The Renewable Solutions Provider

# Making a World of Difference

MITSUBISHI ELECTRIC

LIVING ENVIRONMENTAL SYSTEMS

Air Conditioning | Commercial Heating

Domestic Heating | Photovoltaics

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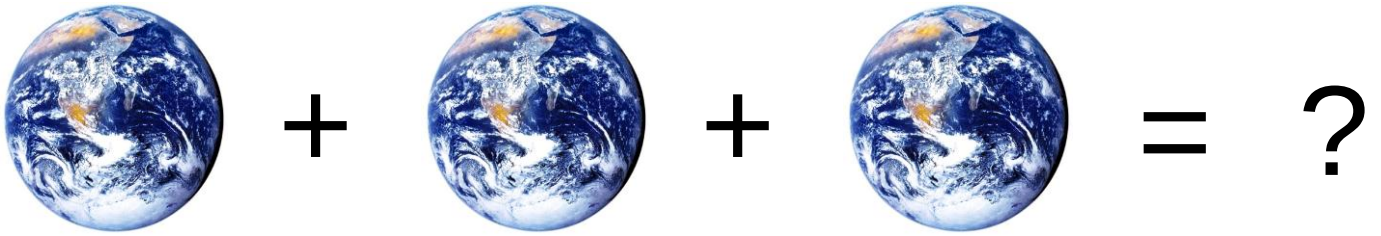
# Building on Opportunity

Donald Daw
Commercial Director
Living Environmental Systems Division

# One Planet living

If everyone in the world lived like the average UK person we would need 3 planets worth of resources



The average US person has a 5 planet life style

10 point plan

1. Make buildings more energy efficient and deliver energy from renewables

# Drivers for change

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Climate change

Energy prices

Fuel poverty

Energy Security

# The 2050 target

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2020 34% CO2 emission reduction
20% of energy from renewables

2050 80% CO2 emission reduction

Landing a man on the moon

# Building emissions

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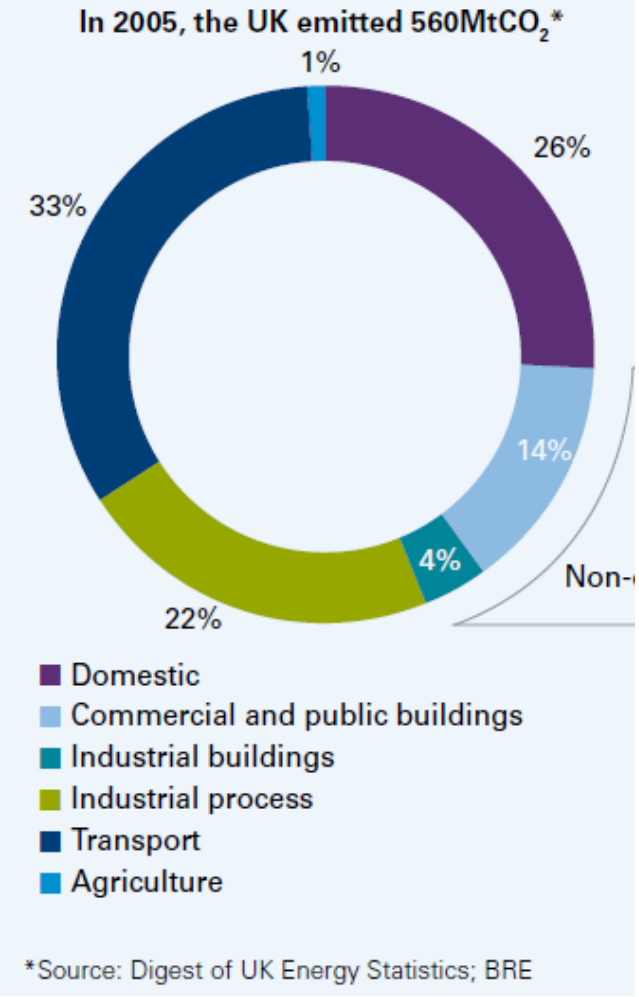
**Buildings account for 44% of UK carbon emissions**

The average UK building is not efficient and historically we appear not to have been concerned

How is it a current home in Sweden uses ½ the energy of a UK home?



