



28 Westfield Avenue
Orchard Close

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INTRODUCTION

This report relates to a **Review** of the Legionella Risk Assessment that was carried out by Freeston Water Treatment in February 2008; this is the latest Risk Assessment for this building. The Review Survey was carried out at 28 Westfield Avenue, Hayling Island, Hampshire, PO11 9AG. The Review of Recommendations highlighted in the previous Risk Assessment was undertaken in order to comply with the Health and Safety Executive requirements on the control and prevention of Legionellosis. This Review has been carried out as asked for by Hampshire County Council in accordance with ACoP L8 'The control of Legionella bacteria in water systems' (APPROVED CODE OF PRACTICE & GUIDANCE) only.

The Review has been limited to the terms of reference agreed between Hampshire County Council and Freeston Water Treatment Ltd. Observations relating to system conditions and other factors applicable to the requirements of L8 have been recorded during the Survey and specific references are made to compliance with the ACoP in the Observations section of the report.

A recommendations section concludes the report. ACoP L8 places responsibility on employers and others to prepare a scheme for preventing or controlling the risk from Legionellosis. Adoption of a monitoring scheme in conjunction with a regime of preventative maintenance and associated record keeping will meet these requirements.

BACKGROUND TO LEGIONELLA

Legionella is the bacterium that causes Legionnaires disease. Of this bacterium, Legionella pneumophila is the species most commonly associated with disease outbreaks. Legionnaire's disease is identified as a pneumonia type of infection of the lower respiratory tract. The infection is most commonly acquired by the inhalation of airborne droplets or particles containing viable Legionella. Exposure to Legionella can also cause a short feverish illness without pneumonia, known as Pontiac Fever.

Research and investigations indicate that the occurrence of Legionella contamination is greatest in water cooling towers, evaporative condensers, hot and cold water services, water spray humidifiers, air washers, spa baths and pools where water is agitated and re-circulated. The contamination from a cooling water tower will cover a far larger area than any other likely source.

Sediment, scale, and organic materials present in water systems can provide nutrients and give protection for Legionella. Legionella has been shown to colonise certain types of water fittings, pipe work and materials used in the construction of water systems. The presence of these materials may provide nutrients for Legionella and make eradication difficult. Other organisms in water systems such as bacteria, amoeba and algae can provide a suitable habitat and nutrients in which Legionella can survive and multiply.

The formation of biofilms within water systems is undesirable and may also provide harbourage and favourable conditions for Legionella growth. The presence of Legionella in biofilms and in enclosures within protozoa may protect the organisms from any remedial measure employed to eradicate the bacterium.

Legionella is most likely to proliferate in water systems that have a temperature between 20°C and 50°C. Human blood temperature of approximately 37°C is the most ideal temperature for proliferation. Stagnant water within the above temperature range appears to provide the ideal conditions for proliferation of Legionella.

Legionella will survive at temperatures below 20°C but is considered to be in a dormant state with no growth activity. The bacterium does not survive temperatures maintained consistently at 60°C or above.

REVIEW COMPLIANCE

The Review was commissioned in order to identify and assess the risk of Legionellosis from the water sources on the premises using the previous Risk Assessment. General and specific observations on the systems made during the course of the Survey are also recorded and the more general requirements of L8 are also commented on where applicable.

The specific observations made in this Review, together with the most recent Risk Assessment should be read in conjunction with the practices and procedures detailed in the recommendations section and also with ACoP L8.

The Assessment should be reviewed regularly (at least every two years) and whenever there is reason to suspect it is no longer valid. An indication of when to review the Assessment and what needs to be reviewed should be recorded.

This may result from example:

Changes to the water system or its use

Changes to the use of the building in which the water system is installed

The availability of new information about risks or control measures

The results of checks indicating that control measures are no longer effective

A case of Legionnaires disease/Legionellosis is associated with the system

SITE REVIEW

This Review relates to observations made and information supplied from the existing Risk Assessment together with information supplied by others.

During this Review Survey it was identified that temperature monitoring of the domestic hot and cold water systems has been carried out sporadically and the monitoring has been recorded on the old style log sheets. A new water systems logbook has been issued for 2011 by Hampshire County Council therefore the monitoring and checks should be recorded within this logbook. I was informed that the unit manager has only just received training and this has not yet been passed onto the site staff that are to carry out the monitoring. At the time of this Review I explained to the site staff the procedures and checks that should be carried out; and also identified to them the relevant sections of the new logbook where the monitoring checks are to be recorded. It was made clear to the staff that the monitoring is very important and has to be started and recorded within the new logbook as soon as possible.

It must be ensured that all monitoring and checks are kept up to date; this will be achieved if the monthly logbook audit is carried out by the site manager; at the time of this Review as already mentioned no monitoring has been recorded within the new logbook therefore no audits have been carried out on the logbook documentation.

