Client Name: Example Hospital

Site Name: Example Hospital

Assessment Date: 20/07/2010

Executive Summary

Site Description

Example hospital, in the Dublin ###############, has been caring for cancer patients from all over Ireland since its formal opening in May 1954. The core of the hospital was [redacted]. To cater for the constant increase in the number of patients attending Example hospital, the staff and facilities of the hospital steadily expanded and Example hospital came to play an important part in the national healthcare system. In 1996 major financial investments were allocated to upgrade Example hospital to a world class treatment centre. In 2008 two new and two replacement Linear Accelerators were installed, increasing the hospital's radiotherapy treatment capacity to a total of 8 units. The hospital structure reflects progressive extensions and interconnecting buildings.

The Systems

A large part of the hospital is fed from a centralised hot and cold water system. Mains water is boosted to two large cisterns and dosed with Chlorine Dioxide within the mains riser. The cold water is then distributed in under floor ducts running below many of the main corridors to the OPD and ward areas.
Units 4,5 and 6 have been added and have a local cold water cistern and hot water heater.
Units 7 and 8 have been added and have a local cold water cistern and hot water heater.
The education building has a dedicated cold water service.
The Laboratory, Lodge and facilities management buildings all have dedicated hot and cold water services.
The old house has a number of de-commissioned cisterns but an old lead lined unit and water heater still appear to be serving a few outlets in the admin area.
An artificial water feature is present near the laboratory and wards.
Several heating and chilled water systems were noted.

The Management

A water safety management policy document was supplied to us at the time of our survey. A great number of the management failings often pointed out during a risk assessment are covered

in this document. Management therefore have a sound written base for controlling legionella at Example Hospital. This risk assessment has identified a number of water systems and the interaction between these along with better mechanical drawings is still yet to be completed.

Risk Assessment - Overview of findings and risk ratings.

Management

Risk rating	4	3	2	1
Number of items that require attention - Legionella risks	0	7	7	2
Number of items that require attention - General risks	0	0	0	3

For specific information see the Survey Findings report.

Summary of findings Management

All areas Management survey summary –

Plumber and contractor training in legionella awareness may help to minimise dead ends and problems in the future, the practice of adding or removing sinks needs to be taken one step further to consider the system.
ACoP L8 requires procedures what it calls normal operation such as instructions for commissioning, shutdown, checks on warning and diagnostic systems, maintenance requirements and operating cycles.
Obtain evidence of your service provider training and assessment of the competence of individuals working on-site. Also hold formal review meetings with your service provider at least annually. Specialist service providers should provide defined allocation of all tasks within their service agreements. (The LCA requires service providers to detail also tasks that remain the client responsibility).
Although we have produced simple sketches to understand the systems a more detailed layout is needed in order to understand the water system and make management decisions if problems occur.
Consider how management would demonstrate they have legionella training and are competent.
We feel site should check Chlorine Dioxide and sensor readings at weekly intervals recording results.

Cistern (Tank)

Risk rating	4	3	2	1
Number of items that require attention - Legionella risks	0	14	32	24
Number of items that require attention - General risks	0	1	8	13

For specific information see the Survey Findings report.

Summary of findings Cistern (Tank)

Main hospital T01 & T02 –
The cistern should be relined or replaced due to the significant levels of corrosion found. While many operational problems need to be overcome with the number of faults present replacement of these cistern would provide the best long term cost effective action for the hospital.
Dirty utility cistern T03 –
As the cistern is storing more than 1000 litres of water the lid should be constructed so that the cistern may be inspected or cleansed without wholly uncovering the cistern. A tight fitting inspection hatch should be installed.
The float valve is letting past and the cistern is over flowing lightly.
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.
The cistern appears over sized. Water turnover needs to be established and if not adequate

steps taken to reduce storage or improve turnover possibly by reducing the operating level.
Old house area T04 –
Disconnect and remove the cistern together with any redundant pipe work and water services. The services fed can be supplied by the main cisterns.
Education building T06 –
The cistern needs to be replaced with a new water reg compliant cistern incorporating all other recommendations made here.
Units 4, 5, &6 T07 –
A new lid and inspection hatch is needed with minor other works.
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.
The total stored capacity appears to be over sized. Water turnover needs to be established and steps taken to improve turnover within this cistern.
Units 7&8 T08 -
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.
The cistern appears over sized. Water turnover needs to be established and if not adequate steps taken to reduce storage or improve turnover.
Facilities management T09 –
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.
A rigid close fitting lid should be fitted along with a few other minor improvements.
Laboratory T10 –
Due to the external location the cistern is externally rether dirty. A clean would reduce the risk of debris entering the cistern during inspections.
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.
Lodge roof top T11A and B –
Water turnover could present an issue if the lodge is under occupied. Water meter readings allow turnover to be monitored. Usage much below 11m3 per day would indicate over capacity.
The cistern needs to be cleaned and disinfected in accordance with ACOP L8.

Calorifier (Water heater)

	4	3	2	1
Risk rating				
Number of items that require attention - Legionella risks	0	3	11	12
Number of items that require attention - General risks	0	0	2	13

For specific information see the Survey Findings report.

Summary of findings Calorifier (Water heater)

Old house area Cal03 –
If the unit fed patient areas we would have issued a risk rating of 4. The heater should not remain working at this temperature. Remove the water heater and connect any served outlets to the main HWS running close to the same locations.
Units 4 - 5 & 6 1st floor Plant room CAL04 –
The water temperature at the base of the water heater is much cooler than the water temperature at the top. A shunt pump to move hot water from the top of the calorifier to the base should be fitted.
The thermostat setting should be adjusted as the water heater is operating slightly above target temperatures. This may cause a scalding risk.
Units 7 & 8 Cal05 –
No significant recommendations made.
Facilities management Cal06 –
A few minor recommendations have been made.
Laboratory Cal07 - Fit thermometer pockets or temperature gauges on the water heater.
A few minor recommendations have been made.

Units 7&8 Rear Plant room CAL05 –
A few minor recommendations have been made.
Basement plant room Lodge CAL08, 09 & 10 –
The isolated water heater will create stagnation between the flowing circuit and the closed valves. The water heater should not remain off-line permanently.
Check the operation of the secondary system circulating pumps as at present they don't appear to be running? (Water temperatures in the return were satisfactory).

Direct mains services (MCW)

Risk rating	4	3	2	1
Number of items that require attention - Legionella risks	0	0	2	1
Number of items that require attention - General risks	0	0	2	1

For specific information see the Survey Findings report.

Summary of findings Direct mains services (MCW)

Mains water distribution -
Backflow is a real possibility with a pump directly fitted to the main supply. Connections such as those outside Education building area are a concern and should not be allowed. (See photo).
Direct mains pumps are not generally allowed in the UK and are subject to approval by Dublin council in Ireland. Where possible a break tank should be used.
The large cast iron pipe work and fittings should be replaced with those constructed of WRAS approved materials as improvements are made. The main is likely to be in poor condition and could have significant debris in low flow areas.
As mains pipes are upgraded or refurbishment takes place better insulation should be fitted to the distribution system.
Defined drinking water outlets need to be labelled so that they can be readily identified.

Cold Water Down Services (CWDS)

Risk rating	4	3	2	1
Number of items that require attention - Legionella risks	0	1	3	1
Number of items that require attention - General risks	0	0	0	1

For specific information see the Survey Findings report.

