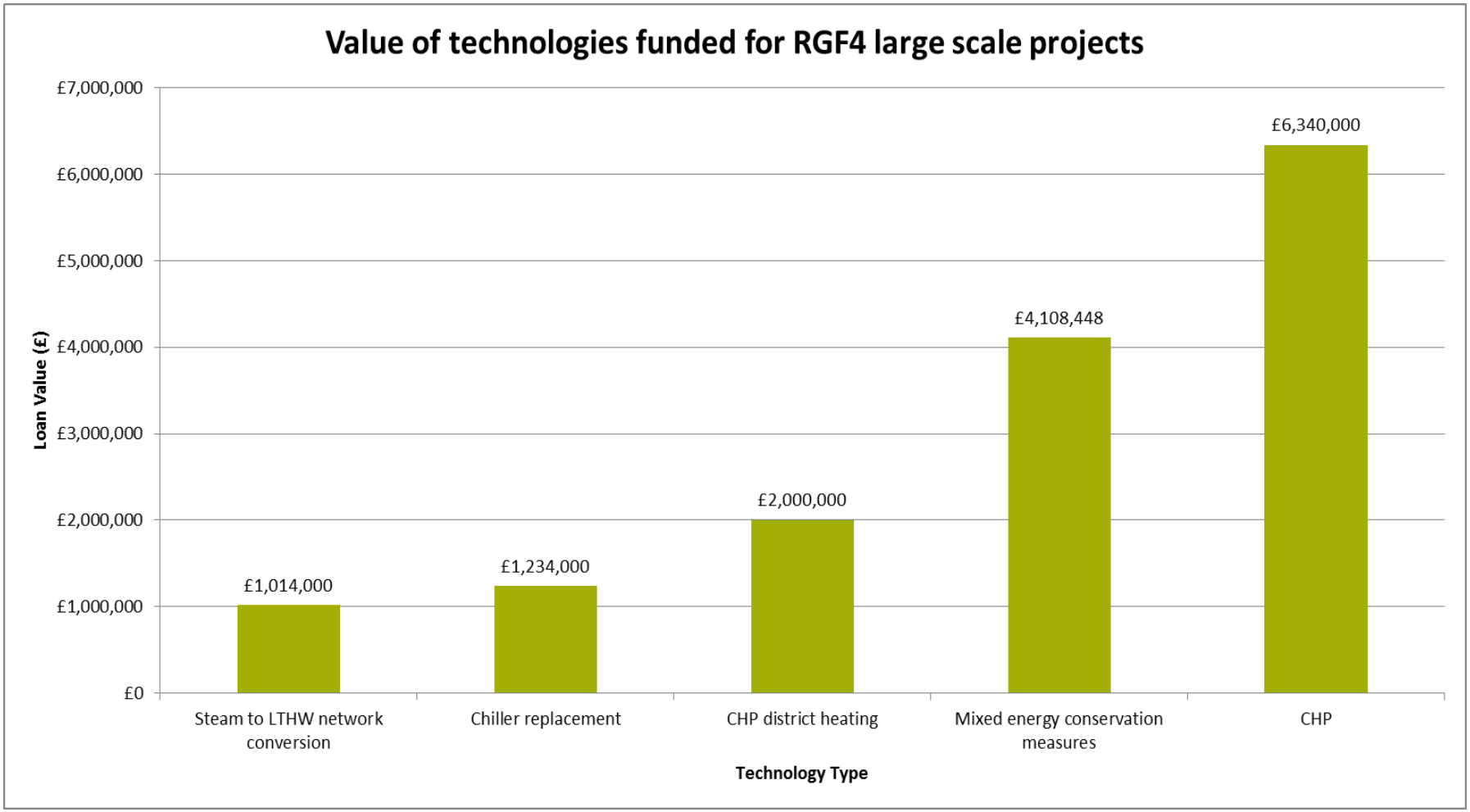
Features of a successful application

The assessors review applications to en projects can:

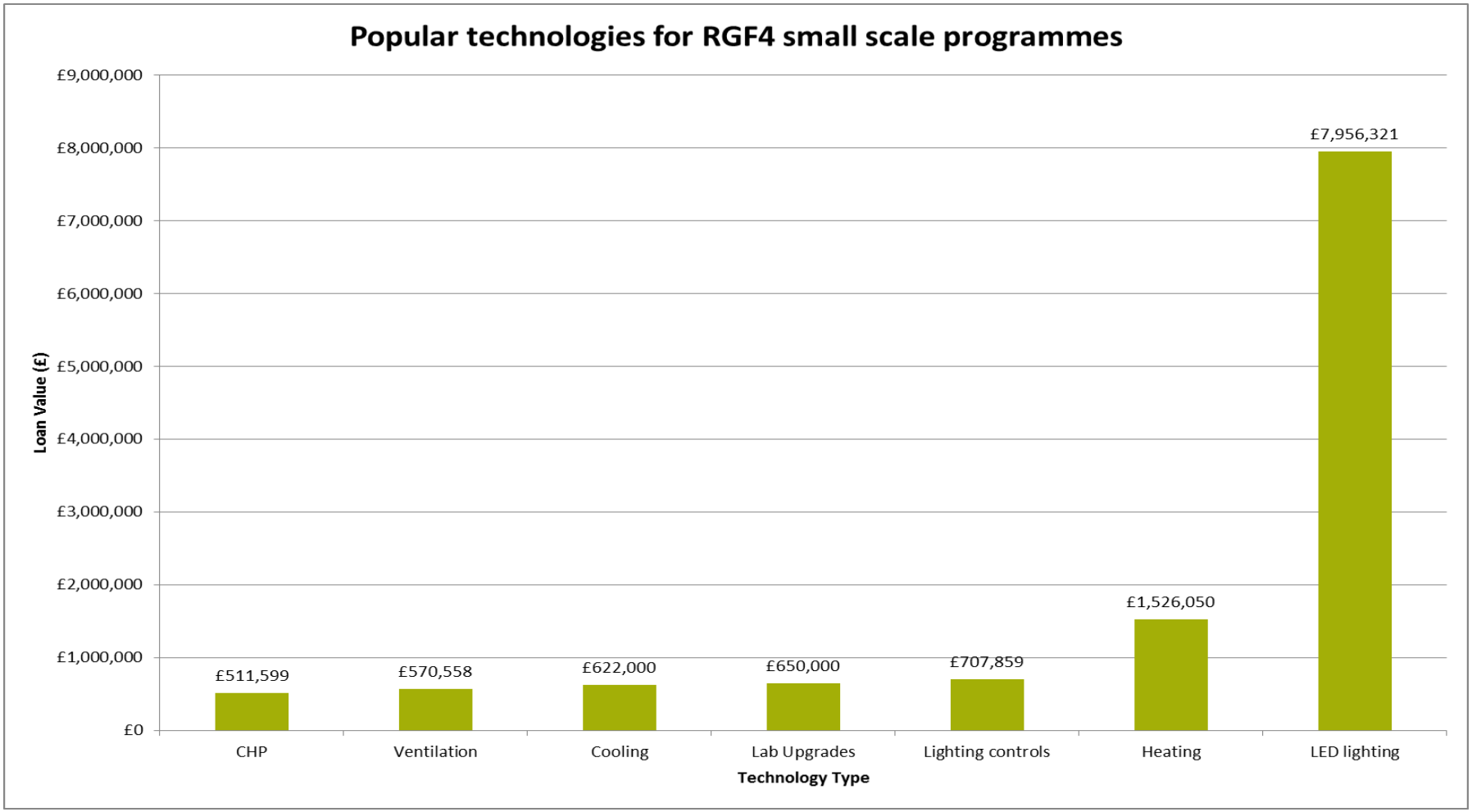
- Save the expected amount of and carbon
- Be delivered for the est cost
- Be delivered wi estimated timeframe

