



Great Learners Trust

Water Hygiene (Legionella) Management Policy

Elmhurst School

Approved by: Board of Trustees

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1 Intent

This policy applies to all schools across the Great Learners Trust (GLT).

2 Aims

The Control of Substances Hazardous to Health (COSHH 2002) and Management of Health and Safety at Work Regulations (MHSWR 1999) require employers to ensure that any control measures are properly applied, and employees are provided with suitable and sufficient information, instruction and training. A Legionella written scheme of control should be devised and implemented - as stated in the Approved Code of Practice (ACOP L8) "The control of legionella bacteria in water systems 2013" to design, maintain and operate the water services under conditions that prevent or control the growth and multiplication of legionella bacteria.

3 Guidance

3.1 Legionellosis

Legionella bacteria are commonly found in water. The bacteria multiply where temperatures are between 20-45°C and nutrients are available. The bacteria are dormant below 20°C and do not survive above 60°C.

Legionnaires' disease is a potentially fatal type of pneumonia, contracted by inhaling airborne water droplets containing viable Legionella bacteria. Such droplets can be created, for example, by hot and cold-water outlets; atomisers; wet air conditioning plants; whirlpool or hydrotherapy baths.

Anyone can develop Legionnaires' disease; however, the elderly, smokers, alcoholics and those with cancer, diabetes or chronic respiratory or kidney disease are at more risk.

HSE's Legionnaires' disease page provides information on managing the risks www.HSE.gov.uk

This document is based on the Department for Education's guidance on [good estate management for schools](#) and ACOP L8.

3.2 Pseudomonas

Pseudomonas aeruginosa is a type of bacteria commonly found in soil and ground water, as well as other wet and moist environments. Pseudomonas rarely affects healthy individuals; however, it can cause a wide range of infections within those that suffer from weakened immune systems and/or are medically predisposed and has the potential to be able to infect almost any organ or tissue. Some of these higher risk individuals may suffer from diabetes mellitus, cystic fibrosis, cancer and also newborns.

Pseudomonas is typically more associated with healthcare environments such as Hospitals and Care homes etc. This is due to the increased risk from the type of individuals that are regularly seen within these settings, however, the presence of Pseudomonas in other settings such as Schools is no less and due care and attention must be given to the users and employees of GLT Schools, to identify and risk assess.

Pseudomonas infections are associated with contact from contaminated water. Within School settings transmission could occur from the following:

- Direct contact - Ingestion of infected water from infected water outlets, splashing from water outlets or basins and surfaces contaminated by infected water
- Indirect contact - School Staff using infected water outlets followed by child contact or from surfaces splashed with contaminated water.

BS 8580-2 provides an in-depth guide to risk assessments for Pseudomonas and should be referred to.

4 Roles and responsibilities

4.1 Local Governing Boards and Headteacher

The local governing boards and headteachers acknowledge and accept their responsibilities required under the Health and Safety at Work Act 1974, COSHH 2002, MHSWR 1999 and the HSE ACOP L8.

All GLT schools will take all reasonable precautions to prevent risk to health from exposure to legionellosis by implementing the appropriate control measures in all of their buildings.

4.2 The Duty Holder

The duty holder is the person who is ultimately accountable and on whom the duty falls for the safe operation of the school.

The duty holder for this school is the Headteacher. It is their responsibility to ensure that the necessary resources are available to the responsible person (and their deputy) to ensure full compliance with the workings of this policy.

4.3 The Responsible Person

The responsible person is formally appointed by the duty holder to be managerially responsible for the school's overall legionella management system.

The responsible person must be a manager and have sufficient authority to ensure that all operational procedures are carried out in an effective and timely manner.

The responsible person must also possess a sound understanding of the control of legionella through appropriate training. It is recognized that the responsible person cannot be an expert on all matters and must be supported by specialists in the necessary area of expertise.

Specifically, the role will involve:

- Ensuring overall compliance with the water management written scheme;
- Ensuring building water system schematics are updated after any significant changes;
- Ensuring risk assessments and written scheme are carried out and reviewed at least every two years or as necessary;
- Ensuring all relevant staff members are competent to carry out the aspects of legionella control to which they have been assigned;
- Taking reasonable steps to ensure contractors are competent.

The school's responsible person is the schools Site Manager.

4.4 The Deputy Responsible Person

The duty holder will appoint a deputy responsible person, to whom delegated responsibilities may be given when the responsible person is unavailable. The deputy must meet the criteria set out above under 'The Responsible Person'.

The school's deputy responsible person is the School Business Manager.

