

IEA Buildings, Energy Efficiency & Behaviour Workshop

 **Optimising**  **Power** @  **Work**

A Staff Energy Awareness Campaign

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Office of Public Works



- Property Management (Central Government Portfolio) is one of the main activities of the Office of Public Works (OPW)
- Approximately 2000 properties, many small, Total Floor Space of 1.4M m² (for 50,000 Staff)
- Predominantly office accommodation but also includes data centres, laboratories, heritage buildings, etc.
- Total Energy Spend = €35M - €40M

Our Clients



- OPW provides a central service in terms of technical expertise and management of buildings
- Work closely with all our customers on a day to day basis.
- OPW owns/leases the properties on behalf of the State
- Individual occupying Departments pay for Maintenance and Energy

Energy Conservation in the Public Service



- Ireland's National Energy Efficiency Action Plan (NEEAP) requires Public Service Organisations to provide exemplary role
- Public Sector Target = 33% energy reduction by 2020
- Originally thought to be ambitious but OPW well on the way to achieving this goal
- No room for complacency
- Energy Conservation Programmes – easiest savings are the initial savings.

Background



- 2007: 2 Pilot Studies in 10 Buildings
 - Demonstrated savings of up to 19% Possible
- 2008 - 2010: Optimising Power @ Work 1
- 2010 – 2015: Optimising Power @ Work 2

Main Focus of the Pilot Study:



- Switch Off
- Switch Off Early
- Identify Areas Of Energy Wastage

Concentrate on Electrical Consumption:



- Electricity = 59% Total Energy Consumption
- Electricity = 78% Carbon Dioxide Emissions
- Staff have direct influence
- Current Performance was 'Poor'

Lessons from the Pilot:

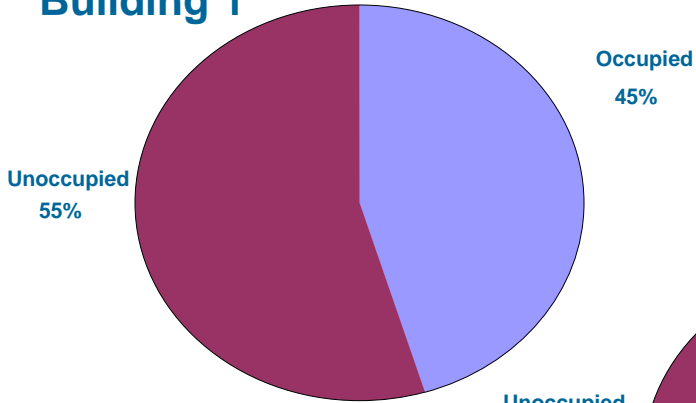


- 35% Electrical Energy Used at Night
- 20% Electrical Energy Used at Weekends
- 55% Electricity used when building is unoccupied!

