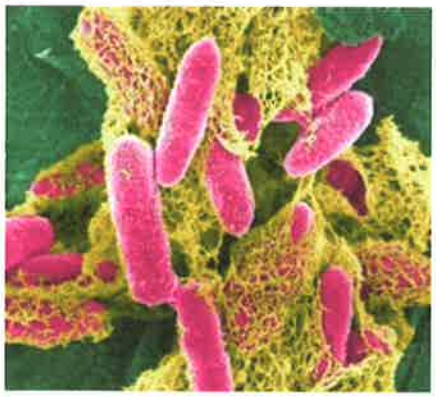
EMPATHY
ENVIRONMENTAL CONSULTANTS

Legionellosis Risk Assessments for Cotswold District Council

Legal & Property Services

September 2014



Date : September 2014

Next Audit Due: September 2015

Issued To : Ivan Hackett and Tim Seeton

Author : Alan Hambidge

Legionellosis Risk Assessment Report Cotswold District Council September 2014

To:-

Mr Ivan Hackett
Cotswold District Council
Trinity Road
Cirencester
Gloucestershire
GL7 1PX

Submitted by:-

Mr Alan Hambidge
Managing Director
Empathy Environmental Consultants Ltd
1 The Paddock
Longworth
Oxon
OX13 5BX

Report Date:-	September 2014
Review Date:-	September 2014

Copies to:-	**Format:-**	**Organisation:-**
Mr Ivan Hackett	1x Electronic	Cotswold District Council
Mr Alan Hambidge	1x Electronic	Empathy EC Ltd

Signed : Alan Hambidge 

Filename	Author	Issue to:-		Date
		Client	Consultant	
CDCLegRAudC14	Alan Hambidge www.empathyec.co.uk	√	√	September 2014

Contents

1.0 Executive Summary

Legionnaires' disease [legionellosis] is a form of pneumonia, which is caused by inhaling airborne aerosols [tiny water droplets] that are contaminated with bacteria of the *Legionella* species. The Health and Safety Commission Approved Code of Practice [ACoP] entitled "Legionnaires' Disease – The control of *Legionella* bacteria in water systems" (L8) and supporting Guidance (HSG274, parts 1-3) provide the standards and guidance to operate towards.

This report is of the findings of the legionellosis risk audit assessment of the Cotswold District Council's primary retained Premises (Trinity Road Offices and Moreton Area Offices) as identified by the client. The risk assessment results have been used to produce recommendations for the control of *Legionella*, in the form of a Risk Minimisation Scheme (action plan). The action plan is specific to each individual site, whilst this management level front report is a common report covering all sites. The risk minimisation scheme consists of three types of recommendations – operational, remedial works and systematic risk management. The latter consists of broader recommendations made to the organisation, contained in this report.

The recommendations encompass technical issues such as hot water temperatures and system configurations; safety issues such as scalding and safe access to plant; and management system issues such as the need for policy and procedures, training, re-assessment and access to competent help on a retained service contract basis.

The legionellosis audit was completed at the same time in September 2014, and as such management level actions are not repeated here. However, the management of water hygiene has improved again and risk reduced. The Council's retained stock has diminished, and there is now no stored water in any of the retained stock. The Responsible Person will however, need to seek assurance of compliance from the out-sourced management company(ies). Schematics and scalding audits are still to be completed.

2.0 Legionnaires' Disease

Legionnaires' disease [legionellosis] is a form of pneumonia, which is caused by inhaling airborne water droplets [aerosols] that are contaminated with bacteria of the *Legionella* species. There is no evidence to show that the disease can be contracted from someone who is already infected.

Legionellosis principally affects those who are susceptible due to age, illness, immunosuppression, smoking etc and can be fatal. Legionellae can also cause less serious illnesses which are not fatal or permanently debilitating but which can affect any person.

Legionella sp is commonly found in water systems. However the issue of concern is the avoidance of the conditions necessary for the growth and proliferation of the organism. These include:-

- Dirty water systems – the presence of sludge, scale, rust, algae and organic matter;

- Water temperatures in the range 20 to 45^{0}C – *Legionella* multiplies within this range. It is killed rapidly at water temperatures above 60^{0}C. Below 20^{0}C it stays dormant but will grow if the temperature is raised and other conditions are favorable.

3.0 Legal Requirements

The ACoP identifies the following essential duties:-

- A person should be appointed formally to be managerially responsible and to provide supervision for the implementation of the precautions;
- A thorough assessment should be carried out to identify and assess the risk of legionellosis from work activities, water sources and any necessary precautions;
- An action plan should be produced for the remedial work necessary to minimise the risks identified;
- Implement and manage the precautions to control risk;
- Ensure that adequate records are maintained.

4.0 Legionellosis Risk Assessment

Empathy Environmental Consultants Ltd has undertaken a legionellosis risk assessment of the principal buildings of the Cotswold District Council property portfolio. A systematic checklist has been applied to all of the water systems, with particular reference to the factors which influence growth and proliferation of the bacterium [i.e. design, condition, operation, performance, vulnerability and exposure]. The risk assessment results have been used to produce recommendations for the control of *Legionella*, in the form of a Risk Minimisation Scheme / risk register with prioritised recommendations. There is also a need to consider legionellosis risk management at the organisational level.

4.1 Risk Assessment Method

The assessment of the Legionellosis risk was based on the requirements of the following legionellosis / water hygiene management legislation and guidance:

- COSHH Regulations;
- HSE Approved Code of Practice L8;
- HSE Guidance HSG274;
- BS8580.

Reference is also made to the Management of Health and Safety at Work Regulations (MHSWR) in determining if an item is "Suitable and Sufficient" for its purpose as defined by legislation.

Formal questionnaires have been applied (see risk assessment data forms based on L8) covering domestic hot water services; domestic cold water services; air handling units, and other water systems. .

