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INTRODUCTION

This report relates to a Review of the Legionella Risk Assessments that were carried out by Freeston Water Treatment in April 2009; these were the latest Risk Assessments for these buildings. The Review Survey was carried out at 110A, B and C West St, Havant, Hampshire PO9 1LN. The Review of Recommendations highlighted in the previous Risk Assessments was undertaken in order to comply with the Health and Safety Executive requirements on the control and prevention of Legionellosis. This Review has been carried out as asked for by Hampshire County Council in accordance with ACoP L8 'The control of Legionella bacteria in water systems' (APPROVED CODE OF PRACTICE & GUIDANCE) only.

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

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

BACKGROUND TO LEGIONELLA

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

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

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

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

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

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

REVIEW COMPLIANCE

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

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

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

This may result from example:

Changes to the water system or its use

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

The availability of new information about risks or control measures

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

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

SITE REVIEW

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

During the Review Survey it was identified that temperature monitoring of the domestic hot and cold water systems is now being carried out within the three buildings; this was found to be up to date as of March 2011. A new water systems logbook has now been issued for 2011 by Hampshire County Council; this was actually started in February 2011 with monitoring and checks being recorded within the logbook; this single logbook serves all three buildings. The duty holder, responsible persons and operational staff have been nominated in writing within the logbook.

It was found at the time of this Review that monthly temperature monitoring of the hot water calorifier flow and return is not being carried out in any of the three buildings; the monthly temperature monitoring of the sentinel TMV's is also not being carried out. It appears that the site staff do not have any form of digital thermometer with surface and immersion type probes to be able to carry out satisfactory monitoring; I would recommend the site staff are issued with the correct devices to enable them to carry out the monitoring sufficiently as soon as possible.

Weekly flushing of the three buildings water outlets as well as infrequently used outlets is being carried out and recorded within the logbook documentation. Showerhead cleaning and disinfection is being carried out but it is not being recorded in the logbook; it must be ensured that when this is carried out it is recorded; I would also include the sluice room showerheads in this cleaning and disinfection regime.

It must be ensured that all monitoring and checks are kept up to date; this will be achieved if the monthly logbook audit is carried out by the site manager; at the time of this Review, audits appear to have been carried out on the logbook documentation up until April 2011.

All cold water storage tanks within the three buildings with the exception of the one in the roof void above the bedsit flat of 110C have been cleaned and disinfected this was last carried out in November 2010; no cleaning and disinfection certificates were seen within the logbook documentation. As already mentioned one storage tank within the roof void of 110C has not been cleaned and disinfected; it would appear that the far end water storage tank in building 110C was not identified at the time of the original assessment; details can be found later in this report.

COLD WATER STORAGE

Building 110A

The domestic cold water storage tank is of a GRP construction with a poly fibre jacket for insulation which was in a poor condition; I would recommend this is replaced. There is a screened vent fitted to the lid and screened overflow pipe work. The returning vent pipe from the calorifier has been re-routed from the storage tank to a tundish via an air gap as recommended in the original assessment; it would appear the hole left from the vent pipe work has not been capped to help prevent ingress of contaminants; I would recommend this hole be capped. Internal inspection proved the tank to have a slight amount of sediment on the base of the tank; this storage tank was last cleaned and disinfected in November 2010; I would recommend this is continued annually if required.

The water temperature of 110A water storage tank at the time of this Review Survey was:

110A Storage Tank 12.2°C This is Satisfactory

Building 110A

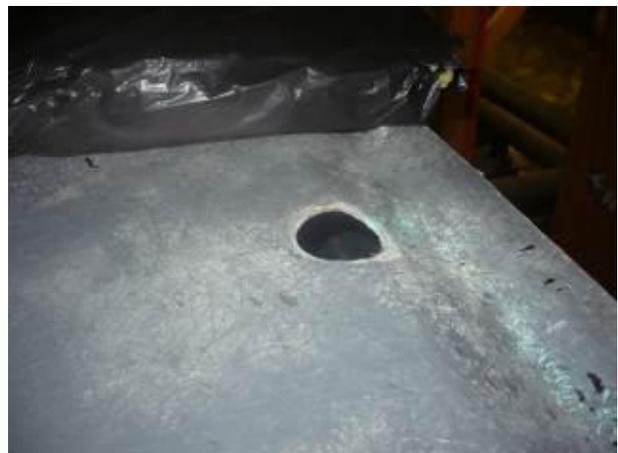
Water storage tank located in roof void.
Poor insulation fitted recommend this is replaced.



Internal view of water storage tank at time of Review. Last clean and disinfection was in November 2010; clean and disinfect annually if required.



Returning vent pipe hole in storage tank has not been capped to prevent ingress of contaminants; recommend hole is capped.



HOT WATER STORAGE

Building 110A

Hot water storage within building 110A is by one calorifier located within the cupboard space of the first floor bathroom; the calorifier is heated by the LTHW system and single electric element and is fitted with a return system; there is one circulating / return pump fitted. It was recommended in the original assessment that temperature gauges be fitted to the flow and return pipe work to aid with the monthly temperature monitoring this has not been carried out. Monthly temperature monitoring of the flow and return temperature is not being carried out and recorded in the logbook documentation; I would again recommend this is started as soon as possible and recorded when carried out. It was noted at the time of this Review that the drain pipe work on this calorifier is long thus creating deadleg pipe work; it was recommended in the original assessment that the calorifier be purged to drain on a six monthly basis, this is not being carried out. Domestic water services should operate at temperatures that prevent the proliferation of Legionella. L8 specifies that hot water should be stored at no less than 60°C and distributed at no less than 50°C, obtainable at user outlets within one minute of opening.