4.5 The Appointed Contractor

The appointed contractor for designated aspects of legionella control will be a member of a relevant trade professional body and the responsible person shall request, inspect and hold contractor staff-competency records. The GLT's appointed preferred contractor is:

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5 Design and Use of Hot & Cold Water Systems

5.1 Conditions that Promote the Growth of Legionella Bacteria

Legionella bacteria may contaminate water systems where the temperature is between 20 and 45 degrees C. It is uncommon to find any significant growth below 20 degrees C; the bacteria does not survive for any lengthy period above 60 degrees C. The optimum temperature growth is 37 degrees C.

The presence of sediment, sludge, scale and organic material can act as a source of nutrients for Legionella bacteria. Commonly encountered organisms in water systems such as algae, amoebae and other bacteria may serve as a nutrient source for Legionella. The formation of a biofilm (slime) within a water system will also play an important role in harboring and providing favorable conditions in which Legionella can proliferate.

The presence of water stagnation can also play a significant part in legionella growth. An example of this would be a building that has little to no use of its water systems within a school holiday or disused pipework that is still live.

If the conditions mentioned above are eliminated or controlled, the likelihood of legionella growth will be significantly reduced.

5.2 Design and Installation of New or Refurbished Building Services

All domestic water systems new or refurbished installations shall comply with current water regulations and ACOP L8/HSG 274 guidance. It is important to ensure that potential hazards are designed out where possible before installation.

5.3 Cold Water Systems and Storage Tanks

Ideally, cold water should not be stored or distributed above 20 degrees C. However, the water supply regulations allow the water companies to supply cold water at up to 25 degrees C so maintaining a water temperature of below 20 degrees C may not be possible. Where water is supplied at temperatures of above 25 degrees C, the cold water in storage and at outlets should not be more than 2 degrees C above the supply water temperature. Cold-water temperatures of above 20 degrees C must be brought to the attention of the responsible person.

Wherever practicable domestic water storage tanks should not be used within the school properties and instead provided by the mains water supply.

Where water storage tanks are in use to supply cold water services, the storage tanks shall be suitable for potable water, easily cleaned, equipped with a close-fitting cover, suitably insulated to minimize heat gains, and having overflow pipes properly screened. Tanks should ideally have take-off and entry points at opposite ends to ensure a sufficient flow through the tank.

Tank capacity shall be such under normal use complete turnover takes less than 24-hours.

5.4 Domestic Hot Water Services

Calorifiers' stored water should be maintained at 60 degrees C with secondary return loops (where fitted) at no less than 50 degrees C and should be suitably accessible for cleaning. It should be possible to isolate them, and they should incorporate drain connections at the lowest points which are large

enough to permit the removal of sludge and quick drainage of the vessel. Hot water should reach at least 50 degrees C at all outlets within one minute of running.

Combination type water heaters (with fitted pans) should be maintained at 55-60 degrees C. This type of water heater should not be fitted in any new installation scenarios due to the increased legionella growth risk by design.

Point of use heaters should be maintained at 50-60 degrees C.

Pipework should be as short and direct as possible especially where it serves intermittently used taps and appliances. On new systems, spurs from circulation loops shall not exceed 5 meters in length.

Where people at risk of scalding are served by the hot water system, "fail-safe" thermostatically controlled mixing valves shall be used to reduce the hot water temperature at the outlet to 43 degrees C. These are valves that are unaffected by changes in water pressure and automatically close the hot water supply if the cold water fails to prevent scalding risk. They will be positioned as close as possible to the hot water outlets. Those people at risk of scalding include young children, the very old, and those with sensory loss.

Mixed water pipework from the thermostatically controlled mixer valve should be kept as short as possible.

5.5 Air-conditioning Systems

Ventilation and air-conditioning systems shall be designed so that water, whether from the supply or from other sources such as condensation, cannot accumulate in ductwork or plant, which is subject to an air stream. All condensed drains shall incorporate an air break as near to the ventilation or air-conditioning system as possible, to prevent potentially contaminated water from being drawn back into the system.

5.6 Ornamental Water Features

Schools should not install or operate any outdoor or indoor ornamental water feature unless a water risk assessment and appropriate control measures are in place.

5.7 Handling and Exposure to Compost

Legionella is often found in compost and legionella's disease has resulted in a small number of cases from inhalation of dust or moisture droplets.

All staff who come into physical contact with compost must ensure the following:

- Staff must ensure that themselves and any children wash their hands as soon as is possible after contact;
- Compost bags should not be stored in direct sun light;
- Compost bags should be opened carefully as not to disturb contents;
- Compost bags ideally should not be opened in enclosed spaces such as sheds or green houses.

5.8 Use of Water Trays (Children's Play Areas)

When water is allowed to stagnate, bacterial growth can occur which can be harmful to persons who interact with it. Water trays must be:

- Emptied after each use;
- Must be covered or left in an inverted position to prevent water build up;
- Used with fresh water (mains water supply).