The systems are subject to two levels of risk prioritisation, thus:

4.1.1 Overall System Risk Score :

The overall system score is calculated, using the following factors:

* Occupant Susceptibility;
* System Age;
* System Size;
* Showers Present;
* Stagnation – decanted areas etc;
* Dead-legs Known / Identified;
* Contamination;

Scores are assigned as shown below:

Occupant Susceptibility and System Risk Scores

Scores are assigned thus:

Category:	Risk Score:
V.HIGH – Respiratory illness; cancer; renal; aids; immuno-compromised; theatres; ICU; etc	100
HIGH – Healthcare / in-patient areas.	75
MODERATE – General Public.	50
LOW – Staff only area.	25

System Age

Scores are assigned thus based on when the domestic systems were last refurbished:

Category:	Risk Score:
Over 25 years	50
10 to 25 years	40
5 to 10 years	30
1 to 5 years	20
Under 1 year	10

System Size

Scores are assigned thus:

Category:	Risk Score:
Large – Many areas, departments and floors	50
Moderate – Up to 4 departments, two floors or similar	30
Small – Large domestic size building	20
Very Small – domestic size premises or area	10

Showers Present

Scores are assigned thus:

Category:	Risk Score:
Yes – Showers present	50
No – No showers present	20

Stagnation – decanted areas etc

Scores are assigned thus:

Category:	Risk Score:
Yes – Stagnant, empty, decanted areas etc	50
No – No known stagnant areas	20

Dead-legs Known / Identified

Scores are assigned thus:

Category:	Risk Score:
Yes – dead-legs present	50
No – No known dead-legs present	20

Contamination Observed

Scores are assigned thus:

Category:	Risk Score:
V.HIGH – Very heavy contamination or corrosion.	100
HIGH – Heavy contamination or corrosion.	75
MODERATE – Moderate contamination or corrosion.	50
LOW – Light contamination or corrosion.	25

Risk Scores

RELATIVELY **LOW** RISK = Scores up-to 170
MODERATE RISK = Scores of 171 to 235
HIGH RISK = Greater than 226 to 300
VERY HIGH RISK = Greater than 300

The following table provides a summary of the site risk scores:

Area:	Susceptibility*:	System Age*:	System Size*:	Showers present*:	Stagnation*:	Known Dead-legs*:	Total Score*:	Risk Category:
1. Council Offices	50	40	30	20 (No)	20	20	180	MOD / LOW
2. Moreton Area Office	25	40	10	20 (No)	20	20	135	V. LOW
3. Volunteer Bureau	25	40	10	20 (No)	20	20	135	V. LOW

* Information as confirmed with Cotswold District Council members of staff.

4.1.2 Individual Action Scores :

The recommended Opportunities for Improvement are presented in the format of a conventional Risk Register. The risk register system developed in the international standard AS/NZS 4360:1999 – Risk Management, is employed.

Risk is assessed using the five by five scoring system as laid out in the standard AS/NZS 4360:1999 – Risk Management. This provides a risk score from 0 to 25, which is arrived at by multiplying scores for consequence (magnitude of risk on a scale 0 – 5) by likelihood (again on a scale of 1 to 5). The higher the score, the more significant the perceived risk. The qualitative five-by-five system is below:

Qualitative Risk Assessment Matrix Indicating Level of Risk:

LIKELIHOOD	CONSEQUENCE				
	1 Insignificant	2 Minor	3 Moderate	4 Major	5 Fatality Multiple Fatality
5 – CERTAIN	5 Yellow	10 Orange	15 Red	20 Red +	25 Red +
4 – LIKELY	4 Green	8 Yellow	12 Orange	16 Red	20 Red +
3 – POSSIBLE	3 Green	6 Yellow	9 Yellow	12 Orange	15 Red
2 – UNLIKELY	2 Green	4 Green	6 Yellow	8 Yellow	10 Orange
1 – RARE	1 Green	2 Green	3 Green	4 Yellow	5 Yellow

Very Low Risk 1 to 4	Low Risk 5 to 9	Moderate Risk 10 to 14	High Risk 15 to 19	Very High Risk 20 - 25

The Opportunities for Improvement / recommendations tables in sections 4 are based on findings of the audit questionnaire. For each question on the audit form there is a compliance column. The following are the possible compliance responses:

YES (Y) – complies and no further action required above current approach.

NO (N) – does not comply see recommendations for additional actions.

DON'T KNOW (?) – it is not clear if compliance is achieved. Ensure that it is.

NOT APPLICABLE (NA) – compliance with this point is not required.

The findings of this audit should be implemented using the concept of 'Reasonable Practicability' (i.e. the balance between the quantum level of risk versus the quantum cost and difficulty of rectifying the situation). This concept can be used to formulate the following simple prioritisation system for the recommendations identified.

The draft simple risk action plan is presented on the next page. This would suggest that we must do the high priority actions first followed by the significant risk and then the moderate risk. We can further prioritise each risk category by cost (and difficulty). This is best demonstrated in the following draft action plan. It is also necessary to consider legal duty when assigning priority.

Risk Treatment Action Plan

The action plan can therefore be developed based on score and cost (including difficulty), e.g.:

Risk Category	*Cost Category (and CODE)*	*Guide Implementation Time-Table (example only)*
20 –25 VERY HIGH (Priority 1 – Do NOW)	< £1,000 **(A)**	Immediate
	£1,000 - £9,999 **(B)**	December 2014
	> £10,000 **(C)**	February 2015
15-19 HIGH (Priority 1B – Do NOW)	< £1,000 **(A)**	May 2015
	£1,000 - £9,999 **(B)**	August 2015
	> £10,000 **(C)**	October 2015
10 – 14 MODERATE (Some Priority 1B and some 2A)	< £1,000 **(A)**	December 2015
	£1,000 - £9,999 **(B)**	February 2016
	> £10,000 **(C)**	April 2016
5 – 9 LOW (Some Priority 2A and 3)	< £1,000 **(A)**	July 2016
	£1,000 - £9,999 **(B)**	September 2016
	> £10,000 **(C)**	December 2016
1 - 4 VERY LOW	**Acceptable with effective control measures through the revised Policy and Procedures and appropriate Training. Both are to be conducted as a Priority, as the risk is only Low if these are in place.**	

This draft action plan is for example purposes only. The Department should draw up its own implementation strategy.

