

UNIVERSITY OF SHEFFIELD

CONTROL OF LEGIONELLA BACTERIA WITHIN WATER SYSTEMS POLICY & PROCEDURES

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Appendix 1 Estate Services - Legionella Management Structure

There is an associated “Operational Procedures Manual with which all relevant personnel should be familiar. This document covers the following: -

1. Legionella control documentation and reporting
2. Procedure for the Pasteurisation of a Calorifier
3. Procedures for flushing & purging infrequently used outlets
4. Procedure for Legionella Control in Laboratory equipment
5. Procedure for removal of fire hose reels
6. Procedure in the event of a positive Legionella sample
7. Procedure in the event of a suspected Legionellosis outbreak

Control of Legionella Bacteria within Water Systems in the University of Sheffield

Purpose of Document

To specify how the University will manage the potential for Legionella contamination to comply with both legislation and good practice. The Registrar and Secretary, as Duty Holder, has overall responsibility for health and safety and will oversee through the appointment of a Responsible Person and Deputy Responsible Person the implementation and development of this Policy.

This Policy applies to all areas of the University except those areas where the University occupies buildings owned by others and where Legionella control is managed by others.

1 BACKGROUND

- 1.1 Legionnaires' disease is a potentially fatal form of pneumonia which can affect anybody, but which principally affects those who are susceptible because of age, illness, immunosuppression, smoking etc. It is caused by the bacterium *Legionella pneumophila* and related bacteria. Legionella bacteria can also cause less serious illnesses, which are not fatal or permanently debilitating. The collective term used to cover the group of diseases caused by Legionella bacteria is Legionellosis. On average there are 200-300 reported cases in England and Wales each year.
- 1.2 Legionnaires disease is normally contracted by the individual inhaling Legionella bacteria either in tiny droplets of water or in droplet nuclei (particles left after the water has evaporated).
- 1.3 Incubation period is 2-10 days (usually 3-6 days).

2. UNIVERSITY COMMITMENT

- 2.1 The University intends to adopt as far as reasonably practicable the principles of control and management identified in the Health and Safety Executive (HSE) Approved Code of Practice and Guidance document "The Control of Legionella Bacteria in Water Systems" (ACOP L8), a copy of which is kept by the Department of Estates and is available on-line through Health and Safety packages to which the University subscribes.
- 2.2 To comply with its legal duties the University will:
 - a) Identify, assess and document sources of risk
 - b) Prepare schemes for preventing or controlling the risk identified.
 - c) Implement, manage and monitor all precautionary control measures identified

- d) Keep records of routine monitoring, precautionary measures and Legionella incidents.
- e) Identify roles and responsibilities of relevant managers, employees and Contractors for the control of Legionella in the University of Sheffield.
- f) Establish a Legionella Control Steering Group to: - monitor current or potential Legionella issues for the University, review the Policy annually and make recommendations on appropriate changes and provide other advice as relevant to the University's Health and Safety Committee.
- g) Communicate with the University as appropriate to build both specific competences and necessary general awareness.

3. RISK ASSESSMENT

3.1 Risk Assessment Policy

3.1.1 University buildings and plant are considered to fall into five categories for the purposes of precautions against Legionella infection, these are:

Class A - Buildings with cooling towers

Class B - Complex buildings with spray outlets / showers.

Class C - Simple buildings with spray outlets / showers

Class D - Complex buildings without spray outlets / showers.

Class E - Buildings off mains supplies with point-of-use immersion heaters.

The University will conduct risk assessments in respect of Legionella bacteria in all its buildings and review those assessments regularly based on the results of checks indicating the efficacy of control measures. Where there is no reasonably foreseeable risk or that risks are insignificant and unlikely to increase, no further assessment or measures will be undertaken. Where there is a foreseeable risk or where any of the following criteria indicate the assessment may no longer be valid: -

1. changes to the water system or its use;
2. changes to the use of the building in which the water system is installed;
3. the installation of new equipment, including equipment owned by Departments, containing or circulating water within the temperature range 20-45°C;
4. the availability of new information about risks or control measures;
5. the results of checks indicating that control measures are no longer effective;
6. a case, or cases, of Legionnaires' disease/Legionellosis is associated with the system.

: - assessments will be updated every two years, or sooner in the event of a case of Legionella disease or where refurbishment takes place, or where a new building is commissioned.

3.1.2 The University will employ professionally qualified and competent Contractors to carry out the risk assessment on its behalf, and ensure they are competent under the duty of care. The risk assessments are held centrally by the Department of Estates.

