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# 2021/01 Technical Bulletin

## WATER HYGIENE GUIDANCE FOR BUILDINGS OR SITES CLOSED OR SUBJECT TO REDUCED OCCUPANCY

### **Aim:**

The aim of this bulletin is to highlight water hygiene considerations in buildings and on sites where reduced occupancy has significantly decreased water consumption with the potential to have a negative impact upon water hygiene (quality).

### **Applicable to:**

All buildings and sites with reduced occupancy due to personnel working from home or furloughed during the COVID-19 emergency measures. The following legislation, Standards and ACoPs place a duty of care on the Employer to ensure a safe working environment for employees and visitors:

- **Health and Safety at Work etc Act**
- **Control of Substances Hazardous to Health Regulations**
- **The Water Supply (Water Quality) Regulations**
- **Water Bylaws and Regulations**
- **Building Act 1984**
- **ACOP L8 The Control of Legionella Bacteria in Water Systems**
- **HSG 274 The Control of Legionella Bacteria in Hot and Cold-Water Systems.**
- **BS 8680 – 2020 - Water Quality – Water Safety plans – Code of Practice**
- **BS 8558 – 2015 – Guide to the design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages – Complementary guidance to BS EN 806**
- **Legionella Control Association - A Code of Practice**

### **Situation:**

Due to the COVID 19 situation some MOD buildings and sites have been closed and to comply with Government guidance, the majority of staff have been requested to work from home, leaving building use for essential attendance only; or as in the case of a number of sites, empty.

Some Heads of Establishments (HOE's) may have directed staff to flush the partial and unoccupied buildings / assets without adequate specification. While this activity is constructive it may not be sufficient to mitigate the risk and may not have had the appropriate



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technical oversight from the Maintenance Management Organisation (MMO) and water hygiene specialist as required by the references above. A structured process of flushing must be instructed and agreed by the Maintenance Management Organisation Legionella Responsible Person (MMO LRP) prior to implementation.

Water service providers, including Aquatrine have a legal duty to provide our buildings with potable water, MOD/DIO have a duty of care to ensure all water delivered to occupants is safe. Decreased or nil attendance reduces water consumption resulting in water in the piped water system becoming more susceptible to bacterial growth which can cause illness. There is therefore a need to evaluate the water hygiene implications of all changes of use or occupation rates and to implement a management plan to minimise this risk.

Where conditions for Legionella bacteria growth exist such as partial occupation there is a risk of proliferation and significantly elevated levels of Legionella bacteria have been detected in a number of water systems on the MoD Estate already. There are a number of ways to reduce the risk. For simple hot/cold water systems, these could be straightforward. The main objectives should be to prevent stagnation and keep water temperatures outside of 20-50°C. If possible, aim to ensure the turnover of any water stored in tanks every 24 hours and movement of water through pipework and outlets at least once a week to prevent it from becoming stagnant. If this cannot be achieved because the building is closed, or there is significantly reduced use, the Legionella Responsible Person (LRP) must be notified. The LRP will have knowledge of the site and individual assets water systems, Legionella Risk Assessments and Legionella Management Plans will be able to provide advice and guidance on any additional steps beyond current control measures, which may include regular flushing through to recommissioning and disinfection requiring the services of skilled professionals under the direction of a Water Hygiene Specialist.

### **Immediate Action Required by the Head of Establishment and DIO Service Manager:**

Where buildings are under normal occupation and maintenance The HoE and DIO Service Manager should seek formal written assurance from the MMO that under the Maintenance Management Organisation (MMO) contract all these assets are fully maintained and safe for continued occupation. Where there is reduced (less than 75%), or no occupancy, the normal water hygiene maintenance regime may not be suitable and the LRP must be informed of the reduced or no occupancy as required in the Legionella Management Plan and recommend mitigation measures. The HoE and DIO Service Manager should ensure that these remedial measures are put in place and monitored to mitigate the risk. Where the HOE decides due to access or mitigation purposes to organise flushing then they have to flush in accordance to the MMO LRP's scope and specification. For occupancy >75% the occupants must be requested to alternate their use of water fittings in common areas, so that some flow is maintained in as many fittings as possible, until full occupancy is achieved.

