

Ene02 and Wat02

Energy and water metering

Actions:

- i. Install clearly labelled energy meters
- ii. Install clearly labelled water meters

i. Energy meters

Sub-metering of end-use categories

Energy metering systems should be installed so that **at least 90%** of the estimated energy consumption of each fuel is assigned to the **end-use categories**.

Energy consumption should be metered according to the total useful floor area:

- If the area is **greater than 1,000m²**, meter by end-use category with an appropriate energy monitoring and management system (BMS/EMS).
- If the area is **less than 1,000m²**, use either an energy monitoring and management system or separate accessible energy sub-meters with pulsed or other open protocol communication outputs, for future connection to an energy monitoring and management system

End-use categories include:

- Space heating
- Domestic hot water heating
- Humidification
- Cooling
- Ventilation, i.e. fans (major)
- Pumps
- Lighting
- Small power
- Renewable or low carbon systems (separately)
- Controls
- Other major energy consuming systems or plant, where appropriate. Depending on the building type, this might include: plant used for swimming or hydrotherapy pools; other sports and leisure facilities; kitchen plant or catering equipment; office equipment; cold storage plant; laboratory plant; sterile services equipment; transportation systems (e.g. lifts and escalators); drama studios and theatres with large lighting rigs; telecommunications; dedicated computer room or suite; server rooms; dealing rooms; covered car parks; ovens or furnaces; and floodlighting. See also CIBSE TM39: Building energy metering for further information.

Note: This document is intended as guidance only. Consult your BREEAM AP or Assessor to ensure compliance is achieved.

When not connected to a BMS/EMS, the meters should be **clearly labelled** so that building users can easily identify the energy consuming end uses, as shown in the photo below:



The image below shows energy meters that have been labelled with numbers, which is **not clear** in its end use:



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Sub-metering of high energy load and tenancy areas

A significant majority of the energy supply should be monitored with either an accessible energy monitoring and management system, or separate accessible energy sub-meters with pulsed or other open protocol communication outputs for **future connection** to an energy monitoring and management system. Both options are for **tenanted areas** or relevant **function areas** or departments in single occupancy buildings.

In large single occupancy or single-tenancy buildings with one homogenous function (e.g. hotel bedrooms, offices), there should be a **sub-meter per floor plate**.

ii. Water meters

There should be an **accessible water meter** on the mains water supply at the point where it enters each building. This includes instances where water is supplied via a borehole or other private source. Mains water meters which are property of the water utility company or on the site boundary are **not compliant**.

For water-consuming plant or building areas **consuming 10% or more** of the building's total water demand:

- Fit easily accessible **sub-meters**
- OR
- Install water monitoring **equipment integral** to the plant or area.

Each meter (main and sub) must:

- Have a **pulsed or other open protocol** communication output
- AND
- Where applicable, be connected to an **appropriate utility monitoring and management system** (BMS/EMS), for the monitoring of water consumption.

In buildings with **swimming pools**, or large water tanks and aquariums, separate sub-meters should be fitted on the water supply of these and any associated changing facilities (toilets, showers etc.) irrespective of their water consumption levels.

In buildings containing laboratories, a separate water meter should be fitted on the water supply to any process or cooling loop for 'plumbed-in' laboratory process equipment, irrespective of their water consumption levels.

Where there is no new water supply installed:

Identify the facilities **most likely** to be used by the occupants and visitors of the building (e.g. specific facilities provided in a nearby accessible building). In this case, provide the following in the nearby building:

- A water meter for the mains water supply
- Sub-meters for large water-consuming plant or facilities, (as above).

The meters provided must have a pulsed output or connection to existing BMS in accordance with the assessment criteria.

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