

Your Company Ltd

Legionella Risk Assessment

Domestic hot and cold water services · ACOP L8 · HSG274 Part 2 · BS 8580-1



SAMPLE PHOTO Riverside House

CLIENT

Sample Property Management Ltd

SITE

Riverside House

ADDRESS

1 Example Quay Glasgow, G1 1XX

DATE OF ASSESSMENT

01/10/2026

REPORT REFERENCE

SAMPLE-001

ASSESSOR

A. Assessor

REVIEW PERIOD

12 months · next review 01/10/2027

REASON FOR REVIEW PERIOD

Open high-rated actions on the cold water storage tank and the control regime.

OVERALL RISK RATING

HIGH

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1 Site details

Client	Sample Property Management Ltd
Site	Riverside House
Address	1 Example Quay Glasgow, G1 1XX
Use of premises	Multi-storey office
Site contact	Facilities Manager · 0000 000 0000
Date surveyed	01/10/2026
Date completed	01/10/2026
Report reference	SAMPLE-001
Approximate daily occupancy	60
Susceptibility of exposed persons	Average population
Review period	12 months
Next review due	01/10/2027
Reason for review period	Open high-rated actions on the cold water storage tank and the control regime.
Assessor	A. Assessor
Assessor training and qualifications	City & Guilds accredited Legionella risk assessor. BS 8580-1 risk assessment training.
Checked and authorised by	B. Reviewer
Assessment carried out by	Your Company Ltd · Your address · 0000 000 0000 · you@yourcompany.co.uk

Building

Building	Use	Occupancy	Levels	Description
Main building	Office without canteen	60	Basement, Ground, 1st, 2nd, 3rd, Roof Space	Four-storey office building with basement plant rooms and car park.

2 Executive summary

CURRENT RISK RATING

HIGH

RATING ON COMPLETION OF ALL ACTIONS

MEDIUM

The post-remediation rating is the rating this site would achieve on completion of **all** the actions listed in section 3.3, and is achievable only on their completion.

This assessment raises **27** recommendations: 15 rated High, 10 rated Medium and 2 rated Low. They are set out in section 3.3.

2.1 Site responsibilities

Role	Name	Duties
Duty Holder	Sample Property Management Ltd	Holds the statutory duty to identify, assess and control the risk from Legionella at the premises, and to appoint a competent Responsible Person. The duty cannot be delegated.
Responsible Person	TBC by Client	Appointed by the Duty Holder to take day-to-day managerial responsibility for the control scheme: ensuring the control measures are carried out, recorded, reviewed and acted upon.
Deputy Responsible Person	TBC by Client	Covers the Responsible Person in their absence, with the same authority and knowledge of the systems and the control scheme.
Water Hygiene Contractor	Your Company Ltd	Carries out the monitoring, inspection and remedial tasks contracted to them, reports results and out-of-range findings to the Responsible Person, and provides evidence of the competence of its personnel.

2.2 Guidance on duties

Duties in respect of Legionella arise from general health and safety law rather than from any single Legionella-specific statute.

The Health and Safety at Work etc. Act 1974 places a duty on every employer to ensure, so far as is reasonably practicable, the health and safety of employees, and to conduct the undertaking so that persons not in their employment are not exposed to risk. Those in control of premises owe a similar duty to people who use non-domestic premises made available to them.

The Control of Substances Hazardous to Health Regulations 2002 (COSHH) apply to Legionella bacteria as a biological agent. They require the risk to be assessed, prevented where reasonably practicable, and otherwise adequately controlled, with control measures maintained, monitored and recorded.

The Management of Health and Safety at Work Regulations 1999 require a suitable and sufficient assessment of risk, the appointment of competent persons, and arrangements for planning, organising, controlling, monitoring and reviewing preventive measures.

The Approved Code of Practice L8, *Legionnaires' disease: The control of legionella bacteria in water systems*, sets out how those general duties are to be met. An Approved Code of Practice has

a special legal status: if a duty holder is prosecuted for a breach of health and safety law, and it is proved that the provisions of the Code relevant to the case were not followed, the court will find them at fault unless they can show they complied in some other equally effective way. The supporting guidance in HSG274 Part 2 covers hot and cold water systems in detail.

Where water fittings are installed or altered, the Water Supply (Water Fittings) Regulations 1999 apply in England and Wales; in Scotland the equivalent requirements are set by the Water Supply (Water Fittings) (Scotland) Byelaws 2014. Cooling towers and evaporative condensers must additionally be notified to the local authority under the Notification of Cooling Towers and Evaporative Condensers Regulations 1992.

Who carries the duty. The Duty Holder is the employer, or the person in control of the premises. The Duty Holder must appoint a Responsible Person — a named individual with sufficient authority, competence and knowledge of the installation to ensure that control measures are carried out — together with a deputy to cover absence. These appointments should be recorded in writing and accepted in writing by the individuals named. Appointing a contractor does not transfer the duty; the Duty Holder remains accountable for ensuring the work is done and is effective.

2.3 Training and competency

Anyone appointed to implement a control measure, and anyone who carries out monitoring, must be competent to do so. Competence means the necessary training, knowledge, skill and experience for the specific task, kept current by refresher training at appropriate intervals.

Records should be kept of who has been trained, in what, by whom and when, and of the date the next refresher falls due. Where any part of the control regime is contracted out, the Duty Holder should satisfy themselves that the contractor's personnel are competent for the work being carried out, and should retain evidence of that competence.

The persons carrying out the works detailed in this assessment must be trained and competent to a standard appropriate to the task, and must understand the potential sources of risk, the measures to be taken to control that risk, and why those measures matter.

Training records observed	No training records were available for review.
Summary of competence	No competency records were available. The water hygiene contractor holds current LCA registration.

2.4 Existing control procedures and system history

Control procedure or record	Finding	Note
Water hygiene logbook on site	Yes	
Full L8 control regime in place and documented	No records observed	
Weekly flushing of little-used outlets	No records observed	
Monthly sentinel outlet temperatures	Yes	
Representative outlet temperatures (rotational)	No records observed	
Monthly calorifier flow and return temperatures	No records observed	
Quarterly showerhead clean and disinfection	No records observed	

Control procedure or record	Finding	Note
TMV servicing and fail-safe checks	No records observed	
Annual cold water storage tank inspections	No records observed	
Tank clean and disinfection	No records observed	
Six-monthly potable water sampling	No records observed	
Legionella sampling regime	N/A	
Booster / circulation pump alternation	No records observed	
Annual review of the control regime	No records observed	
Out-of-range results escalated and resolved	N/A	
Asset register	No asset register	
Schematic drawings	No schematics	
Previous risk assessment	N/A	
Previous assessment actions closed out	N/A	
Legionella awareness training	No records observed	
Competence records for those carrying out controls	N/A	
Records retained for five years	N/A	

System history.

A logbook is held on site with monthly temperature records for the last twelve months. There are no records of tank inspection, tank cleaning or flushing of little-used outlets, and no previous risk assessment was available.

2.5 What the written scheme must contain

A written scheme of control is the site's operating document for Legionella control. It should be specific to the premises assessed and should set out at minimum:

- An up-to-date description of the correct and safe operation of the water systems, supported by an asset register and schematic drawings
- The precautions to be taken, expressed as tasks with defined frequencies
- The checks to be carried out to ensure the scheme remains effective, who carries them out, and how results are recorded
- The parameters within which results are acceptable, and the remedial action to be taken when a result falls outside them
- The escalation route where a remedial action does not bring the system back into control
- The persons responsible for each element of the scheme, by name and role
- The arrangements for reviewing the scheme and the risk assessment

The scheme must be readily available to everyone who has a part in operating it, and must be kept up to date as the systems and the people change.

2.6 Details of the written scheme

Written scheme of control in place	No
Details	No written scheme of control was available on site.

3 Recommendations

3.0 General recommendations

The recommendations in this section arise directly from the observations made during the survey. They are presented in two tables: management actions, which concern the control regime and the records supporting it, and water system actions, which concern the physical condition of the installation.

Each recommendation is given a risk rating and a response time. The response times are the maximum periods within which the action should be completed, measured from the date of this report:

Rating	Response time
High	Immediate — begin without delay and complete at the earliest opportunity
Medium	Within 3 months
Low	Within 12 months

A High rating indicates a condition capable of allowing *Legionella* to proliferate, or of allowing exposure to contaminated aerosol, or an absence of control that leaves the system unmonitored. It does not indicate that *Legionella* is present; that can only be established by sampling.

Completion of every action listed does not by itself constitute compliance. Compliance requires that the control measures then implemented are sustained, monitored and recorded on an ongoing basis.