5.9 Use of Rainwater Supply (Water Butts)

Water butts collect rainwater. Non-potable water may contain potentially harmful bacteria. The water is often stagnant and may warm up during the summer months leading to significant bacteria growth.

They may be used for gardening purposes such as watering of plants through a water can or similar. They must not be used in the following scenarios:

- Be used for children's play, i.e., water guns;
- Be used in conjunction with a power washer
- If children are allowed to handle any water cans used for watering plants, they must be supervised at all times to prevent direct contact with the water

5.10 Water Coolers / Fountains

Water coolers can quickly become a source of bacteria, if not managed correctly. Cleaning regimes should be organized in advance of the placement of any water coolers or fountains and should detail cleaning and descaling responsibilities and frequencies. There should be no build up of limescale evident on the nozzle or around the drip tray/splash board.

Maintenance and servicing of filters should be put in place and managed appropriately with a filter change every 6 months (Or as per manufacture guidance). Any servicing and/or filter changes should be recorded and copies placed within the L8 folder kept on site.

6. Operation and Maintenance of Building Services

6.1 Water Temperatures at Outlets

The flow temperature from hot water calorifiers should not be less than 60 degrees C. The minimum temperature of the secondary recirculation pipework should not be less than 50 degrees C.

It is acceptable for point of use heaters with storage no greater than 10 litres to have a flow temperature of between 50-55 degrees C due to the lower associated risk. Combination water heaters (with feed pan fitted) should have a flow temperature of 55-60 degrees C.

Water temperatures (including Calorifier or combination water heater flow/return) at sentinel hot and cold outlets shall be measured and recorded monthly. Results should be recorded on a log sheet and filed in the legionella control log book.

Low volume water heater (15l or less) flow temperatures (and associated sentinel outlets) can be measured and temperatures recorded at a frequency of up to six monthly intervals, depending on the associated risk.

Cold water outlet temperatures shall be measured after allowing the water to run at full flow for 2 minutes. The temperature should be less than 20 degrees C, or if above 20 degrees C should be less than 2 degrees C above the incoming supply from the water supply company.

Hot water outlet temperatures shall be measured after allowing the water to run at full flow for up to 1 minute. The temperature should be at least 50 degrees C. However, where mixing or blending devices are used which prevent the outlet reaching this temperature, the pipe surface immediately before the device should reach 50 degrees C within 1 minute.

Representative outlets (outlets in between sentinels) should be measured on a rotational basis over a period of a year.

6.2 Domestic Water Storage

The condition of domestic cold-water storage tanks shall be checked annually and any remedial work carried out (see also Disinfection of Water Tanks).

Tank water temperatures shall be checked annually (ideally summertime).

Water storage capacity should be that ideally complete turnover will occur within 24 hours. Wherever unnecessary tanks are located, they will be taken out of use and drained to ensure the necessary turnover rate.

Maintenance staff who have undertaken "dirty" jobs (i.e., unblocking drains) must change into clean protective clothing and wash their hands thoroughly before working on domestic hot or cold water systems where there is a risk of contamination of that system.

Every year hot water calorifiers shall have their drain valve (where fitted) water visually inspected for signs of sludge, rust or scale. If visual contamination is identified then cleaning should be carried out as necessary.

Before any hot water calorifier is returned to service following temporary disuse or servicing, the entire contents is to be brought up to and held at a temperature of at least 60 degrees C for at least 1 hour. After this time, all associated outlets should be flushed to achieve and maintain a temperature of 50 degrees C for 5 minutes.

6.3 Disinfection of Domestic Water Storage Tanks

Water tanks will be inspected annually (summer) by the appointed contractor. The contractor should provide an inspection report and (if cleaning is required) a certificate of cleaning after the completed works.

This work shall be carried out in accordance BS EN 806 and method statements will be obtained by the Responsible Person before the work is carried out.

Note – Unless otherwise directed by the Responsible Person, this written scheme does not cover the cleaning and disinfection of water storage tanks, which do not supply domestic cold water or domestic hot water systems. In particular heating system feed and expansion tanks are outside the scope of this policy due to the low inherent risk these systems pose.

6.4 Infrequently Used Outlets and Showers

The need for intermittently or infrequently used taps and appliances (particularly showers) shall be reviewed from time to time, by the responsible person. If such taps and appliances are not necessary, the supplies shall be cut off close to the in-use supply pipe to ensure that no dead leg is formed. If it is not reasonably practicable to remove these outlets then a weekly flushing regime should be implemented.

During periods of little use of the water systems such as school holidays, both hot and cold outlets should be flushed weekly for a determined period.

On a quarterly basis, or less frequently if it is shown to be necessary, shower heads and hoses will be dismantled, cleaned and descaled and the work logged on the shower maintenance log sheet. The completed log will be located within the legionella control log book.