Successful s provide sufficient evidence in these areas

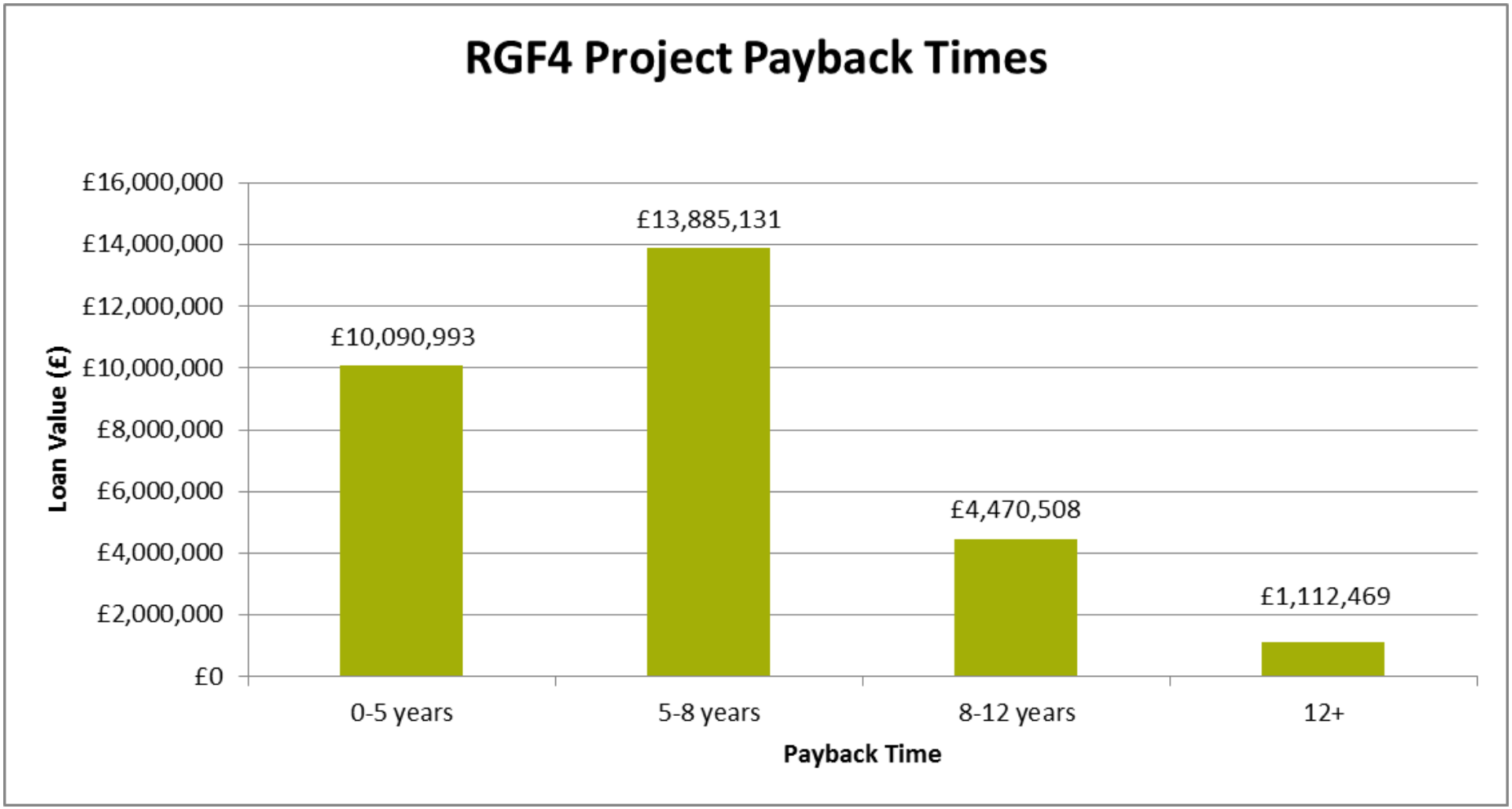
RGF4 large scale projects



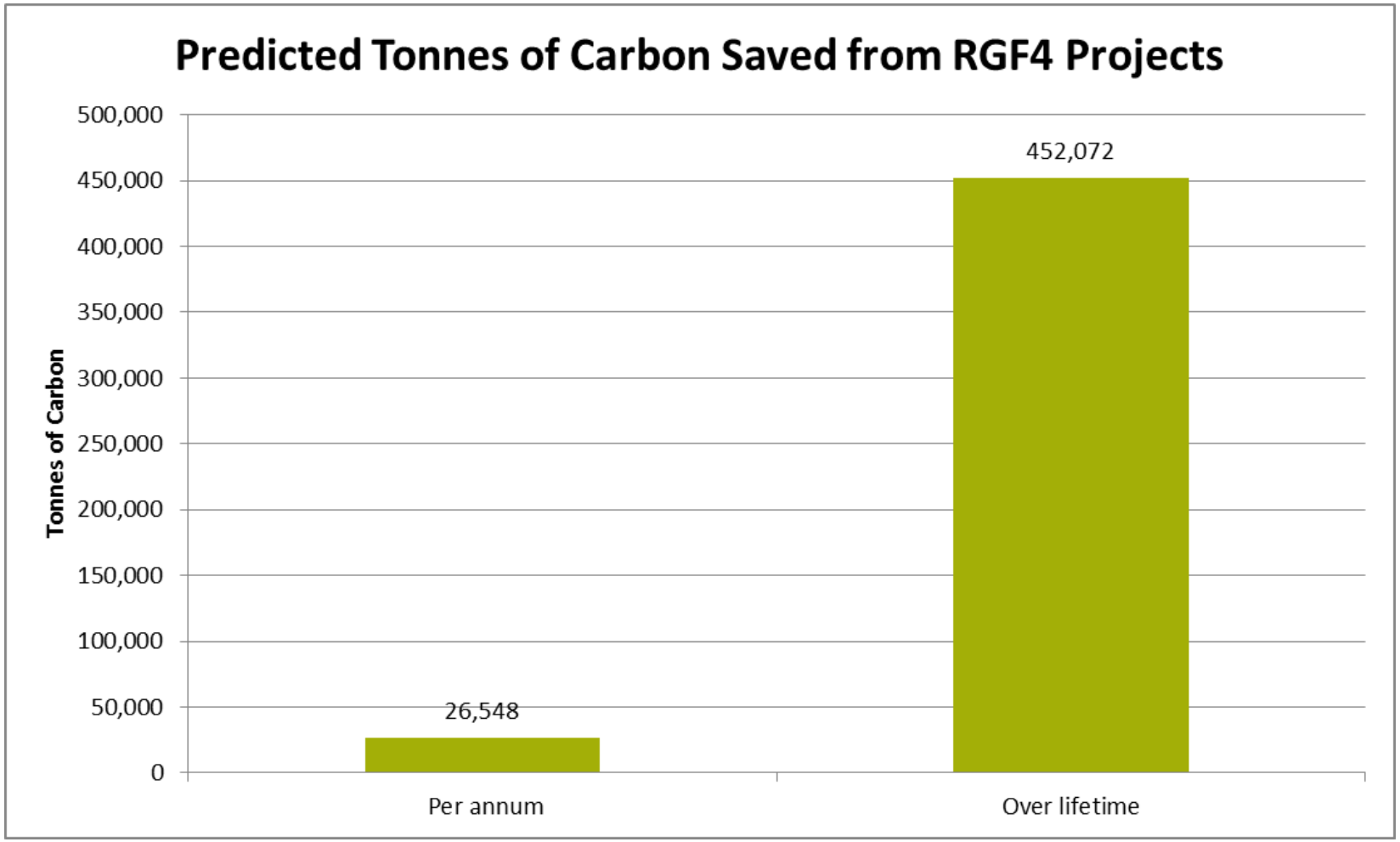
RGF4 small scale projects



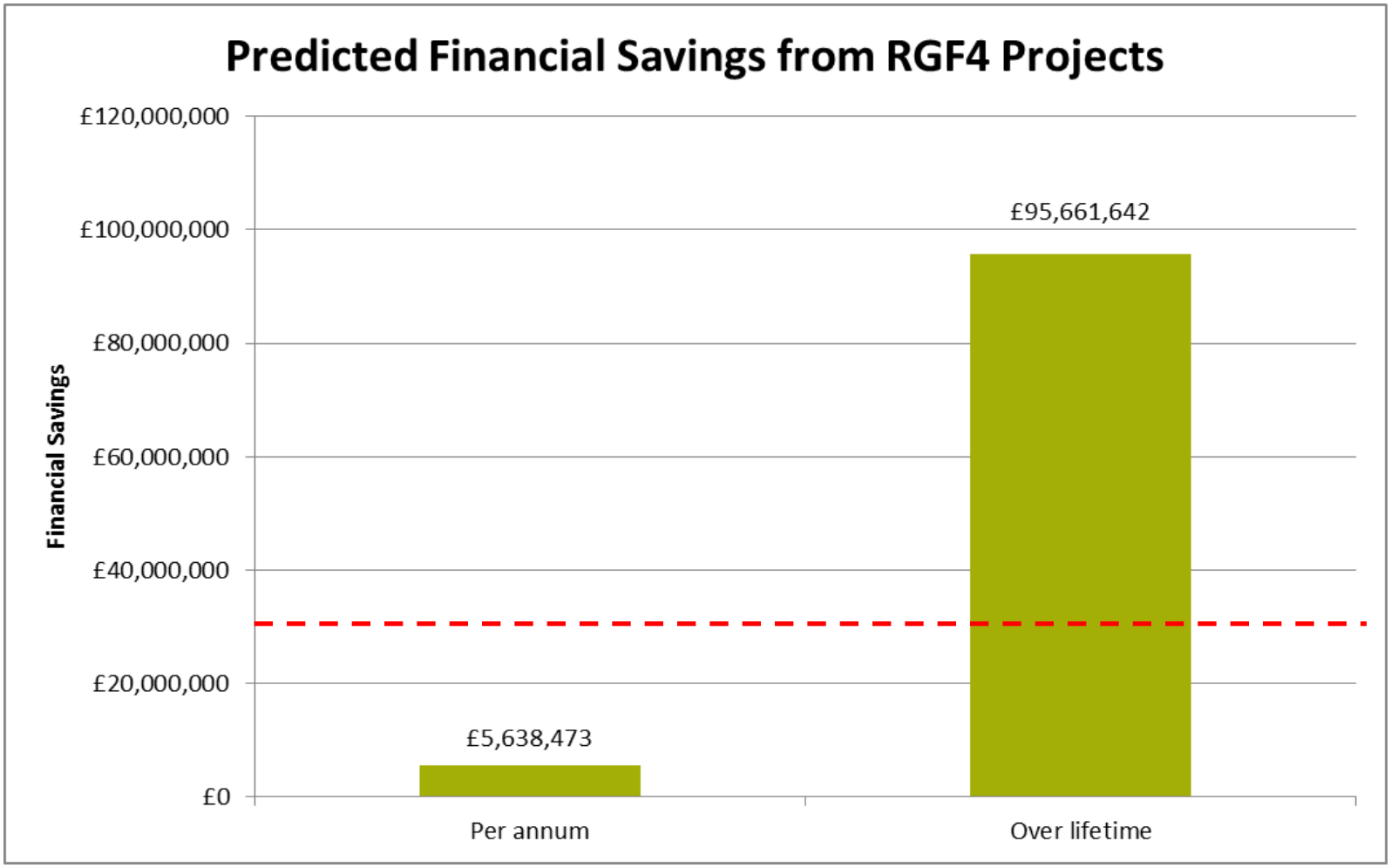
Payback times



Carbon savings to the sector

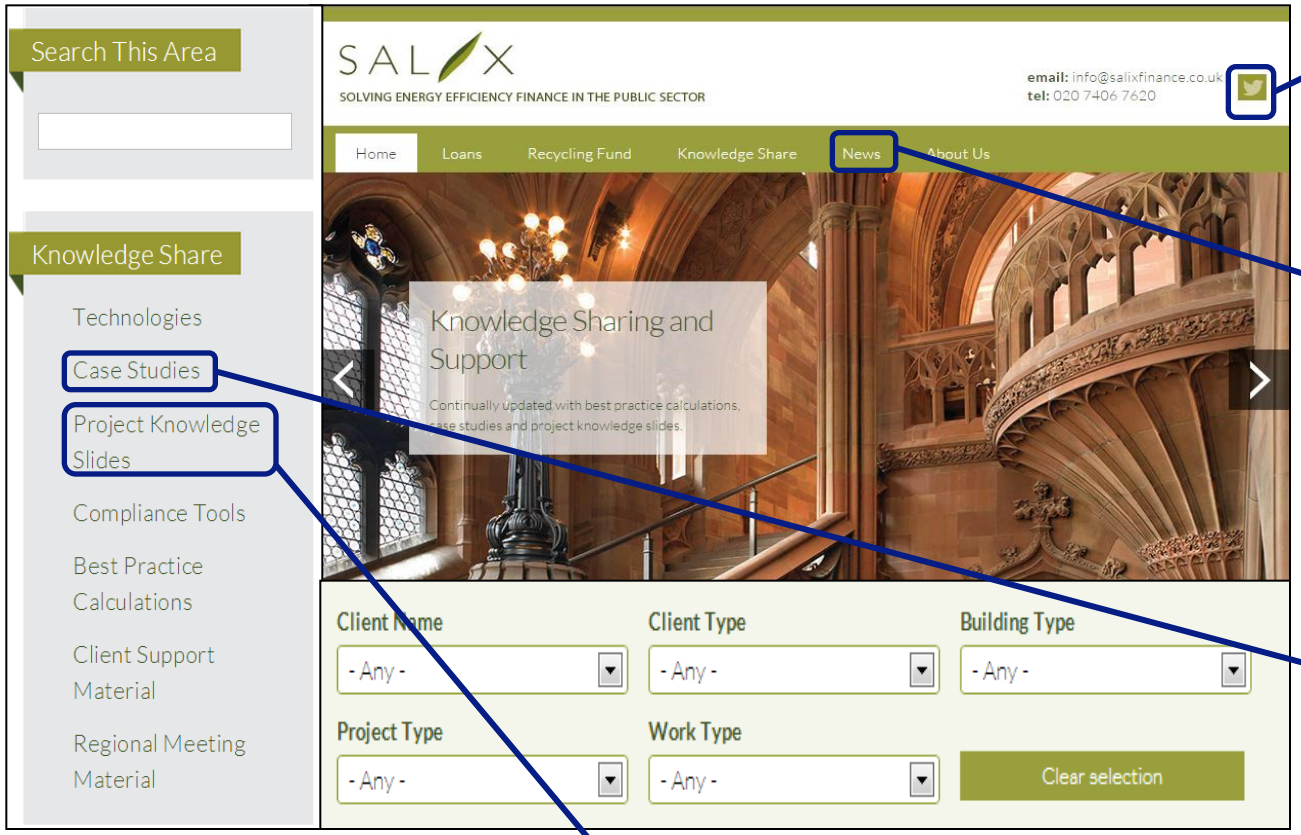


Financial savings to the sector



Challenging connections

Active Knowledge Sharing



Social Media

News & Blog

Case Studies