3.1 Requirements of the Duty Holder

The Duty Holder is required to:

- Identify and assess the sources of risk from *Legionella* arising from the water systems under their control
- Prepare and implement a written scheme of control for preventing or controlling that risk
- Appoint a Responsible Person and deputy, in writing, with the authority and competence to discharge the role
- Ensure the control measures in the scheme are carried out at the stated frequencies, and that the results are recorded
- Ensure that out-of-range results are acted upon, and that the action taken is recorded
- Keep records for at least five years after the period to which they relate
- Review the risk assessment whenever there is reason to believe it is no longer valid, and in any event at the interval recommended in this report

3.2 Requirements of this report

This report should be read in full, and in conjunction with the written scheme of control and the site logbook. It is not a substitute for either.

The asset register, temperature register and schematic drawings within this report should be transferred into, or referenced by, the site's control documentation, and should be updated

whenever the systems are altered.

Where an action in section 3.3 is completed, the date of completion and the person completing it should be recorded against that action, and the evidence retained. Where an action is not going to be completed, the reason should be recorded and the residual risk accepted in writing by the Duty Holder.

3.3 Recommendations schedule

Management

No.	Observation	Recommendation	Risk	Response	Date and complete by
M1	Lines of communication and responsibility are not fully established. A Responsible Person and Deputy Responsible Person have not been nominated.	Nominate a Responsible Person and Deputy Responsible Person without delay. Record both appointments in writing and obtain each individual's written acceptance of the responsibilities.	HIGH	Immediate	
M2	Legionella awareness training is not in place for the appointed responsible personnel.	Arrange Legionella awareness training for all personnel appointed to carry out control measures and for those with managerial responsibility for the water systems. Retain training records and set refresher intervals.	HIGH	Immediate	
M3	There is no written scheme of control in place for the site.	Prepare and implement a written scheme of control specific to this site, covering the matters set out in section 2.5 of this report.	HIGH	Immediate	
M4	There is no full control regime currently in place in compliance with HSE ACOP L8 and HSG274 Part 2.	Implement and document the weekly, monthly, quarterly, six-monthly and annual control measures applicable to the systems at this site, as set out in the scheme of control in section 20.	HIGH	Immediate	
M5	There are no weekly flushing records present.	Implement a weekly flushing regime for all infrequently used outlets and record each flush in the water hygiene logbook or electronic system.	HIGH	Immediate	
M6	Showers or spray outlets are installed and there are no records of quarterly cleaning and disinfection.	Implement a quarterly programme to dismantle, clean, descale and disinfect all showers, spray heads, spray taps, hoses and inserts, and record each service.	HIGH	Immediate	

No.	Observation	Recommendation	Risk	Response	Date and complete by
M7	There are no records of annual cold water storage tank inspections.	Implement annual inspection of all cold water storage tanks, with remedial cleaning and disinfection carried out as the inspection indicates, and record each inspection.	HIGH	Immediate	
M8	There are no records of cleaning and disinfection of the cold water storage tanks.	Implement a programme of cleaning and disinfection for the cold water storage tanks, at a frequency determined by annual inspection, and record each clean with before and after evidence.	HIGH	Immediate	
M9	There are no representative outlet temperatures being taken on a rotational basis.	Implement rotational monitoring of a representative selection of outlets so that a temperature profile of the whole system is built over a defined period.	MEDIUM	3 months	
M10	A booster pump set is installed and there are no duty and standby pump alternation records.	Implement and record regular alternation of duty and standby pumps so that neither set stands idle and stagnates.	MEDIUM	3 months	
M11	There is no record of an annual review of the control regime.	Hold a formal annual review of the control regime with all parties involved in Legionella control at the premises, and record the outcome and any changes agreed.	MEDIUM	3 months	

Water systems

No.	Observation	Recommendation	Risk	Response	Date and complete by
W1	The cold water storage tank is not fitted with an approved lid, allowing the ingress of foreign material into the live system. Applies to: CWST 1	Fit an approved close-fitting lid to the cold water storage tank(s) to prevent the ingress of light and foreign material.	HIGH	Immediate	
W2	The cold water storage tank lid is not fitted with an approved screened vent. Applies to: CWST 1	Fit an approved screened lid vent to the cold water storage tank(s) to allow the tank to breathe while excluding insects and foreign material.	HIGH	Immediate	

No.	Observation	Recommendation	Risk	Response	Date and complete by
W3	The internal surfaces of the cold water storage tank show evidence of corrosion, which provides nutrients for Legionella bacteria. Applies to: CWST 1	Carry out a clean and disinfection of the cold water storage tank(s) and all associated down services. Reline the tank with a WRAS approved coating, or replace the tank, to prevent recurrence.	HIGH	Immediate	
W4	The internal surfaces of the cold water storage tank show deposits of sediment, which provide nutrients for Legionella bacteria. Applies to: CWST 1	Carry out a clean and disinfection of the cold water storage tank(s) and all associated down services.	HIGH	Immediate	
W5	Dead-legs and blind-ends were identified within the water distribution system, in which water stands and stagnates.	Isolate, drain and remove the redundant pipework identified in section 11, cutting back as close to the live supply as possible and replacing the tee with a straight coupling or elbow. Where a branch cannot be removed, include the outlet in the weekly flushing regime and record each flush.	HIGH	Immediate	
W6	Infrequently used outlets were identified and there is no flushing regime in place to prevent the water in the branches serving them from stagnating.	Include all infrequently used outlets identified in section 11 in a documented weekly flushing regime. Where an outlet is no longer required, remove it and cut the pipework back to the live supply.	HIGH	Immediate	
W7	Significant aerosols are generated from the water system via showers and spray outlets during normal operation.	Review the need for each shower and spray outlet and remove those not required. Where aerosol generation cannot be avoided, implement quarterly cleaning, descaling and disinfection of all spray heads and hoses.	HIGH	Immediate	
W8	The cold water storage tank overflow is not fitted with a vermin or rodent screen to prevent the ingress of vermin and foreign material. Applies to: CWST 1	Fit an approved vermin and rodent screen to the overflow of the cold water storage tank(s).	MEDIUM	3 months	

No.	Observation	Recommendation	Risk	Response	Date and complete by
W9	The cold water storage tank stores more than 1,000 litres and does not have a screened early warning pipe fitted. Applies to: CWST 1, CWST 2	Fit a screened early warning pipe to the cold water storage tank(s), set slightly below the overflow and terminating in a conspicuous location.	MEDIUM	3 months	
W10	The cold water storage capacity exceeds the demand of the building. The stored water is unlikely to turn over within 24 hours, creating a risk of stagnation.	Reduce the stored volume on site, or bypass the cold water storage tank(s) to mains cold water, upgrading the hot water system where necessary to suit.	MEDIUM	3 months	
W11	The cold water storage tank insulation is absent or in poor condition, allowing thermal gain to the stored water. Applies to: CWST 1	Insulate the cold water storage tank(s) and associated supply pipework in accordance with BS 5970, and make good any damaged insulation.	MEDIUM	3 months	
W12	Access, lighting, power or drainage at the tank location is inadequate for safe inspection and maintenance. Applies to: CWST 1, CWST 2	Provide safe access, adequate lighting, a power supply and adequate drainage to the tank location so that inspection, cleaning and disinfection can be carried out safely.	MEDIUM	3 months	
W13	Pipework and valves are not labelled to identify the service and the direction of flow.	Label all pipework and valves in accordance with BS 1710, identifying the service and the direction of flow.	MEDIUM	3 months	
W14	An expansion vessel which is not of flow-through design is installed without a drain valve, so the vessel cannot be purged and acts as a dead-leg. Applies to: EV 1	Fit a suitable drain valve to the expansion vessel and include it in a monthly or six-monthly flushing regime, or install a flow-through arrangement such as a Flowjet valve. Confirm the vessel is mounted vertically and can be fully isolated.	MEDIUM	3 months	
W15	The cold water storage tank does not have a separate ball valve inspection hatch. Applies to: CWST 1, CWST 2	Fit a separate ball valve inspection hatch so the valve can be inspected without removing the main lid.	LOW	12 months	

No.	Observation	Recommendation	Risk	Response	Date and complete by
W16	The cold water storage tank inlet is not fitted with a delayed-action or equivalent valve arrangement, which would improve turnover of the stored water. Applies to: CWST 1, CWST 2	Consider replacing the inlet valve with a delayed-action float valve to improve the turnover of stored water and reduce stratification.	LOW	12 months	

4 Background to the disease and the organism

Legionnaires' disease is a potentially fatal form of pneumonia caused by bacteria of the genus *Legionella*, most commonly *Legionella pneumophila*. The same organism causes two milder, non-pneumonic illnesses, Pontiac fever and Lochgoilhead fever. The collective term for illness caused by the organism is legionellosis.

