

# Diageo - Leadership in Energy Efficiency

Referencing EED case studies - Project Phoenix (€168m) & Guava (£26m)

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**DIAGEO** **ENGINEERING  
EXCELLENCE**



## Outcome

- How Diageo is working to achieve **World Class Leadership** in its approach to Design and Management of Energy through its capital investments
- Overview the **approach taken** and highlight the **benefits we have gained** from applying EED on two flagship Investment projects.
- Share how **we are securing** now the **future benefits**, as part of Diageo's Global **Engineering Excellence** Program.

# Leadership through Energy Efficient Design (EED)

Context – Who we are



## DIAGEO At A Glance



Global company founded in 1997

Global Brands - No 1 Stout, Gin, Whiskey, Vodka, and Cream Liquor.

Sold in more than 180 markets

Employs over 25,000 people worldwide.

# Leadership through Energy Efficient Design (EED)

## Context – Progress so far

Diageo has grown significantly since 2007 and has made great progress

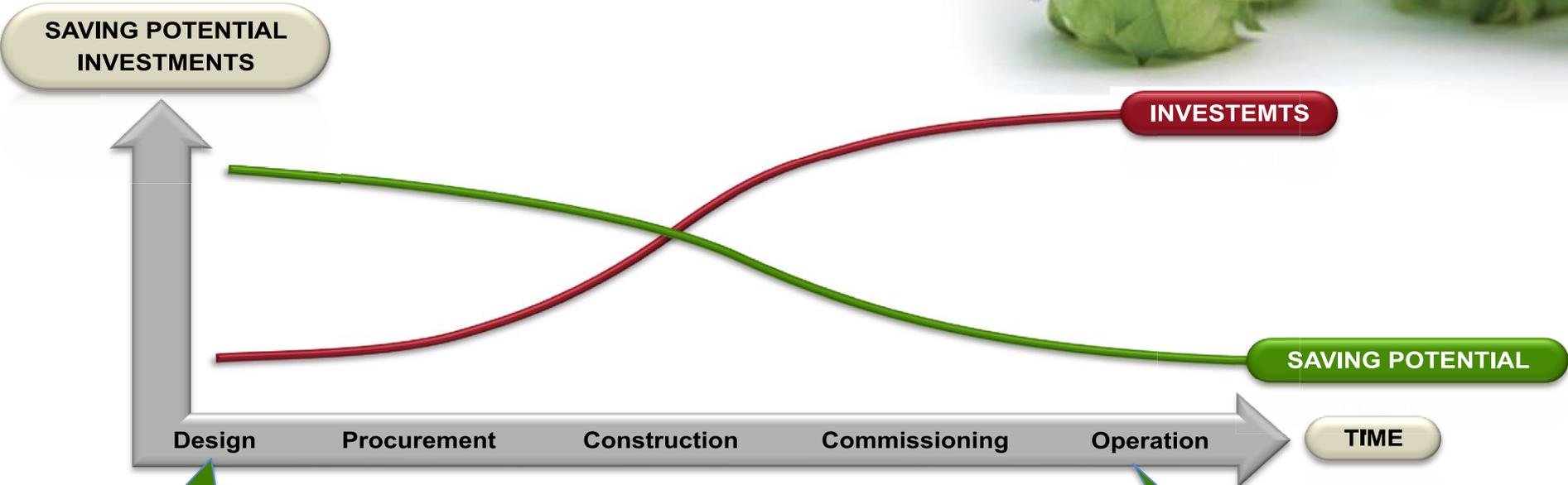
Group environmental data is reported externally as part of Diageo's annual reporting and key metrics are independently assured by KPMG. The St. James's Gate Brewery will play a critical role in ensuring the Diageo European Beer Network achieves these targets.