# Influencing the future

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Each time we build or refit a building we potentially fix it's energy foot print for the next 10 to 20 years

We are fixing a large part of the future UK energy use every year in the construction industry

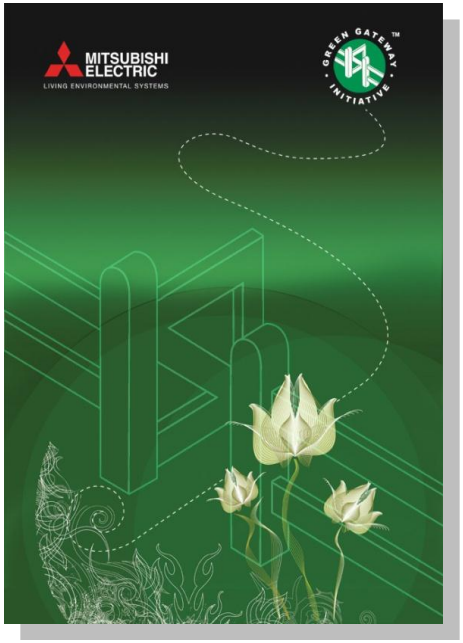
# Rapid change and ambition

During the next 10 years we will see more rapid change than at any time in the history of the construction industry

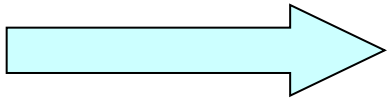
Technologies considered new now will become main stream

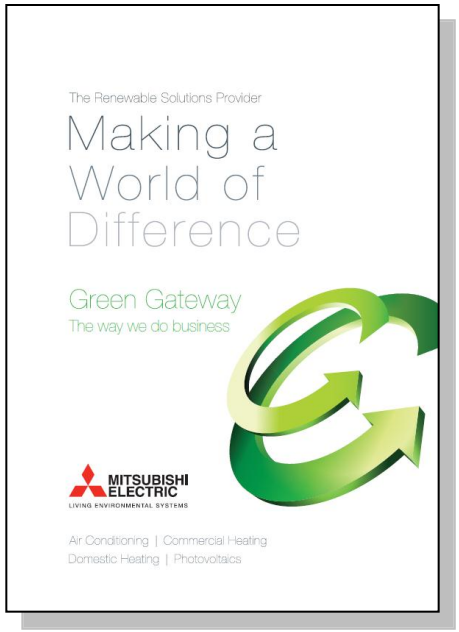
There is no lack of skills, only lack of knowledge and ambition