Summary of findings Cold Water Down Services (CWDS)

All CWS distribution services. -
Some risk assessors recommend flushing of fire hoses on a regular basis to avoid stagnation and dead legs when they are attached to the mains distribution system. If flushing is undertaken, or considered possible, aerosols must not be produced during flushing. Consider installing a double check valve on fire hose connections.
Inadequate insulation needs to be replaced to meet the requirements of ACOP L8 as areas are improved.
Flexible hoses fitted after TMVs have recently shown to be a risk. Please see the enclosed document. The asset register has recorded areas where we noted flexible hoses. If these areas yield poor results the hoses should be considered as possible sources.
Dead legs identified on the schematics and the asset register should be removed.

Hot Water Down Services (HWS)

	4	3	2	1
Risk rating				
Number of items that require attention - Legionella risks	0	2	0	1
Number of items that require attention - General risks	0	0	0	1

For specific information see the Survey Findings report.

Summary of findings Hot Water Down Services (HWS)

HWS Outlets and system –
Dead legs should be removed as identified on our schematic drawings. The flow and return circuit is not operating and has created large dead legs under units 1 and 2. The end of the line has been capped, this requires attention.

Water Features

	4	3	2	1
Risk rating				
Number of items that require attention - Legionella risks	0	0	4	1
Number of items that require attention - General risks	0	0	0	0

For specific information see the Survey Findings report.

Summary of findings Water Features

Water feature outside –
Where the risk would normally be very low the susceptibility of individuals at this site makes this system a potential risk system. As high risk individuals are present the water feature should be operated with minimal aerosol production around areas where the water returns to the pond. From a pure Health and Safety view the need to produce splashing should be assessed, if there is no need then the risk even a low risk could be removed.
Temperature monitoring checks, in order to establish if water exceeds 20°C, should be carried out during summer months. If temperatures rise we would recommend that splashing is avoided until temperatures are acceptable. Monitoring for legionella would be applicable if temperatures exceed 20°C during warmer months.

Plate Heat Exchanger

	4	3	2	1
Risk rating				
Number of items that require attention - Legionella risks	0	2	1	1
Number of items that require attention - General risks	0	0	0	1

For specific information see the Survey Findings report.

Summary of findings Plate Heat Exchanger

Main Hospital Cal01 & 02 –
As temperature is used as a the main means of control, each vessel should deliver water at a temperature of at least 60°C (ACoP L8 Para 152). The heat exchangers do not appear to be performing well enough to deliver these target temperatures. (Please see additional comments supplied separately).
Surprisingly the base of the buffer vessels was found to be cold. This could be avoided by

altering the position of the draw off point for the feed to the heat exchangers.

All Surveys

Risk rating	4	3	2	1
Total number of items for all surveys - Legionella risks	0	29	60	43
Total number of items for all surveys - General risks	0	1	12	33

Understanding Risk Assessment

"A risk assessment is an important step in protecting your workers and your business, as well as complying with the law. It helps you focus on the risks that really matter in your workplace - the ones with the potential to cause real harm" (Health and Safety Executive INDG163 rev2).

This risk assessment uses basic definitions:

- a hazard is anything that may cause harm, such as chemicals, electricity, or Legionella bacteria;
- the risk is the chance, high or low, that somebody could be harmed by Legionella or other hazards noted, together with an indication of how serious the harm could be.

Risk Assessment Responsibilities

The responsibility for implementing and completing the corrective measures remains with the Statutory Duty Holder or nominated Responsible Person. We would recommend that you read at least the following sections of HSE ACoP L8: -

• Page 8 - Managing the risk management responsibilities, training and competence.
• Page 10 - Preventing or controlling the risk from exposure to legionella bacteria.
• Page 13 - Record keeping.

Failing to action the findings of a risk assessment may result in legionella bacteria proliferating in the water systems inspected. Legionella is potentially fatal.

The use of L8MS-Risk software does not negate the responsibility of the service provider to ensure the Risk Assessor is competent to undertake legionellosis risk assessments. It is imperative that all operatives using L8MS-Risk are suitable trained. To include:

(i) Use of the software
(ii) Principals of risk assessment.
(iii) A sound knowledge of legionella legislation and control practices.

Those appointing a service provider must also ensure that the competence of the service provider is assessed.

Risk Assessment Ratings

LR - Legionella Risk - has been used to prioritise corrective actions relating directly to legionella control.

GR - General Risk - has been used to prioritise corrective actions relating to general safety
Concerns, such as working at heights, or scalding risks pointed out under our duty of care.

Legionella Risk (LR) Level 0

- HAZARD (Legionellosis) x LIKELIHOOD (Very Low) = RISK (Minimal)
- No additional action required.

Legionella Risk (LR) Level 1

- HAZARD (Legionellosis) x LIKELIHOOD (Low) = RISK (Slight risk under abnormal operating conditions)
- Take actions when other more significant risks have been completed.

Legionella Risk (LR) Level 2

- HAZARD (Legionellosis) x LIKELIHOOD (Possible) = RISK (Possible risk with existing operating conditions)
- Take actions when operationally practicable.

Legionella Risk (LR) Level 3

- HAZARD (Legionellosis) x LIKELIHOOD (Present) = RISK (Probable risk with existing operating conditions)
- Take actions as soon as possible.

Legionella Risk (LR) Level 4

- HAZARD (Legionellosis) x LIKELIHOOD (High) = RISK (Imminent risk of harm or loss)
- Take immediate action to reduce the risk, this may include taking systems off line.

General Risk (GR) - Relating to general safety concerns such as working at heights or scalding pointed out under a duty of care.

GR Level 0

- No additional action required.

GR Level 1

- Take actions when other more significant risks have been completed.

GR Level 2

- Take actions when operationally practicable.

GR Level 3

- Take actions as soon as possible.

GR Level 4

- Take immediate action to reduce risk.

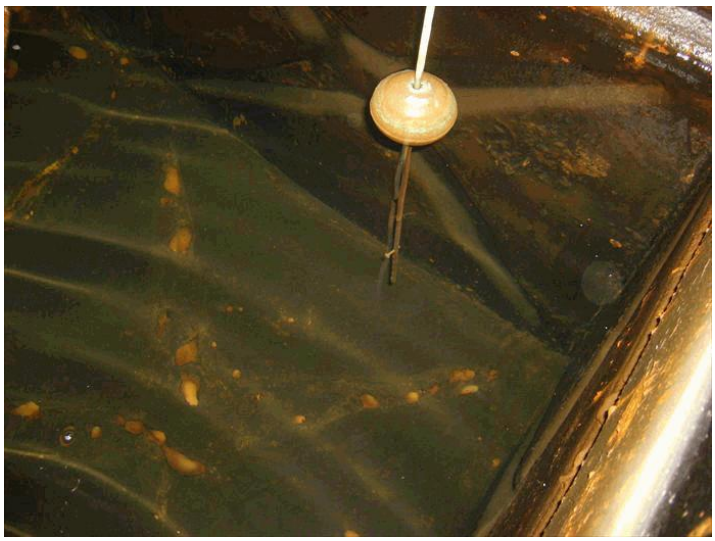
We as a service provider will have great difficulty defining time scales for corrective action as this is dependent on any other risks within your organisation and the budget available for corrective actions.