	Since 2007	Units
Water Efficiency	21% Improvement	L water / L packaged
Greenhouse Gases	30% reduction	Tonnes
Waste to Landfill	82% reduction	Tonnes
Effluent	15% increase	Tonnes BOD



# Leadership through Energy Efficient Design (EED)

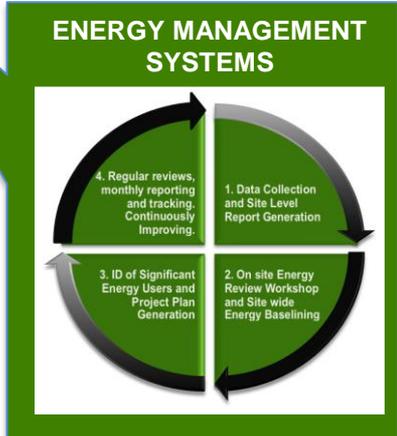
## Context – Our leadership journey in energy



**Our Leadership Journey - moving up the value chain**

from **Energy Management**

To Investment In **Energy Design**

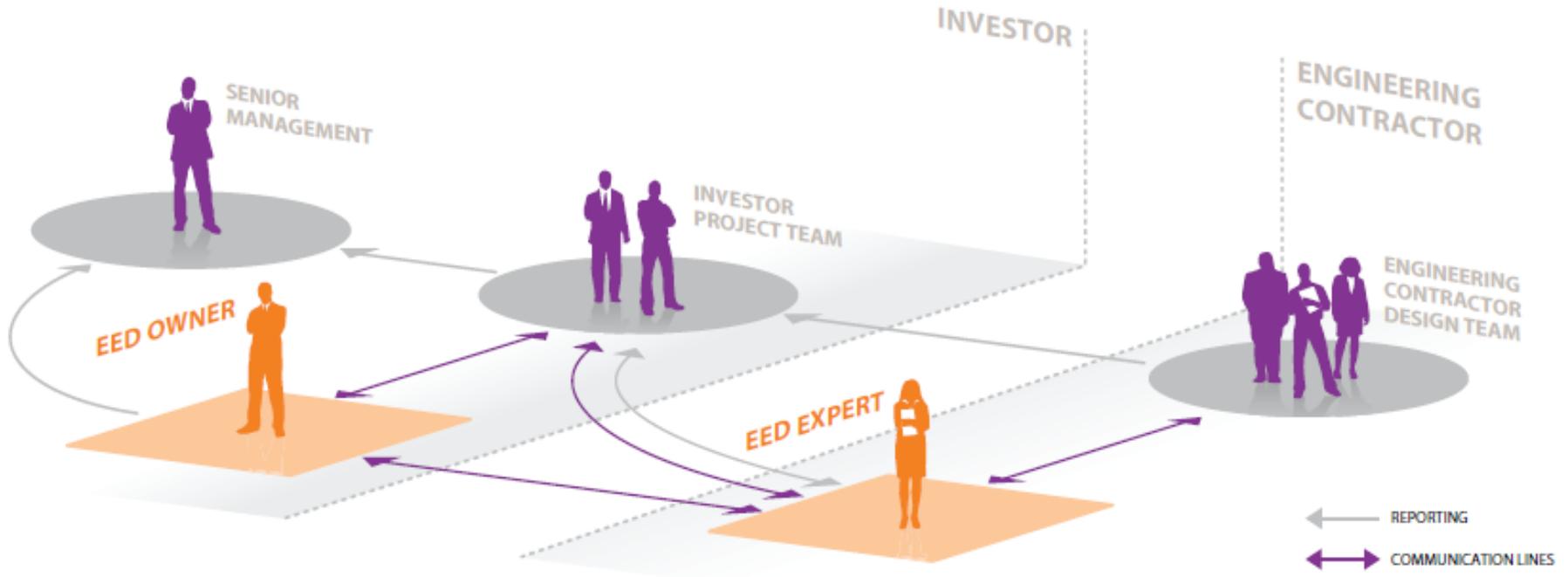


# Leadership through Energy Efficient Design (EED)

## The Approach Taken



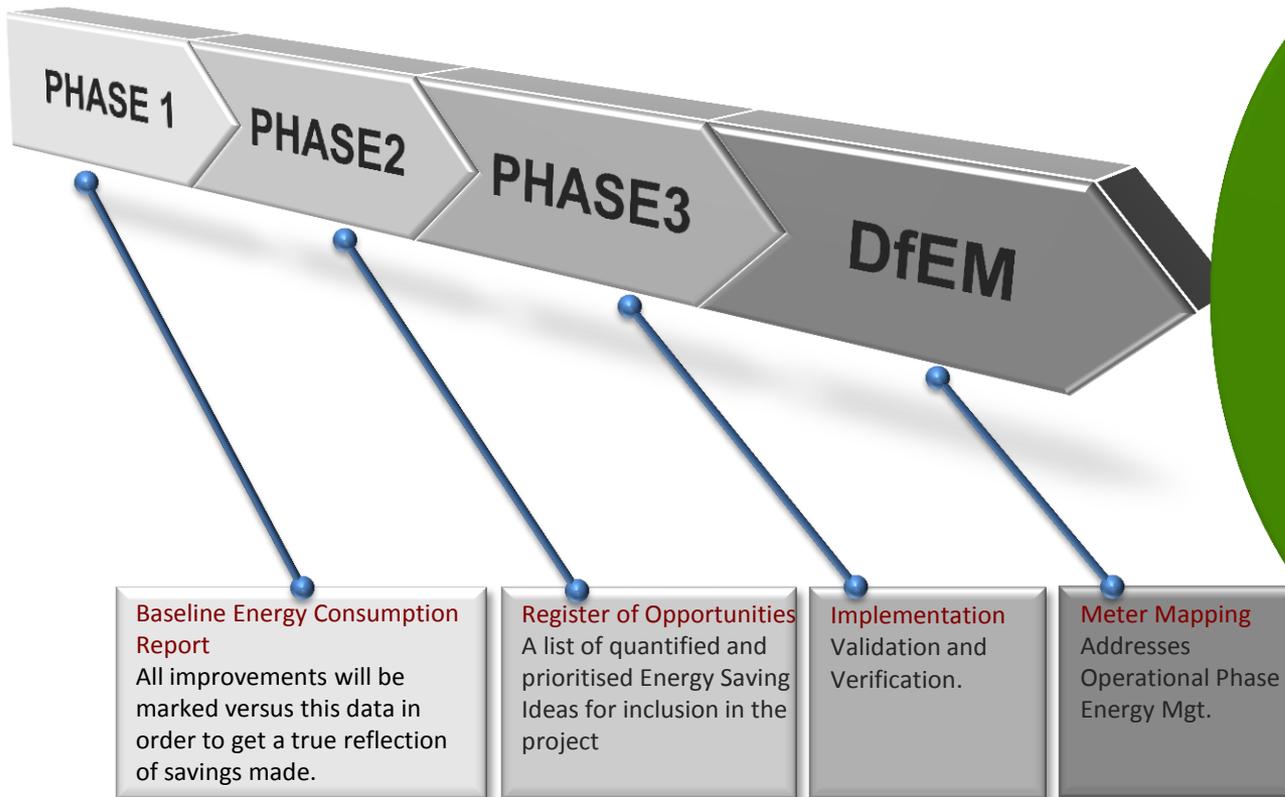
Putting the appropriate **Organization** in place which is focused on Energy Design.



# Leadership through Energy Efficient Design (EED)

## The Approach Taken

Following a **simple, robust and consistent process** - see *SEAI website* for details on the methodology



### Benefits

It minimises Energy usage in the Operational phase.

It addresses Operational phase energy management during the Design phase e.g. Metering Plans.

It reduces Capital cost in both Utilities and Processes due to reductions in plant requirements.

It can be readily integrated into existing projects, it runs in parallel without impacting the schedule.



## Energy Benefits

Guava also on track to  
**DELIVER SUBSTANTIAL ENERGY SAVINGS IN GHANA**

ENGINEERING EXCELLENCE - NEWSFLASH JULY 2013

### EED ENERGY EFFICIENT DESIGN

The faster it travels  
the more energy it saves...