3.1.3 A site survey of all water systems will be conducted culminating in a schematic drawing and logbook for each system, which will be instigated, held and updated by the Department of Estates.

3.2 Persons at Risk

3.2.1 This Policy recognises that University staff, students, visitors and the general public using adjacent buildings and thoroughfares may be at risk whether specifically identified in risk assessments or not.

Areas of risk where control is necessary:

- | | |
|--------------------------------|-------------------------------|
| 1. Cooling Towers | 8. Humidifiers |
| 2. Showers | 9. Ornamental water fountains |
| 3. Domestic hot water systems | 10. Residences |
| 4. Tank fed cold water systems | 11. Sports facilities |
| 5. Infrequently used outlets | 12. Fire hose reels |
| 6. Drinking water distribution | 13. New equipment/alterations |
| 7. Laboratory equipment | |

4 CONTROL METHODOLOGY

4.1 The Department of Estates will arrange to assess the Legionella risks associated with all “areas of risk” indicated in section 3.2.1 above.

4.2 The Department of Estates will ensure that all controls necessary to manage Legionella bacteria within the University are scheduled, designed, ordered and monitored in accordance with measures identified by risk assessment.

4.3 The Department of Estates will ensure that all controls necessary to manage Legionella bacteria within the University are carried out, procured and documented.

4.4 University Departments, Schools and Divisions which have water-related fixtures or equipment capable of harbouring Legionella, will ensure equipment under their control is assessed for risk of Legionella, serviced (including inspection, cleaning and disinfecting) and maintained to the standard required

to control Legionella bacteria within the University, and ensure records of servicing and maintenance are kept.

- 4.5 The Department of Estates will produce, or have access to on a Contractors website, a Water Systems logbook for each building (or Group of buildings) on campus that will contain all records of control measures implemented. These will be held within the Department of Estates and contain the following: -
- Risk Assessment for all the Water Systems in that building
 - Schematic diagrams of the Water Systems
 - Records of control checks taken
 - Chlorination record certificates
 - Records of any remedial work carried out

5. TRAINING, INSTRUCTION AND GENERAL AWARENESS

- 5.1 Staff in Estate Services and in other Departments involved in the management of water systems or Legionella control of laboratory equipment and facilities will be trained by a competent person, or otherwise receive adequate guidance, to carry out their responsibilities.
- 5.2 The services of a specialist water treatment/environmental services company will be retained to advise as appropriate.
- 5.3 Key members of staff involved in Legionella control are referred to in Section 9 and in Appendix 1, but a wider awareness will support that control and means to inform University personnel will be implemented through the Legionella Control Steering Group, including a Guidance note in Legionella control, on the Safety Services web site.

6. AUDIT

- 6.1 The Responsible Person or the Deputy Responsible Person will commission an external consultant to audit the policy and management procedures (outlined in Section 4 above) on at least a 3-yearly basis to ensure compliance with the policy and procedures. The Responsible Person will hold a written report of the findings of this audit.

7. CONTROL OF AREAS OF RISK

7.1 COOLING TOWERS ASSOCIATED WITH AIR CONDITIONING EQUIPMENT

A suitably qualified Water Treatment or Environmental Service contractor shall carry out the following works and complete all necessary record sheets. Records are to be provided to the Department of Estates electronically for each building. A method statement for all such work by contractors should be issued and filed in the log book.

7.1.1 Water quality to be monitored, water use and biocide/chemical use assessed to ensure effectiveness of water treatment regime, including key chemical and microbiological parameters. Observations of internal conditions of pond, pack and water. Frequency - weekly to three monthly depending on an assessment of risk.

7.1.2 Monitor central control functions, conductivity sensor calibration, blowdown function, uniformity of water distribution, condition of sprays/troughs, eliminators, pack, pond, immersion heater, fans and sound attenuators. Frequency - monthly to three monthly, according to risk.

7.1.3 Clean and disinfect cooling towers/evaporative condensers, make-up tanks and associated systems, including all wetted surfaces, descaling as necessary. Packs should be removed and cleaned where practicable on a 6-month frequency.

7.2 SHOWERS, including emergency / drench showers with & without storage

7.2.1 All shower heads and connecting hoses must be flushed weekly, or as necessary based on an assessment of risk, if not in regular (at least weekly) use and this should be recorded. (Operational Procedure 3)

7.2.2 Each showerhead and associated hose should be cleaned and descaled on a quarterly basis. A suitably qualified Water Treatment or Environmental Service contractor should carry out the work and complete the record sheets.

7.2.3 Records are to be returned to the Department of Estates on the issued record sheet for filing in the building logbook. A method statement for all such work by contractors should be issued and filed in the log book.