Survey Photo's

Title : Main hospital cisterns

LR: 3

GR: 0



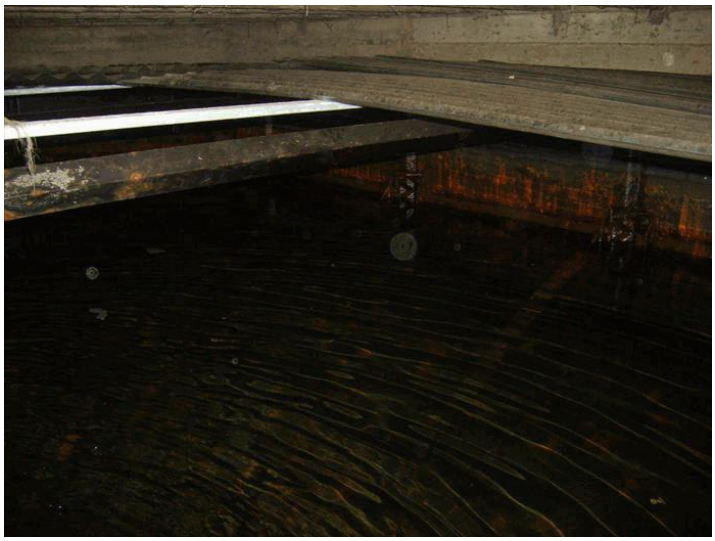
Comments :

The main cisterns are old steel vessels that have been painted internally but are generally in poor order and need replacing.

Title : Main hospital cisterns - waterline

LR: 3

GR: 0



Comments :

As can be seen the cisterns are not well enclosed or up to water bye law requirements.

Title : Main hospital cisterns

LR: 2

GR: 0

Comments :

Primary cold water pipes are not insulated and the general area is in poor order.

Title : Main hospital rear cistern second supply

LR: 1

GR: 0

Comments :

This second supply was working hard when we surveyed the site. It is not dosed with chlorine dioxide.

Title : Old building lead cistern

LR: 3

GR: 0

Comments :

The old building has a few outlets served by an old wooden (lead lined) cistern that needs to be removed.

Title : Old building uninsulated water heater.

LR: 3

GR: 0

Comments :

The old building has a few outlets served by an old uninsulated water heater running at very poor temperatures. We could not follow pipes for supply or feed but suspect this unit could be removed from service.

Title : Education cistern internal.

LR: 3

GR: 0

Comments :

An old galvanised cistern in need of replacement.

Title : Education cistern primary heating returns.

LR: 2

GR: 0

Comments :

Primary heating should not vent back to CWDS and need redirecting.

Title : Unit 4, 5 and 6 cistern lid

LR: 2

GR: 0

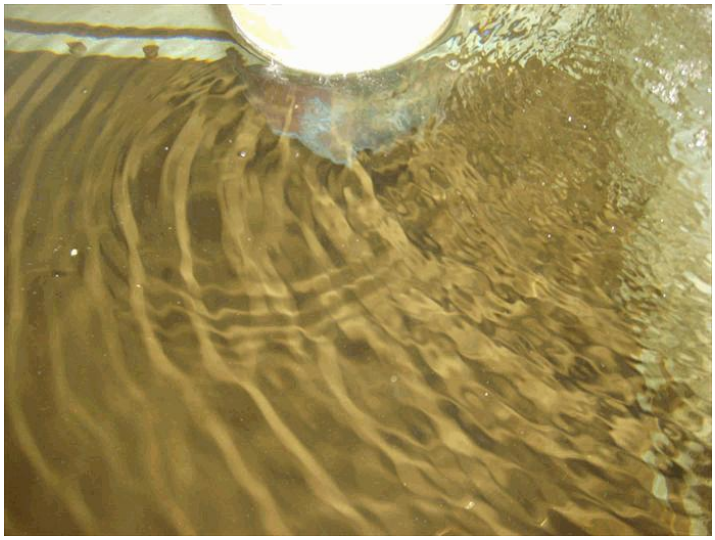
Comments :

Unit 4, 5 and 6 cistern lid is not compliant and needs replacing.

Title : Unit 4, 5 and 6 cistern Internal

LR: 2

GR: 0



Comments :

Unit 4, 5 and 6 cistern is a little grubby and needs to be cleaned and disinfected.

Title : Unit 7 and 8 cistern Internal

LR: 2

GR: 0

Comments :

Unit 7 and 8 cistern is a little grubby and needs to be cleaned and disinfected.

Title : Facilities management cistern Internal

LR: 2

GR: 0

Comments :

Facilities management cistern is a little grubby and needs to be cleaned and disinfected.

Title : Laboratory cistern Internal

LR: 2

GR: 0

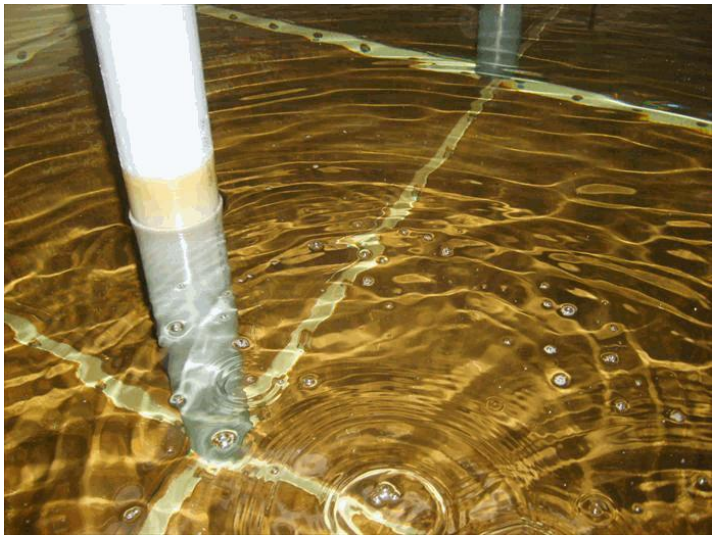
Comments :

Laboratory cistern is a little grubby and needs to be cleaned and disinfected.

Title : Lodge cistern Internal

LR: 2

GR: 0



Comments :

Lodge cistern is a little grubby and needs to be cleaned and disinfected.

Title : OPD instrument cistern Internal

LR: 2

GR: 0

Comments :

OPD instrument cistern is a little grubby and needs to be cleaned and disinfected.

Title : Example dead end on CWDS

LR: 2

GR: 0

Comments :

During our survey we could not trace all pipework from source to destination. We think this pipe heading to the water heaters may have been the old cold feed and that it is still linked to the main cisterns.

Title : Example dead end on HWS

LR: 3

GR: 0

Comments :

During our survey we could not trace all pipework from source to destination. The hot water service flow and return is not working under units 1 and 2. At the end of the HWS a closed valve was found.

Title : Example dead end on MWS

LR: 1

GR: 2

Comments :

A mains water feed lying on the ground near the education building is both a dead leg and a back flow risk for the drinking water.

Findings Report - Direct mains services (MCW) Survey

System ID : 101

Location : Mains water distribution

Serving : Feeds all other water services on site.

Risk rating	4	3	2	1	0
Number of items that require attention - Legionella risks	0	0	2	1	7
Number of items that require attention - General risks	0	0	2	1	7
Questions not answered / Total number of questions	1	/	11		

Question		LR	GR
1	Are materials WRc compliant?	2	2

Surveyor's Answer: No - old cast main above ground.

Surveyor's Recommendation:
The large cast iron pipework and fittings should be replaced with those constructed of WRAS approved materials as improvements are made. The main is likely to be in poor condition and could have significant debris in low flow areas.

Question		LR	GR
3	Is distribution pipework insulated and does the system operate below 20°C?	2	0

Surveyor's Answer: Cold water pipes are not well insulated.

Surveyor's Recommendation:
As mains pipes are upgraded or refurbishment takes place better insulation should be fitted to the distribution system.

Question		LR	GR
8	Is the main protected against back flow (Wash down hoses, bib taps, Fire hoses Quick fill etc)?	1	2

Surveyor's Answer: Lines like those found by Education are a concern.

Surveyor's Recommendation:
Backflow is a real possibility with a pump directly fitted to the main supply. Connections such as those outside Education building area are a concern and should not be allowed. (See photo). Direct mains pumps are not generally allowed in the UK and are subject to approval by Dublin council in Ireland. Where possible a break tank should be used.

