ENGINEERING
TOMORROW

Overcoming the Challenges of Tall Building Design

Meeting BREEAM WAT03 for Commercial buildings

Outcome of Impacting Trends

- Population growth and planning processes are creating the conditions to build up rather than out
- Foreign investment in the ‘secure’ London housing market has created an explosion in apartment and office buildings
- Higher customer expectations have increased the demand for higher indoor comfort
- The technology drive has created the need for advanced digital components, as well as keeping up to date with environmental issues and changes to legislation

BREEAM

BREEAM is the world's leading sustainability assessment method for master planning projects, infrastructure and buildings.

BREEAM inspires developers to innovate and make effective use of resources

A focus on sustainable value and efficiency makes BREEAM certified developments attractive property investments and enhances environmental wellbeing

BREEAM measures sustainable value in a series of categories, ranging from energy to ecology

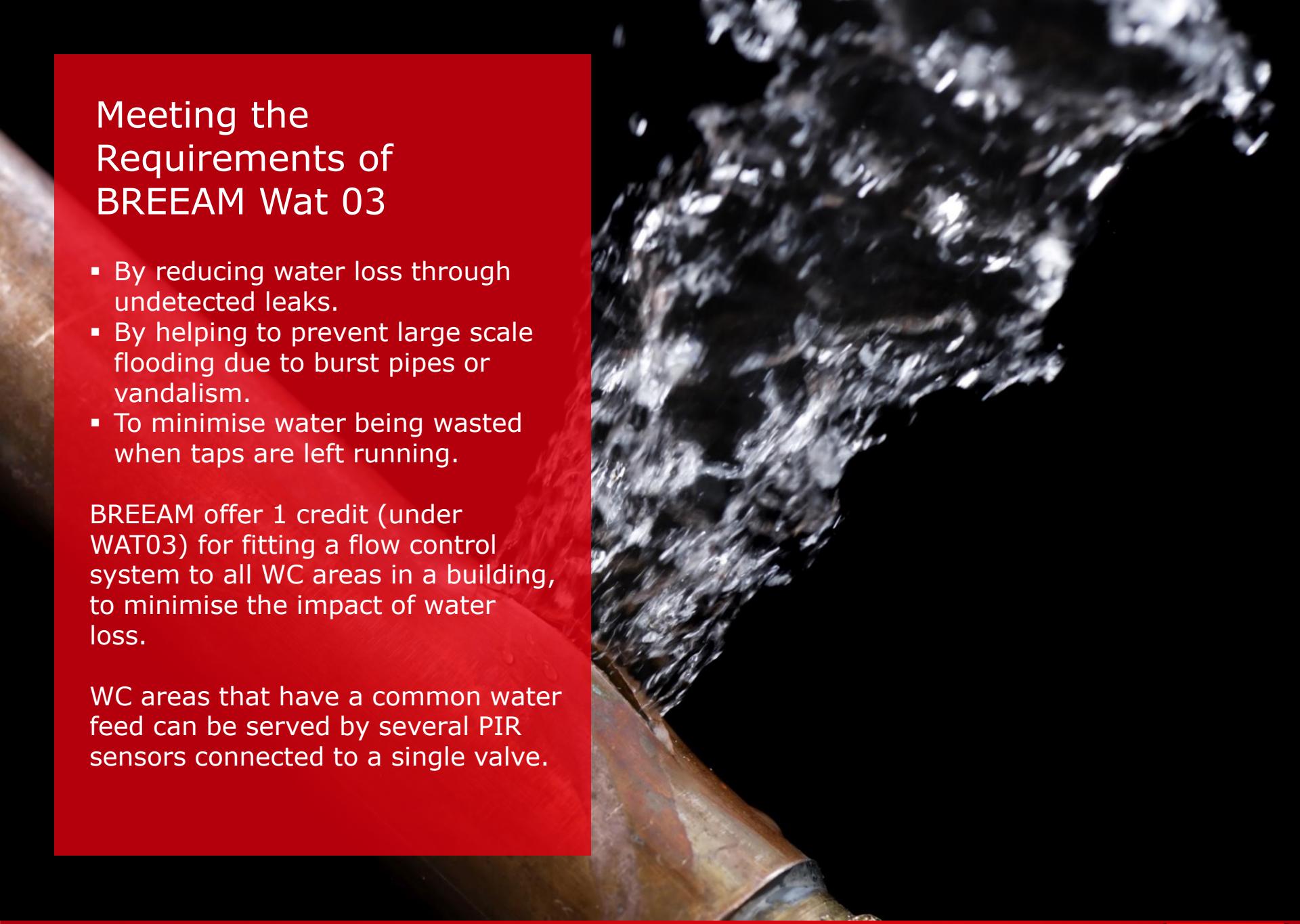
Within every category, developments score points – called credits for achieving targets, and their final total determines their rating

