Havant Day Service Centre

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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 Havant Day Services, Barncroft Way, Leigh Park, Havant, Hampshire PO9 3AL. 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 is now being carried out. A new water systems logbook has now been issued for 2011 by Hampshire County Council; monitoring and checks are being recorded within the logbook; records were up to date as of April 2011. 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 unit manager; at the time of this Review no audits appear to have been carried out on the logbook documentation. The duty holder, responsible persons and operational staff have been identified and nominated in writing within the logbook.

It was seen that TMV's are being monitored but only the outlet temperatures; it must be ensured that the inlet temperature to TMV's are also monitored to ensure the hot water supply maintains at least 50.0°C or more to the TMV and the cold water 20.0°C or below. The TMV's are being serviced and maintained by contractors Kier; this was last carried out in April 2011 this is carried out on a six monthly basis. The hot water calorifier flow and return temperatures are being monitored and recorded monthly in the logbook documentation; weekly flushing of all outlets is being carried out and also recorded in the logbook documentation. I was informed that the showerheads are being cleaned and disinfected weekly and descaled quarterly as implemented by Hampshire County Council; it must be ensured that all showerheads including the Arjo bath and shower are also included in this regime. It was recommended in the original Risk Assessment that the adjustable showerheads be replaced with new non adjustable type; this has not been carried out. There were seen to be inline strainers fitted on the Arjo bath and shower water supplies; these should be cleaned on a regular basis and recorded when carried out as strainers are ideal areas for bacteria proliferation.

COLD WATER STORAGE

The cold water storage tank that is located at height within the boiler room has since the original Risk Assessment now been removed from the water services; all associated pipe work has been removed and the tank has been left empty. All cold water now within the centre is supplied directly from the mains water service that rises within the boiler room; the main serves all cold water and the hot water calorifier via a pressure reducer.

Old cold water storage tank has now been removed from the water services along with all associated pipe work.

HOT WATER STORAGE

Hot water storage within the Day Services Centre is by one Beaumont 272 litre capacity calorifier located in the Boiler Room. The calorifier has factory fitted insulation located beneath the outer metal casing; there are temperature gauges fitted to the flow and return pipe work. There are two circulating return pumps fitted to this system it must be ensured that these pumps are changed over on a weekly basis to prevent any deadleg areas. It was recommended in the original Risk Assessment that the calorifier should be purged to drain on a six monthly basis; there are no records to indicate this is being carried out. This calorifier is now served by the mains water service via a pressure reducer.

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:

Calorifier Flow	**60.0°C**	**This is Satisfactory**
Calorifier Return	**54.0°C**	**This is Satisfactory**

It was noted that the calorifier storage temperature recorded in the logbook documentation has been below 60.0°C for a few months; this must be reported and adjusted to ensure the storage maintains 60.0°C at all times.

Hot water calorifier serving all hot water outlets within the centre; now supplied directly from the mains water service via a pressure reducer.
Ensure hot water storage is maintained at 60.0°C or more at all times.

Calorifier hot water circulating / return pumps; ensure pumps are changed over on a weekly basis to prevent deadleg areas.

GENERAL

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

All tap outlets within the centre are being flushed on a weekly basis and this is 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 the centre are being serviced and maintained by contractors Kier; this is assumed being carried out on a six monthly basis. The TMV's are adjusted to meet the correct water temperatures by contractors during servicing and maintenance; this was last carried out in April 2011.

It is unknown when Legionella or bacteriological samples where last taken; it was recommended in the original 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.

There are inline strainers fitted on the water supplies to the Arjo bath and shower; these should be cleaned on a regular basis as they are ideal areas for bacteria proliferation.

I was informed no Legionella training has been given to site staff; I would recommend training is given to all involved with Legionella control for this building.

General

Ensure all showers are used and continue with current cleaning and descale regime that has been implemented.

Ensure inline strainers fitted on the water supplies to the Arjo bath and shower; are cleaned on a regular basis as they are ideal areas for bacteria proliferation.

Continue to service, maintain and adjust if required all TMV's on a six monthly basis; record when 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:-

Reception area Kitchen Wash Basin		
Hot	55.1°C to TMV 38.0°C from TMV	Satisfactory Satisfactory
Cold	14.8°C	Satisfactory
Art Room Area Kitchen Sink		
Hot	54.0°C to TMV 40.2°C from TMV	Satisfactory Satisfactory
Cold	15.4°C	Satisfactory
Shower Room Wash Basin		
Hot	55.0°C to TMV 39.5°C from TMV	Satisfactory Satisfactory
Cold	16.2°C	Satisfactory
Staff Room Toilet Wash Basin		
Hot	52.0°C to TMV 42.3°C from TMV	Satisfactory Not Satisfactory
Cold	16.6°C	Satisfactory

Gents Toilet Wash Basin		
Hot	52.0°C to TMV 38.0°C from TMV	Satisfactory Satisfactory
Cold	14.8°C	Satisfactory
Art Room Butler Sink		
Hot	56.5°C to TMV 39.7°C from TMV	Satisfactory Satisfactory
Cold	13.9°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 is now being carried out and recorded in the logbook documentation.

Clean and disinfect cold water storage cisterns as soon as is practicable and repeat annually if required.

Cold water storage tank has been removed from the water system along with all associated pipe work.

Fit sparge pipe to the outlet pipe in the cold water cistern.

Cold water storage tank has been removed from the water system along with all associated pipe work.

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.

At the time of this Review the calorifier had good storage and return temperatures recorded.

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.

All tap outlets are being flushed weekly and 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 weekly and descaled on a quarterly basis; this is recorded 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 April 2011.

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

This is being carried out at the time of the service and maintenance schedule; last carried out in April 2011.

Replace adjustable spray showerheads with non adjustable items as recommended.

This has not been carried out.

Fit check valve to mains cold water supply pipe on the pressurization unit in the boiler room to prevent backflow contamination of the mains water supply.

This has not been carried out.

It is recommended that the following are carried out:-

- Continue with all current procedures implemented by Hampshire County Council and continue to record in water systems logbook.

- Continue monthly temperature monitoring of all domestic sentinel hot and cold water and additional outlets and record in water systems logbook.

- Start purging calorifier to drain on at least a six monthly basis and record in the water systems logbook 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.

- Ensure inline strainers fitted to Arjo bath and shower are cleaned on a regular basis.

- Start monthly temperature monitoring of sentinel TMV and additional TMV inlet temperatures monthly and record in logbook.

SUMMARY

As reported a new water systems logbook has been issued by Hampshire County Council for 2011 for Havant Day Services Centre and monthly temperature monitoring is being carried out by site staff.

It should be ensured that the water systems logbook be audited on a monthly basis by the unit 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.

I would recommend that the hot water calorifier circulating / return pumps be changed over on a weekly basis to prevent deadleg area.

It was recommended in the last Risk Assessment that all adjustable showerheads be replaced with the non adjustable type; this has not been implemented. I was informed that no Legionella training has been given to site staff; I would therefore recommend training is given to all staff involved with Legionella control for this building.

I would recommend that the current procedures and checks that have been implemented be continued; and continued to be recorded within the logbook documentation.