# Green Gateway




2007






2011

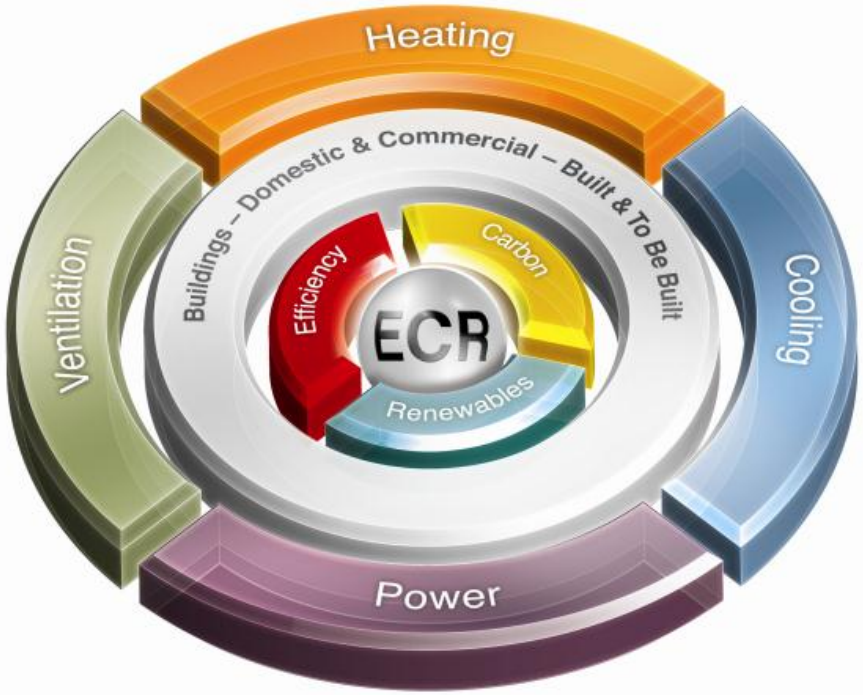
Changing the way we do business

Standing up and being counted

# ECR

What we need to provide

What we HAVE to deliver



# The life cycle

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Four distinct phases

Seven touch points

A whole life cycle view

# New products for new markets

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Heat Pumps for heating

- How quickly things can change

4 years ago

- Do you really think people will use these in their homes
- No mention of heat pumps in any national policies

Today

- The market has grown 10 fold in the past 4 years
- Heat pumps are one of the 8 key renewable technologies
- We are likely to see an RHI for heat pumps