Infection occurs when a person inhales small water droplets, or droplet nuclei, containing the bacteria. It is not spread by drinking water, and person-to-person transmission is not a normal route of infection. Anyone can contract the disease, but the risk of serious illness is higher in people over 45, smokers and heavy drinkers, and those with chronic respiratory or kidney disease, diabetes, cancer or an impaired immune system.

Legionella bacteria are common in natural water sources — rivers, lakes and reservoirs — usually in numbers too low to present a risk. They enter engineered water systems from the mains supply, and it is within those systems that they can multiply to hazardous concentrations.

Conditions that allow proliferation:

- **Temperature** — the organism is dormant below 20 °C, multiplies between 20 °C and 45 °C, and multiplies most rapidly at around 37 °C. Above 50 °C survival falls sharply; at 60 °C the organism is killed within a few minutes.
- **Stagnation** — water that stands still allows sediment and biofilm to develop and warms towards room temperature.
- **Nutrients** — sludge, scale, rust, organic matter and biofilm all provide a food source and protect the organism from heat and biocide.
- **A means of dissemination** — showers, spray taps, hose reels, fountains and similar create respirable aerosol.
- **Susceptible persons** — someone must be exposed for harm to occur.

Control therefore rests on keeping hot water hot, keeping cold water cold, keeping water moving, keeping systems clean, and preventing the creation of unnecessary aerosol.

5 Introduction and scope

5.0 Scope, and limitations of this assessment

Riverside House is a four-storey office building with a basement. Mains cold water enters the basement plant room and feeds a break tank (CWST 1). A booster set lifts water to a second cold water storage tank (CWST 2) in the roof space, which feeds the outlets on every floor by gravity. A cleaners sink and the fire hose reel in the basement are fed directly from the boosted supply.

Hot water is generated by a single plate heat exchanger in the basement plant room, served from the boosted cold supply, and is distributed to every floor on a circulating flow and return.

Each floor has male and female toilets and a kitchen. The ground floor also has an accessible WC with a shower.

This assessment covers the domestic hot and cold water services at Riverside House as described in this report. It was carried out on 01/10/2026 by A. Assessor.

Every effort has been made to identify all relevant water systems and all reasonably foreseeable sources of risk. It cannot be guaranteed that every system, or every section of concealed pipework, has been identified. Pipework within voids, ducts, ceilings and the fabric of the building cannot be inspected without opening up, which is outside the scope of a survey of this type. No liability is accepted for omissions arising from services that were concealed, isolated, out of service or inaccessible at the time of the visit.

It is the responsibility of the site to provide the assessor with full and unrestricted access to the water systems, and to make available the records relating to their operation and maintenance. Where access was restricted, or records were unavailable, this is recorded in section 5.2, and a further visit may be required at additional cost to complete those parts of the assessment.

This assessment records the condition of the systems as found on the date of the visit. It does not warrant their condition at any other time, and it does not confirm the presence or absence of *Legionella* bacteria, which can be established only by sampling and analysis.

Where a system is identified that has the potential to allow *Legionella* to proliferate and for which no adequate precautions are currently in place, the Duty Holder should seek advice on suitable procedures and should have this assessment updated accordingly.

5.1 Systems outside the scope of this assessment

All water systems within the client's demise are included.

No water systems outside the scope of this assessment were identified at the time of survey.

5.2 Limitations

All system areas were accessible.

5.3 Site induction

Site induction conducted	Yes
Escorted by	Facilities Manager

Role	Facilities Manager
Knowledge of the water systems	Limited
Areas not shown or not accessed	None

5.4 Regulatory and guidance references

This assessment has been carried out with reference to:

- Health and Safety at Work etc. Act 1974
- Control of Substances Hazardous to Health Regulations 2002
- Management of Health and Safety at Work Regulations 1999
- Notification of Cooling Towers and Evaporative Condensers Regulations 1992
- Water Supply (Water Fittings) Regulations 1999 / Water Supply (Water Fittings) (Scotland) Byelaws 2014
- ACOP L8 (4th edition) — *Legionnaires' disease: The control of legionella bacteria in water systems*, HSE
- HSG274 Part 2 — *Legionnaires' disease: Technical guidance — the control of legionella bacteria in hot and cold water systems*, HSE
- BS 8580-1:2019 — *Water quality. Risk assessments for Legionella control. 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*
- BS EN 806 (all parts) — *Specifications for installations inside buildings conveying water for human consumption*
- BS 7592:2022 — *Sampling for Legionella bacteria in water systems. Code of practice*
- BS 5970 — *Thermal insulation of pipework, ductwork, associated equipment and other industrial installations*
- BS 1710 — *Specification for identification of pipelines and services*
- PD 855468 — *Guide to the flushing and disinfection of services supplying water for domestic use*
- HTM 04-01 — *Safe water in healthcare premises* (referenced for completeness; healthcare-specific requirements are outside the scope of this assessment)
- CIBSE TM13 — *Minimising the risk of Legionnaires' disease*
- Legionella Control Association — Code of Conduct

Observations that do not comply with the above are recorded in this report and given a risk rating.

6 Assessment of risk

The purpose of this assessment is to determine whether the potential for harm from exposure to *Legionella* is reasonably foreseeable, and what measures are necessary to prevent or adequately control that risk.

The assessment considers, for each part of the system:

1. Whether conditions exist that would allow the organism to survive and multiply
2. Whether there is a means of creating and disseminating respirable aerosol
3. Whether anyone is likely to be exposed to that aerosol, and how susceptible they are

Judgement has been applied to routine operation and use, and also to foreseeable departures from routine — breakdown, partial shutdown, low occupancy, commissioning and periods of reduced use.

Temperature is the primary control, and the bands used throughout this report are:

Temperature	Effect on <i>Legionella</i>
0–20 °C	Dormant; survives but does not multiply
20.1–24.9 °C	Begins to multiply
25–44.9 °C	Multiplies readily; optimum around 37 °C
45–54.9 °C	Survival reduced; does not multiply
55–60 °C	Unlikely to survive

The control parameters that follow from this are that hot water is stored at 60 °C or above and reaches 50 °C at the outlet within one minute of running, and that cold water is at or below 20 °C within two minutes of running.

Where temperature control cannot be achieved, an alternative control measure — such as a biocidal regime — must be applied, monitored and recorded, and its effectiveness demonstrated.

7 Practice guidelines

Particular attention is required where the exposed population includes people who are more susceptible to infection, and where the population density is such that a larger number of people could be exposed from a single source.

This assessment is a living document. It should be reviewed whenever there is reason to believe it is no longer valid, including where:

- The water systems, or the plant serving them, are altered, extended or replaced
- The use or occupancy of the building changes, including extended periods of low occupancy or closure
- Monitoring results indicate that control measures are no longer effective
- Key personnel change, or the arrangements for carrying out the control regime change
- New information about the risk or its control becomes available
- A case of legionellosis is associated with the premises

Where a review identifies changes in the risk, the control measures must be revised to match, and the written scheme updated.

The interval to the next review of this assessment is recorded on the cover of this report. Setting an interval does not remove the obligation to review earlier if any of the circumstances above arise.

8 Incoming water supply

MCW 1

Identity	
Asset ref	MCW 1
Floor	Basement
Room or location	Plant Room
Position in room	Left-hand wall
Source	Mains
Pipework	
Material	Copper
Stop valve size (mm)	35
Stop valve type	Gate valve
Condition	Good
Insulated to BS 5970	Yes
Labelled to BS 1710	No
Water treatment	
Softener or conditioner	None



MCW 1

9 Cold water services

Cold water systems should deliver water at or below 20 °C at the outlet within two minutes of running. Above that temperature the organism will begin to multiply, and the cause of the thermal gain — proximity to hot services, poor or absent insulation, warm plant rooms, low turnover — should be identified and corrected.

Cold water storage. Stored water is at greater risk than water taken directly from the mains, because it is held, may warm, and may accumulate sediment. Storage should be sized so that the whole contents turn over within 24 hours; over-sized storage is a common and avoidable source of risk, and is often a legacy of a building's earlier use or occupancy. Where two or more cisterns are linked, they should be connected so that flow passes through both rather than short-circuiting one, and both should be inspected.

Tanks should be constructed of a material approved for potable water, sited in a cool, clean and accessible location, and insulated to prevent heat gain. Each tank requires:

- A close-fitting, rigid lid that excludes light and foreign material, refitted and secured after every inspection
- A screened vent allowing the tank to breathe
- A screened overflow, correctly sized and clearly routed to give visible warning of a fault
- A screened warning pipe, set slightly below the overflow, where the tank stores more than 1,000 litres
- An insect and vermin screen on every opening

Hollow, uncapped PVC-U pipes used as lid supports are a recognised risk and were the subject of Department of Health alert EFA/2013/004: where present and uncapped at the base, they stand in the stored water and stagnate internally. They should be replaced with solid supports.