Product Knowledge Slides

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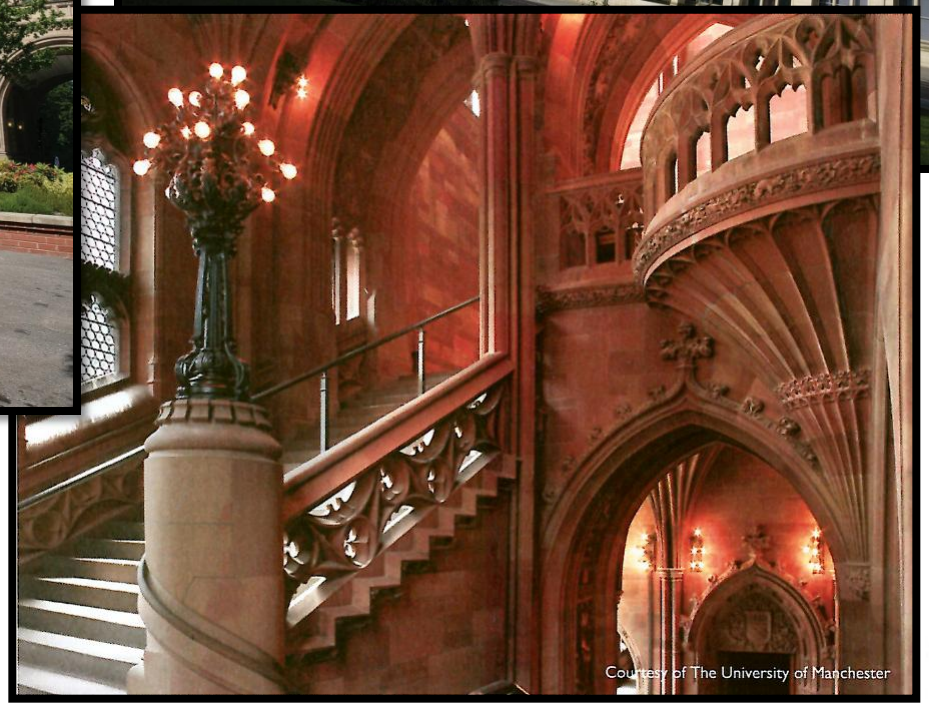
SOLVING ENERGY EFFICIENCY FINANCE IN THE PUBLIC SECTOR

Challenging connections



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SOLVING ENERGY EFFICIENCY FINANCE IN THE PUBLIC SECTOR

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Revolving Green Fund @ The UoB

RGF2: JB PRIESTLEY Library

Salix/HEFCE loan £1m

+

£0.5m Contribution from the University

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Built: 1973 - 1975

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Top two floors refurbished: 4600 sqm

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Existing Building

- Concrete structural frame
- Concrete waffle slab
- Brick cavity construction
- Pre rehab air test 14m3/hr
- Blown air heating
- Plant intensive/Mech vent
- Pre rehab survey in indifferent satisfaction levels