Each recommendation in the following section is assigned a priority. Using the action plan it is possible to establish when activities should be completed. Each recommendation is also colour-coded to match this system.

5.0 Legionellosis Risk Minimisation Scheme

The risk minimisation scheme consists of three types of recommendations:-

- **Operational** – consisting of actions that the Responsible Person on site should ensure are carried out, contained in each individual site report;

- **Remedial Works** – typically engineering modifications to water systems, in a prioritised programme managed centrally by the Council;

- **Systematic Risk Management** – broader recommendations made to the Council, contained in this report, dealing with issues such as training, review, etc.

5.1 Legionellosis – Systematic Risk Management Recommendations

Legionellosis risk is typically managed at two levels:-

- **Site level** – for example each property should have a Responsible Person who ensures that the Operational Recommendations, such as outlet temperature monitoring, within the Legionellosis Risk Minimisation Scheme are carried out.

- **Organisational level** - in this case by a Responsible Person within the Property Services Department, who deals with technical issues that have wide implications across the property portfolio and risk management system issues.

The site level risk assessments have revealed very few technical issues that might be best addressed at organisational level, as the systems have been reduced in capacity (and risk), largely by the removal of water storage, and the introduction of mains fed instantaneous systems at most sites. These are described later. Some organisational level risk management issues are discussed in the next pages.

5.1.1 Scalding Risk

All remedial measures should be balanced against scalding risk. The risk of scalding to young children, the elderly and disabled tends to be higher. Where thermostatic mixing valves have been installed it represents considerably less of a risk to increase hot water temperature than in other properties. Total body immersion devices such as baths and showers present greater potential risk (these all have thermostatic mixing valves (TMVs)). A formal scalding risk audit should be completed. The audit is to be reviewed on an annual basis.

Recommendation One

Complete a scalding risk audit on an annual basis to identify any further remedial actions necessary to protect against scalding, particularly where temperatures are being raised to improve *Legionella* control. Ensure that monitoring and recording of Temperature and TMV performance is continued. Ensure that audit trail is improved, so that any actions taken against non compliant results are clearly recorded.

5.1.2 Operation of Hot Water Systems at Full Temperature & with Good Flow

The Remedial Works Recommendations for hot water systems have been based on providing full temperature hot water. This means storing hot water at >60^{0}C, with minimum flow and return temperatures of >60^{0}C and >50^{0}C respectively. Temperatures at outlets should reach >50^{0}C (unless mixed, which should be locally). Where a thermostatic mixing valve [TMV] is fitted, the inlet pipe to the TMV should reach >50^{0}C within one minute of running the outlet. Low flow taps and spray taps pose a potential problem of stagnation – these should be avoided where possible. These temperatures are not required for point of use water heaters providing these are subject to regular flushing, regular clean and de-scale and maintenance.

Recommendation Two

Temperature control is the preferred method of *Legionella* control. All hot water storage systems should operate at full temperature. Implement a regime of flushing infrequently used outlets.

5.1.3 Schematics Development

Water Service Schematics are Required.

Recommendation Three

Develop suitable and sufficient water schematics for all sites, and identify dead-legs, flexible hoses etc.

5.1.4 Temperature Testing

The Operational Recommendations include a suggestion to monitor domestic hot water storage, flow and return temperatures on a monthly basis. This is on-going and records exist. It is also suggested that hot and cold water sentinel outlet temperatures are monitored at a similar frequency – ensure that this is implemented. Where it has been suggested that a temperature gauge is fitted, the purpose is to enable on-site personnel to take temperature readings of the domestic cylinder flow without the need for a digital thermometer with a surface probe, but only if such a gauge is accurate. In some cases swan-neck or coiled neck gauges were used. These typically contain stagnant water, therefore the recommendation is to avoid using, or remove them.

Recommendation Four

Ensure that monthly sentinel tap outlet temperature monitoring is continued and recorded. This is on-going and records exist. Ensure non compliant results are followed up and a clear audit trail maintained.

5.1.5 Domestic Hot Water Distribution

Domestic hot water storage is no longer present at any retained sites. All systems are mains fed point of use instantaneous water heaters which pose a relatively low risk.

Recommendation Five

Operate all domestic hot water storage systems at the temperatures as specified under L8.

5.1.6 Legionella Sampling

The HSC ACoP and guidance document provides guidance on the circumstances under which samples should be taken for *Legionella* testing from domestic water systems. These should be clearly understood by the Responsible Persons at site and organisational level. At present, routine sampling for Legionella sp. Is not likely to be required.

Recommendation Six

Routine samples for *Legionella* testing is not currently advocated at these sites. However, review on an annual basis. Samples should be taken in the event that temperatures are not adequately achieved, in the event of a routine clean, or in the event of a suspected outbreak or case.

5.1.7 Labels for scalding, drinking water, DHWS details.

There are advantages and disadvantages to the provision of such labels. Any decision to provide labeling should be made and implemented at organisational level. Some sites already have warning hot water labels. As a general rule all total body immersion (TBIs) devices should have thermostatic mixing valves (TMVs). All hot outlets in staff areas should have signs. Wash basins in at risk visitor areas should be mixed.

Recommendation Seven

Labeling should be carried out as follows:-

- Where non-potable cold water taps are provided a label should be posted indicating "not suitable for drinking" – not relevant at the sites assessed;
- Labels should be fixed to DHWS etc with an identifying number and capacity and what they supply;
- Labels stating "very hot water" should be posted where there is a risk of scalding. All Total Body Immersion (TBI) devices should have Thermostatic Mixing Valves (TMVs) fitted.