7.3 DOMESTIC HOT WATER SYSTEMS

7.3.1 System Design

7.3.1.1 Systems should be designed to ensure domestic hot water is stored at 60°C (maximum) and distributed with a minimum flow return temperature of 50°C.

7.3.1.2 Storage calorifiers should all be fitted with a shunt pump set to operate via time switch to heat the full calorifier to 60°C for one hour per day.

7.3.1.3 Each system should be fitted with the circulation pump on the return leg.

7.3.1.4 Temperature of the flow and return legs of each hot water system should be monitored by the Approved Persons Legionella (or Deputy Responsible Person) and recorded to confirm the correct operation. Where monitoring is not constant, temperatures should be checked and logged at an appropriate

frequency, but not greater than once per week. Deviations must be reported to Responsible Person Legionella or the Deputy Responsible Person Legionella.

7.3.1.5 University policy requires existing spray emission type taps to be removed and prohibits the installation of any new. Taps that produce a spray emission as a result of obstructions should be identified to the Department of Estates for replacement.

7.3.1.6 **Only Drinking Water Inspectorate (DWI) approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

7.3.2 Calorifiers - Control Regime

7.3.2.1 Water temperatures entering and leaving calorifiers are to be checked monthly and logged via the Building Management System (BMS) by the relevant Approved Person Legionella

7.3.2.2 6-monthly temperatures are to be taken and recorded on the water storage temperature log sheet and returned to the Department of Estates testing section for filing in the building logbook except where continuous monitoring is undertaken on BMS.

7.3.2.3 Water should leave calorifiers at 60°C with a return temperature of 50°C or above.

7.3.2.4 Deadlegs” should, where possible, be removed or, where not possible, minimised in length.

7.3.2.5 Hot water pipework should be insulated to minimise heat loss.

7.3.2.6 Anomalies are to be reported immediately to relevant Approved Person Legionella or the Deputy Responsible Person Legionella.

7.3.2.7 An annual maintenance inspection of each domestic calorifier is carried out, during which microbiological sampling of the drain water for Legionella should take place.

7.3.2.8 The calorifier is isolated from the building circuit, the shell is drained down and the internal surface is inspected and cleaned. (See Operational Procedure 2).

7.3.2.9 Immediately prior to the calorifier being returned to service a full pasteurisation process is carried out and the operative records the process on the issued maintenance sheet which is then returned to the Department of Estates for recording in the building logbook.

7.4 TANK FED COLD WATER SYSTEMS

7.4.1 System Design

7.4.1.1 Cold water storage should be designed to be sufficient to meet peak demands and maximising turnover of water within tanks to minimise temperature gain.

7.4.1.2 Where considered appropriate new tanks will be partitioned or have an “inlet to outlet” bypass to facilitate cleaning and chlorination of the tanks without interrupting the cold water/hot water service to the building.

7.4.1.3 Tanks are fitted with delayed action float valves, or in the case of pumped services conductivity rod operated switches, to allow for positive water displacement in the tank.

7.4.1.4 The inlet supply to the tank is at the opposite end to the discharge pipework.

7.4.1.5 Where new tanks are to be installed, GRP sectional tanks externally flanged with integral insulation, and dished bottom drain for ease of cleaning are to be fitted.

7.4.1.6 All new tanks are fitted with 54mm drains to waste to ease the process of tank cleaning and draining.

7.4.1.7 Where partitioned tanks are installed the policy is to operate both tanks together except for chlorination and maintenance.

7.4.1.8 University policy requires existing spray emission type taps to be removed and prohibits the installation of any new. Taps that produce a spray emission as a result of obstructions should be identified to the Department of Estates for replacement.

7.4.1.9 “Deadlegs” should, where possible, be removed or, where not possible, minimised in length and non-essential standby equipment disconnected.

7.4.1.10 Cold water pipework should be insulated to minimise heat gain.

7.4.1.11 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

7.4.2 Control Regime

7.4.2.1 Storage Tank -to be inspected annually by specialist and Department of Estates staff for the following: -

- Condition inside/outside
- Condition of thermal insulation

- Is lid fitted correctly?
- Is water clean and debris free?
- Ball float valve operating correctly?
- Condition of overflow pipe
- Report and to be recorded on the issued record sheet and issued to Estate Services for filing in the building logbook.

7.5 INFREQUENTLY USED OUTLETS (including infrequently used disabled toilets, laboratory taps etc)

7.5.1 Water outlets that are unused for a week or more should be flushed through on a weekly basis, or as necessary based on assessment of risk, by persons responsible for the work area and this should be recorded. Those that are difficult to flush should only be returned to use after purging and this should be recorded. (Operational Procedure 3).