**Project Phoenix.**  
St James's Gate Brewery, Ireland, 2011  
DIAGEO

**Project Guava.**  
Kaaal Brewery, Ghana, 2013  
DIAGEO

### Projected **30%** energy saving through EED at Guava

LED lighting delivers max lux with minimum energy usage

Project Guava is a major £26m capacity expansion project at Diageo's Kaaal Brewery in Ghana. Following the success and key learning's of EED as applied to Project Phoenix, the project team for Ghana has adopted the same EED methodology.

Overall, the application of EED in Ghana has resulted in a total projected energy reduction of 30% when compared to base line energy use.

**PHASE 1** **PHASE 2** **PHASE 3** **DFEM**

- Baseline Energy Consumption Report** - All improvements will be needed versus this date in order to get a true reflection of savings made.
- Register of Opportunities** - A list of opportunities and priorities. Create saving base for projects in Ghana.
- Implementation** - Windows and Ventilators.
- Make Savings** - ADDRESS Operational Phase Energy Mgt.

**Aspirations - Guava**

- Exceed packaging capacity of 500L to achieve P10 standard forecast.
- Implementation of B1 for process efficiency which is suitable for the African market.
- Enhance the Environment.
- Technological innovation.
- Enhance the site Energy usage to help achieve targets.



# Energy and Financial Benefits

## Substantial Savings

Substantial savings in upfront capital investment versus retrofit.

## Benefiting Operation Competitiveness.

Sustained revenue savings benefiting operation competitiveness.

Overall EED on track to achieve

**Annual Steam Saving  
of 25%**

from 85 – 63.6 MJ/HI.

Overall EED on track to achieve

**Annual Elec Saving  
of 15%**

from 32.3 – 27 MJ/HI.

Overall EED on track to achieve

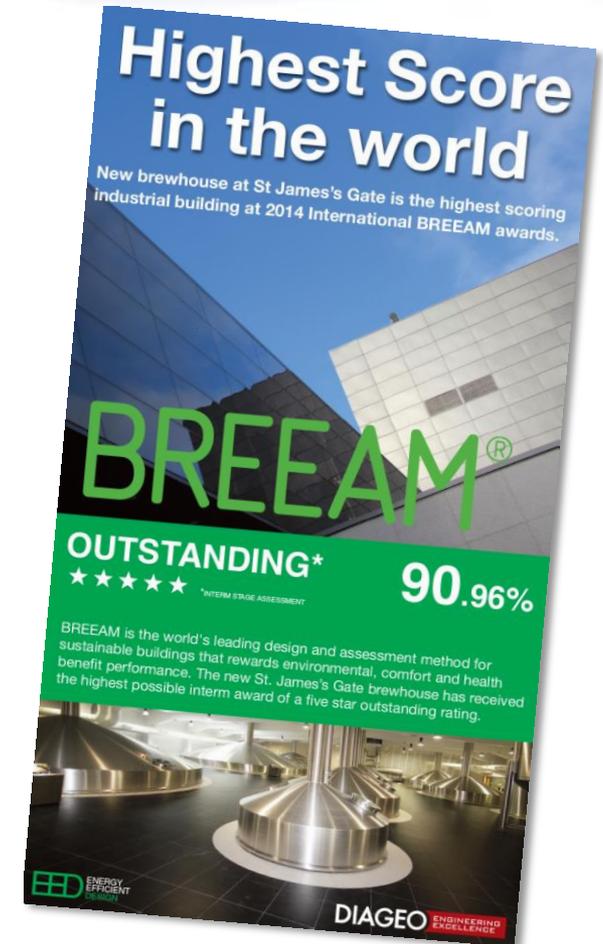
**Annual Water Saving  
of 22%**

from 4.13 – 3.24 HI/HI.

### Reputational Achievements

#### 1<sup>st</sup> to Achieve LEED & Breeam Accreditation

On track to be first industrial process facility to achieve both LEED and BREEAM Accreditation.