5.1.8 Implementation of the Legionellosis Risk Management Scheme

The Health and Safety Executive expects legionellosis risk minimisation schemes to be reasonably practicable, i.e. to balance risk, cost and difficulty where relevant.

The Legionellosis Risk Assessment report provided by Empathy Environmental Consultants Ltd enables the Responsible Person to view a prioritised list of recommendations based on risk score and cost. When entering cost estimates, these have been based on ranges for indicative purposes only. The resulting "budget total" is purely indicative.
Where recommendations for remedial works have been made these have typically included a digital photograph.

Recommendation Eight

The draft **Legionellosis Risk Minimisation Scheme, with tasks and time scales should be formally approved** for implementation, covering Operational, Remedial Works and Systematic Risk Management actions.

5.1.9 Re-Assessment of Risk

Following the implementation of remedial measures, risk assessment surveys should be repeated in order to verify that work has been completed adequately and demonstrate an improvement in the level of risk presented. Bacteriological evidence of cleaning adequacy should be provided by disinfection contractors after carrying out the cleaning and disinfecting of a system. Domestic service schematics are to be developed for most sites. Legionellosis Risk Reassessments should be reviewed once every year in (next due August 2014).

Recommendation Nine

Legionellosis risk should be re-assessed on an annual basis.

5.1.10 Access to Competent Advice and Guidance

In order to facilitate the implementation of systematic legionellosis risk management, including dealing with technical and regulatory issues as they arise, the Council's Property Services Department is to have access to competent help in the format of a support service (as specified by L8). This typically would include a retained specialist consultant who attends review meetings, updating of policy & procedures etc. This service contract is in place with Empathy EC Ltd.

Recommendation Ten

Access to competent advice and guidance has been formally established – Ensure continued.

5.1.11 Responsible Persons

The Responsible Person (Legionella) and Deputy Responsible Person (Legionella) have been appointed and trained. However, there have been numerous changes and final confirmation is reqiured.

Recommendation Eleven

Confirm formally responsible persons and update the organogram and procedures.

6.0 Appendices

Appendix 1 - Risk Assessment and Risk Minimisation Schemes Action Plans

Appendix 2 – Risk Assessment Forms

2014 Legionellosis Risk Minimisation Scheme Report

Site = Council Offices		
System = DHW	**Assessor** = Mr Alan Hambidge	
Plant Room = Various – All POU	**Date** = September 2014	
System Risk Score =	**System Risk Category =**	**MOD / LOW**

System Description =

Domestic Hot Water at this site was supplied by Mains Fed Point of Use electric water heaters. These pose a very low risk of legionellosis. Ensure that these are flushed at the appropriate frequency. The domestic water temperatures were slightly low in some instances (range between 40°C and 58°C). All cold water was mains fed. There were no domestic cold water storage tanks on-site (only the old drained tanks). Both domestic hot and mains cold water temperatures from outlets are recorded and filed at the correct frequency. Adequate flushing and shower replacement records exist.

Photograph =

Operational Requirements =

POU systems pose a low risk. Ensure regular use.

Performance =

Some temperatures were too low (see details). Outlets should attain temperatures required under L8 and HSG 274.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
West Wing Heat Store Instant – supplies Ground Male WC, Ground Kitchen, 1st floor female WC.		Maintain temperatures and increase slightly where necessary. Ensure adequate flushing regime continues to be maintained.	3/4	2/3	6/12	1/2	On-going	
West Wing first floor kitchen water boiler – low risk.		NA	NA	NA	NA	NA	NA	NA
West wing first floor kitchen - Ariston water heater – mains fed. Supplies west wing first floor kitchen, first floor kitchen, first floor male WC and ground floor female WC.		Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained.	3/4	1	3/4	3	On-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Council chambers male and female WC WHBs supplied by flat back water heater and mains cold water.	No Photo	Maintain temperatures and increase slightly where necessary. Ensure adequate flushing regime continues to be maintained. .	3/4	1	3/4	2/3	On-going	
Council chambers kitchen – water boiler.		NA	NA	NA	NA	NA	NA	NA
Council chambers kitchen. Small POU water heater. Cold water is mains fed.		Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained. .	3/4	1	3/4	3	On-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Planning atrium 1st floor male WC POU water heater and mains cold water. Also feeds planning atrium ground kitchen.		Maintain temperatures and increase slightly where necessary. Ensure adequate flushing regime continues to be maintained.	3/4	2	6/8	2	On-going	
Planning atrium kitchen water boiler – low risk.		NA	NA	NA	NA	NA	NA	NA
Planning atrium ground floor male WC has flat back POU water heater. Provides DHW to the WHB here and in the female WC.	NO PHOTO	Maintain temperatures and increase slightly where necessary. Ensure adequate flushing regime continues to be maintained.	3/4	2	6/8	2	On-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Mira sport shower in planning atrium area. Were two now only one, and apparently dead-legs removed.		Maintain temperatures and ensure flushed regularly. Ensure adequate flushing regime continues to be maintained.	3/4	1/2	3/8	2	On-going	
Numerous mains fed drinks chillers.		Ensure inspection, maintenance, cleaning and disinfection contract is maintained and records maintained are adequate.	3/4	2	6/8	1/2	O-going	
Reception area disabled WC whb fed by Heatrae Sadia multi-point unit and mains cold water.		Continue to maintain temperatures. Increase the water temperature. Ensure adequate flushing regime continues to be maintained.	3/4	2/3	6/12	1/2	O-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Central core kitchen – flatback water heater behind panel. Temperature was acceptable from a legionella control point.	NO PHOTO	Maintain temperatures. Ensure adequate flushing regime continues to be maintained.	3/4	1	3/4	3	On-going	
Central kitchen – mains fed water boiler – low risk from a legionella perspective.		NA	NA	NA	NA	NA	NA	NA
Revenue and benefits1st floor male WC WHB provided by flat-back water of heater. Also supplies ground floor female WC WHB.		Increase temperatures. Ensure adequate flushing regime continues to be maintained.	3/4	2/3	6/12	1	O-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Print room block – all domestic hot water provided by a combination boiler. All cold water mains fed.	NO PHOTO	Maintain temperatures and increase slightly where necessary. Ensure adequate flushing regime continues to be maintained.	3/4	1	3/4	3	On-going	
Main IT Suite – DX chiller units.	NO PHOTO	Ensure inspected, cleaned and maintained in accordance with manufacturers instructions and records maintained. This is apparently on-going.	3/4	1/2	3/8	2	On-going	
ALL COLD WATER IS MAINS FED AND ALL TEMPERATURES WERE ACCEPTABLE ON THE COLD OUTLETS								