Question		LR	GR
10	Have identification labels been used?	0	1

Surveyor's Answer: No - all outlets unlabelled.

Surveyor's Recommendation:
Defined drinking water outlets need to be labelled so that they can be readily identified.

Findings Report - Cold Water Down Services (CWDS) Survey

System ID : 201

Location : All CWS distribution services.

Serving : All CWS distribution services.

Risk rating	4	3	2	1	0
Number of items that require attention - Legionella risks	0	1	3	1	4
Number of items that require attention - General risks	0	0	0	1	8
Questions not answered / Total number of questions	0	/	9		

Question LR GR

6 Is the CWDS free from dead ends? 3 0

Surveyor's Answer: No - significant dead legs found (Please see schematic drawing)

Surveyor's Recommendation:
Dead legs identified on the schematics and the asset register should be removed.

Question LR GR

3 Is distribution pipework insulated and does the system operate below 20°C? 2 0

Surveyor's Answer: No - Insulation is unsatisfactory.

Surveyor's Recommendation:
Inadequate insulation needs to be replaced to meet the requirements of ACOP L8 as areas are improved.

Question LR GR

7 Are TMVs considered necessary and operating correctly? 2 0

Surveyor's Answer: Yes - however flexible hoses noted.

Surveyor's Recommendation:
Flexible hoses fitted after TMVs have recently shown to be a risk. Please see the enclosed document. The asset register has recorded areas where we noted flexible hoses. If these areas yield poor results the hoses should be considered as possible sources.

Question LR GR

8 Are all items fed by the CWDS in regular use (Wash down hoses, Emergency showers etc)? 2 0

Surveyor's Answer: No - Fire hose reels fitted to the CWDS and / or MCW are not in regular use.

Surveyor's Recommendation:

Install a double check valve suitable for fluid categories up to 3, Fluid which represents a slight health hazard because of substances of low toxicity on fire hose connections. Some assessments recommend flushing of fire hoses on a regular basis to avoid stagnation and dead legs. If this undertaken / possible aerosols must not be produced during flushing.

Question		LR	GR
9	Are all distribution valves labelled	1	1

Surveyor's Answer: Zone isolating valves are not labelled.

Surveyor's Recommendation:
All zone isolating valves need to be labelled so that they can be readily identified.

Findings Report - Cistern (Tank) Survey

System ID : 201

Location : Main hospital (front tank) T01

Serving : All cold water to the main hospital building.

	4	3	2	1	0
Risk rating					
Number of items that require attention - Legionella risks	0	2	3	2	19
Number of items that require attention - General risks	0	0	1	2	23

Questions not answered / Total number of questions: 0 / 26

Question	LR	GR
12 Internal condition of the cistern	3	0

Surveyor's Answer: The water is clear and levels of debris are actually minimal as far as can be seen. However corrosion breakthrough is evident.

Surveyor's Recommendation:
The cistern should be relined or replaced due to the significant levels of corrosion found. While many operational problems need to be over come with the number of faults present replacement of this cistern would provide the best long term cost effective action.

Question	LR	GR
19 Is the lid rigid, fixed and close fitting	3	0

Surveyor's Answer: The lid is not made from approved materials and is not well enclosed.

Surveyor's Recommendation:
A rigid close fitting lid should be fitted. In the hygiene world a gap of 1mm would be bigger than the mesh size of screens in modern GRP cisterns.

Question	LR	GR
15 Is a screened overflow pipe fitted	2	0

Surveyor's Answer: No overflow screen installed

Surveyor's Recommendation:
A suitably sized (and screened) overflow pipe should be fitted in accordance with Water Supply (Water Fitting) Regulations 1999.

Question	LR	GR
22 Is inlet pipework opposite to outlet pipework	2	0

Surveyor's Answer: No - Fitted on adjacent (90 degrees) side.

Surveyor's Recommendation:
During any replacement the inlet pipe needs to be repositioned to the end opposite to the outlet pipe.

Question	LR	GR
23 Is the cistern and local pipework insulated sufficiently to prevent heat gain or loss	2	0

Surveyor's Answer: No - Nothing insulated.

Surveyor's Recommendation:
The cistern and local distribution pipes need to be Insulated to maintain water temperatures recommended in ACOP L8.

Question	LR	GR
26 Are the valves and cistern labelled	1	1

Surveyor's Answer: Valves and cistern are not labelled.

Surveyor's Recommendation:
The cistern and main valves need to be labelled with an asset number to allow it to be clearly identified.

Question	LR	GR
20 Is the Lid fitted with screened vent	1	0

Surveyor's Answer: No lid vent seen.

Surveyor's Recommendation:
Any new lid needs to be fitted with a screened vent.

Question	LR	GR
21 Is the cistern lid fitted with a close fitting inspection hatch	0	2

Surveyor's Answer: No inspection hatch fitted.

Surveyor's Recommendation:
As the cistern is storing more than 1000 litres of water any new lid should be constructed so that the cistern may be inspected or cleansed without wholly uncovering the cistern. A tight fitting inspection hatch should be installed.

Question	LR	GR
4 Is access restricted above the cistern	0	1

Surveyor's Answer: Slight head height restriction.

Surveyor's Recommendation:
Storage cisterns should be so placed and equipped that the interior thereof can be inspected and cleansed and the float operated valve can be maintained. For this purpose a clear space of not less than 350 mm should be provided above the cistern. Headroom is just about acceptable but should not be reduced if cisterns are replaced.

Findings Report - Hot Water Down Services (HWS) Survey

System ID : 301

Location : HWS Outlets and system

Serving : All HWS in the building

	4	3	2	1	0
Risk rating					
Number of items that require attention - Legionella risks	0	2	0	1	6
Number of items that require attention - General risks	0	0	0	1	8

Questions not answered / Total number of questions: 0 / 9

Question		LR	GR
3	Do all parts of the distribution system operate above 50°C?	3	0

Surveyor's Answer: No - Lowest temperature <50°C at 1 minute.

Surveyor's Recommendation:
Increasing the stored hot water temperature will resolve the issue of low outlet temperatures. Scalding is always a knock on risk but outlet temperatures are critical for control.

Question		LR	GR
5	Is the HWS free from dead ends?	3	0

Surveyor's Answer: No

Surveyor's Recommendation:
Dead legs should be removed as identified on our schematic drawings. The flow and return circuit is not operating and has created large dead legs under units 1 and 2. The end of the line has been capped, this requires attention.

Question		LR	GR
9	Are all distribution valves labelled?	1	1

Surveyor's Answer: No zone isolating valves labelled

Surveyor's Recommendation:
Zone isolating valves should be labelled so that they can be readily identified.

Findings Report - Plate Heat Exchanger Survey

System ID : 301

Location : Main Hospital Cal01 & 02

Serving : The main hot water supply to wards and main building.

	4	3	2	1	0
Risk rating					
Number of items that require attention - Legionella risks	0	2	1	1	15
Number of items that require attention - General risks	0	0	0	1	18

Questions not answered / Total number of questions: 1 / 20

Question LR GR

11 What is the outlet temperature of the water heater? 3 0

Surveyor's Answer: Temperature 51°C (surface measurement)

Surveyor's Recommendation:
If temperature is used as a means of control, each vessel should deliver water at a temperature of at least 60°C (ACoP L8 Para 152). Please see additional comments supplied.

Question LR GR

14 Do all parts of the system operate at target temperatures at least once every day? 3 0

Surveyor's Answer: No

Surveyor's Recommendation:
Surprisingly the base of the buffer vessels was found to be cold. Please see additional comments supplied.