7.6 DRINKING WATER DISTRIBUTION

7.6.1 System Design

7.6.1.1 All drinking water outlets and drinks dispensers should be serviced from a separate supply pipe direct from the incoming water mains service.

7.6.1.2 All taps which are suitably supplied and positioned for potable water use are labelled "Drinking Water" or "Potable Water".

7.6.1.3 Drinking water mains are to supply at their extremities urinal-flushing cisterns (or similar) programmed for 7-day operation to prevent water stagnation.

7.6.2 Control Regime

7.6.2.1 No alterations or additions to the drinking water supply to be made without written authorisation from Estate Services.

7.6.2.2 Only competent, experienced and qualified tradesman shall be employed to achieve the highest standards of workmanship. The Contractor must produce proof of suitable competence of his tradesmen, if so asked by the Contract Administrator, together with samples of workmanship.

7.6.2.3 Departments buying equipment requiring permanent connections to existing water services **MUST** inform the Department of Estates. Assessments will be required to determine risks associated with the equipment and connections.

7.6.2.4 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

7.7 LABORATORY EQUIPMENT

7.7.1 Departments shall identify and plan control measures for equipment or facilities which are not part of the estates water supply system which could harbour Legionella bacteria, i.e. which hold water at between 20°C and 45°C. Examples of such equipment are indicated in this Policy, e.g. water baths, but these examples do not represent an exhaustive list.

7.7.2 Water baths or recirculating cooling equipment. The following options are recommended as part of a prudent water quality maintenance regime for water baths or other equipment operating at temperatures between 20-45°C: -

- 1 Thermally disinfect by heating the water up to 60°C once per month for a period of at least 5 minutes to kill off any bacterial contamination, or
- 2 Change the water at least monthly and clean contaminated surfaces to remove sediment, sludge, scale or organic material, which can act as a source of nutrient for Legionella, or
- 3 Treat the water with biocide tablets or chlorine. Further advice would be required to establish the correct type of biocide for the application, the dosage and frequency of dosing.

It is advised that an appropriate notice be displayed on or next to the equipment as a reminder of whichever treatment regime is adopted and when next treatment is due.

7.8 HUMIDIFIERS (Ultrasonic humidifiers, Fogging systems & water misting systems, rainfall chambers, aerosol generators)

Although humidifiers have not been specifically linked with outbreaks of Legionnaires' disease, they have been implicated in other forms of respiratory conditions. Steam jet humidifiers and those fed directly from a rising main are not thought to give rise to microbiological contamination risks. However, many humidifiers use water from storage tanks which can become contaminated.

7.8.1 No spray humidifiers may be newly installed.

7.8.2 Departments must notify Estate Services of the locations of all existing spray humidifiers.

7.8.3 Existing spray humidifiers must be regularly inspected, cleaned, disinfected and maintained.

7.8.4 Departments must notify the Department of Estates of the locations of all ultrasonic humidifiers, fogging systems and water misting systems.

7.8.5 Departments are responsible for arranging risk assessments, inspections, cleaning, disinfecting and maintenance of all ultrasonic humidifiers, fogging systems and water misting systems to the standard necessary for the control of Legionella. Advice should be sought from the Department of Estates.

7.9 ORNAMENTAL WATER FOUNTAINS (internal or external)

7.9.1 System Design

7.9.1.1 Fountains to be designed to ensure that as far as reasonably practicable, water supplies to be kept below 20°C at all times, and that provision is included for draining down as necessary and chemical addition where required.

7.9.1.2 Risk assessment to be carried out to determine the risk of Legionella growth.

7.9.2 Control Regime

7.9.2.1 When ambient temperatures exceed 20°C, water temperature readings to be taken weekly and recorded. When water temperature exceeds 20°C, then one of the following actions will be taken: -

- a) Biocide to be added into the water in sufficient concentration to ensure 100% kill of Legionella bacteria; biocide concentrations to be monitored weekly and topped up when approaching a concentration when Legionella bacteria could thrive. Monthly sampling programme for Legionella bacteria, or
- b) Recirculating water to be drained completely, refilled with fresh water, temperature monitored daily, and when water temperature exceeds 20°C to be emptied and refilled again, or
- c) Fountain to be switched off and electrically disconnected with immediate effect until water temperature reduces below 20°C.

7.10 RESIDENCES (University owned and operated)

7.10.1 All residences to have all proposed alterations to water systems approved by the Department of Estates prior to works commencing.