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

2014 Legionellosis Risk Minimisation Scheme Report – Outlet Temperatures

Area:	Hot Temperature: (°C)	Cold Temperature: (°C)	Comments*:
Reception Disabled	20		Confirm status – mixed and increase as necessary.
Male WC Hot near Shower	50		OK
Male WC Cold near Shower		15	OK
Kitchen 023 Hot	41		Increase temperature very slightly.
Kitchen 023 Cold		16	OK
Ladies 046 Hot	58		OK
Ladies 046 Cold		16	OK
Gents 057 Hot	54		OK
Gents 057 Cold		17	OK
Kitchen 057 Hot	42		Increase temperature very slightly.
Kitchen 057 Cold		16	OK
Kitchen Opp Store Room Hot	45		Increase temperature very slightly.
Kitchen Opp Store Room Cold		15	OK
Ladies Near 085 Hot	47		Increase temperature very slightly.
Ladies Near 085 Cold		15	OK
These are sentinel sites visited by Watercare – Improve labelling.			

* Post a warning hot water sign where temperatures are increased. Do not increase shower temperatures without fitting a thermostatic mixing valve.

Legionellosis Risk Minimisation Scheme Report

Site = Moreton Area Office		
System = MCW and POU water heaters	**Assessor** = Mr Alan Hambidge	
Plant Room = Various – All POU	**Date** = September 2014	
System Risk Score =	**System Risk Category =**	LOW

System Description =	**Photograph =**
Domestic Hot Water at this site was supplied by mains fed point of use electric water heaters. These pose a very low risk of legionellosis. Ensure that these are flushed at the appropriate frequency. The domestic water temperatures were adequate from a legionella control perspective (range between 55.7°C and 68.2°C). However, the temperatures pose a scalding risk. All cold water was mains fed. There were no domestic cold water storage tanks on-site. Both domestic hot and mains cold water temperatures from outlets are recorded and filed at the correct frequency. There is ventilation with local DX also, but this poses a relatively low risk, and is subject to regular inspection, maintenance and cleaning and records are maintained. All cold water was mains fed and temperatures were acceptable.	

Operational Requirements =
POU systems pose a low risk. Ensure regular use.

Performance =
Temperatures were acceptable from a Legionella control perspective, but do present a potential scalding risk. Warning signs are posted.

Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
Atrium Heatrae Sadia POU water heater. Mains fed cold water in poison cupboard. Temperature was 55.9°C.		Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained. .	3/4	1	3/4	3	On-going	
Atrium ground floor Kitchen mains fed water boiler -		NA	NA	NA	NA	NA	NA	NA
Kitchen DHW supply (located in boiler room). Mains fed cold water. Temperature at kitchen was 56.8°C.		Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained. .	3/4	1	3/4	3	On-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
First floor Council chambers kitchenette – Heatstore POU water heater with mains cold water supply. Temperature was high at 68.2°C.		Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained. Reduce temperature slightly	3/4	1	3/4	3	On-going	
Compton House – Heatstore POU water heater with mains cold water supply. Currently turned off.	NO IMAGE	Ensure flushed or disconnected	3/4	3	9/12	2	TBC	
Ventilation present is heating with local DX. Relatively low risk, and subject to regular inspection, maintenance.		Ensure subject to regular inspection, maintenance and adequate records maintained.	3	2	6	2	On-going	

Key:
C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

Legionellosis Risk Minimisation Scheme Report

Site = Volunteer Bureau		
System = MCW and POU water heaters	**Assessor** = Mr Alan Hambidge	
Plant Room = Various – All POU	**Date** = September 2014	
System Risk Score =	**System Risk Category =**	VERY LOW

System Description =	**Photograph =**
Very small site located at the Old Memorial Hospital site – VERY LOW RISK. Only 4 tiny instant mains cold water fed electric heaters. Domestic Hot Water at this site was supplied by mains fed point of use electric water heaters. These pose a very low risk of legionellosis. Ensure that these are flushed at the appropriate frequency. The domestic water temperatures were adequate from a legionella control perspective. All cold water was mains fed. There were no domestic cold water storage tanks on-site. Both domestic hot and mains cold water temperatures from outlets are recorded and filed at the correct frequency. All cold water was mains fed and temperatures were acceptable.	No Photo

Operational Requirements =
POU systems pose a low risk. Ensure regular use.

Performance =
Temperatures were acceptable from a Legionella control perspective, but do present a potential scalding risk. Warning signs are posted.

Legionellosis Risk Minimisation Scheme Report

Observation:	Photo:	Recommendation:	C:	L:	R:	Priority:	Deadline:	Achieved (Y/N):
POU water heaters (x4). Mains fed cold water in poison cupboard. Temperature was OK.	No Photo	Continue to maintain temperatures. Ensure adequate flushing regime continues to be maintained.	3/4	1	3/4	3	On-going	

Key:

C = Consequence, on a scale of 1-5. Where, 1= negligible; 2= minor illness; 3= major illness; 4 = single death; 5 = multiple death. In an occupied hospital, the consequence could be 4-5, multiple deaths. As such we aim to reduce or eliminate the likelihood.
L = Likelihood, again on a scale of 1-5. Where 1 = very unlikely; 2 = unlikely; 3 = possible; 4 = likely; 5 = near certain.
R = RISK. Risk score is calculated as R = C x L.
Priority = is assigned giving consideration to Risk, Cost, Difficulty, Legal Duty etc.

