Risk Assessment: Hot and cold water systems (Legionella)

Requirements

HSE Approved Code of Practice (ACOP) and guidance on regulations on Legionella Ref L8 requires:

28: A suitable and sufficient assessment must be carried out to identify and assess the risk of exposure to legionella bacteria from work activities and water systems on the premises and any precautionary measures needed.

As duty holder the Church H&S Officer must:

1. identify and assess sources of risk. This includes checking whether conditions will encourage bacteria to multiply.
2. For example, if the water temperature is between 20–45 °C,
3. if there is a means of creating and disseminating breathable droplets, such as the aerosol created, eg by cooling towers, showers and spa pools;
4. and if there are 'at risk' susceptible people who may be exposed to the contaminated aerosols

Sources of risk

Possible sources of risk are as follows:

- Central heating, which are closed systems with no exposure to air – these are NOT sources of risk
- Hot and cold water supplies to taps, washbasins, and toilets. These are present in both buildings, Church and Halls
- Static water tanks – present only for hot water supply in Halls
- Standing water – sump in church boiler room, organ humidifier

'At risk' people

The Church buildings serve varied communities. 'At risk' groups could be:

- Children attending nursery& pre-school and dancing classes
- Elderly attending Church meetings and exercise classes

Low risk scenario

HSE document L8 names conditions which can be regarded as 'low risk'

1. where daily water usage is inevitable and sufficient to turn over the entire system;
2. where cold water is directly from a wholesome mains supply (no stored water tanks);
3. where hot water is fed from instantaneous heaters or low volume water heaters (supplying outlets at 50 °C);
4. where the only outlets are toilets and wash hand basins (no showers).

Church Scenario

In normal operation of the Church's business and that of lessees, condition (1) applies.

Condition (2) is always true

Condition (3) applies to the sinks in the Halls kitchen, cleaners cupboard and the kitchen in the rear of the Church. Water temperature has been measured at 55°C.

Condition (4) applies in the remainder of the buildings

However, hand washing facilities in the Halls toilets and Pre-school area use water heaters which provide safe non-scalding hot water at about 35°C, which when left unused may aid bacterial growth.

The Church boiler room has a drain sump to capture boiler condensate etc, pumped out to the sewer. This provides a pool of stagnant water where bacteria may breed.

Hot water in the Halls toilets is supplied from storage tanks and a vented electric heater.

The risk assessment matrix takes account of two operational modes:

1. Normal term time
2. Holidays and other circumstances when the buildings are unoccupied.

Risk Assessment Form **Tilehouse Street Baptist Church**

Item	Hot and cold water system (Legionella)	Applies to	Everybody
Assessor:	SamHallas		

HAZARD	TYPE/ CONSEQUENCE	RISK (Before Controls)			CONTROL MEASURES IN PLACE/ PROPOSED	RISK (After Controls)		
Hot & cold water systems	Legionella etc infection, pneumonia, death	1	4	4	Low-risk no action needed in normal operation	1	4	4
Ditto	Ditto	2	4	8	Water heaters off, tap & toilet flushing weekly etc	1	4	4
Stagnant sump	General bacterial infection	1	3	3	Disinfectant applied periodically	0	3	0

Key: L= Likelihood/ Probability, C = Consequence, R = Risk = product of LxC. (1-4 = negligible, 4-9 = tolerable, >9 = intolerable)

Control measures

Normal times

During normal term times there are no general control measures for the hot and cold water systems.

The boiler room sump should have disinfectant applied at the interval recommended by the manufacturer.

When buildings closed (holidays etc)

Heaters for hand washing should be turned off to keep water temperature below 20°C

All taps should be run for at least 2 minutes weekly

All toilets should be flushed twice weekly.

Summary

The control measures listed above will reduce the risk to As Low As Reasonably Practical (ALARP).

2 April 2020

S.M. Hallas (Health & Safety Officer)