Question LR GR

7 If known what is the Internal condition of the buffer vessel? 2 0

Surveyor's Answer: The internal condition is unknown as the unit has not been opened for some time.

Surveyor's Recommendation:
Introduce an annual internal inspection and maintenance plan. This could be achieved through the old bundle access holes. If conditions are satisfactory the inspection period could be reduced.

Question LR GR

19 Is the water heater and associated plant labelled? 1 1

Surveyor's Answer: No

Surveyor's Recommendation:
The water heater should be labelled with Asset Number so that it can be clearly identified.

Findings Report - Calorifier (Water heater) Survey

System ID : 302

Location : Old house area Cal03

Serving : Old house area only limits unknown.

	4	3	2	1	0
Risk rating					
Number of items that require attention - Legionella risks	0	2	0	0	8
Number of items that require attention - General risks	0	0	1	1	8

Questions not answered / Total number of questions 15 / 25

Question LR GR

4 Is the water heater required 3 0

Surveyor's Answer: No

Surveyor's Recommendation:
Remove the water heater and connect any served outlets to the main HWS running close to the same locations.

Question LR GR

15 What is the outlet temperature of the water heater 3 0

Surveyor's Answer: Poor Temperature 42°C

Surveyor's Recommendation:
If the unit fed patient areas we would have issued a risk rating of 4. Unit should not remain working at this temperature.

Question LR GR

8 Describe the external condition of the water heater 0 2

Surveyor's Answer: Uninsulated

Surveyor's Recommendation:
The water heater is surrounded with wood chippings but essentially uninsulated.

Question LR GR

3 Is safe access provided to the area around the water heater 0 1

Surveyor's Answer: No - Access considered unsafe.

Surveyor's Recommendation:
The attic area does not provide a safe working platform to the water heater.

Findings Report - Water Features Survey

System ID : 501

Location : Water feature outside

Serving : Artificial water feature

Risk rating	4	3	2	1	0
Number of items that require attention - Legionella risks	0	0	4	1	5
Number of items that require attention - General risks	0	0	0	0	10
Questions not answered / Total number of questions	0	/	10		

Question LR GR

1 Does the operation of the fountain or water feature create a risk of exposure due to an aerosol? 2 0

Surveyor's Answer: The water feature appears to produce significant splashing that may reult in aerosols around the waterfall.

Surveyor's Recommendation:
As high risk individuals are present the water feature should be operated with minimal aerosol production around areas where the water returns to the pond. From a pure Health and Safety view the need to produce splashing should be assessed, if there is no need then the risk even a low risk could be removed.

Question LR GR

2 Are materials of construction likely to minimise bacterial growth? 2 0

Surveyor's Answer: No - soil and organics present.

Surveyor's Recommendation:
The water is not clean as it operates with organic material that can not be avoided.

Question LR GR

3 Is the water system likely to operate above 20°C? 2 0

Surveyor's Answer: Yes - the water feature may reach temperatures above 20° C during warmer months.

Surveyor's Recommendation:
Temperature monitoring checks, in order to establish if water exceeds 20°C, should be carried out during summer months. If temperatures rise we would recommend that splashing is avoided until temperatures are acceptable.

Question LR GR

7 Are any microbiological samples being taken? 2 0

Surveyor's Answer: No

Surveyor's Recommendation:
Monitoring for legionella would be applicable if temperatures exceed 20°C during warmer months.

Question		LR	GR
8	Are susceptible individuals exposed to the aerosols created?	2	0

Surveyor's Answer: Yes - Susceptible individuals identified.

Surveyor's Recommendation:
Where the risk would normally be very low the susceptibility of individuals at this site makes this system a potential risk system.

Question		LR	GR
6	Are water treatment techniques used?	1	0

Surveyor's Answer: No

Surveyor's Recommendation:
Water treatment is possible if temperatures rise and splashing is not prevented. However this would need careful design and application.

Findings Report - Management Survey

System ID : 99

Location : All areas Mng survey

Serving : All areas Mng survey

	4	3	2	1	0
Risk rating					
Number of items that require attention - Legionella risks	0	7	7	2	28
Number of items that require attention - General risks	0	0	0	3	41

Questions not answered / Total number of questions 0 / 44

Question	LR	GR
16 Are schematics satisfactory	3	0

Surveyor's Answer: No schematics available.

Surveyor's Recommendation:
Irish National standard Para 5.1.3 Record keeping
The responsible person(s) appointed must ensure that appropriate up-to-date records relating to the
control scheme are kept. These records should include the following details:
Plans and schematic drawings of the systems
Although we have produced simple sketches to understand the systems a more detailed layout is needed in order to understand the water system and make management decisions if problems occur.

Question	LR	GR
20 Is there evidence of non-conformity control	3	0

Surveyor's Answer: Chlorine Dioxide was found to be below target at the time of our visit.

Surveyor's Recommendation:
The water policy statement indicates that chlorine dioxide sensors are alarmed. However both sensors were reading zero and no alert condition appeared to be in place. Ensure that the controls put in place by the policy are active and that negative situations raise corrective actions.

Question	LR	GR
21 Has management competence been assessed	3	0

Surveyor's Answer: No - Managers have experience in legionella control and are considered competent but this needs to be evidenced.

Surveyor's Recommendation:
Consider how management would demonstrate they have legionella training and are competent. Assessed training with certification is often the first step. A specialist provider could be used to provide legionella management training.

Question	LR	GR
31 Are water cisterns inspected annually	3	0

Surveyor's Answer: Yes - However some found dirty.

Surveyor's Recommendation:
Ensure all cisterns are on the inspection schedule and are reported on if found dirty.

Question	LR	GR
41 Where dosing systems are used are weekly checks being conducted on the dosing system.	3	0

Surveyor's Answer: No

Surveyor's Recommendation:
Check the following at weekly intervals recording results and taking remedial action when necessary. The quantity of chemical in the reservoir, Chlorine Dioxide level in main tanks (chlorine dioxide sensor drain), chlorine dioxide sensor reading and visual spot checks recommended by the supplier.

Question	LR	GR
42 Where dosing systems are used are monthly checks being conducted on water quality.	3	0

Surveyor's Answer: Yes - However some concern over results obtained during our survey.

Surveyor's Recommendation:
In order to maintain clear records the chlorine dioxide dosing visits would ideally record sensor reading, actual measured readings, chemical stock, chemical usage, water meter reading / usage and where vessels can become exhausted we feel they should carry identity numbers and dates when put into service.

Question	LR	GR
44 Do procedures define risk assessment reviews due to changes or at least every two years.	3	0

Surveyor's Answer: No

Surveyor's Recommendation:
This risk assessment should be reviewed at least every two years or whenever there is reason to suspect that it is no longer valid. The assessment needs to be reviewed as a result of changes to the water system or its use, changes to the use of the building, the availability of new information about risks or control measures, the results of checks indicating that control measures are no longer effective or if a case of legionellosis is associated with the system. The National standards also require an annual audit of the legionella control records.

Question	LR	GR
10 Do service agreements confirm allocation of tasks	2	0

Surveyor's Answer: Unknown - No service agreement seen.

Surveyor's Recommendation:
Specialist service providers should provide defined allocation of all tasks within their service agreements. (The LCA requires service providers to detail also tasks that remain the client responsibility).

Question	LR	GR
13 Are monitoring and inspection records complete and available for at least 5 years	2	0

Surveyor's Answer: Some monitoring and inspection records are available but they are not complete.

Surveyor's Recommendation:
Ensure monitoring and inspection records are maintained / available for at least 5 years. A document location map may help where records are held in many locations.

Question	LR	GR
19 Is there evidence of service provider review meetings	2	0

Surveyor's Answer: No documented review meeting notes seen.