Site name	1. Cotswold District Council Council Offices	Property Code	NA	Project Ref	CDC
Building/Block name	Council Offices			Consultant	Alan Hambidge
Plant room location	NA – All mains fed and POU heaters	System Ref./I.D.	NA	Date	September 2014

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
Safe access	Yes	All mains fed and POU heaters		Yes	NA
Lighting	Yes	All POU heaters located in main building in rooms served.		Yes	NA
Type of water heater	P-O-U	*Manufacturer... Santon & Heatrae Sadia. All domestic hot water temperatures were greater than 45°C, unless stated in the report.*		Yes	NA

N.B. For those water heaters that are Flat back / P-O-U / Combi record basic details and DO NO complete the rest of the form.

No of water heaters	Santon & Heatrae Sadia		Multiple configuration		Parallel/ Series*		Orientation		Horizontal/ Vertical				NA	NA
Storage/flow temp	No. 1	°C	No. 2	°C	No. 3	°C	No. 4	°C		°C			NA	NA
Base temp		°C		°C		°C		°C		°C			NA	NA
Return temp		°C		°C		°C		°C		°C			NA	NA
Capacity (Lts or HxR)													NA	NA
Insulation material													NA	NA
Vent		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Temperature gauge		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Temp. gauge reading		°C		°C		°C		°C					NA	NA
Pressure Gauge		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Type of gauges used		Swan/Straight/BMS		Swan/Straight/BMS		Swan/Straight/BMS		Swan/Straight/BMS					NA	NA
Access hatch		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
CWS entry point		Top/Mid/Bot/Ret*		Top/Mid/Bot/Ret*		Top/Mid/Bot/Ret*		Top/Mid/Bot/Ret*					NA	NA
CWS NRV		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Distance of NRV to vessel (health <300)		mm		mm		mm		mm					NA	NA
Return entry point		Top/Mid/Bot/CWS*		Top/Mid/Bot/CWS*		Top/Mid/Bot/CWS*		Top/Mid/Bot/CWS*					NA	NA
Return NRV		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Destratification loop		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*		Fitted / Not fitted*					NA	NA
Loop is top to bottom		Yes/ No*		Yes/ No*		Yes/ No*		Yes/ No*						NA
Drain diameter		mm		mm		mm		mm					NA	NA

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Distribution pump[s]	Flow / Return	On bypass	Yes / No	Dry spare	Present / Not present		NA	NA
Cold water source	Tank / Mains / Borehole*						NA	NA
Water treatment if present	Chlorine Dioxide* / UV* / Copper / Silver* / Other *(please detail)						NA	
Preheat vessel	Present / Not present*	*Manufacturer…*		NA	°C		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
		DHW RISK CATEGORY = LOW						

Site name	1. Council Offices			Property Code	NA	Project Ref	CDC
Building/Block name	Council Offices					Consultant	Alan Hambidge
Plant room location	NA		System Ref./I.D.	NA		Date	September 2014

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
N.B. For those sites that have NO cold water storage and outlets are all mains fed then DO NO complete the rest of the form.					
Safe access	Yes	All mains fed cold water. No DCWS tanks. Lighting: Yes			
Cold water source	Mains CWS – No Tanks	Water treatment if present: NA - None			
Tank material	NA - None	No of tanks: NA - None; Multiple configuration: NA - None			
Actual capacity (Lts or LxWxD)				NA - None	NA
Tank lid secure	Yes/ No*			NA - None	NA
Access hatch fitted	Yes/ No*			NA - None	NA
Access hatch secure	Yes/ No*			NA - None	NA
Storage temperature	°C			NA - None	NA
Sediment	n/a/ lite / mod / hvy			NA - None	NA
Corrosion	n/a/ lite / mod / hvy			NA - None	NA
Internal circulation	In / out same side In / out opp sides In / out at 90°			NA - None	NA
Stagnation	Yes/ No*			NA - None	NA
Vent over tank	Yes/ No*			NA - None	NA
Vent over tundish	Yes/ No*			NA - None	NA
Screened vent in lid	Yes/ No*			NA - None	NA
Tell Tale (TT)	Fitted / Not fitted*			NA - None	NA
TT Insect Screen	Fitted / Not fitted*			NA - None	NA
Overflow (OF)	Fitted / Not fitted*			NA - None	NA
OF Insect Screen	Fitted / Not fitted*			NA - None	NA
T°C Gauge	Fitted / Not fitted*			NA - None	NA
Type of gauges used	Swan/Straight/BMS			NA - None	NA
Tank ins material				NA - None	NA
Drain Diameter	mm			NA - None	NA

No. 1	No. 2	No. 3	No. 4
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
°C	°C	°C	°C
n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy
n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy
In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS
mm	mm	mm	mm

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Booster set	Fitted / Not fitted *	# of pumps		Switch over	Manual / Auto		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Heat gain	Windows / Tank Housing / Heat/frost protection / DHW system / Other*						NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
	CWS RISK CATEGORY: LOW							