Meeting the Requirements of BREEAM Wat 03

- By reducing water loss through undetected leaks.
- By helping to prevent large scale flooding due to burst pipes or vandalism.
- To minimise water being wasted when taps are left running.

BREEAM offer 1 credit (under WAT03) for fitting a flow control system to all WC areas in a building, to minimise the impact of water loss.

WC areas that have a common water feed can be served by several PIR sensors connected to a single valve.



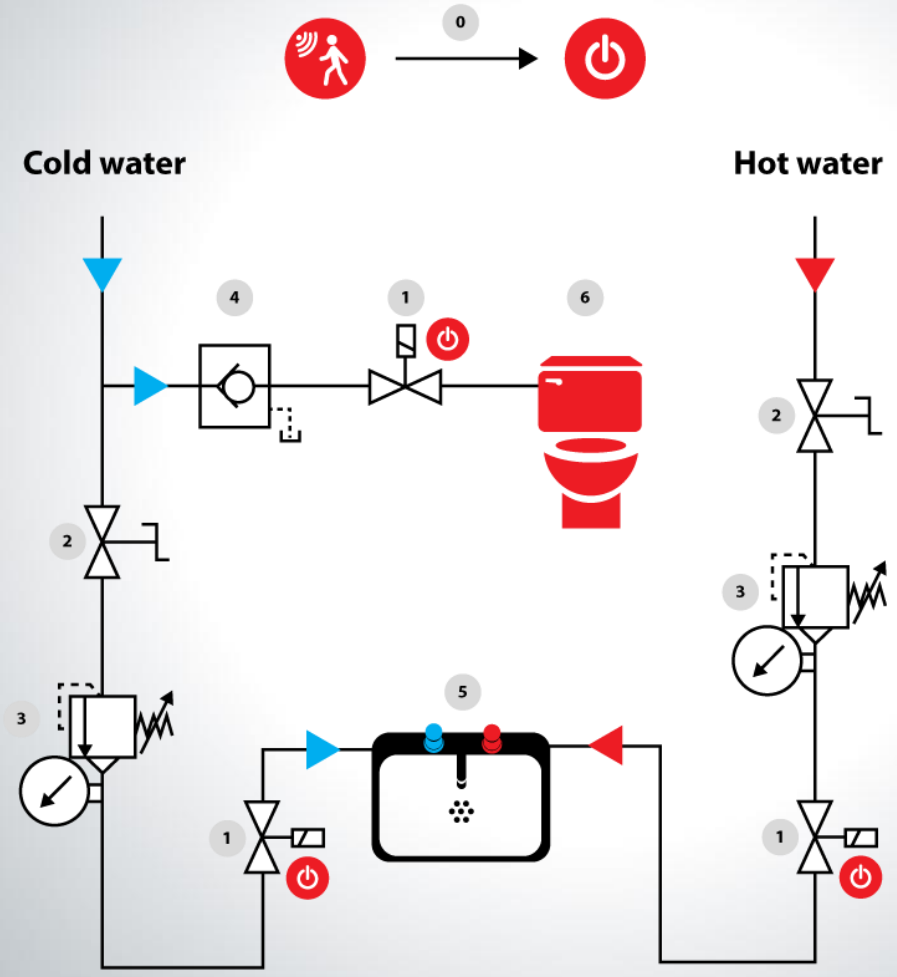
Inside a typical 10 storey Commercial Office Building