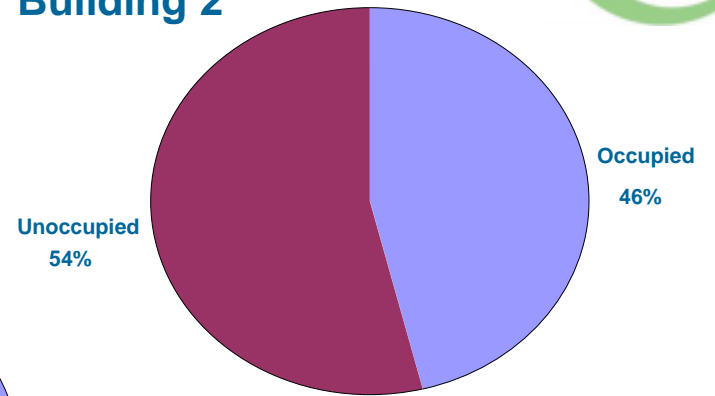
Unoccupied Buildings



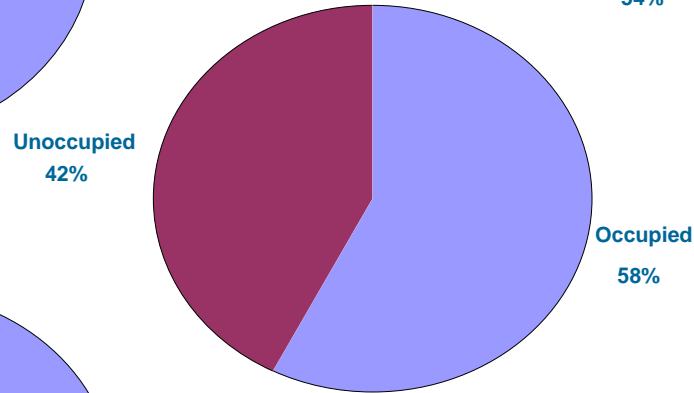
Building 1



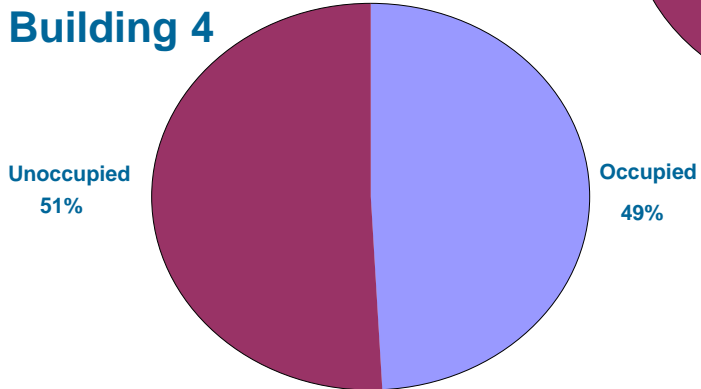
Building 2



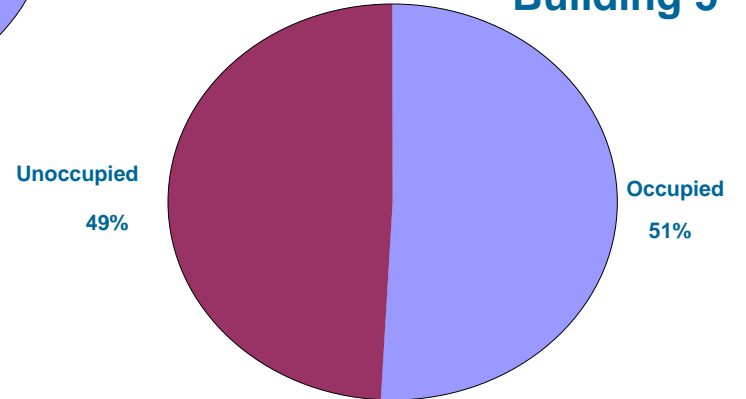
Building 3



Building 4



Building 5



Optimising Power @ Work 1



- 250 Buildings in the campaign
- 2 Service Providers Appointed
- 15% Reduction Target
- Actual average savings of 12% achieved

Optimising Power @ Work 2 - Targets



- Target 20% average energy saving.
- Minimum saving of 15% in each building i.e. buildings that did not achieve a 15% in Phase 1 were intensively targeted.
- Buildings, which have already achieved >20%, a 5% further reduction

The key success factors:



- Three key elements to programme:
 1. Technology
 2. Specialist Resources
 3. Continuous Staff Engagement
- Endorsement at CEO & Senior Management level essential for success
- Active energy teams within participating buildings is the cornerstone of the campaign

The OPW Programme



1) Technology - *Availability of up to date reliable energy data*

- OPW installed dedicated energy monitoring equipment in all buildings which have floor areas over 1000m².
- Approximately 270 buildings in total
- Best estimates indicate that these are responsible for 80% of our expenditure on energy.

The OPW Programme



2) Specialist Resources: *The application of adequate and suitable resources*

- Potential net savings are up to three times the investment, per annum.
- Worthwhile and necessary to apply proper and adequate resources
- A proper resource is an experienced specialist
- By applying suitable resources it is reasonable to set targets and expect results.