Internal condition. Sediment, sludge, scale, rust, organic debris and biofilm all provide nutrients, and biofilm in particular shelters the organism from heat and biocide. Any such accumulation should be removed by cleaning and disinfection, and the cause addressed.

Inspection and sampling. Tanks should be inspected at least annually and cleaned and disinfected as the inspection indicates. Where stored water serves outlets used for drinking or food preparation, bacteriological analysis should be carried out at six-monthly intervals in accordance with BS 8558 and BS EN 806-5 to confirm the water remains fit for domestic use.

CWST 1

Identity	
Asset ref	CWST 1
Floor	Basement
Room or location	Plant Room
Cistern details	
Height (mm)	1200
Width (mm)	1000

Length (mm)	1800
Gross capacity (L)	2160
Net capacity (L)	1700
Material	Galvanised steel
Insulation type	Jacket
Insulation thickness (mm)	50
Insulation condition	Poor
Lid fitted	No
Separate ball valve inspection hatch	No
Screened air vent	No
Hollow PVC-U lid supports	No
Tank room condition	Good
Linked to another cistern	No
Cross flow	Good
Pipework labelled	No
Overflow and warning pipe	
Overflow size (mm)	54
Overflow material	Plastic
Rodent screen on overflow	No
Warning pipe	None
On-site testing	
Ambient °C	14
Supply °C	12.8
Stored °C	15.5
Visual inspection	
Stagnation	None
Sediment	Heavy Sediment
Biofilm	None
Corrosion	Heavy Corrosion
Contamination	Evident
Supply	
Fed from	MCW 1

Supply pipe size (mm)	35
Supply pipe material	Copper
Float material	Copper
Supply valve	Ball Valve
Isolation valve on supply	Yes
Open vent	Not required
Outlets	
Outlet pipe size (mm)	42
Outlet pipe material	Copper
Outlet valves	Good
Unit and surroundings	
Pipework insulated to BS 5970	Yes
Pipework labelled to BS 1710	No
Lighting	Yes
Power	No
Drainage	Yes
Ladders required	Yes
Safe access	Yes
Access via	Standard door
Comments	Tank is in poor internal condition. Replacement with a compliant tank is recommended.



SAMPLE PHOTO
CWST 1 external

CWST 1 external



SAMPLE PHOTO
CWST 1 internal

CWST 1 internal, heavy sediment and corrosion



SAMPLE PHOTO
CWST 1 lid

CWST 1, lid not close fitting

CWST 2

Identity	
Asset ref	CWST 2
Floor	Roof Space
Room or location	Tank Room
Cistern details	
Height (mm)	1000
Width (mm)	2000
Length (mm)	3000
Gross capacity (L)	6000
Net capacity (L)	4800
Material	Galvanised steel
Insulation type	Jacket
Insulation thickness (mm)	50
Insulation condition	Fair
Lid fitted	Yes
Lid condition	Good
Separate ball valve inspection hatch	No
Screened air vent	Yes
Hollow PVC-U lid supports	No
Tank room condition	Good
Linked to another cistern	No
Cross flow	Good
Pipework labelled	No

Overflow and warning pipe	
Overflow size (mm)	54
Overflow material	Plastic
Rodent screen on overflow	Yes
Warning pipe	None
On-site testing	
Ambient °C	14
Supply °C	13.4
Stored °C	17.2
Visual inspection	
Stagnation	Slight
Sediment	Light Sediment
Biofilm	None
Corrosion	Light Corrosion
Contamination	None
Supply	
Fed from	BS 1
Supply pipe size (mm)	28
Supply pipe material	Copper
Float material	Plastic
Supply valve	Ball Valve
Isolation valve on supply	Yes
Open vent	Not required
Outlets	
Outlet pipe size (mm)	42
Outlet pipe material	Copper
Outlet valves	Good
Unit and surroundings	
Pipework insulated to BS 5970	Yes
Pipework labelled to BS 1710	No
Lighting	Yes
Power	No

Drainage	No
Ladders required	Yes
Safe access	Yes
Access via	Loft hatch
Comments	Stored volume is large for the current occupancy.



CWST 2 external



CWST 2 internal

Storage turnover. Total stored volume 8,160 litres. Estimated daily demand 2,400 litres (60 × 40 litres per person per day). The stored water turns over in approximately 82 hours, which exceeds 24 hours.

10 Hot water services

Hot water systems present the greatest opportunity for proliferation, because much of the system operates within, or passes through, the growth range.

Stored hot water should be held at 60 °C or above throughout the vessel. The base of a calorifier is the point of greatest risk: incoming cold water meets stored hot water, producing a layer of warm water in which sediment collects. Calorifiers should be fitted with a drain at the lowest point, drained periodically and inspected internally at least annually. Where stratification cannot be eliminated by other means, a shunt pump may be fitted to maintain an even temperature through the vessel.

Distribution should be balanced so that water returns to the calorifier at 50 °C or above, and reaches 50 °C at every outlet within one minute of running. Failure to reach temperature at an outlet usually indicates a balancing problem, an undersized or failed circulating pump, missing insulation, or a long uncirculated branch.

Dead-legs on hot services are the most common single defect found on these systems. Water in a length of pipe served by a circulating main but not itself circulated will fall towards room temperature between draw-offs.

Instantaneous heaters, combination boilers and plate heat exchangers heat water on demand from the cold supply. The volume held is small, but the delivery temperature is limited by the rating of the unit, and at high flow rates water can leave the unit below the required temperature. These units are also prone to scaling, which reduces efficiency further. They should be maintained in accordance with the manufacturer's instructions, and scale control fitted on the supply where the water is hard.

Point-of-use water heaters and electric showers hold small volumes at variable temperature and are frequently associated with infrequently used outlets. Where they serve outlets in little use, they warrant particular attention in the flushing regime.

Thermostatic mixing valves are fitted to protect against scalding and are necessary where vulnerable people are present. They also bring hot and cold water together at a point close to the outlet, creating a short blended section within the growth range. TMVs should be fitted as close to the outlet as practicable, and should be serviced, cleaned, descaled and fail-safe tested in accordance with the manufacturer's instructions and at intervals no greater than annually.

BS 1

Type	Booster set
Asset ref	BS 1
Floor	Basement
Room or location	Plant Room
Fed from	CWST 1
Serves	CWST 2, basement outlets and the plate heat exchanger
Make	Grundfos
Pipe size (mm)	42

Fittings	
Insulation	Good
Drain valve	Yes



BS 1 booster set

HWS 1

Type	Plate heat exchanger
Asset ref	HWS 1
Floor	Basement
Room or location	Plant Room
Fed from	BS 1
Circulating return	Yes
Serves	All floors
Make	Alfa Laval
Pipe size (mm)	22
Temperatures	
Flow °C	61.5
Return °C	54.2
Fittings	
Insulation	Good
TMV fitted	No



SAMPLE PHOTO

Plate heat exchanger

HWS 1 plate heat exchanger

11 Dead-legs, blind-ends and infrequently used outlets

A **dead-leg** is a length of pipe leading to a fitting through which water passes only when that fitting is used. A **blind-end** is a length of pipe through which no water passes at all — typically where a fitting has been removed and the pipe capped rather than cut back. An **infrequently used outlet** is any fitting not used regularly enough to replenish the water standing in the branch serving it.

All three produce the same result: water stands, warms toward room temperature, loses any residual disinfectant, and accumulates sediment and biofilm. When the outlet is eventually used, that water is drawn through the fitting and, at a spray outlet, dispersed as aerosol.

The preferred remedy is removal. Redundant pipework should be cut back to the live supply — ideally by removing the tee and replacing it with a straight coupling or elbow, so that no stub remains. Capping close to the fitting is not a remedy; it creates a blind-end.

Where a branch cannot be removed because the outlet is required, the outlet must be flushed at least weekly, for long enough to draw fresh water through the full length of the branch and until the temperature stabilises. Flushing must be recorded, and must be sustained: an interrupted flushing regime can leave the outlet in a worse condition than no regime at all, because the interruption is not detected. Flushing should be carried out in a way that minimises aerosol.

Only visible, accessible pipework can be assessed. Dead-legs may exist within the building fabric that were not identified during this survey.

Dead leg 1

Type	Dead leg
Floor	Basement
Room or location	Plant Room
Fed from	MCW 1
Service	Cold
Approx. length (mm)	100
Supply pipe diameter (mm)	35
Leg diameter (mm)	15
Flushed weekly	No
Comments	Drain point on the incoming main.



SAMPLE PHOTO

Drain on incoming main

Drain point on MCW 1 creating a dead leg

Blind end 2

Type	Blind end
Floor	Basement
Room or location	Plant Room
Fed from	BS 1
Service	Cold
Approx. length (mm)	50
Supply pipe diameter (mm)	42
Leg diameter (mm)	42
Flushed weekly	No
Comments	Capped connection on the booster set.