Ideally, changes in Legionella risk will have been considered at an early point in planning drawdown/closure arrangements, and early engagement with LRP will have assisted in developing legionella risk mitigation plan. However, where the LRP was not notified and



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consulted prior to closure of a building they must be informed at the earliest opportunity in order for the risk to be considered, particularly if it is foreseeable that buildings and water systems may remain shut down or subject to low usage for several weeks. The earlier intervention is commenced the less complex and resource intensive the mitigation and legionella management is likely to be. To ensure an effective management plan is established and maintained the HoE (or nominated representative) is to:

- **Notify the LRP of temporary change of use or occupancy**
- **Identify buildings that are occupied (including occupancy level) and those that are not**
- **Agree an interim process of safeguarding whilst buildings are partially occupied**
- **Agree options for safe occupancy**

### **Immediate Action Required by the MMO and Legionella Responsible Person:**

The LRP will provide advice and guidance to HoE on the appropriate actions to be taken based upon an number of factors including occupancy level, size and complexity of water systems within the asset, findings of the Legionella Risk Assessment and the Legionella Management Plan. It is likely that the LRP will advise that flushing will be required where there is reduced occupancy or fluctuating occupancy throughout the week/month. Further recommended actions will be determined by the factors detailed above, building water hygiene history and will be categorised accordingly based upon risk.

The Legionella Control Association have provided guidance on the Safe Management of Water Systems in Buildings During Covid 19 Outbreak

<https://www.legionellacontrol.org.uk/news/90/> which should inform the advice and guidance provided by LRP:

*“Hot and cold-water systems in buildings that are empty or with under occupancy must address the issue of stagnation:*

- a. If the building is still partially in use take additional measures to keep the remaining occupants safe:*
  - i. If possible, drop stored water levels in tanks to maintain <24 hours storage*
  - ii. Flush to simulate use – weekly flushing may not be sufficient*
  - iii. Monitor temperature to ensure thermal gain in cold water is controlled*
  - iv. If fitted, consider temporarily increasing levels of potable water treatment dosing – consider other consequences of this such as corrosion and make the decision on balance of benefit*
  - v. If controls are lost (temperature, biocide levels, etc.) the guidance in HSG274 is to sample for legionella weekly*
  - vi. Consider other short term measures to keep remaining occupants safe such as point of use filters at designated locations with other areas shut off*
- b. Buildings that are temporarily shut down (mothballed) should follow the guidance in HSG274 Part 2 paragraphs 2.50-2.52:*
  - i. Do not drain down pipework*
  - ii. If possible, remove sources of heat and external thermal gain*



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- iii. Lock off, place signage on doors and otherwise advise potential users that the system has been taken out of use*
- iv. Have a plan in place for recommissioning the water system”*

*For all of the work above there should be a task risk assessment in place to ensure operatives are working safely.*

Where a flushing regime is advised by LRP as appropriate, and due to the nature of the water system it is deemed and agreed that flushing can be undertaken by personnel nominated by HoE, the LRP will identify the number, the location of outlets and duration of flushing necessary to maintain water hygiene. The LRP is to demonstrate to HoE personnel nominated for this duty the correct techniques (minimise aerosol and spray/droplet production) and provide guidance on PPE requirements and records to be maintained (the Form at Annex A would be suitable for this purpose or use the form provided by MMO). The LRP should provide a schedule that details the specified duration for each outlet (typically 15 minutes for tank water and 5 minutes for mains water systems by default) checking that there is no flooding, and provide instructions including but not limited to:

- a. The correct technique for percussion taps (hold down or push multi times)
- b. How to activate sensor taps utilising the infra control to maintain activation
- c. How to ensure urinal PIR activation achieves flush
- d. Guidance on water supplied assets within Mess/ welfare facilities and bars, rest areas, swimming pools etc – ensure all outlets are flushed
- e. That flushing is required to all water outlets including but not limited to: hose taps and hoses (not fire hoses), water boilers, drinking fountains, dental chairs, catering equipment, water fed drinks machines, workshop outlets etc

It must be noted that any instruction that is not suitable or sufficient by any individual to flush any building for the protection of the building could be culpable, due to lack of knowledge or lack of understanding. If there is loss or harm due to the inadequacy of the instruction as a result, then the instructor could be held culpable in a court of law for “Negligence” or Gross Negligence” and could be held personally responsible.