The procedures which have been implemented by Hampshire County Council regarding the showerheads is not being carried out and recorded within the logbook documentation. The showerheads are being cleaned and disinfected on a fortnightly basis but this is not being recorded within the logbook when carried out. It was recommended in the Risk Assessment that the adjustable showerheads be replaced with a new non adjustable type; this has been carried out.

Calorifier flow and return temperatures are not being recorded monthly; site staff has no knowledge of the calorifier system and did not know where to monitor the calorifiers from. At the time of this Review I explained and demonstrated where and how to take the temperature checks from the calorifier system; and where to record them in the new logbook.

TMV temperature monitoring is not being carried out; again the site staff had no knowledge of how to check the TMV inlet temperatures and was therefore shown. It was found during this Review that access to most of the TMV's is not possible as they are located behind panelling; I would recommend access is made to the TMV's for monitoring to be carried out successfully. The TMV's are being serviced by contractors Kier; this was last carried out in January 2011.

There were no Legionella training records seen for any of the site staff at the time of this Review. I would recommend that Legionella awareness training be given to all staff involved with the control of Legionella within this building.

The duty holder, responsible persons and operational staff must be identified and nominated in writing within the new logbook documentation.

COLD WATER STORAGE

There is no cold water storage at 28 Westfield House; all cold water is supplied directly from the mains water service that rises within the boiler room.

HOT WATER STORAGE

Hot water storage within 28 Westfield Avenue is by two Andrews gas fired calorifiers located within the boiler room; both calorifiers are linked in parallel. Both calorifiers have factory fitted insulation located beneath the outer metal casings; the calorifier system is fitted with a single circulating return pump. It was also recommended in the original Risk Assessment that temperature gauges be fitted to the flow and return pipe work to aid with monthly temperature monitoring; this has not been carried out. Monthly temperature monitoring of the flow and return temperatures as already mentioned is not being carried out and recorded in the logbook documentation; this must be started as soon as possible. At the time of this Review the left hand calorifier storage temperature was found to be high at 72.0°C and the right hand calorifier slightly down at 58.0°C. I would recommend adjustment so both calorifiers store hot water at 60.0°C.

Domestic water services should operate at temperatures that prevent the proliferation of Legionella. L8 specifies that hot water should be stored at no less than 60°C and distributed at no less than 50°C, obtainable at user outlets within one minute of opening.

The calorifier flow and return temperatures at the time of this Review were:

Left Calorifier Flow	72.0°C	This is Satisfactory
Left Calorifier Return	54.0°C	This is Satisfactory
Right Calorifier Flow	58.0°C	This is Not Satisfactory
Right Calorifier Return	54.0°C	This is Satisfactory

Hot water should be stored at 60°C at all times; I would recommend adjustment to achieve this in the right hand calorifier.

Two hot water calorifiers linked in parallel; both should store hot water at 60.0°C at all times. Temperature monitoring should be carried out monthly on flow and return system.



Calorifier hot water circulating / return pump. Temperature monitoring should be carried out monthly on flow and return system.



GENERAL

There are several showers within 28 Westfield House; it was recommended in the last Risk Assessment that the adjustable showerheads be replaced with new non adjustable showerheads this has been carried out. The procedures implemented by Hampshire County Council regarding the cleaning and disinfection and descaling are not being carried out and recorded within the logbook documentation.

Infrequently used outlets within 28 Westfield House are being flushed on a weekly basis but this is not being recorded within the water systems logbook when carried out.

Scale build up on tap outlets can act as a nutrient for bacteria proliferation; I would recommend that tap outlets be cleaned and descaled on a regular basis.

The TMV's within 28 Westfield House are being serviced and maintained by contractors Kier; this is assumed being carried out on a six monthly basis and was last carried out in January 2011. It is assumed that adjustment is made at the time of the service if required. TMV temperature monitoring is not being carried out monthly at sentinel outlets and recorded in the logbook.

It is unknown when Legionella or bacteriological samples were last taken; it was recommended in the Risk Assessment that this is carried out on an annual basis or more frequently in areas with 'at risk patients', for example those who are Immuno-Compromised; no records were seen for water sampling at the time of this Review.

General

Ensure all showers are used and start cleaning and descale regime that has been implemented by Hampshire County Council.



Continue to service, maintain and adjust if required all TMV's on a six monthly basis; record when carried out. Start monthly temperature monitoring of sentinel TMV's; ensure access is possible to TMV's for monitoring to be carried out.



HOT & COLD WATER TEMPERATURES

Domestic water services should operate at temperatures that prevent the proliferation of Legionella. L8 specifies that hot water should be stored at no less than 60°C and distributed at no less than 50°C, obtainable at user outlets within one minute of opening. Cold water should be stored and distributed at no more than 20°C.