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AIMS

- DEC: E to an A
- Carbon savings
- Replicable project
- Provide a 1st class environment
- Enhanced student experience
- Design out the engineering

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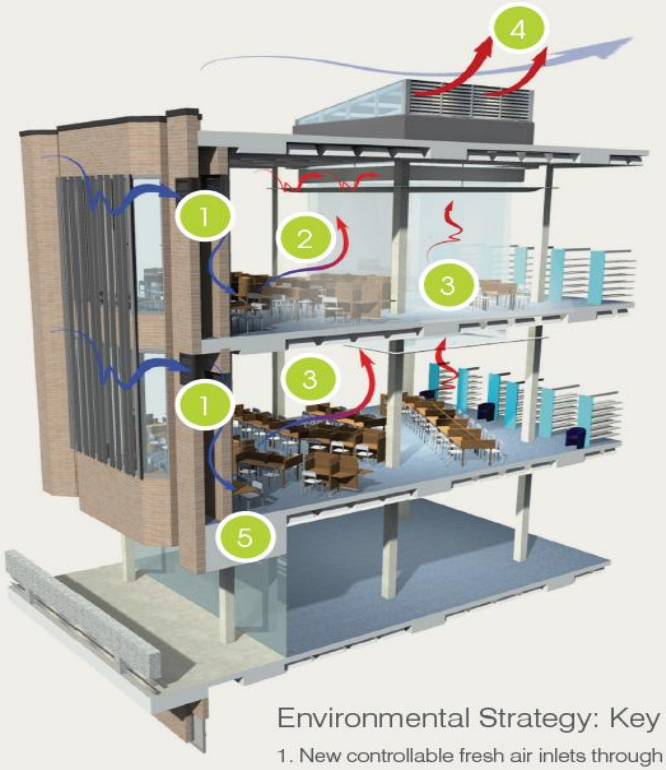
Construction Principles

- Design out the services/Building fabric first approach
- Use the existing concrete elements as thermal mass
- Fully naturally ventilated both spaces
- Super insulate (Passivhaus principles adopted)
- High level of air-tightness
- Introduce natural light
- Open plan space
- Behaviour change project GLEE



Environmental Strategy: Key Principles

1. New controllable fresh air inlets through external wall.
2. Air drawn across internal spaces and heated by people, computers and the sun.
3. Warm air rises in to solar chimney sucking more fresh air in.
4. Air expelled at high level through new glazed rooflight.
5. Super insulated building fabric keeps heat in the building.

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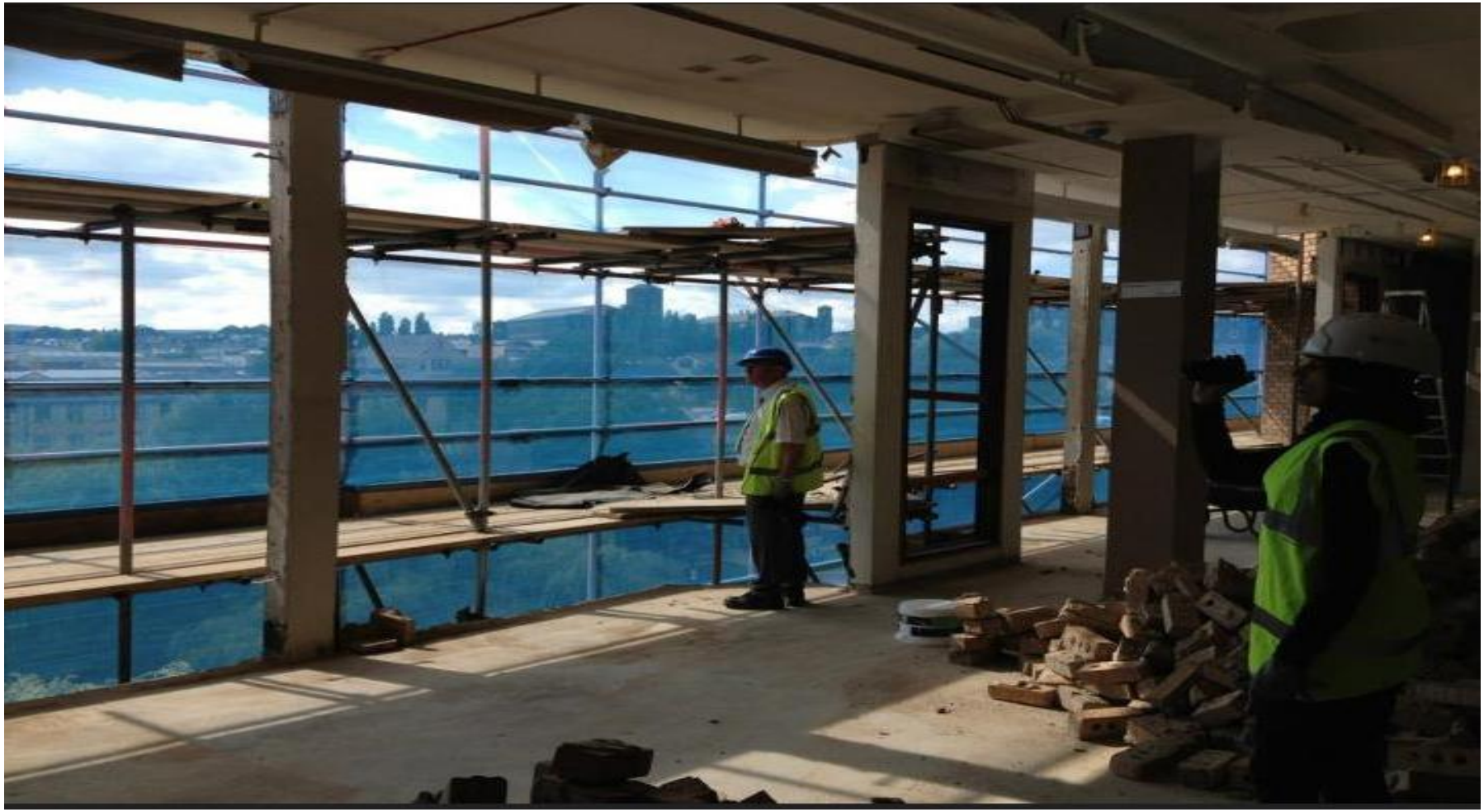