SAMPLE PHOTO

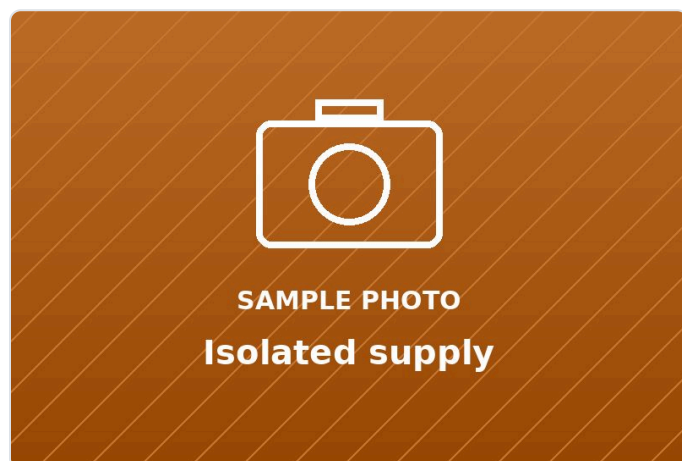
Capped connection

Capped connection on booster set

Dead leg 3

Type	Dead leg
Floor	Ground
Room or location	Kitchen

Fed from	CWST 2
Service	Cold
Approx. length (mm)	300
Supply pipe diameter (mm)	15
Leg diameter (mm)	15
Flushed weekly	No
Comments	Isolated supply to a removed vending machine.



Isolated supply to removed vending machine

Dead leg 4

Type	Dead leg
Floor	Roof Space
Room or location	Tank Room
Fed from	CWST 2
Service	Cold
Approx. length (mm)	1500
Supply pipe diameter (mm)	42
Leg diameter (mm)	42
Flushed weekly	No
Comments	Isolated pipe to a removed linked tank.



SAMPLE PHOTO

Redundant tank pipe

Isolated pipe to removed linked tank

Infrequently used outlet 5

Type	Infrequently used outlet
Floor	Ground
Room or location	Accessible WC
Service	Both
Flushed weekly	No
Comments	Shower rarely used.



SAMPLE PHOTO

Accessible WC shower

Infrequently used shower

12 Asset and temperature register

Location	Outlets	TMVs	Cold from	Cold °C	Hot from	Hot °C	In use	Clarity	Scale
Basement									
Car Park	1×FireHose		BS 1				No	Clear	No
Cleaners Store ★	1×SK		BS 1	14.1 S	HWS 1	60.2 S	Yes	Clear	No
Ground									
Accessible WC	1×WHB 1×WC 1×SH		CWST 2	17.9	HWS 1	57.4	No	Clear	No
Female WC	4×WHB 4×WC		CWST 2	17.6	HWS 1	58	Yes	Clear	No
Male WC	4×WHB 2×WC 2×UR		CWST 2	17.8	HWS 1	58.3	Yes	Clear	No
Kitchen ★	1×SK 1×DW 1×H-B		CWST 2	17.5 S	HWS 1	58.8 S	Yes	Clear	No
1st									
Male WC	5×WHB 3×WC 2×UR		CWST 2	17.7	HWS 1	56.9	Yes	Clear	No
Female WC	3×WHB 3×WC		CWST 2	17.9	HWS 1	57.3	Yes	Clear	No
Kitchen	1×SK 1×DW 1×H-B		CWST 2	17.4	HWS 1	57.8	Yes	Clear	No
2nd									
Male WC	5×WHB 3×WC 2×UR		CWST 2	18.1	HWS 1	55.4	Yes	Clear	No
Female WC	3×WHB 3×WC		CWST 2	18.3	HWS 1	55.8	Yes	Clear	No
Kitchen	1×SK 1×DW 1×H-B		CWST 2	17.8	HWS 1	56.3	Yes	Clear	No
3rd									
Male WC ★	5×WHB 3×WC 2×UR		CWST 2	18.6 S	HWS 1	52.1 S	Yes	Clear	No
Female WC	3×WHB 3×WC		CWST 2	18.8	HWS 1	52.5	Yes	Clear	No
Kitchen ★	1×SK 1×DW 1×H-B		CWST 2	18.3 S	HWS 1	53 S	Yes	Clear	No

★ and bold indicate a sentinel location; S marks the sentinel reading. Readings outside the control range are shaded. Blended readings are taken downstream of a thermostatic mixing valve and are assessed against 38–43 °C. Outlet abbreviations: WHB wash hand basin, UR urinal, SK sink, SH shower, BT bath, SL sluice, DW dishwasher, WM washing machine, CM coffee machine, DWD drinking water dispenser, DWT drinking water tap, Vend vending machine, H-B hydro-boil, PST pre-rinse spray tap, BIB bib tap, EEW emergency eyewash, EMS emergency shower, ICE ice machine, IRR irrigation system, FIL water filter, FLEXI flexible hose, FireHose fire hose reel.

13 Source risk rating

Each source of risk is rated by scoring a fixed set of influencing factors. The assessor selects one option per factor from the tables in section 14; each option carries a numerical value reflecting its contribution to the risk. The values are summed and the total is banded to give an overall rating of Low, Medium or High for that source.

The method is applied identically to every assessment, so ratings are comparable between sites and between visits, and a change in rating between assessments can be traced to the factor that moved.

The rating describes the *potential* for the organism to proliferate and for exposure to occur. It is not a measure of the concentration of *Legionella* present, and a Low rating does not remove the requirement to maintain and monitor the control measures.

The overall rating for the premises recorded in the executive summary is the higher of the highest source rating and the highest rating carried by any outstanding recommendation. A site whose sources all rate Medium will therefore be reported as High where a High-rated non-compliance is outstanding — which reflects the fact that an uncontrolled system is a greater risk than a controlled one in the same physical condition.

The post-remediation rating shown alongside is the rating this site would achieve on completion of **all** the actions listed in section 3.3, and is achievable only on their completion.

Block	Low	Medium	High
A. Building Usage, Users & Water Distribution System	Up to 9	Over 9 to 16	Over 16
B. Mains Cold Water Outlets	Up to 7	Over 7 to 12	Over 12
C. Tanked Cold Water Outlets	Up to 7	Over 7 to 12	Over 12
D. Hot Water Outlets	Up to 7	Over 7 to 12	Over 12
E. Cold Water Storage Tanks	Up to 10	Over 10 to 15	Over 15

14 Assessment summary

Block A. Building Usage, Users & Water Distribution System

Factor	Assessment	Score
Current Control Procedures	In place but not comprehensive	2
Management Structure	In place but not comprehensive	2
Susceptibility of Exposed Persons	Average population	2
Density of Exposed Persons	Medium	2
Pipework Materials	Copper / WRAS-approved plastics	1
Pipework Insulation	Fully	1
Premises Water Usage	Some little used, no weekly flushing	2
Total		12
Source risk rating		MEDIUM

Block B. Mains Cold Water Outlets

Factor	Assessment	Score
Formation of Droplets	Droplets	2
Water Condition	Chemical regime	1
Temperature	Below 20 °C	1
Turnover	High	1
Current Control Procedures	In place but not comprehensive	2
Total		7
Source risk rating		LOW

Block C. Tanked Cold Water Outlets

Factor	Assessment	Score
Formation of Droplets	Droplets	2
Water Condition	Chemical regime	1
Temperature	Below 20 °C	1
Turnover	High	1
Current Control Procedures	In place but not comprehensive	2
Total		7
Source risk rating		LOW

Block D. Hot Water Outlets

Factor	Assessment	Score
Formation of Droplets	Droplets	2
Water Condition	Chemical regime	1
Temperature	50 °C and above	1
Turnover	High	1
Current Control Procedures	In place but not comprehensive	2
Total		7
Source risk rating		LOW

Block E. Cold Water Storage Tanks

Factor	Assessment	Score
Supply Valve	Keraflo	1
Water Condition	Chemical regime	1
Internal Condition	Good	1
Storage Temperature	Below 20 °C	1
Turnover	High	1
Water Throughput	Good	1
Current Control Procedures	In place but not comprehensive	2
Total		8
Source risk rating		LOW

Highest source rating	MEDIUM
Highest outstanding recommendation	HIGH
Overall rating	HIGH
Rating on completion of all actions	MEDIUM

15 Implementation

Implementing this assessment means putting the control measures into effect and keeping them in effect.

The Duty Holder should:

1. Read this report in full and confirm the systems described match those on site
2. Confirm the Responsible Person and deputy in writing
3. Prepare or update the written scheme of control to reflect this assessment and section 20
4. Programme the actions in section 3.3 by response time and assign each to a named person
5. Put the monitoring regime in section 20 into operation and record every result in the logbook
6. Establish the escalation route for out-of-range results before the first result arrives
7. Retain records for at least five years

Two categories must both be addressed for control to be effective: the **management procedures** — the scheme, the records, the monitoring and the review — and the **plant condition** — the physical state of the systems. Remedying the plant without establishing the management regime leaves the site uncontrolled, and operating a management regime over defective plant records the deterioration without preventing it.

