

Ultraviolet Solutions for HVAC BREEAM, LEED & WELL Accreditation

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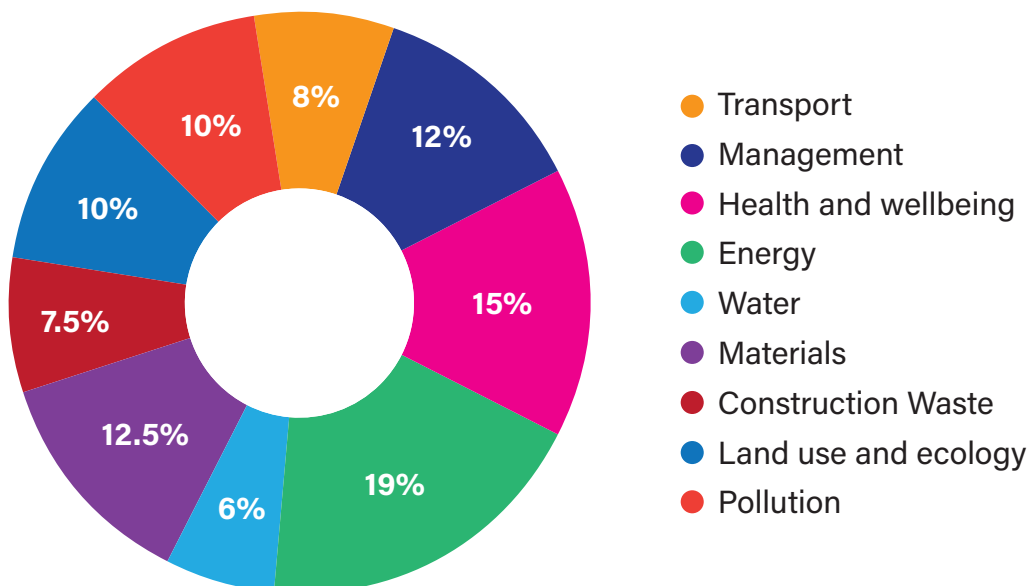


BREEAM®

HEA2	Health and wellbeing indoor air quality	Up to 4 Credits
HEA4	Health and wellbeing thermal comfort	Up to 4 Credits
ENE1	Reduction of energy use and carbon emissions	Up to 15 Credits
WAT1	Water efficiency	Up to 5 Credits
INN1	Innovation	Up to 10 Credits



WEc1	Water efficiency Regional priority credits,	Up to 12 Credits UK 1 Extra Credit
EAc3	Optimise energy performance HVAC Regional priority credits,	Up to 25 Credits UK 1 Extra Credit
MRC2	Interiors life-cycle impact reduction	Option 3 2 Credits
IEQc2	Low-emitting materials	Up to 3 Credits
IEQc5	Thermal comfort	1 Credit 1 Extra Credit
IDc1	Innovation in design	1 Credit
IDc2	Innovation in design	1 Credit



Appendix 6 – WELL Building Standard™

The WELL Building Standard™ is an evidence-based system for measuring, certifying and monitoring the performance of building features that impact health and well-being. WELL is administered by the International WELL Building Institute™ (IWBI), a public benefit corporation whose mission is to improve human health and well-being through the built environment.

UVC disinfection of cooling coils is mandated to meet minimum compliance.

Below are extracts from Section 06 (Microbe and Mold Control) on page 33 of the Standard and Section 23 (Advanced Air Purification) on page 52 of the Standard:

06 - MICROBE AND MOULD CONTROL

Mould often grows on cooling coils in HVAC systems due to moisture condensation and can be introduced into the building's indoor air. It can also occur on or within wall assemblies due to water damage or improper detailing in humid locations, for example kitchens and bathrooms. Mould spores can trigger asthma, headaches, allergies and other respiratory system disorders.

Intent: To reduce mould and bacteria growth within buildings, particularly from water damage or condensation on cooling coils.

PART 1: COOLING COIL MOULD REDUCTION

In buildings that rely on a mechanical system for cooling, one of the following requirements is met:

- a.** Ultraviolet lamps (using a wavelength of 254 nm so as not to generate ozone) are employed on the cooling coils and drain pans of the mechanical system supplies. Irradiance reaching the cooling coil and drain pan, including the plenum corners, is modelled. (GUS Statement – UVC for HVAC will protect asset value with a 24/7 non-invasive cleaning regime modelled to disinfect the surface and full depth of the coil).
- b.** Building policy states that all cooling coils are inspected on a quarterly basis for mould growth and cleaned if necessary. Dated photos demonstrating adherence are provided to the IWBI on an annual basis. (GUS Statement – Manual cleaning is time consuming and costly; mould will quickly return. It is invasive and labour intensive and can damage cooling coil fins. It will only impact on the surface of the coil and possibly push biofilm and debris into the coil).

PART 2: MOULD INSPECTIONS

The following are not present:

- a.** Signs of discoloration and mould on ceilings, walls or floors.
- b.** Signs of water damage or pooling.

23 - ADVANCED AIR PURIFICATION

Some circumstances justify greater investment in air purification strategies. For example, proximity to highly traveled roads, manufacturing plants and seasonal variation can affect outdoor air quality, increasing ozone and VOC content, and in turn diminishing indoor air quality.

Similarly, climates with high humidity levels and inadequate indoor ventilation can foster the development of mold and spores in indoor environments.

Intent: To improve recirculated indoor air quality through the implementation of advanced air purification strategies.

PART 1: CARBON FILTRATION

To reduce VOCs in the indoor air, buildings which recirculate air use one of the following methods:

- a.** Activated carbon filters in the main air ducts to filter recirculated air. Replacement is required as recommended by the manufacturer.
- b.** A standalone air purifier with a carbon filter used in all regularly occupied spaces. Purifiers must be sized appropriately to the spaces they are serving. Filter replacement is required as recommended by the manufacturer.

PART 2: AIR SANITIZATION

Spaces with more than 10 regular occupants, within buildings that recirculate air, use one of the following treatments or technologies to treat the recirculated air, either integrated within the central ventilation system or as a standalone device:

- a.** ¹⁵ Ultraviolet germicidal irradiation. (CoilCare[®] is a UVGI System)
- b.** ¹⁵ Photocatalytic oxidation. (InDuct produces Ozone and Photoplasma) recommended by the manufacturer.

PART 3: AIR QUALITY MAINTENANCE

As evidence that the selected filtration/sanitization system chosen continues to be fully operational, projects must annually provide IWBI with:

- a.** Records of air filtration/sanitization maintenance, including evidence that the filter and/or sanitizer has been properly maintained as per the manufacturer's recommendations.

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