Where it is deemed that the building water systems require specialist intervention the LRP should contact the Water Hygiene Specialist for guidance and arrange for any recommissioning and disinfection that may be required.

### **Action Required – Building Users:**

If assigned responsibility for flushing of building water systems it is critical that the task is undertaken diligently to the standard specified by the LRP; incomplete or partial flushing can increase the risk of legionella proliferation and install a false sense of security through the belief that the water system legionella risk has been mitigated. Note in the event of a legionella outbreak the flushing programme and records of flushing may be subject to formal investigation.



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All Building users are to be instructed to:

**NOT DRINK THE WATER AND NOTIFY THE BUILDING CUSTODIAN AND MMO IF YOU IDENTIFY**

- Any discolouration of water
- Change in taste of water
- Change in smell of water
- Any Asellus or Chironmids (microscopic shrimps or fly larvae 1mm to 2 mm long) in the water
- Any sediment in the water

**IF ANY OF ABOVE ISSUES ARE IDENTIFIED BUT IT IS ESSENTIAL TO OCCUPY THE BUILDING DUE TO OPERATIONAL NEED, POST COVID LOCKDOWN SOCIAL DISTANCING ADJUSTMENT PURPOSES OR SIMILAR, THE FOLLOWING MUST BE FOLLOWED UNTIL WATER SYSTEM HAS BEEN FLUSHED AND DISINFECTED AND LRP CONFIRMED THAT WATER IS POTABLE AND SAFE FOR INTENDED USE**

- Drink bottled water
- Use bottled water to boil for hot drinks
- Sanitise hands with hand sanitiser
- Wipe down surfaces with antiseptic spray or wipes, adhering to contact times
- Do not use the shower
- Minimise atomisation from taps
- Close the toilet lid prior to flushing

Additional information to guide LRP can be found at:

**Updated and revised LCA Guidance for Members Reopening Buildings version 2.**

<https://www.legionellacontrol.org.uk/news/97/>

**Safe Management of Water Systems in Buildings During the COVID-19 Outbreak**

<https://www.legionellacontrol.org.uk/news/90/>

**Advice for LCA Members Taking Legionella Samples**

<https://www.legionellacontrol.org.uk/news/91/>

[www.gov.uk/dio](http://www.gov.uk/dio)



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#### **LCA's Q&A COVID-19**

<https://www.legionellacontrol.org.uk/news/93/>

#### **Management of waterborne pathogens in dental care during the COVID-19 pandemic**

<https://www.legionellacontrol.org.uk/news/95/>

#### **HSE Bulletin - Legionella Risks During the Coronavirus Outbreak**

<https://www.legionellacontrol.org.uk/news/98/>

#### **ESGLI Guidance for managing Legionella in building water systems during the COVID-19 pandemic**

[https://www.escmid.org/fileadmin/src/media/PDFs/3Research\\_Projects/ESGLI/COVID\\_buidling\\_water\\_system\\_guidance\\_27\\_3\\_20\\_v4\\_DS\\_pk.pdf](https://www.escmid.org/fileadmin/src/media/PDFs/3Research_Projects/ESGLI/COVID_buidling_water_system_guidance_27_3_20_v4_DS_pk.pdf)

#### **Legionnaires' disease: lockdown risks and reopening safely**

<https://www.cieh.org/media/4208/legionella-guidance-covid-19.pdf>

#### **Legionnaires' disease. The control of legionella bacteria in water systems**

##### **HSE Approved Code of Practice**

<https://www.hse.gov.uk/pubns/priced/l8.pdf>

##### **HSE Heath Safety Guidance 274**

Part 1 The control of legionella bacteria in evaporative cooling systems

<https://www.hse.gov.uk/pubns/priced/hsg274part1.pdf>

Part 2 The control of legionella  
bacteria in hot and cold water systems

<https://www.hse.gov.uk/pubns/priced/hsg274part2.pdf>

Part 3 The control of legionella bacteria in other risk systems

<https://www.hse.gov.uk/pubns/priced/hsg274part3.pdf>



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