



Guidance on the shutdown of buildings during COVID-19



The Building Engineering Services Association (BESA) has released specific guidance on how buildings can be managed and maintained effectively during the COVID-19 lockdown. With thousands of people now working from home or prevented from travelling, many commercial buildings are moving into shutdown mode.



Moving buildings into shutdown has huge implications for building services equipment, with decisions that would usually have been planned over a number of months now having to be taken within days. BESA requires that buildings' owners, landlords and tenants will still need to maintain their buildings for security purposes, to achieve statutory compliance, and to protect the fabric and critical systems as well as satisfying any insurance requirements.

Evotech currently maintain our client's buildings in-line with BESA's industry planned maintenance standard SFG20. BESA suggest that adopting the standard's strategies would continue to keep buildings safe and compliant throughout this period, however, some organisations may decide to mothball their buildings or at least reduce their maintenance regime to a low level. In reference to the latter situation, BESA argues that full closure and shutdown is intended as a long-term action that would make it difficult to return the building to operational status quickly when the current crisis recedes. In addition, elements of the building services may also be required to support staff working from home, such as server rooms. In these instances, BESA's recently updated SFG30 Mothballing and Re-Commissioning of Buildings standard could prove useful.

SFG30 has been adapted to provide a step-by-step process for maintaining critical services during this low occupancy period, ready for rapid and full reactivation once

business returns to normal. This includes key elements of maintenance such as keeping water systems safe (in-line with the HSE's L8 requirements for legionella control), both active and passive fire protection systems, safe handling of refrigerant gases, electrical and gas service safety checks, ventilation hygiene, security systems and lifts (if they are still in service).

The key consideration when applying a revised maintenance strategy is the duration of action and hence the cost of ongoing reduced maintenance vs the cost of mothballing and reactivation of assets and services. Further considerations when deciding which direction to take with a building include (but are not limited to):

- Insurance providers should be consulted in the first instance, as they will likely require fire alarms and sprinkler systems to be maintained, especially if the building is left empty for periods.
- Domestic water systems would need to be subject to regular checks in-line with L8 requirements, to avoid the growth of bacteria within systems, which would come at a significant cost to rectify.
- For mechanical ventilation systems, the general advice is to supply as much outside air as possible. Expanded operation times are recommended for buildings with mechanical ventilation. Setting the ventilation system to operate 24/7 with reduced supply rates outside occupancy hours should be considered for those buildings still in use. Should employee numbers reduce, it is recommended not to place remaining staff in smaller areas. Exhaust ventilation systems of toilet areas should be set to operate 24/7, and relatively negative pressure must be maintained in the room to help avoid faecal-oral transmission.
- Heat-recovery devices may carry over the virus attached to particles from the exhaust airside to the supply airside via leaks. In rotary heat exchangers (including enthalpy wheels) particles deposit on the return airside of the heat exchanger surface, after which, they might be resuspended when the heat exchanger turns



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to the supply airside. Based on current evidence, the recommendation is to disable rotary heat exchangers temporarily during COVID-19 episodes. If leaks are suspected in the heat-recovery sections, pressure adjustments or bypassing can be an option to avoid a situation where higher pressure on the extract side causes air leakages to the supply side. Transmission via heat-recovery devices is not an issue when a HVAC system is equipped with a twin-coil (run-around coil) or other heat-recovery device that guarantees air separation between return and supply side.

- If a building is occupied by security or a skeleton workforce, life safety systems such as emergency lighting and active/passive fire protection systems will need to be checked for compliance. Emergency generators will also need to be tested if they are still being relied upon to provide power in an emergency.
- Fire suppression systems still need to be checked if they are being left active whilst the building is shutdown. Assets such as hydrants and other firefighting facilities would require discussion with the local fire brigade to determine what their requirements would be.
- Lifts where buildings are occupied need to continue to be in operation and they will require thorough examinations to be carried out as normal. However, if it can be shown that lift journeys are reduced it may be that lift maintenance can be reduced, or in the case of multiple lifts within a building, it may be that one or more lifts could be removed from service – this will need to be confirmed in-line with the overall building risk and fire strategies.
- Heating systems could potentially be put into summer mode as we enter the warmer months, not necessarily drained down, but a closed water sample and chemical top-up would be recommended to leave the system fully charged whilst preventing oxygen and bacteria causing issues further down the line.
- Chilled water systems incorporating cooling towers – in empty buildings these towers can be drained and notifications made to the local authority that the tower has been decommissioned.

Low use and low key maintenance buildings

It is recommended to continue to operate the building services in a reduced occupancy building, albeit at a reduced capacity where possible. Certain services will fall under the essential/critical category and are underpinned by legislation and requirements placed on Responsible Person(s) operating a building. These requirements, including the Health and Safety at Work Act 1974, and other relevant legislation, are still in place and obligations to comply have not been reduced in any way - as such, we have a collective responsibility to work to these standards wherever possible. Services defined as 'Essential' under SFG20/30 are those required for statutory/legal compliance and further information can be found in the relevant section of SFG20 & SFG30 procedures.

Shutdown and reactivation of buildings

It is recommended to prepare the building services to provide only essential environmental requirements in an unoccupied building. This includes frost protection, fire, security and safety features to maintain the safety and integrity of the building and minimising the input required to restore all services to full running order. A caretaker maintenance regime should be set up to turn moving parts and run specific assets periodically. The full list of requirements for shutdown and reactivation of buildings can be found within the relevant section of SFG30 procedures.

I hope you find this information useful - should you wish to discuss the guidance in greater detail or have any specific operational concerns relevant to your own buildings, please do not hesitate to contact me.



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