16 Review of this assessment

When to review. This assessment must be reviewed whenever there is reason to believe it is no longer valid, and in any event within the interval recorded on the cover. Circumstances requiring earlier review are listed in section 7.

Reviewing the control regime. Separately from reviewing the assessment, the Duty Holder should hold a formal review at least annually with all parties involved in Legionella control at the premises, covering the scheme's adequacy, whether it has been carried out as programmed, the results obtained, and any changes needed.

Independent audit. Periodic independent audit of the control measures, the logbook and the physical condition of the systems provides assurance that the regime is being followed and remains effective. Where audit indicates the regime is no longer adequate, the assessment should be reviewed.

Record keeping. Records should be kept for the period they are current and for at least five years thereafter, and should include: who is responsible for the assessment, the scheme and its implementation; the significant findings of the assessment; the written scheme and details of its implementation; the state of operation of the systems, including which parts are in or out of use; and the results of every monitoring check, inspection, test and remedial action, with dates.

17 General management compliance

Where this assessment shows a reasonably foreseeable risk that it is reasonably practicable to prevent or control, the Duty Holder must appoint a person or persons to take managerial responsibility for implementing the precautions and to provide supervision of that work.

Those appointed should have the ability, experience, information, training and resources to carry out their tasks safely and completely, and should understand the sources of risk and the significance of each control measure, so that a departure from the regime is recognised as such rather than treated as a routine gap in the records.

The precautionary measures in section 20 should be undertaken at the stated frequencies and the results recorded on a system that makes an omission visible. The records should be reviewed continually rather than filed, since the value of monitoring lies entirely in acting on what it shows.

18 Elements within the water system

18.1 Flushing of infrequently used outlets

Outlets not in regular use should be flushed at least weekly, and recorded. Flushing should continue until the water temperature at the outlet stabilises and is comparable with the supply, so that the standing contents of the branch are fully replaced.

Before establishing a flushing regime, consider whether the outlet is needed at all. Removing an unnecessary outlet and cutting the pipework back to the live supply eliminates the risk permanently; flushing manages it indefinitely and depends on someone continuing to do it. Where an outlet produces spray, flushing should be carried out so as to minimise aerosol — for example by removing the spray head, or by purging to drain.

More frequent flushing is appropriate where susceptible people are present. Any equipment within a water system that has not been used for seven days or more should be brought into the flushing regime.

Findings.

No flushing regime is in place. The ground floor accessible shower and the basement fire hose reel are used less than weekly.

18.2 Scale control at outlets

In hard water areas calcium is deposited on tap outlets, spray heads, internal pipe surfaces, cisterns and heaters. Scale provides both a nutrient source and a physical shelter that protects the organism from thermal and chemical disinfection, and it reduces the efficiency of heaters and heat exchangers.

Outlets should be inspected regularly, and descaled and disinfected where scale is found. In hard water areas, scale inhibition on the supply to instantaneous heaters and heat exchangers should be considered.

Findings.

No scale was observed on outlets at the time of the survey.

18.3 Showers, spray heads and spray taps

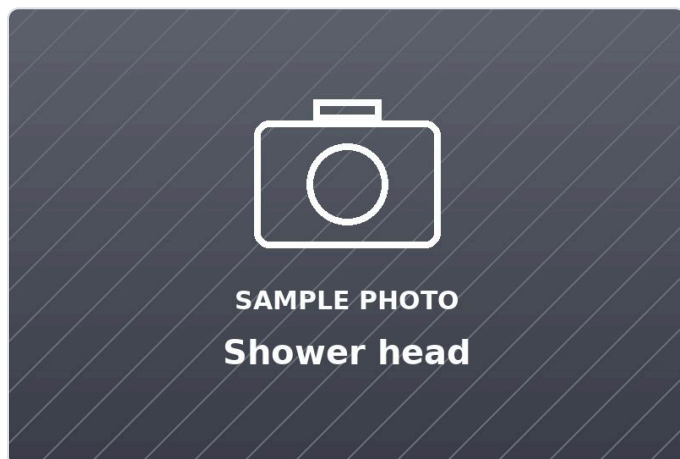
Showers and spray outlets convert water directly into respirable aerosol, and are therefore the outlets of greatest concern.

Removable parts — heads, inserts, hoses and their fittings — should be dismantled, cleaned, descaled and disinfected quarterly as a minimum, and more frequently where fouling or scaling is rapid, or where susceptible people are present. The disinfection has a short-lived effect, so cleaning is a supplement to temperature control and regular use, not a substitute for either.

The usage of every shower and spray outlet should be reviewed periodically. Removing those that are not needed is the most effective control available, and reduces the ongoing maintenance burden.

Findings.

One shower is installed in the ground floor accessible WC. There are no records of quarterly cleaning and descaling.



Shower, ground floor accessible WC

18.4 Expansion vessels

An expansion vessel that is not of flow-through design holds a volume of water in a bladder which is exchanged only as system pressure varies. Unless temperature and pressure change significantly, the same water may remain in the vessel for a long period, making the vessel a dead-leg with a large surface area.

Where such vessels are installed they should be:

- Mounted vertically, so that debris does not collect in the base
- Connected by the shortest practicable branch, hard piped
- Capable of full isolation so that the vessel can be purged completely
- Fitted with a drain valve, and included in a monthly or six-monthly flushing regime operated through that valve

Where no drain valve is fitted, flushing cannot be carried out, and either a drain valve or a flow-through arrangement — such as a Flowjet valve, which allows water to move through the vessel as the system draws — should be installed.

EV 1

Asset ref	EV 1
Floor	Basement
Room or location	Plant Room
Fitted to	BS 1
Pipe size (mm)	22
Unit type	Bladder
Orientation	Vertical
Drain valve	No

Comments

Hydraulic accumulator on the booster set.



SAMPLE PHOTO
Accumulator

EV 1 hydraulic accumulator

18.5 Pipework insulation

All hot and cold pipework should be insulated in accordance with BS 5970, to prevent thermal loss from hot services and thermal gain to cold services.

Cold pipework is particularly vulnerable where it runs alongside hot water or heating pipework, through warm plant rooms, or in ceiling voids above heat sources. Insulation thickness should be assessed against the local conditions rather than applied uniformly, and cold and hot services should be separated where practicable. Insulation is frequently found missing at valves, at branches and where it has been removed for access and not reinstated — the points that are most exposed.

Findings.

Hot and cold distribution pipework is insulated where visible.



SAMPLE PHOTO
Pipework insulation

Insulated distribution pipework

18.6 Flexible hose connections

Flexible hoses used to connect taps and appliances present two concerns: the internal lining is prone to fissuring, pitting and biofilm formation, which is not visible from outside, and hoses of uncertain provenance may not be approved for use in potable systems.

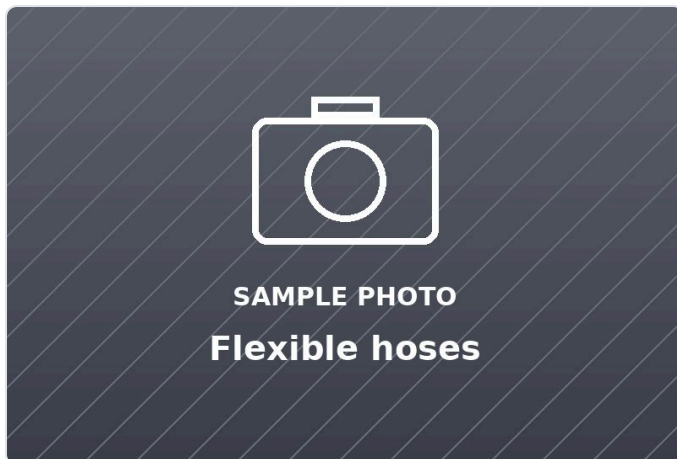
Where flexible hoses are installed:

- Confirm each is WRAS approved, or approved by an equivalent scheme, and retain the evidence in the site logbook or O&M manual
- Where provenance cannot be established, replace with an approved product
- Inspect a representative sample internally for fissuring, pitting and biofilm
- Where practicable, replace with rigid pipework in copper or an approved plastic

Hoses should be kept as short as the installation allows, and should not be used to bridge a distance that ought to be hard piped.

Findings.

Flexible hoses are fitted to wash hand basins on every floor. Those inspected appeared to be WRAS approved and in good condition.



Typical flexible hose connections

19 Further photographic evidence



SAMPLE PHOTO
Tank room access

Roof space tank room access



SAMPLE PHOTO
Plant room

Basement plant room

20 Scheme of control

The table below sets out the minimum monitoring regime for the systems identified at this site. It is generated from the systems recorded in this assessment: where a system type is not present, the corresponding rows do not appear.