7.10.2 All projects to include costs for updating schematic drawings and issuing to Department of Estates.

7.10.3 If a system is taken out of use for alterations or an area is unused for over 7 days the Project Manager must ensure that one of the following options are taken:

- o Completely drain the system down followed by cleaning and disinfection prior to re-use.
- o Instigate a regime of regular flushing of the risk systems during the out of use period followed by cleaning and disinfection prior to re-use.

7.10.4 The logbook for the systems will be held by the Department of Estates and contain the following:

- Risk Assessment for the system
- Schematic diagrams of the system
- Records of control checks taken
- Chlorination record certificates
- Records of any remedial work carried out

7.10.5 A specialist Water Treatment / Environmental Service Contractor undertakes the maintenance/monitoring tasks.

7.10.6 A Job Card will be issued from the Planon system identifying the areas where the maintenance activities are to be undertaken and the appropriate report sheet is then completed, dated and signed and returned to the Department of Estates to file.

7.11 SPORTS FACILITIES

7.11.1 System Designs and Control Regimes for relevant water systems are as indicated in Sections 7.2, 7.3, 7.4 & 7.5.

7.11.2 Record Books - The logbook for the systems will be held by the Department of Estates and contain the following:

- Risk Assessment for the system
- Schematic diagrams of the system
- Records of control checks taken
- Chlorination record certificates
- Records of any remedial work carried out

7.12 FIRE HOSE REELS

7.12.1 Existing Fire hose reels will be removed as soon as practicable and the installation of new fire hose reels prohibited. Additional fire extinguishers will be installed where required by risk assessment. See Operational Procedure 5 for removal procedure.

7.12.2 Existing fire hose reels will be removed as soon as practicable (See Operational Procedure 5).

7.13 NEW WATER SYSTEMS, ALTERATIONS & EQUIPMENT

7.13.1 System Design

7.13.1.1 All new systems or alterations should be designed and installed to minimize the risk of Legionella bacteria and facilitate compliance with the ACOP L8 document.

- 7.13.1.2 Only non-spray emission water taps are to be installed
- 7.13.1.3 Only shower heads that are designed to give large droplets should be installed.
- 7.13.1.4 All installed pipework to be insulated, including cold water services.
- 7.13.1.5 Water systems are to be designed so that there are no dead legs or pockets created.
- 7.13.1.6 All Hot water systems must be designed with a return on them.
- 7.13.1.7 Modifications and alterations to existing pipework should include removal of branches to eliminate “dead-legs” wherever practicable. Where removal is not possible, the “dead-leg” should be cut and capped as near as possible to the flowing water supply pipe from which it branches.”
- 7.13.1.8 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

7.13.2 Control Regime

- 7.13.2.1 All University departments to have all proposed alterations to water systems approved by Estate Services prior to works commencing.
- 7.13.2.2 All Projects to include costs for updating schematic drawings and issuing to Estate Services.
- 7.13.2.3 If a system is taken out of use for alterations or an area is unused for over 7 days the Project Manager must ensure that one of the following options are taken:
 - Completely drain the system down followed by cleaning and disinfection prior to re-use.
 - Instigate a regime of regular flushing of the risk systems during the out of use period followed by cleaning and disinfection prior to re-use.

8.0 TEMPERATURE MONITORING & WATER ANALYSIS

8.1 Temperature monitoring of Sentinel taps

- 8.1.1 Approved Persons Legionella will ensure tap temperature of the sentinel taps are taken monthly in each building in their area of responsibility.
- 8.1.2 All results are to be recorded electronically for the building log book.

- 8.1.3 Expectations at the furthest outlet: cold water temperatures below 20°C after running for 2 minutes and hot water temperatures above 50°C after running for 1 minute, with a maximum temperature of 55°C. If temperatures at or above 60°C are measured at the furthest outlets, then temperatures greater than 60°C can be expected at outlets nearer the hot water source. See 8.2.3 below.
- 8.1.4 Anomalies are to be reported immediately to the relevant Approved Person Legionella or the Deputy Responsible Person Legionella.

8.2 Temperature monitoring of General taps

- 8.2.1 Annually Estate Services will record representative tap temperatures on a rotational basis, on each floor of the building.
- 8.2.2 All results are to be recorded electronically for the building log book.
- 8.2.3 Expectations: cold water temperatures below 20°C after running for 2 minutes and hot water temperatures above 50°C after running for 1 minute, with a maximum temperature of 55°C. If temperatures above 60°C are measured then “Caution: Hot Water” signs should be posted at all outlets likely to issue water at temperatures of greater than 60°C.
- 8.2.4 Anomalies are to be reported immediately to relevant Approved Person Legionella or the Deputy Responsible Person Legionella.