Site name	1. Council Offices			Project Ref	CDC	
Building/Block name	Council Offices			Consultant	Alan Hambidge	
Plant room location	Several small units. No centralised air conditioning (humidification or chilling)			Date	September 2014	
AHU Ref./I.D.	There are also a number of low risk local (room only) ventilation / DX units – these also pose a low risk, and are all under a maintenance and inspection contract.					
RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)		IMAGE #	COMPLY? (YES=0, NO=1)	STD REC #
N.B. For those systems that are localised air conditioning (i.e. there is no duct work associated with the unit) DO NOT complete form.						
Safe access	Yes				Yes	NA
Lighting	NA				Yes	NA
Inlet at least 10 metres from outlets of other systems?	Yes	Yes – no other wet systems near-by.			Yes	NA
What does the AHU provide?	HEATING ONLY – LOW RISK				Yes	NA
N.B. For those systems that are HEATING ONLY then DO NOT complete the rest of the form.						
CHILLING UNIT						
Lighting in AHU chiller area	Yes / No*				NA	NA
No of chiller batteries					NA	NA
Windows fitted to chiller battery	Yes / No*				NA	NA
Drainage tray fitted to each chiller battery	Yes / No*	Standing water in drainage tray	Yes / No*		NA	NA
Drainage tray corrosion free	Yes / No*				NA	NA
Transparent traps fitted from each drainage tray	Yes / No*	Traps clean	Yes / No*	Traps contain water	Yes / No*	NA	NA
Type A air gap from trap	Yes / No*				NA	NA
Fall on pipework from air gap	Yes / No*				NA	NA
N.B. For those items that are HEATING & CHILLING then DO NOT complete the rest of the form.						
HUMIDIFICATION UNIT						
Windows fitted to humidifier	Yes / No*				NA	NA
Lighting in humidifier	Yes / No*				NA	NA
No of humidifiers					NA	NA
Type humidification	Steam Other*	If "other" detail			NA	
Source of steam	Central Supply Localised	Detail "localised"			NA	

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Drainage tray fitted to each humidifier	Yes / No*	Standing water in drainage tray	Yes / No*				NA	NA
Drainage tray corrosion free	Yes / No*						NA	NA
Transparent traps fitted from each drainage tray	Yes / No*	Traps clean	Yes / No*	Traps contain water	Yes / No*		NA	NA
Type A air gap from trap	Yes / No*						NA	NA
Fall on pipework from air gap	Yes / No*						NA	NA
Steam lance impinge on duct sides	Yes / No*	Steam lance dripping	Yes / No*				NA	NA
Humidifier set to go off when fan goes off or before fan goes off	Yes / No*						NA	NA
Humidification high limit stat set >70%	Yes / No*						NA	NA
		AHU RISK CATEGORY:				LOW		

Site name	6. Moreton Area Offices			Property Code	NA	Project Ref	CDC
Building/Block name	Moreton Area Offices					Consultant	Alan Hambidge
Plant room location	NA – All mains fed and POU heaters		System Ref./I.D.	NA		Date	September 2014

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
Safe access	Yes	All mains fed and POU heaters		Yes	NA
Lighting	Yes	All POU heaters located in main building in rooms served.		Yes	NA
Type of water heater	P-O-U	*All MCW and POU*		Yes	NA

N.B. For those water heaters that are Flat back / P-O-U / Combi record basic details and DO NO complete the rest of the form.

No of water heaters	Santon & Heatrae Sadia				Multiple configuration				Parallel/ Series*				Orientation				Horizontal/ Vertical					NA	NA
Storage/flow temp			°C				°C				°C				°C				NA	NA
Base temp			°C				°C				°C				°C				NA	NA
Return temp			°C				°C				°C				°C				NA	NA
Capacity (Lts or HxR)																			NA	NA
Insulation material																			NA	NA
Vent		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
Temperature gauge		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
Temp. gauge reading			°C				°C				°C				°C				NA	NA
Pressure Gauge	No. 1	Fitted / Not fitted*			No. 2	Fitted / Not fitted*			No. 3	Fitted / Not fitted*			No. 4	Fitted / Not fitted*					NA	NA
Type of gauges used		Swan/Straight/BMS				Swan/Straight/BMS				Swan/Straight/BMS				Swan/Straight/BMS					NA	NA
Access hatch		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
CWS entry point		Top/Mid/Bot/Ret*				Top/Mid/Bot/Ret*				Top/Mid/Bot/Ret*				Top/Mid/Bot/Ret*					NA	NA
CWS NRV		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
Distance of NRV to vessel (health <300)			mm				mm				mm				mm				NA	NA
Return entry point		Top/Mid/Bot/CWS*				Top/Mid/Bot/CWS*				Top/Mid/Bot/CWS*				Top/Mid/Bot/CWS*					NA	NA
Return NRV		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
Destratification loop		Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*				Fitted / Not fitted*					NA	NA
Loop is top to bottom		Yes/ No*				Yes/ No*				Yes/ No*				Yes/ No*						NA
Drain diameter			mm				mm				mm				mm				NA	NA

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Distribution pump[s]	Flow / Return	On bypass	Yes / No	Dry spare	Present / Not present		NA	NA
Cold water source	Tank / Mains / Borehole*						NA	NA
Water treatment if present	Chlorine Dioxide* / UV* / Copper / Silver* / Other *(please detail)						NA	
Preheat vessel	Present / Not present*	*Manufacturer…*		NA	°C		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
		DHW RISK CATEGORY =	**LOW**					

Site name	6. Moreton Area Office			Property Code	NA	Project Ref	CDC	
Building/Block name	Moreton Area Office					Consultant	Alan Hambidge	
Plant room location	NA		System Ref./I.D.	NA		Date	September 2014	

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
N.B. For those sites that have NO cold water storage and outlets are all mains fed then DO NO complete the rest of the form.					
Safe access	Yes	All mains fed cold water. No DCWS tanks. Lighting: Yes			
Cold water source	Mains CWS – No Tanks	Water treatment if present: NA - None			
Tank material	NA - None	No of tanks: NA - None; Multiple configuration: NA - None			

	No. 1	No. 2	No. 3	No. 4			
Actual capacity (Lts or LxWxD)						NA - None	NA
Tank lid secure	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Access hatch fitted	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Access hatch secure	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Storage temperature	°C	°C	°C	°C		NA - None	NA
Sediment	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy		NA - None	NA
Corrosion	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy		NA - None	NA
Internal circulation	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°		NA - None	NA
Stagnation	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Vent over tank	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Vent over tundish	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Screened vent in lid	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*		NA - None	NA
Tell Tale (TT)	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
TT Insect Screen	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
Overflow (OF)	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
OF Insect Screen	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
T°C Gauge	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
Type of gauges used	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS		NA - None	NA
Tank ins material						NA - None	NA
Drain Diameter	mm	mm	mm	mm		NA - None	NA