Frequencies are minimums. They should be increased where results indicate the systems are not under control, where the exposed population includes susceptible people, or where the physical condition of the systems warrants closer attention.

Responsibility for each row should be assigned to a named person and recorded in the written scheme. "TBC by client" indicates the responsibility had not been assigned at the time of this assessment and must be allocated.

Every check must be recorded, whether or not the result is within range, and every out-of-range result must be followed by recorded remedial action and a recorded re-test.

Service	Action to take	Frequency	Responsible party	Action if out of range
Cold water outlets	Record the temperature at the sentinel cold outlets (nearest and furthest from each source) after two minutes of running.	Monthly	TBC by client	Above 20 °C: investigate heat gain, insulation and turnover; flush and re-test; record the action taken.
Cold water outlets	Record the temperature at a representative selection of other cold outlets on a rotational basis, so that every outlet is covered over the year.	Rotational, at least annually	TBC by client	As for sentinel cold outlets.
Hot water outlets	Record the temperature at the sentinel hot outlets after one minute of running.	Monthly	TBC by client	Below 50 °C: check the heater setting and circulation, rebalance where required, re-test and record.
Hot water outlets	Record the temperature at a representative selection of other hot outlets on a rotational basis.	Rotational, at least annually	TBC by client	As for sentinel hot outlets.
Cold water storage tanks	Inspect each tank internally and externally: lid, vents, screens, insulation, water condition and any sediment, corrosion or biofilm.	Annually	TBC by client	Defects or contamination: carry out remedial works and clean and disinfect before return to service.
Cold water storage tanks	Record the stored water temperature and the temperature of the incoming supply at the float valve, in summer.	Annually (summer)	TBC by client	Stored above 20 °C: review insulation, stored volume and turnover.

Service	Action to take	Frequency	Responsible party	Action if out of range
Infrequently used outlets	Flush each identified outlet until the temperature stabilises, minimising aerosol, and record.	Weekly	TBC by client	Missed flush: flush as soon as possible and record; consider removing outlets that are not required.
Showers and spray outlets	Dismantle, clean, descale and disinfect shower heads, hoses and spray fittings.	Quarterly	TBC by client	Scale or fouling returning between visits: increase the frequency.
Expansion vessels	Flush each vessel through its drain valve and record.	Monthly to six-monthly, as appropriate	TBC by client	No means of flushing: fit a drain valve or replace with a flow-through vessel.
Control regime	Review the control scheme, the results obtained and any changes to the systems or their use with all parties involved.	Annually	TBC by client	Regime not carried out as programmed, or results show loss of control: review the risk assessment.

21 Glossary

Aerosol — A suspension of fine liquid or solid particles in air, small enough to remain airborne and to be inhaled.

Algae — Simple aquatic plants requiring light to grow; a nutrient source in open systems.

Bacteria — Single-celled micro-organisms.

Biocide — A chemical used to kill or inhibit micro-organisms.

Biofilm — A layer of micro-organisms and entrained debris attached to a surface within a water system, which shelters the organisms from heat and biocide.

Blind-end — A length of pipe closed at one end through which no water passes.

Calorifier — A vessel in which water is heated indirectly, by a coil or jacket carrying the heat source.

Chlorine — An element used as a biocide and disinfectant in water systems.

Chlorine dioxide — A compound used as a biocide, effective at lower concentrations than chlorine and less pH-dependent.

Cold water services — The plant, pipework and fittings by which cold water is stored, distributed and drawn off.

Contact time — The period a chemical is held in the system to achieve its effect.

Corrosion inhibitor — A chemical that protects metal surfaces by forming a passivating oxide or barrier film.

Dead-leg — A length of pipework serving a fitting through which water passes only when that fitting is used.

Disinfection — Reduction of micro-organisms to a safe level by chemical or physical means.

Distribution circuit — Pipework distributing water from plant to one or more fittings.

Domestic water — Water intended for drinking, washing, cooking, food preparation and similar purposes.

Duty Holder — The employer or person in control of premises, on whom the statutory duty falls.

Flushing — Running an outlet to replace the standing contents of the branch serving it with fresh water.

Fouling — Organic growth or deposits on surfaces, particularly heat transfer surfaces.

Hot water services — The plant, pipework and fittings by which water is heated, distributed and drawn off, excluding the cold feed cistern.

Legionella — A genus of bacteria found in natural and engineered water systems.

Legionnaires' disease — A form of pneumonia caused by *Legionella* bacteria.

Legionellosis — Any illness caused by exposure to *Legionella*, including Legionnaires' disease, Pontiac fever and Lochgoilhead fever.

mg/l — Milligrams per litre; numerically equivalent to parts per million in water.

Nutrient — A food source for micro-organisms; in water systems typically sludge, scale, rust, organic debris or biofilm.

Pasteurisation — Heat treatment to destroy micro-organisms.

pH — A measure of acidity or alkalinity on a scale of 0 to 14, 7 being neutral.

Planktonic — Free-floating micro-organisms suspended in water, as opposed to sessile.

Point-of-use filter — A filter of 0.2 µm maximum pore size fitted at an outlet to remove bacteria from the water delivered.

ppm — Parts per million.

Responsible Person — The individual appointed by the Duty Holder to take day-to-day responsibility for controlling the risk.

Risk assessment — The identification and evaluation of the risk from legionellosis arising from work activities and water systems, and determination of the necessary precautions.

Scale inhibitor — A chemical that prevents the formation of hard adherent scale by disrupting crystal formation.

Sentinel outlet — On a hot water circulating system, the first and last outlets on each circuit; on a cold water system, the outlets nearest to and furthest from the point of entry or storage. Other outlets representative of the system may also be designated.

Sero-group — A subdivision of a bacterial species identified by its surface antigens.

Sessile — Micro-organisms attached to a surface, normally as part of a biofilm.

Shunt pump — A pump fitted to a calorifier to overcome temperature stratification within the stored water.

Sludge — Soft deposits found at the base of calorifiers, cisterns and on heat transfer surfaces.

Stagnation — The condition in which water ceases to flow and becomes liable to microbiological growth.

Strainer — A coarse filter fitted upstream of a sensitive component to protect it from debris.

Thermal disinfection — Heat treatment of a system to disinfect it.

Thermostatic mixing valve (TMV) — A valve that blends hot and cold water to a pre-selected outlet temperature, controlled automatically, fitted to prevent scalding.

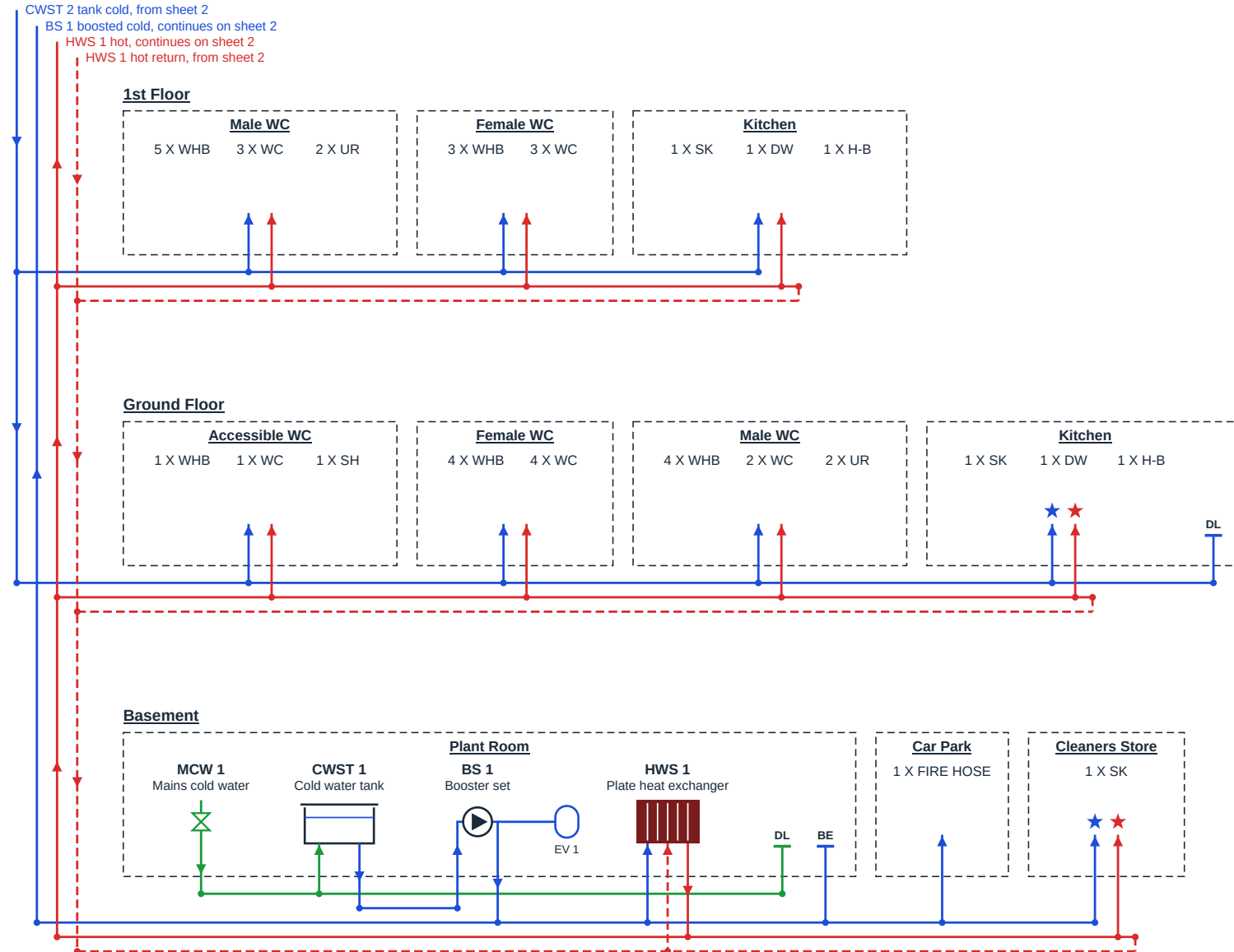
Total viable count (TVC) — The total number of culturable bacteria in a given volume; does not identify *Legionella*.