8.3 Water Analysis

- 8.3.1 Water samples will be taken by a specialist Water Treatment / Environmental Service Contractor for analysis by a UKAS accredited laboratory for the presence of Legionella whenever temperature are recorded inside the Legionella temperature hazard band (25°C to 45°C).
- 8.3.2 All results are to be recorded electronically for the building log book..
- 8.3.3 The Water Treatment / Environmental Service Contractor shall provide a standard of service described in the Code of Conduct for Service Providers produced by the British Association for Chemical Specialities and the Water Management Society (or equivalent) and hold a current registration certificate issued by the same (or equivalent approved) organisation. They shall attend the sites as required and take samples. The water samples shall be tested for:

Tests	Control Limits
Bacteria (total viable colony count)	(cfu = coliform faecal units)
1 day at 37°C	< 10 cfu/ml
3 days at 22°C	< 100 cfu/ml
Coliform/E.coli	< 1 cfu/ml
In practice	nil/100 ml

Detection of Coliform faecal bacteria above the control limits shall initiate a flushing, cleaning and disinfection programme based on the extent of the contamination, followed by a retest. A review of the system and control methods will be undertaken in the event of a second consecutive failure.

Legionella	
Theoretical detection limit	100 cfu/litre
First action level	100 cfu/litre to 1000 cfu/litre
Second action level	>1000 cfu/litre

- 8.3.4 Detection of Legionella bacteria at or above the first action level shall trigger Operational Procedure 6 and a review of the system and control methods. If there are detections at the second action level the Head of Safety Services (or his / her Deputy) must be informed.

9.0 ORGANISATION AND RESPONSIBILITIES

9.1 The Dutyholder shall:

- Appoint a suitable “Responsible Person” and “Deputy Responsible Person(s)”, who have the necessary competence, resources and authority at his or her disposal to fulfil the requirements of the role as required by the HSE document L8 “The Control of Legionella Bacteria in Water systems”.
- Nominate a “Legionella Control Steering Group” whose duties will be monitor the implementation and effectiveness of the University’s Policy and Procedures for the management of Legionella bacteria in water systems and advise the University Health and Safety Committee where changes are requires to the Policy and Procedures. The Group will consist of relevant officers and stakeholders within the University and include, as necessary, outside consultants.
- Report to the Health and Safety Committee on the status and progress of Legionella control measures in the University.

9.2 Responsible Person and Deputy Responsible Persons shall:

- Be familiar with the requirements of the role as required by L8
- Accept management responsibility for Legionella control.
- Appoint suitable “Deputy Responsible Person(s)” as necessary, who have the necessary competence, resources and authority at their disposal to fulfil the requirements of the role as required by the HSE document L8 “The Control of Legionella Bacteria in Water systems”.
- With the assistance of the Legionella Control Steering Group (LCSG) prepare an operational policy on Legionella control.
- Appoint in writing a “Legionella Control Team” whose duties will be to implement and manage the University’s Management & Control Policy for Legionella

- Report to the LCSG the status of implementation and efficacy of the University's Management & Control Policy for Legionella.
- Establish a Communication Plan, in liaison with LCSG, identifying key audiences, mechanisms and timetables for general awareness, transfer of specific information and for incidents of contamination or infection of personnel.
- Assess the training needs of staff involved in the control of Legionella.
- Ensure personnel training records are kept up to date
- Ensure that risk assessments and two-yearly reviews of assessments on all water systems and air conditioning plant in all the University's buildings are carried out, fully documented and current.
- Monitor the management arrangements for the control of Legionella and advise the LCSG as necessary where there is reason to believe the policy or procedure are inadequate and require amendment.
- Review the Policy annually with LCSG and submit any proposed amendments to the Health & Safety Committee for ratification.
- Ensure that the Health and Safety Committee are kept fully informed of the risks and of the financial implications of controlling, reducing and eliminating them as applicable in order to comply with legislation and guidance.
- Ensure that corrective measures required as a result of the risk assessments or planned maintenance or user regimes are either taken without delay, or where there are significant financial implications, that the situation is made safe until such time as adequate funding is obtained and that Capital Projects are prepared to control risks for those that cannot be reduced, reduce risks where feasible or where risks are deemed unacceptable, and eliminate risks where practicable.
- Ensure that appropriate planned maintenance regimes are devised and implemented and their outcomes fully documented.
- Ensure that appropriate control and preventative regimes are agreed with, and implemented by, other University users and building managers as necessary, and that all actions are fully documented.
- Ensure whenever necessary, that upon completion of any construction, refurbishment or minor works affecting water systems, that a risk assessment (or re-assessment) is carried out and the results documented. This will apply to all works.
- Ensure that in conjunction with the Deputy Responsible Person(s), that procedures are implemented on all capital works to incorporate the requirements of this Policy and that required by legislation and guidance.
- Be responsible for the vetting of Legionella Control Contractors to ensure their competence to fulfil the work required by the University to a satisfactory standard. This will include checking appropriate insurances and accreditations from certification bodies.
- Ensure that arrangements are in place to keep all relevant records for a minimum of five years.
- Programme risk assessments, reviews and reassessments as required to comply with this Policy.