### Internal - Site operations

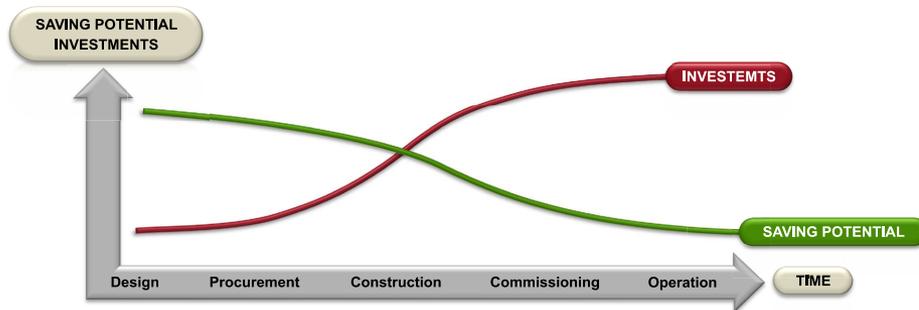
#### Ensures and Integrated Energy Approach

Gets great buy in as Design for Energy Management (Dfem) ensures an integrated energy approach.

#### Maximised Value from Capital Invested

#### Step Changes

Step changes environmental and revenue cost performance for the site



### External - Approved Suppliers help roll out of EED

#### Suppliers can Differentiate

Provides new way for suppliers to differentiate and add value

#### Suppliers CSR Agenda

Supports their own CSR agenda



### Internal

#### Engineering Website

Engineering website provides Global knowledge sharing platform on EED including tools and techniques e.g. register of opportunities for ci