Turnover — The rate at which the contents of a vessel or system are replaced by fresh water.

Wholesome water — Water fit for drinking, cooking, food preparation and washing.

A Appendix: schematic drawings

The domestic hot and cold water services are shown on the 2 drawings that follow. The drawings are diagrammatic and not to scale: they show what feeds what, not the routes or lengths of pipework.



KEY

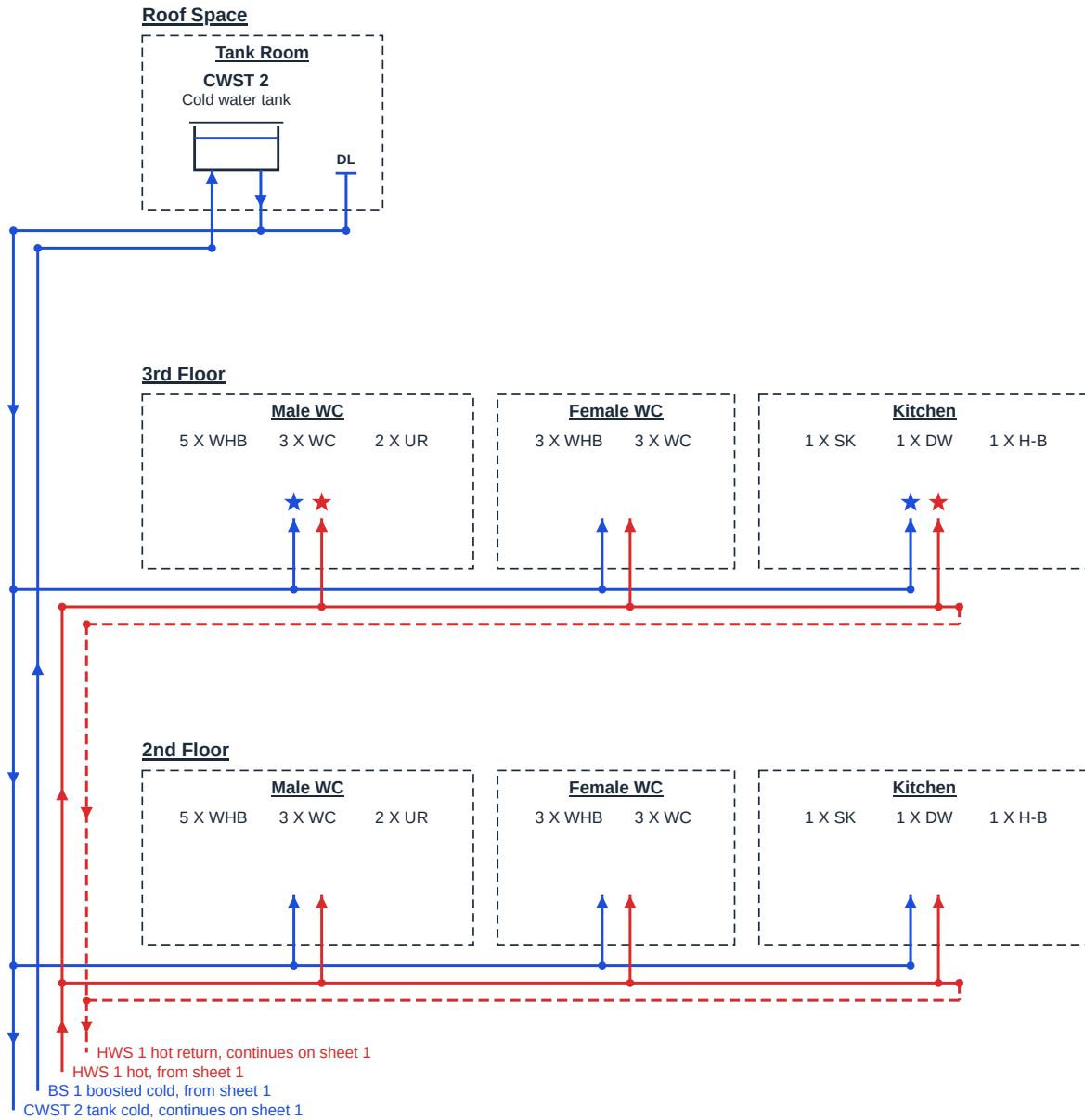
- Mains cold water
- Tank cold water
- Hot water
- Hot water return
- Incoming supply and stop valve
- Cold water storage tank
- Booster set
- Plate heat exchanger
- Calorifier or storage water heater
- Hot water buffer vessel
- Water heater (non-storage)
- Expansion vessel
- Dead leg (DL) or blind end (BE)
- Cold sentinel outlet
- Hot sentinel outlet
- Direction of flow

- WHB Wash hand basin
- WC WC
- UR Urinal
- SK Sink
- SH Shower
- BT Bath
- SL Sluice
- DW Dishwasher
- WM Washing machine
- CM Coffee machine
- DWD Drinking water dispenser
- DWT Drinking water tap
- Vend Vending machine
- H-B Hydro-boil
- PST Pre-rinse spray tap
- BIB Bib tap
- EEW Emergency eyewash
- EMS Emergency shower
- ICE Ice machine
- IRR Irrigation system
- FIL Water filter
- FLEXI Flexible hose
- FIRE HOSE Fire hose reel
- TMV Thermostatic mixing valve

Diagrammatic only. Shows what feeds what, not the routes or lengths of pipework.

Your Company Ltd

Client	Sample Property Management Ltd
Site	Riverside House
Title	Domestic hot and cold water services
Levels	Basement to 1st
Scale	NTS - Original size A3
Date	01/10/2026
Drawing no	1 of 2
Drawn by	A. Assessor
Reference	SAMPLE-001
Revision	1



KEY	
—	Mains cold water
—	Tank cold water
—	Hot water
- - -	Hot water return
	Incoming supply and stop valve
	Cold water storage tank
	Booster set
	Plate heat exchanger
	Calorifier or storage water heater
	Hot water buffer vessel
	Water heater (non-storage)
	Expansion vessel
	Dead leg (DL) or blind end (BE)
	Cold sentinel outlet
	Hot sentinel outlet
	Direction of flow
WHB	Wash hand basin
WC	WC
UR	Urinal
SK	Sink
SH	Shower
BT	Bath
SL	Sluice
DW	Dishwasher
WM	Washing machine
CM	Coffee machine
DWD	Drinking water dispenser
DWT	Drinking water tap
Vend	Vending machine
H-B	Hydro-boil
PST	Pre-rinse spray tap
BIB	Bib tap
EEW	Emergency eyewash
EMS	Emergency shower
ICE	Ice machine
IRR	Irrigation system
FIL	Water filter
FLEXI	Flexible hose
FIRE HOSE	Fire hose reel
TMV	Thermostatic mixing valve
Diagrammatic only. Shows what feeds what, not the routes or lengths of pipework.	
Your Company Ltd	
Client	Sample Property Management Ltd
Site	Riverside House
Title	Domestic hot and cold water services
Levels	2nd to Roof Space
Scale	NTS - Original size A3
Date	01/10/2026
Drawing no	2 of 2
Drawn by	A. Assessor
Reference	SAMPLE-001
Revision	1