Surveyor's Recommendation:
Hold formal review meetings with your service provider at least annually.

Question	LR	GR
24 Has proof of service provider competence been provided	2	0

Surveyor's Answer: No proof

Surveyor's Recommendation:
Obtain evidence of your service provider training and assessment of the competence of individuals working on-site.

Question	LR	GR
25 Is there a description of the normal and correct plant and equipment operation.	2	0

Surveyor's Answer: No

Surveyor's Recommendation:
Write or obtain procedures for commissioning, shutdown, checks on warning and diagnostic systems, maintenance requirements and normal operating cycles.

Question	LR	GR
28 Are there cleaning and disinfection method statements	2	0

Surveyor's Answer: Nothing seen.

Surveyor's Recommendation:
Obtain or write a cleaning and disinfection procedure to control risks from conducting works and specify the concentration, contact times, circulation and flushing requirements for each water system. Method statements should reflect the complexity of the system.

Question	LR	GR
33 Are water heaters inspected annually	2	0

Surveyor's Answer: No - Internal inspection would require opening the old heating bundle.

Surveyor's Recommendation:
Water heater inspections could be completed via tube bundle access plates. If conditions were found to be good then the frequency of inspection could be reduced from annual.

Question	LR	GR
11 Are emergency contact details provided for automated dosing or control equipment	1	1

Surveyor's Answer: No - Supplier details not displayed.

Surveyor's Recommendation:
Obtain and display out of hours and emergency contact details for the chlorine dioxide dosing system..

Question	LR	GR
23 Are training needs planned and recorded	1	1

Surveyor's Answer: Nothing seen.

Surveyor's Recommendation:
Plumber training in legionella may help to minimise dead ends in the future.

Question	LR	GR
18 Are Material Safety Data Sheets available	0	1

Surveyor's Answer: Not at points of use / storage.

Surveyor's Recommendation:
Display MSDS at the locations where chemical handling and storage occurs.

System Ref.

Floor / Location Information Quantity & Type of outlet	Temperature Dead	Infreq	Mains	Tank	Hot	Mixed
101 MCWS ,						
Grd Education Centre--Entrance						
1 x Drinks Chiller Assumed Mains						
Grd Maintenance--Yard Cage(581)						
1 x Not recorded						
Grd Maintenance--Yard Toilet(580)						
0 x Not recorded						
Grd Mortuary--Mortuary(556)						
1 x POU Sink Cold - Not operating						
Grd Mortuary--Mortuary(557)						
1 x POU Sink Cold - Not operating						
Grd Mortuary--Toilet						
1 x WC						
Grd Mortuary--Toilet(555)						
1 x POU WHB Cold - Not operating						
Grd Radiotherapy-Unit4-Waiting area						
1 x Drinks Chiller Assumed Mains						
Grd Rehab-4.3-Physiotherapy						
1 x Water chiller Assumed Mains						
Grd Therapy-U7+ 8-Drinking Water(575)						
1 x Drinks Chiller						
1st Ward A-Corridor						
1 x Ice Machine Assumed mains fed						
GRD Ward B--Corridor						
1 x Ice Machine Mains fed						
GRD Ward B--Corridor						
1 x Drinks Chiller Mains fed						
1st Ward C-2.18-Waiting room						
1 x Drinks Chiller Assumed Mains						
Grd Ward D-1.09-Kitchen						
1 x Water boiler Assumed Mains						

201 CWDS, 301 HWS,

Grd --(149)					
0 x Not recorded					
Grd --(195)					
1 x Not recorded					
Grd --(225)					
1 x Not recorded					
Grd --(226)					
1 x Not recorded					
Grd --(249)					
1 x Not recorded					
Grd --(26B)					
1 x Not recorded					
Grd --(26C)					
1 x Not recorded					
Grd --(26D)					
1 x Not recorded					
Grd Administration--Reception					
1 x Water chiller					
Assumed mains					
Grd Administration--Reception(1)					
1 x TMV WHB					38.0
Grd Beauty Therapy-4.17-Hairdressing(577)					
1 x TMV WHB Shower			19.0		48.0
Grd Beauty Therapy-4.17-Hairdressing(578)					
1 x TMV WHB Shower					
Grd Beauty Therapy-4.17-Hairdressing(579)					
1 x TMV WHB Shower					
Grd Catering--Catering Delivery Area(550)					

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Infreq

Weekly - Where possible unused outlets should be removed. If removal is not possible instigate a recorded flushing regime.

None identified

Sentinel Outlets

Monthly - Check and record water temperatures of Sentinel outlets. For a hot water services the first and last taps on a recirculating system. For cold water systems (or non-recirculating hot water systems) the nearest and furthest taps from the storage tank. The choice of sentinel taps may also include other taps which are considered to represent a particular risk. This should include the inlet temperatures to TMVs where they are fitted in sentinel positions. Cold water should be below 20°C after running the water for up to 2 minutes. Hot water should be at least 50°C within 1 minute of running the water. TMVs the hot supply should be at least 50°C within 1 minute of running the water.

1 x Sentinel - Located 1st Rehab Upstairs -7.07B-Dr O Reilly(187A) Sentinel WHB
1 x Sentinel - Located Grd Mould Room--Workshop(250) Sentinel TMV Sink
1 x Sentinel - Located Grd Radiotherapy-G48-Clinic Room 3(47) Sentinel WHB
1 x Sentinel - Located 1st Ward C-2.19-Bathroom(166) Sentinel WHB
1 x Sentinel - Located Grd Therapy--Toilet(574) Sentinel TMV WHB
1 x Sentinel - Located 1st Education Centre--Upstairs Men's Toilet(513) Sentinel WHB
1 x Sentinel - Located 1st Ward A-2.82-Shower Rm(85) Sentinel WHB
1 x Sentinel - Located Grd Nuclear Med--Injection Room(3) Sentinel TMV WHB
1 x Sentinel - Located BSM Porters--Basement(208) Sentinel WHB
1 x Sentinel - Located Grd Stores-3.09-Cleaners Room(215C) Sentinel Sink
1 x Sentinel - Located Grd Radiotherapy-G18-Toilet(39) Sentinel WHB
1 x Sentinel - Located Grd Clinical Eng--Workshop(202) Sentinel TMV WHB

Shower

Quarterly - Dismantle, clean, descale and disinfect shower heads and flexible hoses.

1 x Shower - Located Grd Beauty Therapy-4.17-Hairdressing(577) TMV WHB Shower
1 x Shower - Located Grd Ward D-1.4-Patient Room TMV Shower
1 x Shower - Located 1st Ward A-2.54-Isolation RM1 TMV Shower
2 x Shower - Located BSM Ladies Changing Rm--Basement TMV Shower
1 x Shower - Located Grd Ward D-1.11-Shower Room TMV Shower
1 x Shower - Located Grd Doc's SPR Rm--Toilet TMV Shower
1 x Shower - Located Grd Ward D-1.57-Toilet TMV Shower
1 x Shower - Located Grd Ward D-1.1-Bath Room Bidet Shower (TMV)
1 x Shower - Located Grd Ward D-1.36-Patient Room TMV Shower
1 x Shower - Located Grd Ward D-1.24-Patient Room TMV Shower
1 x Shower - Located Grd Ward D-1.21-Patient Room TMV Shower
1 x Shower - Located Grd Ward D-1.34-(139) TMV Shower
1 x Shower - Located Grd Ward D-1.26-Patient Room TMV Shower
1 x Shower - Located 1st Ward C-2.11-Patient Room TMV Shower
1 x Shower - Located Grd Ward D-1.14-Patient Room TMV Shower
1 x Shower - Located Grd Ward D-1.63-Patient Room TMV Shower

Spray Tap

Quarterly - Dismantle, clean, descale and disinfect spray tap inserts.