- 3-6 WC’s per floor
- 30-60 WC’s per building (flushing toilets)
- 60-120 taps (Hot & Cold)

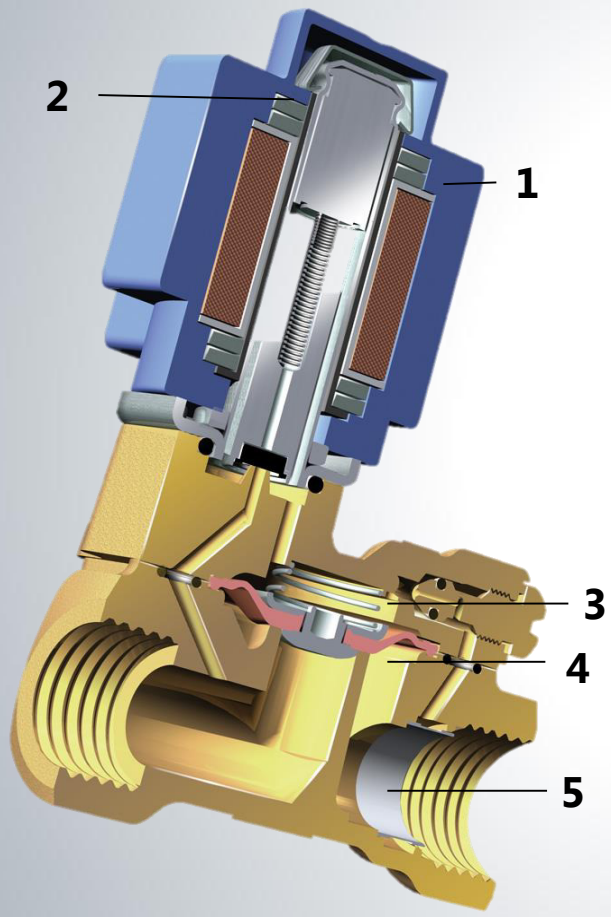
Solenoid valves and PIR Motion sensors are installed on each WC´s to avoid uncontrolled water usage, leaks or damage when the toilet is not in use.

A “running” toilet can use up to 10 liters of water per hour, leading to an extremely high utility bill.

A standard WC layout using PIR's & Solenoid valves



0	PIR sensor (motion sensor)
1	**NC Solenoid valves G3/8 to G1", depending on pipe and connection size**
2	Shut off valve
3	Pressure reducing unit with manometer
4	Protect against water backflow
5	Cold and warm water tap
6	Toilet



Example of a Solenoid Valve

Typical Solenoid Valve Specification

2/2 Servo-Operated Solenoid Valve:

A High Performance Valve Boasts a Range of Benefits:

1. Clip-On Coil
2. IP 65 or 67 rating (Moisture resistant)
3. Water hammer damping - Adjustable closing time option
4. Long life and performance - Reinforced Diaphragm
5. Insensitive to dirt – A unique inbuilt self-cleaning filter to protect the pilot orifice

Square armature design enables the armature to move freely
Superior flow capability

- Available in Brass – DZR – Stainless Steel

Features of a high quality solenoid valve

- Ideal for instant water shut off
- Excellent KV values
- Robust & Reliable
- Easy to install
- Drinking water approvals:
  - WRAS
  - ACS
  - PZH
  - In accordance with:
    - Low Voltage Directive 2015/35/EU
      - EN60730-1
      - EN60730-2-8
    - Pressure Equipment Directive 2014/68/EU
    - RoHS Directive 2011/65/EU

Different System, Different Valve

(2/2 way)
Indirect servo with self cleaning filter

High Performance 15-50

(2/2 way)
Direct servo without filter

Compact High Performance 6-22

(2/2 way) Assisted lift from 0-bar – where low pressure is issue

Robust High Performance 10-22

IP65 or IP67 (Hermetic seal against moisture penetration) simple Clip-On Coils

ENGINEERING
TOMORROW