- Act as the principal point of liaison between the University and the Legionella Control Contractors.
- Keep all staff and the LCSG up to date with Legionella issues.

9.3. Approved Persons Legionella (St George's, North Campus & Western Bank South, Western Bank North, Residences, Technical Services) shall:

- Work with relevant Contractors to ensure Legionella risk assessments address all relevant risks in their areas of responsibility.
- Monitor the activities of the Contractors to ensure that they are performing all activities related to the treatment, sampling, testing, analysis and modifications to water systems to a satisfactory standard and that all relevant documentation is completed accurately and promptly.
- Liaise regularly with and report to the Responsible Person and Deputy Responsible Person.
- Provide advice to others in the University with responsibilities for buildings or equipment with Legionella risks.
- Where applicable, audit the activities of others in the University with responsibilities for buildings or equipment with Legionella risks to ensure compliance with legislation and guidance on the control of Legionella.
- Ensure that all actions taken to control Legionella, or repair water systems are documented and filed appropriately.
- Assist the Responsible Person in the identification of training needs and assisting in the provision of training as necessary.
- Respond to complaints or concerns received from the Deputy Responsible Person or others relating to Legionella control.
- Be responsible for ensuring hot and cold water temperatures for water systems with the potential for creating Legionella risks are monitored, and for advising the Legionella Responsible Person or Deputy Responsible Person where temperatures fall outside set parameters
- Where applicable to advise other relevant Approved Persons Legionella of remedial measures which can be implemented to restore water systems to optimum conditions for Legionella control.
- Arrange appropriate remedial actions where it is believed Legionella control is unsatisfactory
- For buildings leased and occupied by the University of Sheffield for which owners are responsible for Legionella control, Legionella control activities undertaken by owners of buildings must be audited to ensure compliance with legislation and guidance on the control of Legionella. This will include the Student Village properties, New Spring House, Humphrey Davy House, etc (this list is not exhaustive)

9.4 Residences Manager shall:

- Ensure that all preventative and remedial actions necessary to control Legionella in buildings under his or her control are being undertaken, as required by risk assessment, to minimise risks from Legionella bacteria.

- Work closely with the Deputy Responsible Person or relevant Approved Persons Legionella to ensure compliance with relevant legislation and guidance.
- Fully document all actions undertaken deemed necessary for the control of Legionella for inclusion in the relevant risk assessment / file.

9.5 Principle Mechanical Engineer (for design of heating and cooling systems, and hot and cold water systems) shall:

- Ensure that all water systems and air conditioning plant are designed and installed to minimise Legionella risks in accordance with the requirements of this Policy and of the HSE document L8 “The control of Legionella in Water Systems”.
- Ensure that all relevant documentation relating to the design of the water systems, equipment or plant, and its means of controlling Legionella bacteria are fully documented and either incorporated into the Health and Safety File for CDM projects, and/or provided to the Legionella Responsible Person or Deputy Responsible Person.

9.6 Heads of Department with water related equipment requiring Legionella control shall:

- Ensure that all preventative and remedial actions necessary to control Legionella in equipment under their control are being undertaken, as required by risk assessment, to minimise risks from Legionella bacteria.
- Work closely with the Legionella Responsible Person or Deputy Responsible Person to ensure compliance with relevant legislation and guidance.
- Fully document all actions undertaken deemed necessary for the control of Legionella for inclusion in the relevant risk assessment and file within the Department.

9.7 Engineering Clerks of Work/CDM Coordinators shall:

- Ensure that all water systems and air conditioning plants are installed to minimise Legionella risks in accordance with the requirements of this Policy and of the HSE document L8 “The Control of Legionella in Water Systems”.
- Ensure that all relevant documentation relating to the design, installation, commissioning and testing of the water systems, equipment or plant, and its means of controlling Legionella bacteria are fully documented and either incorporated into the Health and Safety File for CDM projects, and/or provided to the Legionella Responsible Person or Deputy Responsible Person.