The following water temperatures were taken at random as follows:-

Ground Floor Bathroom Wash Basin		
Hot	No Access to TMV 40.2°C from TMV	Satisfactory
Cold	16.9°C	Satisfactory
Ground Floor Bedroom 1 Wash Basin		
Hot	No Access to TMV 41.0°C from TMV	Satisfactory Satisfactory
Cold	15.4°C	Satisfactory
Main Kitchen Changing Room Wash Basin		
Hot	64.0°C	Satisfactory
Cold	15.3°C	Satisfactory
First Floor Shower Room Wash Basin		
Hot	57.0°C to TMV 40.0°C from TMV	Satisfactory Not Satisfactory
Cold	16.3°C	Satisfactory
First Floor Bedroom 15 Wash Basin		
Hot	No Access to TMV 41.0°C from TMV	Satisfactory Satisfactory
Cold	15.1°C	Satisfactory

TMV temperature reference is from NHS Estates Guidance (1988) and Thermostatic Mixing Valve Manufacturers Association (TMVA).

RECOMMENDATIONS & SUMMARY

During the Risk Assessment several items were recommended:-

Commence temperature monitoring of the domestic hot and cold water system and record in the logbook.

This has been carried out sporadically and recorded on old log sheets; no monitoring records found within the new water systems logbook at the time of this Review.

Manually check circulating pump monthly to ensure effective operation.

No record of this being carried out.

Ensure all hot water calorifiers are adjusted to achieve 60.0°C storage temperature & 50.0°C or more on the return temperature.

This appears to be satisfactory although the right hand calorifier was slightly low at the time of this Review.

Fit temperature gauges to flow and return pipe work on calorifiers.

This has not been carried out.

Purge calorifier and storage vessel to drain at least six monthly and record when carried out and condition of water.

No record of this being carried out.

Twice weekly flushing of all low use infrequently outlets - showers, toilets, hand basins, sinks, hose reels etc and record when carried out.

Infrequently used outlets are being flushed weekly but recorded when carried out.

Bacteriological and Legionella water samples to be taken annually or more frequently if temperatures fall outside limits or the home has 'at risk' clients.

No record of any water sampling being carried out.

Clean and disinfect showerheads quarterly. Record when carried out.

Showerheads are being cleaned and disinfected fortnightly; this is not recorded in the water systems logbook when carried out.

Thermostatic mixing valves should be serviced and maintained as per the manufacturer's recommendations.

This is assumed being carried out on a six monthly basis by contractors Kier; last carried out in January 2011.

Thermostatic mixing valves to be adjusted to achieve the correct outlet temperatures.

This is assumed carried out at the time of the service and maintenance schedule.

Replace adjustable spray showerheads with non adjustable items as recommended.

This has been carried out.

Ensure all filters are cleaned / replaced in line with manufacturers recommendations.

No records seen to indicate this is being carried out.

It is recommended that the following are carried out:-

- Start all monitoring procedures implemented by Hampshire County Council and record in the new 2011 water systems logbook as soon as possible.
- Start monthly temperature monitoring of all domestic sentinel hot and cold water and additional outlets and record in water systems logbook.
- Start monthly temperature monitoring of the hot water calorifier flow and return temperatures and record in water systems logbook.
- Start purging calorifiers to drain on at least a six monthly basis and record in the water systems logbook when carried out.
- Start temperature monitoring of the sentinel TMV's and record in the new 2011 water systems logbook.
- Bacteriological and Legionella water samples to be taken annually or more frequently if temperatures fall outside limits or the home has 'at risk' clients.
- Start showerhead cleaning and disinfection and descaling procedures as implemented by Hampshire County Council and record in the new 2011 water systems logbook as soon as possible.

SUMMARY

As reported a new water systems logbook has been issued by Hampshire County Council for 2011 for 28 Westfield Avenue (Orchard Close) but the monthly temperature monitoring and checks have not been recorded. It was apparent at the time of this Review that the site staff did not know what the requirements are needed to carry out monthly temperature monitoring; the site manager has apparently only just had training on temperature monitoring but this has not yet been passed onto the site staff. At the time of this Review I explained to some site staff what is required and demonstrated on how to carry out the monitoring procedures and where to record the findings. It should be ensured that all personnel involved with Legionella control within this building have Legionella awareness training given to them.

It should be ensured that the calorifier flow and return monthly temperature monitoring is started as soon as possible and recorded in the 2011 water systems logbook; the circulating return pump should be checked for the correct operation on a monthly basis.

It should be ensured that the water systems logbook be audited on a monthly basis by the site manager and the relevant section in the logbook be signed when carried out; this will ensure all the checks and procedures that are in place are being carried out and are maintained up to date.

It was recommended in the last Risk Assessment that all adjustable showerheads be replaced with the non adjustable type; this has been implemented.

I would recommend that the current procedures and checks that have been implemented by Hampshire County Council be started as soon as possible and all findings be recorded within the logbook documentation.