The OPW Programme



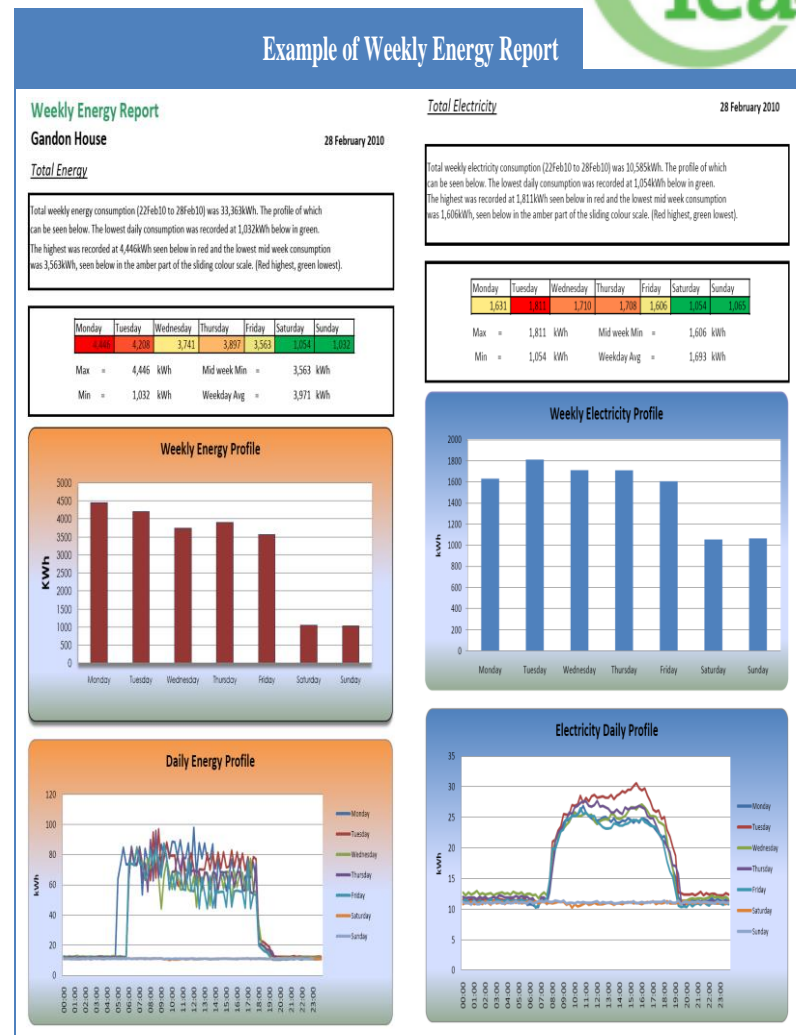
3) Continuous Staff Engagement

- Senior Management buy-in
- Appoint Energy Officer
- Establish Energy Teams
- Campaign launch
- General Staff Involvement
- Set Targets and Benchmarks
- Monitor results against targets