# Alliances and Partnerships

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# Drivers for change

Climate change

Energy prices

Fuel poverty

Energy Security

**Opportunities**

not

**Problems**

# Our own example

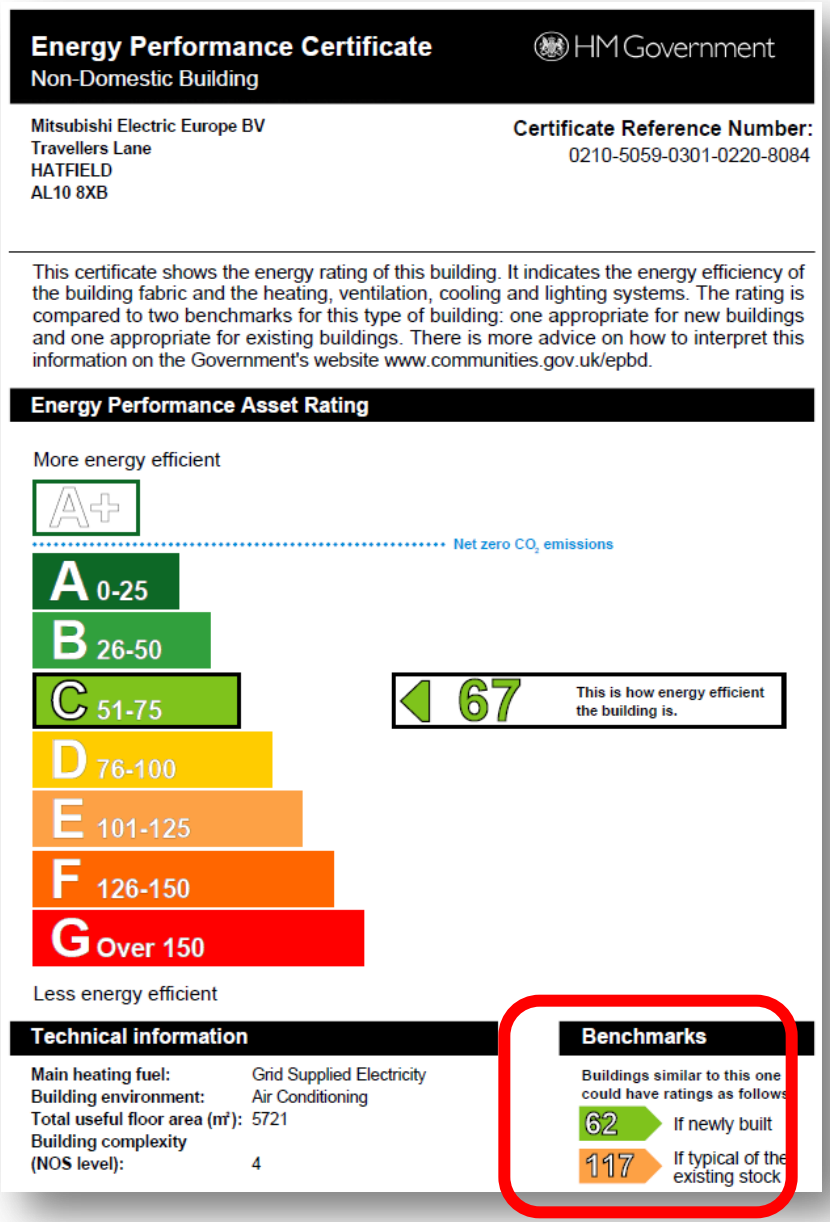
Built in 1980
-Traditional services

Now
- Heat Pumps for heating and cooling

- Ground and air source

- Heat recovered for use in other areas

- Small amount of PV – 8.5kW



**Energy Performance Certificate**
Non-Domestic Building

HM Government

Mitsubishi Electric Europe BV
Travellers Lane
HATFIELD
AL10 8XB

**Certificate Reference Number:**
0210-5059-0301-0220-8084

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information on the Government's website www.communities.gov.uk/epbd.

**Energy Performance Asset Rating**

More energy efficient

A+

Net zero $CO_2$ emissions

A 0-25
B 26-50
C 51-75
D 76-100
E 101-125
F 126-150
G Over 150

67 This is how energy efficient the building is.

Less energy efficient

**Technical information**

| | |
|---|---|
| Main heating fuel: | Grid Supplied Electricity |
| Building environment: | Air Conditioning |
| Total useful floor area ($m^2$): | 5721 |
| Building complexity (NOS level): | 4 |

**Benchmarks**

Buildings similar to this one could have ratings as follows

62 If newly built

117 If typical of the existing stock

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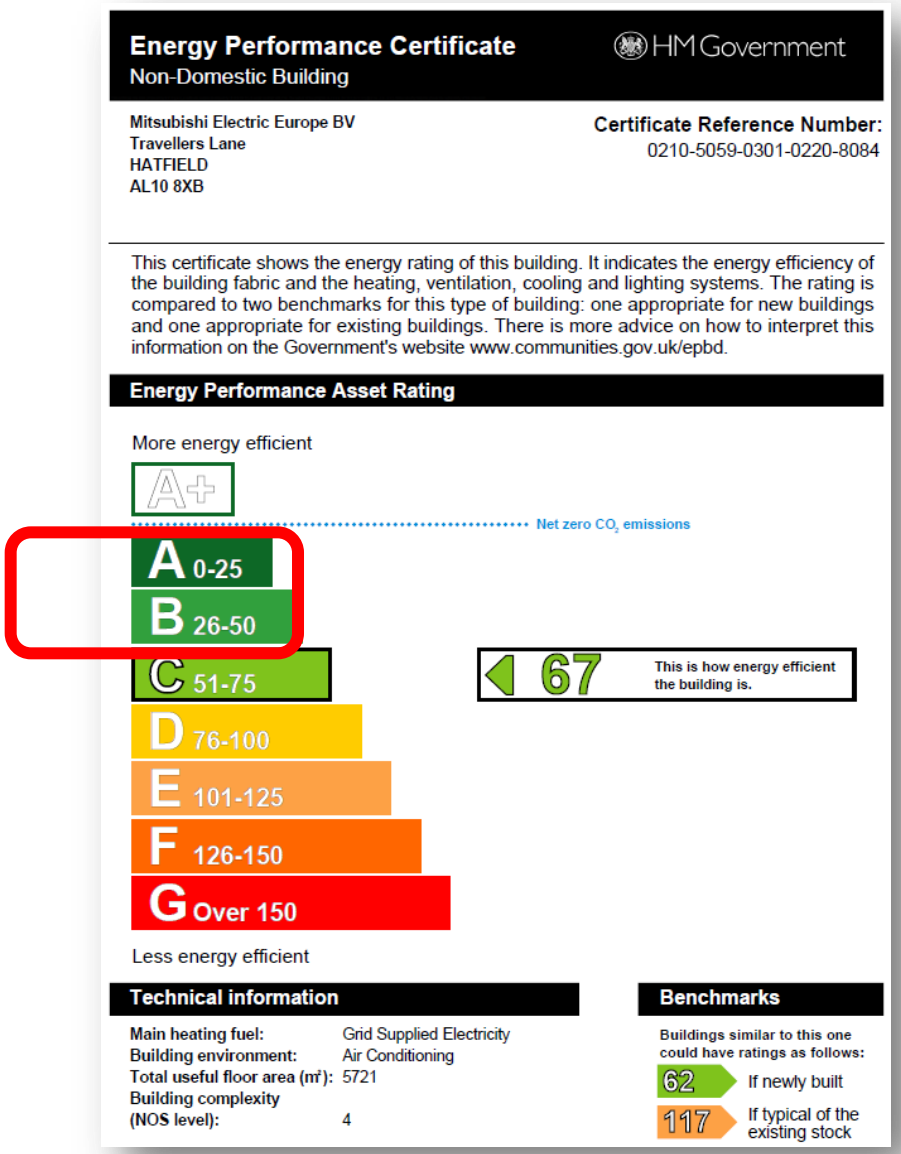