9.8 Contractors responsible for risk assessments shall:

- Assess and document fully all risks associated with water systems, air conditioning plant and other relevant equipment as advised, in all University buildings identified by the Legionella Responsible Person or Deputy Responsible Person.
- Make every effort to identify all pipework systems, including tanks and their associated pipework systems, and to provide detailed schematic drawings

indicating these systems on plans in electronic format compatible with University IT systems as advised.

- Advise the relevant Approved Persons Legionella or Deputy Responsible Person in writing of any remedial measures to be taken to control, reduce or eliminate Legionella risks in water systems, air conditioning plant or other plant and equipment identified.
- Produce a fully documented planned preventative maintenance regime for the control of Legionella bacteria in water systems, air conditioning plant or other plant and equipment identified.
- Minimise disruption to University operations through full communication and co-operation with University departments as necessary.
- Provide specialist advice on Legionella matters as requested.

9.9 Contractors responsible for regular treatment & cleaning regimes shall:

- Undertake to implement such disinfection, cleaning and testing of water systems as required by the risk assessment, legislation and guidance, under the authority of the Deputy Responsible Person or relevant Approved Persons Legionella, and to supply all relevant results to Deputy Responsible Person or relevant Approved Persons Legionella promptly.
- Undertake such measures as required, and as agreed with the Deputy Responsible Person or relevant Approved Persons Legionella, in the event of Legionella bacteria being detected in water systems or air conditioning plant belonging to the University.
- Provide specialist advice on Legionella matters as requested.
- Ensure that all analysis of water samples taken for the presence of Legionella bacteria are carried out by a UKAS accredited Laboratory and that all results are forwarded electronically to the University as soon as practicable for the attention of the Deputy Responsible Person and relevant Approved Person Legionella.
- Inform the Deputy Responsible Person or relevant Approved Person Legionella by telephone of any First or Second Action Level failures, in addition to the electronic results sent to them

9.10 Contractors responsible for repairs and other modifications to water related systems shall:

- Ensure that all works performed by them or their subcontractors will be carried out or installed in such a way as to minimise the conditions for the proliferation of Legionella bacteria, that they comply fully with legislation and guidance for the control of Legionella, and that they comply fully with requirements for the installation of water pipes and fittings as required by the Drinking Water Inspectorate.
- Provide detailed drawings and descriptions of the works undertaken for inclusion in relevant risk assessments.
- Provide relevant certification and test results as required by legislation and guidance for inclusion in relevant risk assessments.

9.11 University Medical staff shall:

- Implement procedures for the investigation and control of a Legionella outbreak in the University affecting students in conjunction with the Health Protection Agency. (See Operational Procedure 7)

9.12 The Legionella Control Steering Group shall:

- Monitor and review the implementation, effectiveness and costs of the University's Policy and Procedures for the management of Legionella bacteria in water systems and prevention of Legionnaire's disease.
- Provide information, advice and guidance on Legionella management and control to all relevant management and staff at the University and other relevant stakeholders.
- Report to the University Health and Safety Committee and advise on necessary changes to the Policy and Procedures
- Implement and co-ordinate the University's actions in the event of a Legionella outbreak in the University.
- Consist of relevant officers and stakeholders within the University and include, as necessary, outside consultants/contractors. These are:
 - Responsible Person (Director of The Department of Estates)
 - Deputy Responsible Person(s)
 - Representative from Safety Services
 - Representative from Accommodation & Campus Services
 - Senior member of University Academic staff (Chairman)
 - Senior member of University Administration staff
 - Senior Mechanical Engineer from The Department of Estates

9.13 University Public Relations and Communications sections shall:

- Be aware of the University Policy for Legionella Control, management procedures and key contacts at the University.
- In the event of Legionella contamination or infection, deal with all enquiries from the public or media.

10.0 Guidance

This Policy and Procedures are based on the standards and requirements of the following documents: -

1. HSE Approved Code of Practice ACOP L8 (rev) "The Control of Legionella Bacteria in Water Systems".
2. BS 6700 - "Design, installation testing and maintenance of services supplying water for domestic use within buildings and their curtilages"
3. Health and Safety at Work etc Act 1974
4. Control of Substances Hazardous to Health Regulations 2002
5. Water Supply (Water Fittings) Regulations 1999
6. Water Supply (Water Quality) Regulations 2000
7. The Notification of Cooling Towers and Evaporative Condensers Regulations 1992

Acknowledgement is given to Bristol University for their permission to base this Policy document on their Policy document.

The Department of Estates - Legionella Control Team