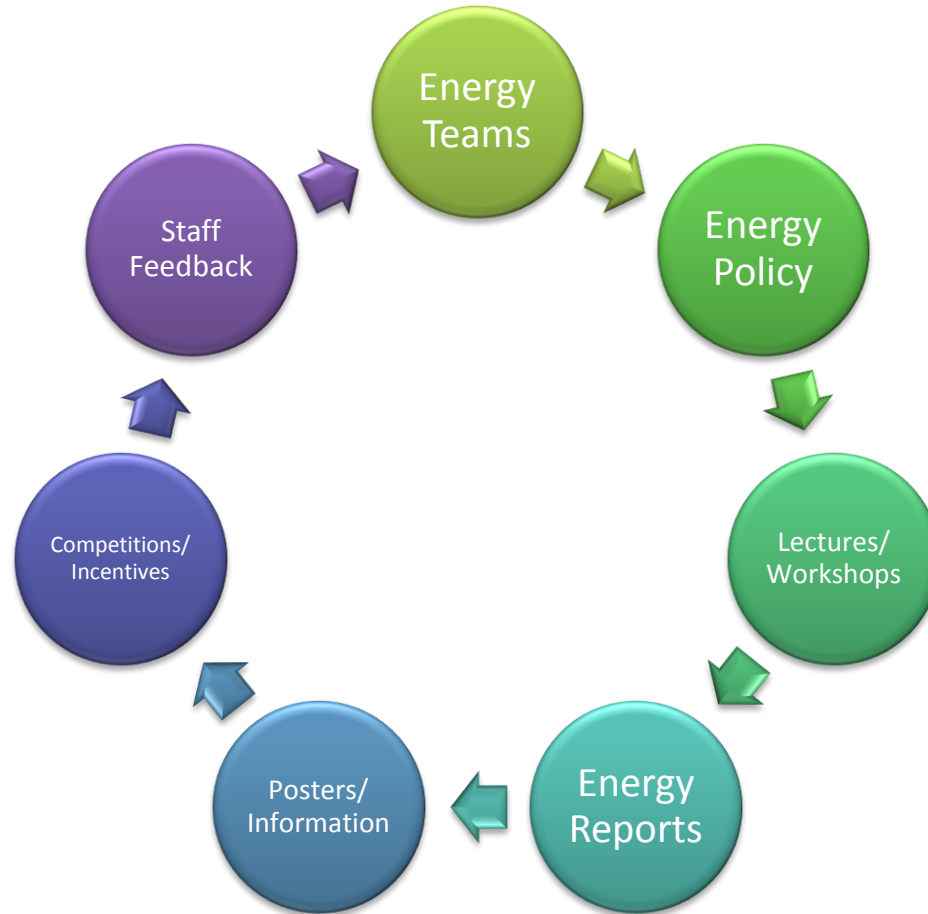


Intensive Staff Engagement

- Monthly Energy Team Meetings
- Monthly Energy Reports
- Inter-Building Competitions
- National Awards Programme
- Night Audits
- BMS Audits
- Staff Energy Workshops/Lectures
- Energy Portal – Web based
- Staff Presentations / Quiz



Energy Awareness Campaign:



Levels of Engagement

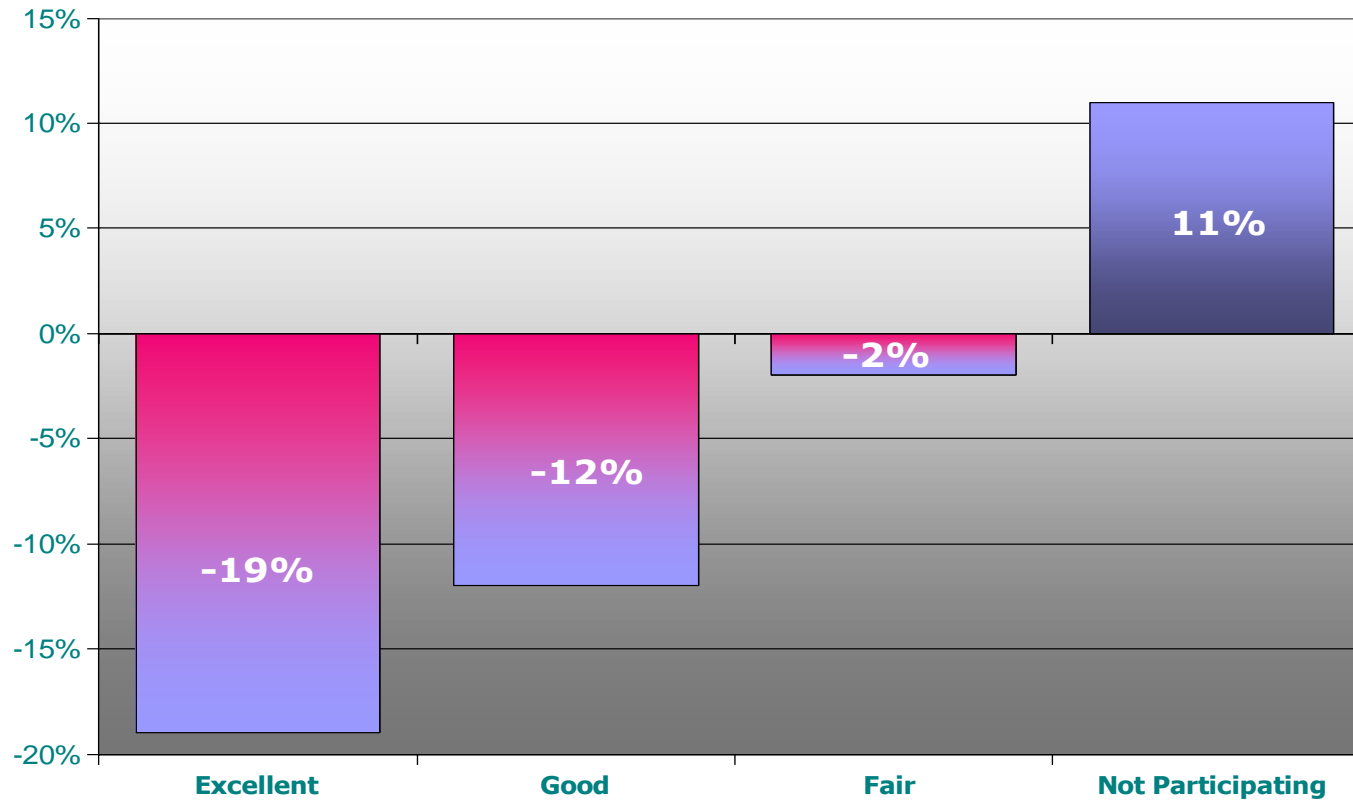


- **Excellent:** Full support from management, appropriate and proactive Energy Officer and team, good response to the programme, taking their own initiative in energy savings.
- **Good:** Good support from management, energy manager and team, medium/good response to the programme.
- **Fair:** Reasonable support from energy manager and team, medium/fair response to the programme.

Levels of Engagement:



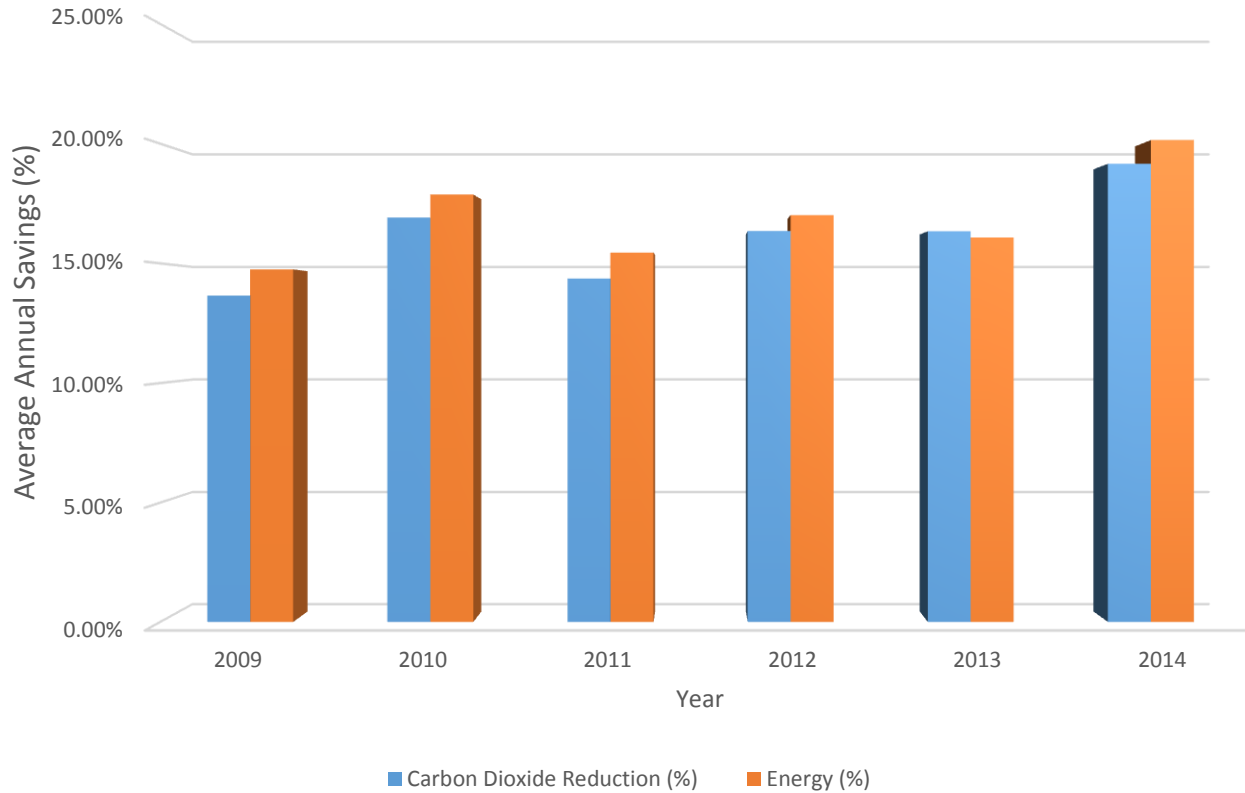
Average Savings V Level of Engagement



Results:



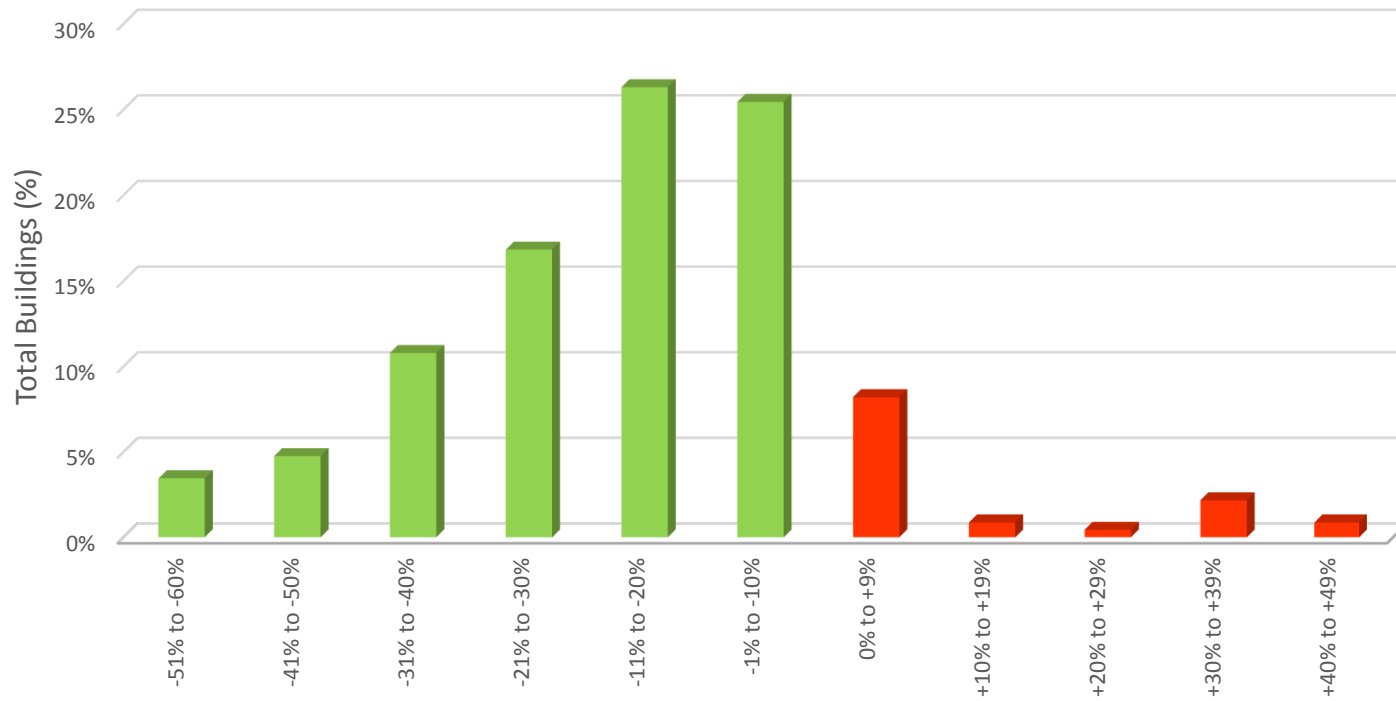
Average Annual Energy and Carbon Dioxide Savings



Results:



Building Energy Performance (2014)



Annual Energy Consumption Compared to Benchmark Year

Summary of Results



Particulars	Saving
Average Annual Energy Savings (February 2015)	20.2%
Annual Cost Savings (February 2015)	>€4.9M/annum
Electricity Portion of Overall Saving	55%
Heating Fuel Portion of Overall Saving	45%

The Future: New Public Sector Programme:



- Following the success of OPW's existing *Optimising Power @ Work* Energy Conservation Campaign, Government Decision to use as a model for roll-out to wider public sector.
- OPW identified as the best organisation to deliver this.
- €9M allocated over a 3 year period.
- Hospitals, Prisons, Universities, Institutes of Technology, Local Authorities, etc.