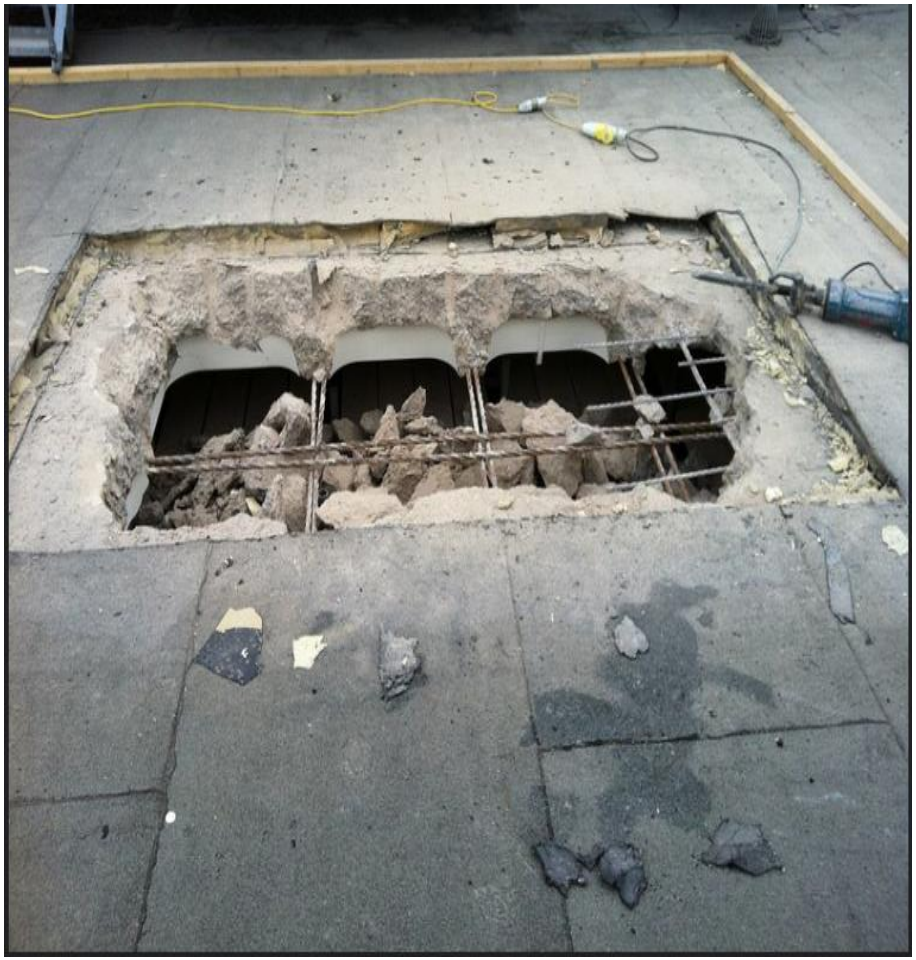

Project Challenges

- Maintain the library service
- Decant 350,000 books
- Works extremely noisey
- Working in a 1970s building
- Tight Programme (9 months) & budget
- Keeping the design team & contractor focused on the outputs

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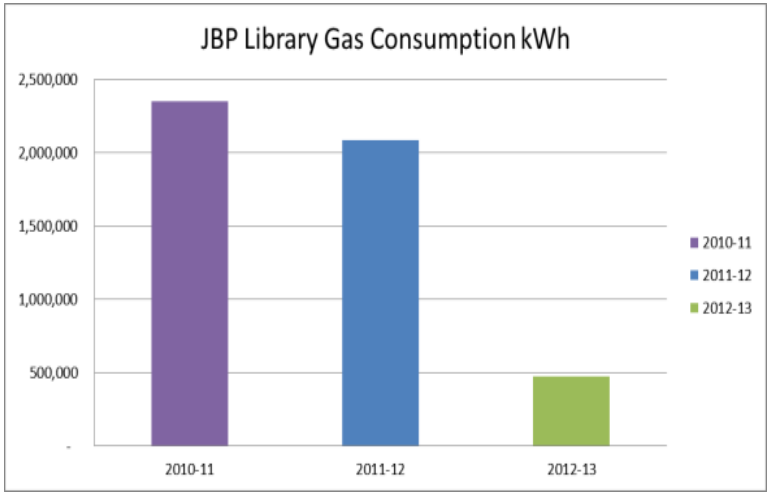
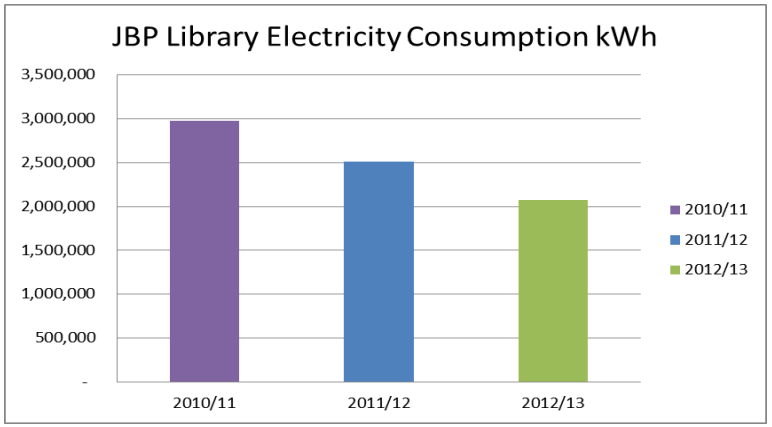
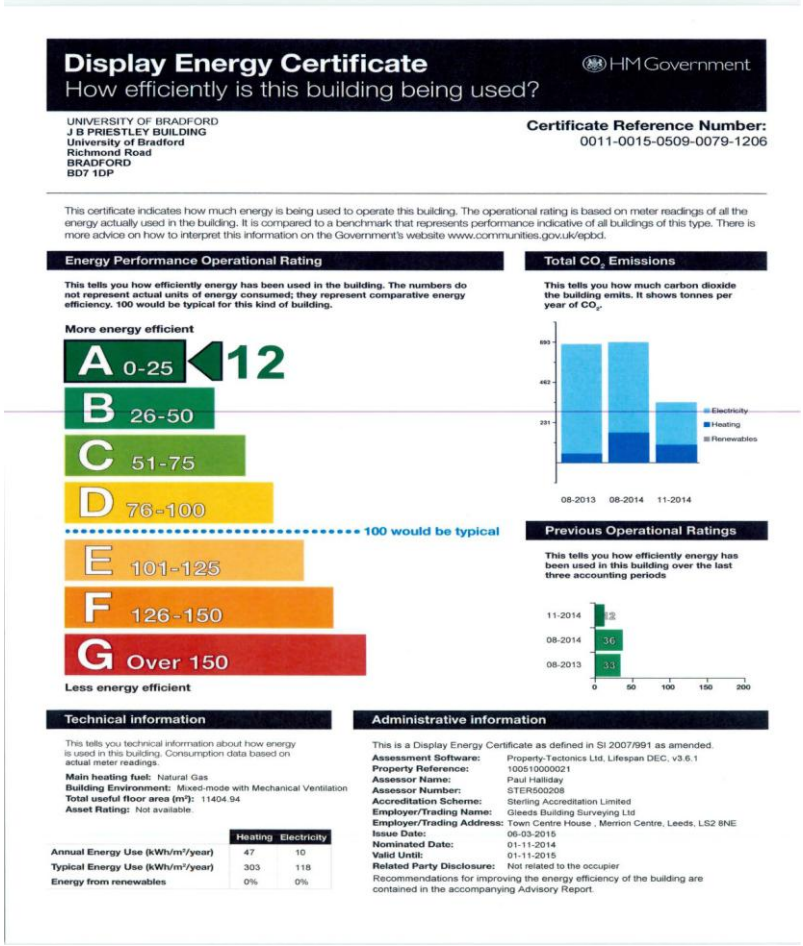
Key Outcomes