1 x Spray - Located Grd Highfield Café--Washup(585) Sink spray hose

TMV

Monthly - Check and record blended water temperature regularly in healthcare applications or where the duty holder assesses a high scalding risk exists. The manufacturer is likely to recommend regular temperature checks where increased risks are perceived such as where patients are unable to immediately respond to an increase in water temperature by either shutting the water off or removing themselves from the contact with the water.
Six Monthly - TMVs must be serviced as indicated by the manufacturer. Most recommend some form of “In-service tests” carried out with a frequency, which identifies a need for service work before an unsafe water temperature can result. Test intervals should be set to those which previous tests have shown can be achieved with no more than a small change in mixed water temperature. Most suggest that in no case should this be longer than 12 months.

1 x TMV - Located Grd Ward D-1.57-Toilet TMV Shower
1 x TMV - Located Grd Therapy--Clinic Room 4(258A) TMV WHB
1 x TMV - Located Grd Theatre--Plant Rm Wash(591) TMV WHB
1 x TMV - Located Grd DID--X-Ray Room(29) TMV WHB
1 x TMV - Located GRD Ward B-1.3-E-BaY(100) TMV WHB
1 x TMV - Located Grd Ward D-1.1-Bath Room Bidet Shower (TMV)
1 x TMV - Located Grd Ward D-1.36-Patient Room TMV Shower
1 x TMV - Located Grd Ward D-1.24-Patient Room TMV Shower
1 x TMV - Located 1st Theatre--Ladies Changing Room(559) TMV WHB
1 x TMV - Located Grd Day Ward--Bed Area(233) TMV WHB
1 x TMV - Located Grd Therapy--Clinic Room 4(258Y) TMV WHB
1 x TMV - Located Grd Ward D-1.21-Patient Room TMV Shower
1 x TMV - Located Grd Clinical Eng--Workshop(202) Sentinel TMV WHB
1 x TMV - Located Grd Ward D-1.34-(139) TMV Shower
1 x TMV - Located 1st Ward C-2.2-Bathroom(168) TMV WHB
1 x TMV - Located Grd Ward D-1.26-Patient Room TMV Shower
1 x TMV - Located Grd Ward D-1.71-Mens Toilet(115) TMV WHB
1 x TMV - Located GRD Ward B--Corridor(107) TMV Sink
1 x TMV - Located Grd Therapy--CXT / DXT(259E) TMV Sink
1 x TMV - Located Grd Radiotherapy--Unit 5(53) TMV WHB
1 x TMV - Located 1st Ward C-2.11-Patient Room TMV Shower
1 x TMV - Located Grd MR-4.55.1- Toilet(179) TMV WHB
1 x TMV - Located Grd Ward D-1.14-Patient Room TMV Shower
1 x TMV - Located Grd Ward D--Corridor(132A) TMV WHB
1 x TMV - Located Grd Ward D-1.63-Patient Room TMV Shower
1 x TMV - Located Grd Ward D-1.77-Corridor D - B(115B) TMV WHB
1 x TMV - Located Grd Radiotherapy--Unit 4(51) TMV WHB
1 x TMV - Located GRD Ward B--Iodine Room(92) TMV WHB

Cistern (Tank) Survey

Six Monthly - Monitor the temperature of stored cold water and inlet (float valve) temperature. Annually - Visual inspection of the cold water storage tank to check the condition of the inside of the tank and the water within it. The lid should be in good condition and fit closely. The insect screen on the water overflow pipe should be intact and in good condition. The thermal insulation on the cold water storage tank should be in good condition so that it protects it from extremes of temperature. The water surface should be clean and shiny and the water should not contain any debris or contamination. The cold water storage tank should be cleaned, disinfected and faults rectified, if considered necessary.

CWDS - Main hospital (front tank) T01
CWDS - Main hospital (Rear tank) T02
CWDS - Dirty utility cistern T03
CWDS - Old house area T04
CWDS - Education building T06
CWDS - First floor plant room 456 T07
CWDS (Boosted) - Ground level rear of units 7&8 T08
CWDS - Facilities management T09
CWDS (Boosted) - Ground level rear of laboratory T10
CWDS - Lodge roof top T11A and B

Calorifier (Water heater) Survey

Monthly - Monitor temperature at flow and return

Annually - Visually check on the internal surfaces of the calorifier for scale and sludge. Where an inspection hatch has not been fitted, any debris in the water at the base of the calorifier should be purged to a suitable drain on an annual basis.

Annually - Take water sample from drain valve in order to note condition of drain water.

- HWS - Old house area Cal03
- HWS - Units 4 - 5 & 6 1st floor Plant room CAL04
- HWS - Units 7&8 Rear Plant room CAL05
- HWS - Facilities management Cal06
- HWS (Boosted) - Laboratory Cal07
- HWS - Basement plant room ACV CAL08
- HWS - Basement plant room Lodge CAL09&10

Water Features Survey

As Directed - Clean and disinfect ponds, spray heads and make-up tanks including all wetted surfaces, descaling as necessary

- Water Feature - Water feature outside

Management Survey

Annually - Inspect the record system for completeness.

At least every 2 years - Conduct a risk assessment review.

- Management - All areas Mng survey

Deadlegs

It is recommend that the dead legs / ends identified in this report are removed as far back as possible to the incoming supply. Alternatively set up an action to flush the location at least weekly. Please note the new NHS HTM 04/01 recommends that infrequently used outlets should be flushed at least twice weekly.

- 2 x Deadlegs - Located Grd OPD-4.98-Disinfectant Room(13) Sink
- 1 x Deadlegs - Located 1st Ward A-2.99-Sluice Rm Bedpan Washer
- 1 x Deadlegs - Located 1st Theatre--Cleaners Room(568) TMV WHB
- 2 x Deadlegs - Located Grd OPD-4.98-Disinfectant Room(12) Sink

Other Hot/Cold Outlets

Annually - Check a representative number of taps on a rotational basis. To ensure the whole system is operating correctly. Cold water should be below 20°C after running the water for up to 2 minutes. Hot water should be at least 50°C within 1 minute of running the water.