#### Case Studies

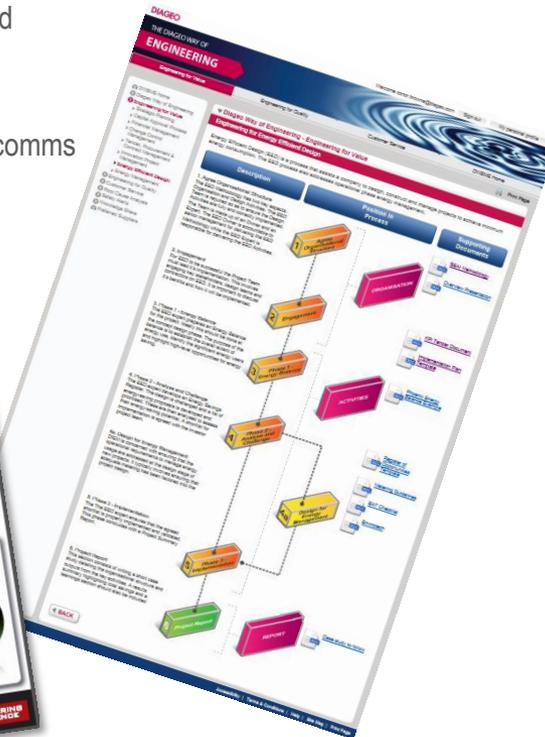
Case studies developed and shared

#### Breaking News

Newsletters and "Breaking News" comms



▲ Communications promoting EED



▲ Website for Engineering Excellence  
EED Global Knowledge & Systems Share



### External

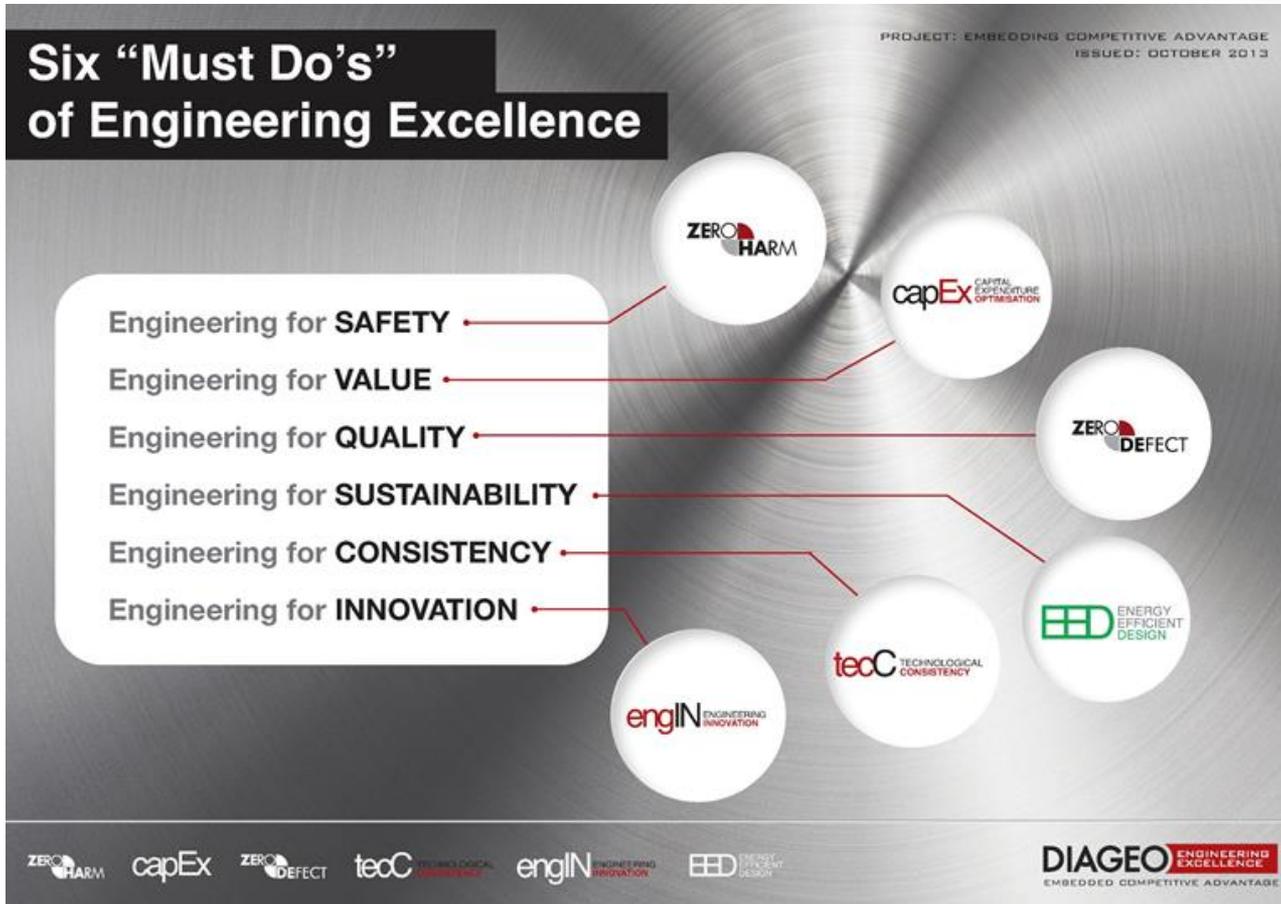
#### Sharing Best Practice

Diageo supports knowledge sharing through a range of activities including demonstrating leadership at events like:-

- Eufores EU presidency (15<sup>th</sup> June '13)
- Irelands Energy Show (12<sup>th</sup> March '13)
- Future of Food UK (18<sup>th</sup> June '14)

## What we are doing to secure EED advantages

EED is now integral to delivering capital investment across our global beer division



1. We have adopted the **EED Organisational Model**
2. Established project and capital investment **EED Performance KPIs**
3. Extending our **Approved Suppliers** model to assess their approach to EED
4. EED incorporated into our **Contractual Terms and Conditions**
5. Worked with NSAI, SEAI and industry to make **EED an Irish Standard** and in future a European standard.

# Thank you

For opportunity to share our journey to delivering **World Class Leadership and performance** in relation to **Energy Design and Management**.