Factor	Pre Project	Post Project
Happy with library environment?	57%	79%
Enough natural light in the library?	35%	81%
Temperature right in the library?	44%	60%
Do you know how green the library is?	17%	25%
Does the library have a litter problem?	43%	29%
Is it now easier to find information and books you need?	-----	68%
Does the library now enhance you learning more?	-----	75%

Entrance Gate Data:
01 Aug 2011 - 25 May 2012 = 595498
01 Aug 2012 - 24 May 2013 = 617654







Display Energy Certificate
How efficiently is this building being used?

HM Government

UNIVERSITY OF BRADFORD
J B PRIESTLEY BUILDING
University of Bradford
Richmond Road
BRADFORD
BD7 1DP

Certificate Reference Number:
0011-0015-0509-0079-1206

This certificate indicates how much energy is being used to operate this building. The operational rating is based on meter readings of all the energy actually used in the building. It is compared to a benchmark that represents performance indicative of all buildings of this type. There is more advice on how to interpret this information on the Government's website www.communities.gov.uk/epbd.

Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this kind of building.

More energy efficient
A 0-25 — 12
B 26-50
C 51-75
D 76-100
100 would be typical
E 101-125
F 126-150
G Over 150
Less energy efficient

Total CO_2 Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO_2.

Electricity
Heating
Renewables
08-2013 08-2014 11-2014

Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods

11-2014 12
08-2014 36
08-2013 33
0 50 100 150 200

Technical information

This tells you technical information about how energy is used in this building. Consumption data based on actual meter readings.

Main heating fuel: Natural Gas
Building Environment: Mixed-mode with Mechanical Ventilation
Total useful floor area (m^2): 11404.94
Asset Rating: Not available

	Heating	Electricity
Annual Energy Use (kWh/m^2/year)	47	10
Typical Energy Use (kWh/m^2/year)	303	118
Energy from renewables	0%	0%

Administrative information

This is a Display Energy Certificate as defined in SI 2007/991 as amended.

Assessment Software: Property-Tectonics Ltd, Lifespan DEC, v3.6.1
Property Reference: 10051000021
Assessor Name: Paul Halliday
Assessor Number: STER500208
Accreditation Scheme: Sterling Accreditation Limited
Employer/Trading Name: Gleeds Building Surveying Ltd
Employer/Trading Address: Town Centre House , Merrion Centre, Leeds, LS2 8NE
Issue Date: 06-03-2015
Nominated Date: 01-11-2014
Valid Until: 01-11-2015
Related Party Disclosure: Not related to the occupier

Recommendations for improving the energy efficiency of the building are contained in the accompanying Advisory Report.

2014/15: A12

2013/14: B33

2009/10: E116

Primary Energy Demand: 111kw/m2

Post air test: 2 m^3/Hr

RGF4: MICRO SMART GRID

Salix/HEFCE loan £1.9m

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Four strands to an energy secure future