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Booster set	Fitted / Not fitted *	# of pumps		Switch over	Manual / Auto		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Heat gain	Windows / Tank Housing / Heat/frost protection / DHW system / Other*						NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
	CWS RISK CATEGORY: LOW							

Site name	10. Volunteer Bureau			Property Code	NA	Project Ref	CDC
Building/Block name	Volunteer Bureau					Consultant	Alan Hambidge
Plant room location	NA – All mains fed and POU heaters		System Ref./I.D.	NA		Date	September 2014

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
Safe access	Yes	All mains fed and POU heaters		Yes	NA
Lighting	Yes	All POU heaters located in main building in rooms served.		Yes	NA
Type of water heater	P-O-U	*All MCW and POU*		Yes	NA

N.B. For those water heaters that are Flat back / P-O-U / Combi record basic details and DO NO complete the rest of the form.

No of water heaters	Santon & Heatrae Sadia	Multiple configuration	Parallel/ Series*	Orientation	Horizontal/ Vertical		NA	NA
Storage/flow temp	°C	°C	°C	°C	°C		NA	NA
Base temp	°C	°C	°C	°C	°C		NA	NA
Return temp	°C	°C	°C	°C	°C		NA	NA
Capacity (Lts or HxR)							NA	NA
Insulation material							NA	NA
Vent	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Temperature gauge	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Temp. gauge reading	°C	°C	°C	°C	°C		NA	NA
Pressure Gauge	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Type of gauges used	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS		NA	NA
Access hatch	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
CWS entry point	Top/Mid/Bot/Ret*	Top/Mid/Bot/Ret*	Top/Mid/Bot/Ret*	Top/Mid/Bot/Ret*	Top/Mid/Bot/Ret*		NA	NA
CWS NRV	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Distance of NRV to vessel (health <300)	mm	mm	mm	mm	mm		NA	NA
Return entry point	Top/Mid/Bot/CWS*	Top/Mid/Bot/CWS*	Top/Mid/Bot/CWS*	Top/Mid/Bot/CWS*	Top/Mid/Bot/CWS*		NA	NA
Return NRV	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Destratification loop	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*		NA	NA
Loop is top to bottom	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*			NA
Drain diameter	mm	mm	mm	mm	mm		NA	NA

No. 1	No. 2	No. 3	No. 4

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Distribution pump[s]	Flow / Return	On bypass	Yes / No	Dry spare	Present / Not present		NA	NA
Cold water source	Tank / Mains / Borehole*						NA	NA
Water treatment if present	Chlorine Dioxide* / UV* / Copper / Silver* / Other *(please detail)						NA	
Preheat vessel	Present / Not present*	*Manufacturer…*		NA	°C		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
	DHW RISK CATEGORY =	VERY LOW						

Site name	10. Volunteer Bureau			Property Code	NA	Project Ref	CDC	
Building/Block name	Volunteer Bureau					Consultant	Alan Hambidge	
Plant room location	NA		System Ref./I.D.	NA		Date	September 2014	

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS (Manufacturer, type of material used or configuration)	PIC #	COMPLY (YES=0,NO=1)	STD REC
N.B. For those sites that have NO cold water storage and outlets are all mains fed then DO NO complete the rest of the form.					
Safe access	Yes	All mains fed cold water. No DCWS tanks. Lighting: Yes			
Cold water source	Mains CWS – No Tanks	Water treatment if present: NA - None			
Tank material	NA - None	No of tanks: NA - None; Multiple configuration: NA - None			
Actual capacity (Lts or LxWxD)				NA - None	NA
Tank lid secure	Yes/ No*	Yes/ No*		NA - None	NA
Access hatch fitted	Yes/ No*	Yes/ No*		NA - None	NA
Access hatch secure	Yes/ No*	Yes/ No*		NA - None	NA
Storage temperature	°C	°C		NA - None	NA
Sediment	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy		NA - None	NA
Corrosion	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy		NA - None	NA
Internal circulation	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°		NA - None	NA
Stagnation	Yes/ No*	Yes/ No*		NA - None	NA
Vent over tank	Yes/ No*	Yes/ No*		NA - None	NA
Vent over tundish	Yes/ No*	Yes/ No*		NA - None	NA
Screened vent in lid	Yes/ No*	Yes/ No*		NA - None	NA
Tell Tale (TT)	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
TT Insect Screen	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
Overflow (OF)	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
OF Insect Screen	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
T°C Gauge	Fitted / Not fitted*	Fitted / Not fitted*		NA - None	NA
Type of gauges used	Swan/Straight/BMS	Swan/Straight/BMS		NA - None	NA
Tank ins material				NA - None	NA
Drain Diameter	mm	mm		NA - None	NA

No. 1	No. 2	No. 3	No. 4
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
°C	°C	°C	°C
n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy
n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy	n/a/ lite / mod / hvy
In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°	In / out same side In / out opp sides In / out at 90°
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Yes/ No*	Yes/ No*	Yes/ No*	Yes/ No*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*	Fitted / Not fitted*
Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS	Swan/Straight/BMS
mm	mm	mm	mm

RISK ISSUE	DETAILS (*delete as appropriate)	COMMENTS /RECOMMENDATIONS				IMAGE #	COMPLY?	STD REC #
Booster set	Fitted / Not fitted *	# of pumps		Switch over	Manual / Auto		NA	NA
Non WRc approved material used	Yes / No *	*Details…*					NA	NA
Heat gain	Windows / Tank Housing / Heat/frost protection / DHW system / Other*						NA	NA
Pipework insulation in plt/rm							NA	NA
Deadlegs in plt/rm							NA	NA
	CWS RISK CATEGORY: VERY LOW							