1 x WHB - Located Grd Day Ward--Bed Area(233) TMV WHB
1 x WHB - Located Grd Ward D-1.38-Patient Room(141) WHB
1 x WHB - Located Grd Rehab-4.3-Physiotherapy(177) WHB
1 x WHB - Located BSM Ladies Changing Rm--Basement(211D) WHB
1 x WHB - Located Grd Therapy--Clinic Room 4(258Y) TMV WHB
1 x WHB - Located GRD Ward B-1.133-D Bay Toilet(99) WHB
1 x WHB - Located Grd Stores-3.12-Cleaners Room(~~) WHB
1 x WHB - Located 1st Rehab Upstairs -7.19A-Pro Hollywwood(188) WHB
1 x WHB - Located 1st Physics--Mens Toilet(36) WHB
1 x WHB - Located Grd Ward D-1.24-Patient Room(132) WHB
1 x WHB - Located Grd Lymphoedema-4.16-(26A) WHB
1 x WHB - Located 1st Ward C-2.2-Bathroom(168) TMV WHB
1 x WHB - Located Grd OPD-4.81-Ladies Toilet(7) WHB
1 x WHB - Located Grd OPD-4.98-Disinfectant Room(14) WHB
1 x WHB - Located Grd Ward D-1.71-Mens Toilet(115) TMV WHB
1 x WHB - Located Grd Maintenance--Toilet(516) WHB
1 x WHB - Located Grd Radiotherapy--Unit 5(53) TMV WHB
1 x WHB - Located 1st Ward A-2.75-Toilet(82) WHB
1 x WHB - Located Grd OPD-4.72-Clinic Rm 4(16) WHB
1 x WHB - Located Grd MR-4.55.1- Toilet(179) TMV WHB
1 x WHB - Located Grd OPD-4.91-Clinic Rm 4(18) WHB
1 x WHB - Located Grd Ward D--Corridor(132A) TMV WHB
1 x WHB - Located Grd Radiotherapy-G13-Clinic Room 2(45) WHB
1 x WHB - Located Grd Ward D-1.77-Corridor D - B(115B) TMV WHB
1 x WHB - Located Grd Radiotherapy--Unit 4(51) TMV WHB
1 x WHB - Located GRD Ward B--Iodine Room(92) TMV WHB
1 x SINK - Located 1st Ward C-2.05-Treatment Room(153) Sink
1 x SINK - Located Grd Ward D-1.2-Patient Room(148A) Sink
1 x SINK - Located 1st Ward A-2.99-Sluice Rm(65) Sluice Sink
1 x SINK - Located Grd OPD--Sluice Room(10) Sink
1 x SINK - Located 1st Ward A-2.92-Clinical Rm(67) Sink
1 x SINK - Located 1st Ward C-2.13-(163) TMV Sink
1 x SINK - Located 1st Ward A-2.73-Treatment Rm(73) Sink
1 x SINK - Located Grd Therapy--Unit 2(259C) TMV Sink
1 x SINK - Located 1st Ward A-2.56-Nursing Dep toilet(~~) Sink
1 x SINK - Located 1st Ward C-2.38-Cleaners Room(150A) Cleaners Sink
1 x SINK - Located 1st Ward C-2.22-Treatment Room(169) Sink
1 x SINK - Located Grd OPD--Sluice Room(10A) Sluice Sink
1 x SINK - Located Grd Day Ward-1.91-(234A) Sink
1 x SINK - Located Grd Ward D-1.70-Cleaners Room(116A) Sink
1 x SINK - Located Grd Therapy--Unit 3(254D) Sink
1 x SINK - Located GRD Ward B-1.104-Washroom(90) Sluice Sink
1 x SINK - Located Grd Therapy--Unit 1(259A) TMV Sink
1 x SINK - Located 1st Ward C-2.04-Kitchen(151) Sink
1 x SINK - Located Grd Radiotherapy--HDR(34C) Sink
1 x SINK - Located 1st Ward A-2.85-(80) TMV Sink
1 x SINK - Located Grd Therapy--Unit 7(572) TMV Sink
1 x SINK - Located 1st Ward C-2.04-Kitchen(152) Sink
1 x SINK - Located Grd Theatre--Kitchen(571) Sink

System Number : 101 Ref: MCWS

Description : Direct mains fed water

Location:	Tank cellar basement level rear
Describe Access:	
System Served:	
Comments:	Boosted in basement and dosed with Chlorine Dioxide to system 201.

System Number : 201 Ref: CWDS

Description : Cold water down service (stored)

Location:	Main hospital upper level plant room.
Describe Access:	Via loft hatch with fixed ladder arrangement.
System Served:	Primary feed to the main hospital hot and cold water services.
Comments:	Old coated steel sectional cistern.

System Number : 202 Ref: CWDS

Description : Cold water down service (stored)

Location:	Roof top housing near the main hospital cisterns.
Describe Access:	No access limitations.
System Served:	Flushing or foul water to sluice sinks
Comments:	Long feeds found to sluice sinks in each ward.

System Number : 203 Ref: CWDS

Description : Cold water down service (stored)

Location:	Attic location in the oldest section of the hospital.
Describe Access:	Access is via internal steps to attic and roof.
System Served:	Full outlet source not known.
Comments:	Lead lined wooden frame cistern.

System Number : 204 Ref: CWDS (Boosted)

Description : **Cold water service boosted (stored)**

Location:	Tank in external location outside of the OPD near mortuary.
Describe Access:	No access limitations.
System Served:	Feed to medical cleaning pure water unit.
Comments:	Two internal submerged pumps. One not working.

System Number : 205 Ref: CWDS

Description : **Cold water down service (stored)**

Location:	Education
Describe Access:	Ladder required to loft hatch.
System Served:	Education only.
Comments:	Old galvanised system.

System Number : 206 Ref: CWDS

Description : **Cold water down service (stored)**

Location:	Units 4-5 & 6 1 st floor plant room
Describe Access:	Steps required to inspect the cistern.
System Served:	Units 4-5 & 6 only
Comments:	New stand alone system

System Number : 207 Ref: CWDS (Boosted)

Description : **Cold water service boosted (stored)**

Location:	Units 7 & 8 Rear boiler room
Describe Access:	Key required from security.
System Served:	Units 7 & 8 only
Comments:	New stand alone system

System Number : 208 Ref: CWDS

Description : **Cold water down service (stored)**

Location:	Facilities management attic
Describe Access:	Ladder required to loft hatch.
System Served:	Facilities office only
Comments:	

System Number : 209 Ref: CWDS (Boosted)

Description : **Cold water service boosted (stored)**

Location:	Laboratory
Describe Access:	Ground level external to the rear
System Served:	Laboratory only
Comments:	

System Number : 210 Ref: CWDS

Description : **Cold water down service (stored)**

Location:	The Lodge Roof top
Describe Access:	Fixed ladder to the roof.
System Served:	Lodge only
Comments:	Dosed with Chlorine Dioxide housed in the extension boiler house.

System Number : 301 Ref: HWS

Description : **Hot water service (stored)**

Location:	Main hospital calorifiers are located in the basement boiler area.
Describe Access:	Key required from security.
System Served:	Main HWS in the hospital see asset register.
Comments:	

System Number : 403 Ref: Chilled

Description : **Chilled / closed system**

Location:	Units 4-5 & 6 Chilled
Describe Access:	NA
System Served:	Units 4-5 & 6 Chilled
Comments:	Closed chilled systems tend to operate outside of 20 to 45°C and do not generate aerosols under normal operating conditions. The systems are dosed and have been awarded an insignificant risk rating. Aerosol control should be considered during open maintenance operations to minimise any legionella risks.

System Number : 404 Ref: Chilled

Description : **Chilled / closed system**

Location:	Units 7 & 8 Chilled
Describe Access:	NA
System Served:	Units 7 & 8 Chilled
Comments:	Closed chilled systems tend to operate outside of 20 to 45°C and do not generate aerosols under normal operating conditions. The systems are dosed and have been awarded an insignificant risk rating. Aerosol control should be considered during open maintenance operations to minimise any legionella risks.

System Number : 501 Ref: Water Feature

Description : **Water feature**

Location:	Close to wards
Describe Access:	NA
System Served:	Local pond (artificial)
Comments:	Aerosols generated by falling water.

System Number : 601 Ref: AHU

Description : **Air handling units**

Location:	Across site
Describe Access:	Not surveyed.
System Served:	Various locations
Comments:	Not fully surveyed at this time. General points made based on observations.

System Number : **999** **Ref: Management**

Description : **Management**

Location:	All areas
Describe Access:	NA
System Served:	All areas
Comments:	Manuals not available at the time of site visit.

Assessment Information

Client Name : **Example Hospital**

[redacted]

Client Contact : [redacted]
Phone : [redacted]
Fax : [redacted]
Mobile : [redacted]
E Mail : [redacted]

Site Name : Example Hospital

[redacted]

Site Contact : [redacted]
Phone : [redacted]
Fax : [redacted]
Mobile : [redacted]
E Mail : [redacted]

Assessor : **Oculus Consulting Ltd**

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Signature : Date :

Risk Assessment Scope

Additional Comments