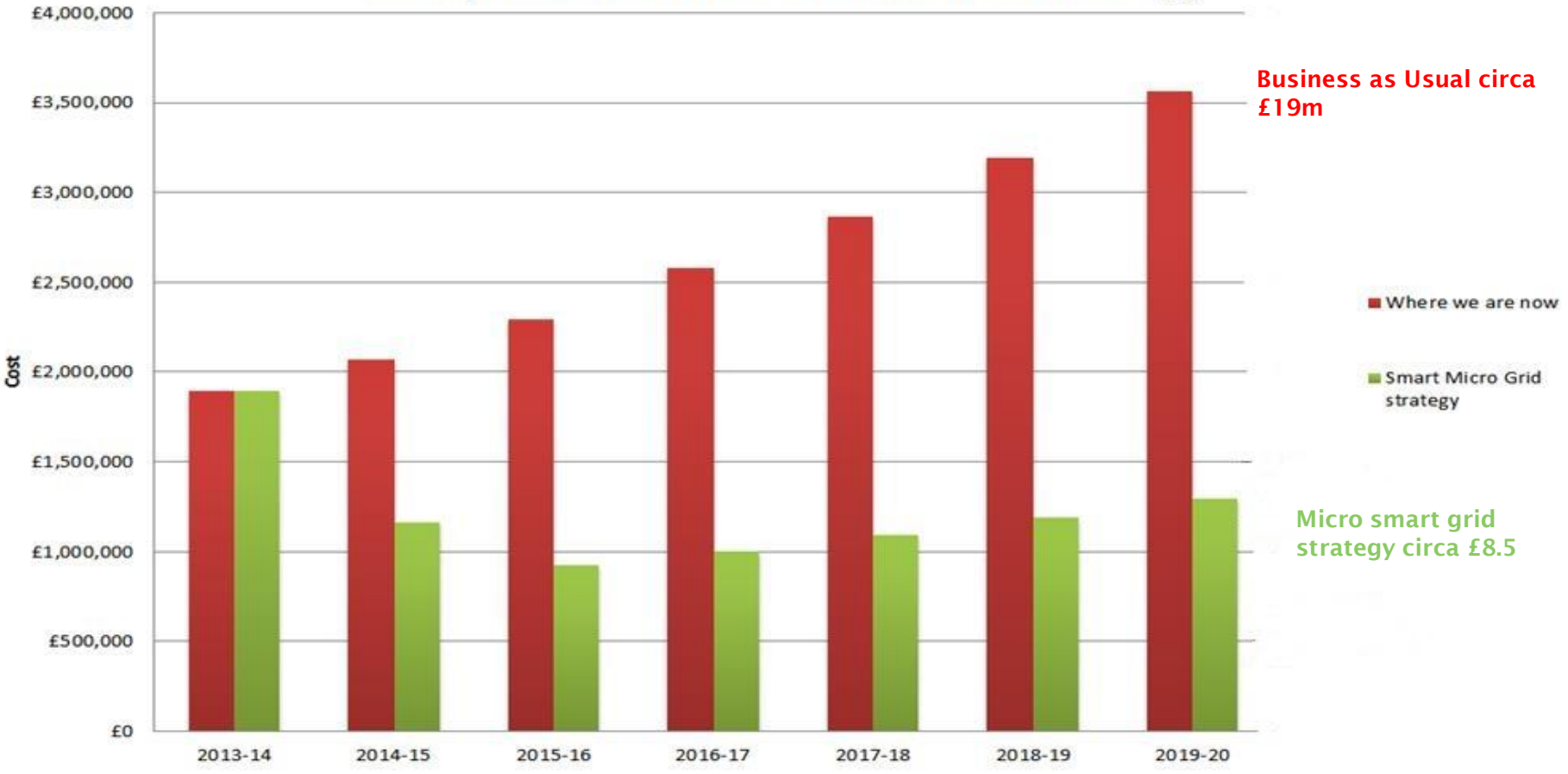
1: Create a micro smart grid

2: Introduce a true demand management system

3: Carry on reducing the base load/building fabric improvements

4: Increased investment to modernise the infrastructure

Utility cost forecast for Smart Micro Grid strategy



Business as Usual circa £19m

Micro smart grid strategy circa £8.5

The Bradford Energy Quarter

- Linking 4 buildings together : 25,746 m^2
- Building fabric improvements
- Replace life expired plant and switch gear
- Installation of a third CHP engine into JBPL
- New district heating main
- New HV/LV network
- Installation of Solar PV and LED lighting

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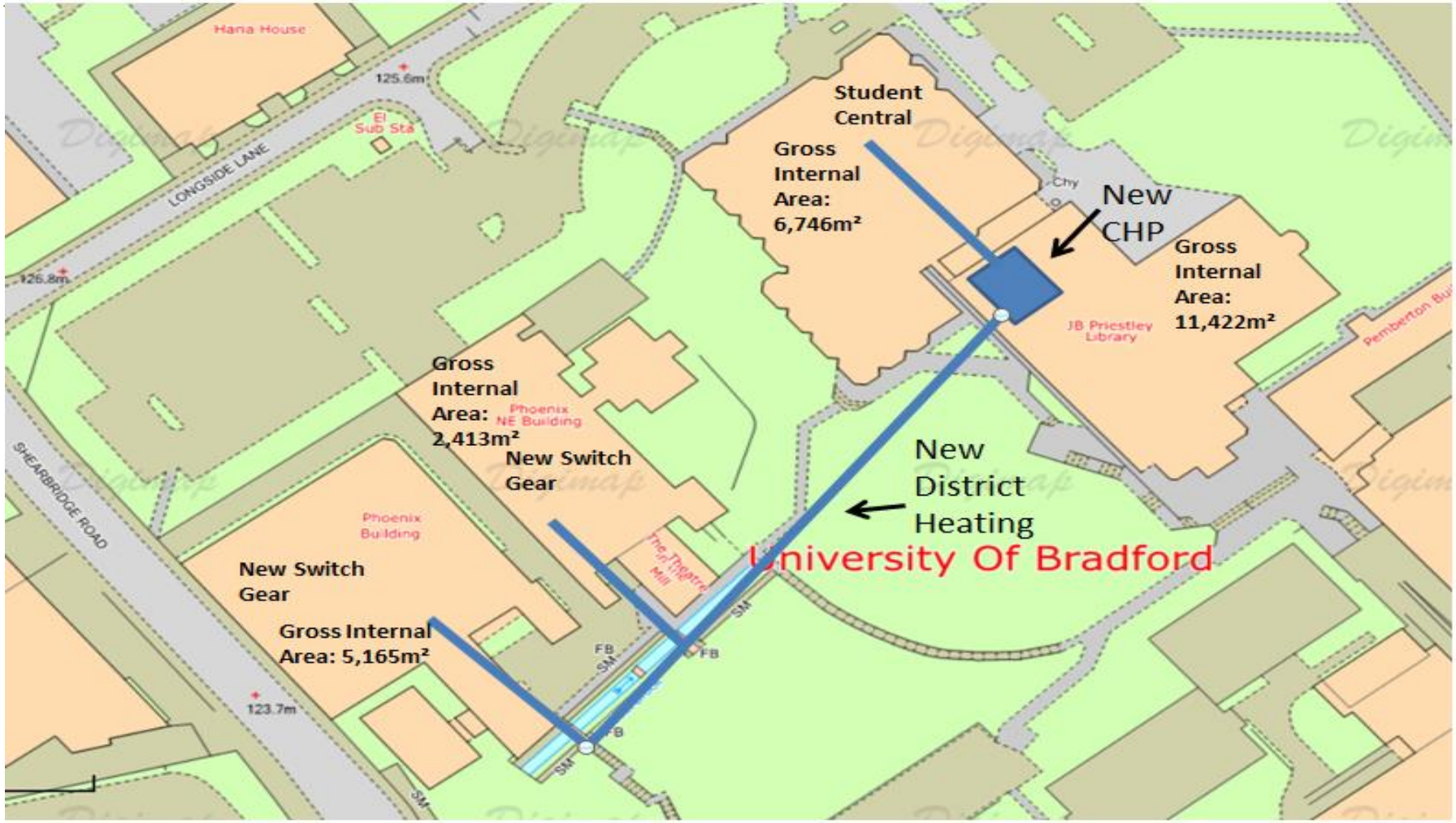

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Current Position

- Design team appointed
- Scheme in early stages of design
- First power down planned summer 2015
- Installation of District heating summer 2015
- Project Complete Q2 2016


DANGER
MEN WORKING
ON APPARATUS
NOTICE

Project Outcomes

- Reduce reliance on grid supplied electricity
- Electricity cost saving £250k pa
- Gas cost saving cost saving £14k pa
- Create a revenue stream from exported Electricity

External Funding Received

HIGHER EDUCATION FUNDING COUNCIL FOR ENGLAND hefce

RGF = £2.9M

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LOANS = £3.3M

Challenging Connections

Estates and Operations

- How can the people in the room help you decide whether to bid for future rounds of the Revolving Green Fund?
- What challenges are there and who could help you overcome them?
- What have you learnt from the experiences of others?