6.5 Planned Preventative Maintenance Schedules

The written scheme will set out the frequency of the necessary control measures to be scheduled as planned preventative maintenance. The master PPM schedule will be retained in the legionella log book and copies given to other relevant staff.

6.6 Record Keeping

The following records shall be kept for a period of 5-years in a log book held within each school's premises. Additionally, electronic records can also be kept as an alternative to paper-based systems.

Risk assessment, written scheme, schematic diagrams, test records (with dates) or work carried out to prevent or control legionellosis.

Completed report sheets for:

- Weekly flushing of infrequently used outlets;
- Monthly hot and cold water temperature checks including flow and return temperature;
- Quarterly shower head cleaning;
- Annual domestic water tank visual inspection and cleaning (where necessary) certification;
- Annual calorifier visual sampling of drain valve water.

7. Action in the event of an Incident

In the event of a single case of legionellosis, possibly acquired within the school then an emergency escalation group shall be set up consisting of:

- Duty Holder

- Responsible Person
- Deputy Responsible Person
- The Appointed Contractor
- GLT's Head of Estates and Facilities

The group should meet daily, as necessary, with others as appropriate, to co-ordinate investigation of the problem and progress any necessary action.

Minutes are to be kept and a log of actions taken, and results of tests and inspections are to be recorded by the Responsible Person in conjunction with the Headteacher. The Duty Holder is responsible for notifying and updating their Local Governing Board and GLT Central Team in the event of an incident.

Action may include:

- Stopping admissions to affected site/areas
- Sampling water from taps and showers prior to any disinfection or pasteurisation
- Sampling of water from calorifiers serving the affected site prior to any disinfection or pasteurisation
- Increasing hot water temperatures at outlets to a minimum of 60 degrees C
- Inspection of maintenance records for legionellosis preventative work
- Disinfection of water services with BS EN 806

Legionnaire's disease is not a notifiable disease in England but if staff acquire the disease, cases may be notifiable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR).

The Health and Safety Executive may be involved in the investigation of outbreaks under the Health and Safety at Work Act 1974.

8. Microbial Monitoring

As a minimum sampling will be carried out annually, unless the below criteria are met:

- Control levels of the treatment regime (temperature control) are not being consistently achieved
- An outbreak or incident is suspected or has been identified:
 - Samples will be taken in accordance with BS EN 7592 by suitably trained persons
 - Analysis of water sample for legionella will be carried out by a UKAS accredited laboratory

8.1 Interpreting Sample Results

ACOP L8 table 4 details the action required following sampling in hot and cold water systems. Table 4 is included below:

CFU (Colony Forming Units)	Recommended Actions
>100 cfu/l and up to 100	Either <ul style="list-style-type: none"> • if the majority of samples are positive, the system should be resampled. If similar results are found again, a review of the control measures and risk assessment should be carried out to identify any remedial actions necessary or: • if the majority of samples are positive, the system may be colonised, albeit at a low level. An immediate review of the control measures and risk assessment should be carried out to

	identify any other remedial action required. Disinfection of the system should be considered.
>1000 cfu/l	The system should be resampled and an immediate review of the control measures and risk assessment should be carried out to identify any other remedial actions, including possible disinfection of the system. Retesting should take place a few days after disinfection and at frequent intervals afterwards until a satisfactory level of control is achieved.

If disinfection of the water systems is necessary, then this work will be carried out by trained persons who have been deemed competent to carry out this task.

9. Monitoring arrangements

The application of this policy is monitored by GLT's Head of Estates and Facilities in conjunction with headteachers, responsible persons (and their deputies), and GLT's appointed contractor through termly premises compliance checks and Health and Safety inspections and audits.

Copies of all water management and compliance paperwork are to be retained in a central location by each school and made available to GLT's Head of Estates and Facilities and approved contractor.

This policy will be reviewed by GLT's Head of Estates and Facilities every twelve months. At every review, the policy will be shared with and approved by the board of trustees.

All relevant persons are required to familiarise themselves with the workings of this policy as part of initial implementation, induction training and every twelve-months thereafter as an ongoing requirement.

10. References

This water hygiene (Legionella) management policy plan links with statutory provisions, Approved Code of Practice's and other HSE guidance including:

- The Health and Safety at Work Act 1974
- Management of Health and Safety at Work Regulations 1999
- The Education (School Premises) Regulations 1999
- COSHH Regulations 2002
- HSE ACOP L8
- BS 8580-2

This list is not exhaustive and this policy will also have regard for statutory and non-statutory guidance to ensure that GLT's schools are a safe place to work and study. This policy should be read in conjunction with the following GLT frameworks and policy documents:

- Health and Safety Policy
- Contractor Management Policy
- COSHH Policy
- Risk Management Policy
- Premises Maintenance Policy