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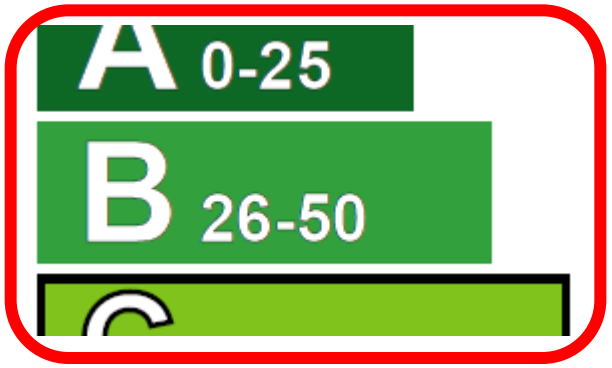
# What next

- Increased amount of PV – 45kW

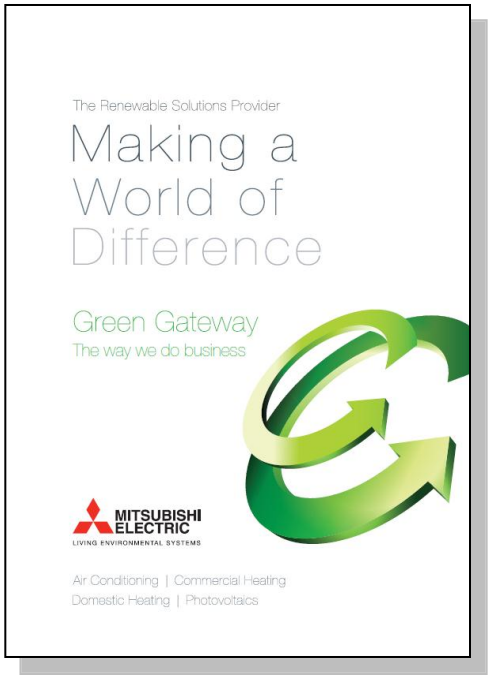
- Central AHU replaced with Heat Pump heating

- We think we could achieve even more…



# Challenges to opportunities

- The solutions exist now to make buildings much more efficient and the products are coming to market
- The basic skills are there, we just need to share knowledge
- Legislation & Incentives will encourage change
- We need to engage with each other and work together
- Doing the right thing will give us sustainable and growing businesses … and it will also make us feel good about what we are doing



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# Thank you

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