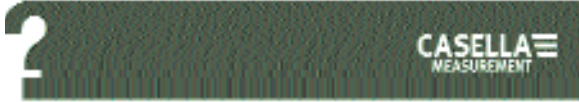


# A Question of Health & Safety



**Q:** How does weather affect my building operations?

**Gary Noakes, product manager at Casella CEL replies:**

There is much discussion bounding around about climate change and global warming, and we should all be aware of the effects the weather has on our everyday lives. Buildings are always affected by weather conditions, these effects can have serious health and safety implications, damage to property and staff, but can also be used to make considerable cost savings as well.

There are many parameters that form 'the weather'. One of the main issues for buildings is wind speed and direction, and these affect the building every day, and especially during construction. When planning a new development, designers need to understand the local wind environment. They need to know what impact it will have on the new structure and whether the structure will cause problems for neighbouring buildings and the surrounding area. This information is required as part of the Environmental Impact Assessment for new large developments. It is important to note: pedestrian comfort and safety, the impact of a building form and site layout on wind paths and speeds, and how to minimise such impacts the effect of wind on building services, levels of cladding required, effects on pollution dispersal and weather tightness.

Many services contracted out are also affected: One of the main ones is window

cleaning. In very high rise buildings cradles and platforms are used and legislation is laid down on use of these, where it is restricted above certain wind speeds. Many FM managers and contractors have to gain access to roofs for maintenance of HVAC etc and again, the wind speed should be measured, either by looking at data from an automatic system, or from very simple hand held anemometers, as part of a risk assessment. Only if the levels are safe can contractors or staff venture outside. Contractors on site often use mobile platforms, and these are also subject to high wind speeds, and details of the maximum wind speed should be specified on the equipment. With more extreme wind events, even tornadoes and hurricanes now starting to be seen in the UK, it is essential that the local conditions are monitored and appropriate action taken if certain levels are exceeded.

With water now one of our major resources, if rainfall is monitored, this may help the FM team to achieve savings by helping to design rainfall harvesting systems, using this water for toilet flushing, cooling and other non potable applications. This again can lead to considerable cost savings in some areas. We are beginning to experience more extreme rainfall episodes in the UK, again as part of the global climate change effects, and many buildings waterproofing capacities are being put to the test more regularly. It is imperative that all leaks, however small are rectified quickly as with increasing rainfall intensity these breaches will rapidly lead to major structural damage.

Not all weather effects work against the building managers, and many facets can be measured and appropriate controls put in place to harness their potential energy. The most obvious would be alternative energy sources, such as solar power, wind power and smart ventilation systems reducing the need for active powered air conditioning systems. Many buildings now also monitor the external conditions such as temperature and humidity and can achieve significant energy savings by integrating this data into their PLC or BMS. Some 'smart' buildings also take solar data and manage the screening and window orientation again in order to achieve energy efficiency savings, and ventilation again saving considerable running costs.

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