Building 110A calorifier flow and return temperatures at the time of this Review were:

Calorifier Flow	55.0°C	This is Not Satisfactory
Calorifier Return	50.0°C	This is Satisfactory

Hot water should be stored at 60°C at all times; I would recommend adjustment to achieve this. The hot water return temperature should be maintained at 50°C or more at all times.

Building 110A

Hot water calorifier located in the first floor bathroom cupboard space. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.



Maintain storage at 60.0°C.

Hot water calorifier circulating/return pump. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.



Maintain return temperature at 50.0°C or more at all times.

Calorifier has a long drain creating deadleg pipe work; recommend this is purged to drain on a regular basis.



COLD WATER STORAGE

Building 110B

The domestic cold water storage tank is of a GRP construction with a poly fibre jacket for insulation which was in a fair condition. There is a screened vent fitted to the lid and screened overflow pipe work. The returning vent pipe from the calorifier has been re-routed from the storage tank to a tundish via an air gap as recommended in the original assessment; the hole left from the vent pipe work has been capped to prevent the ingress of contaminants. Internal inspection proved the tank to be in good order with no sediment build up; this storage tank was last cleaned and disinfected in November 2010; I would recommend this is continued annually if required.

The water temperature of 110B water storage tank at the time of this Review Survey was:

110B Storage Tank 13.7°C This is Satisfactory

Building 110B

Cold water storage tank located in the roof void; returning vent pipe work has been re-routed to tundish and the hole in the tank lid has been capped.



Internal view of water storage tank at time of Review. Last clean and disinfection was in November 2010; clean and disinfect annually if required.



HOT WATER STORAGE

Building 110B

Hot water storage within building 110B is by one calorifier located within the cupboard space of the first floor bathroom; the calorifier is heated by the LTHW system and single electric element and is fitted with a return system; there is one circulating / return pump fitted. It was recommended in the original assessment that temperature gauges be fitted to the flow and return pipe work to aid with the monthly temperature monitoring; this has not been carried out. Monthly temperature monitoring of the flow and return temperature is not being carried out and recorded in the logbook documentation; I would again recommend this is started as soon as possible and recorded when carried out. It was recommended in the original Risk Assessment that the calorifier be purged to drain on a six monthly basis, this is not being carried out.

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

Building 110B calorifier flow and return temperatures at the time of this Review were:

Calorifier Flow	62.2°C	This is Satisfactory
Calorifier Return	61.0°C	This is Satisfactory

Hot water should be stored at 60°C at all times and the hot water return temperature should be maintained at 50°C or more at all times.

Building 110B

Hot water calorifier located in the first floor bathroom cupboard space. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.

Maintain storage at 60.0°C.



Hot water calorifier circulating/return pump. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.

Maintain return temperature at 50.0°C or more at all times.



COLD WATER STORAGE

Building 110C

There are two cold water storage tanks located within building 110C both are located in the roof void at opposite ends of the building.

The domestic cold water storage tank located at the far end of the building is the storage tank that was not identified in the original risk assessment; it is of GRP construction with a poly fibre jacket for insulation which was in a fair condition. There is a screened vent fitted to the lid and screened overflow pipe work. There is a returning vent pipe from the calorifier to the storage tank this would be recommended to be re-routed to a drain or tundish; but is deemed not appropriate as the tank overflow discharges over the front door to the building. Internal inspection proved the tank to have some sediment build up on the base of the tank; this storage tank was last cleaned and disinfected in November 2010; I would recommend this is continued annually if required.

The water temperature of 110C water storage tanks at the time of this Review Survey was:

110C Far End Storage Tank 17.4°C This is Satisfactory

Building 110C Bedsit Flat Storage Tank

At the time of this Review the cold water storage tank was internally inspected and found to have a build up of sediment on the base of the tank; this sediment could act as a nutrient for the proliferation of bacteria. I would therefore recommend the tank be cleaned and disinfected at the earliest opportunity and continued annually if required. The storage tank was insulated with a poly fibre jacket this was seen to be in a good condition; the tank lid is fitted with a screened vent; the overflow pipe work is also fitted with an insect screen. The inlet and outlets are not fully opposed therefore there is not a good flow of water through this tank; consider fitting sparge pipes to help create a good flow of water through the tank. This cold water storage tank appears to serve the bedsit flat on the first floor in the administration area of 110C; it also serves cold water to the hot water calorifier located beneath it in a cupboard space. The returning vent pipe work from the calorifier has not been re-routed as the overflow from this tank discharges over the buildings front door so it was not deemed appropriate.

The water temperature of the bedsit flat storage tank at the time of this Review Survey was:

Storage Tank 18.2°C This is Satisfactory

Building 110C

Far end cold water storage tank located in the roof void.



Internal view of the water storage tank at the time of this Review; some sediment build up on base. Last clean and disinfection was in November 2010; clean and disinfect annually if required.

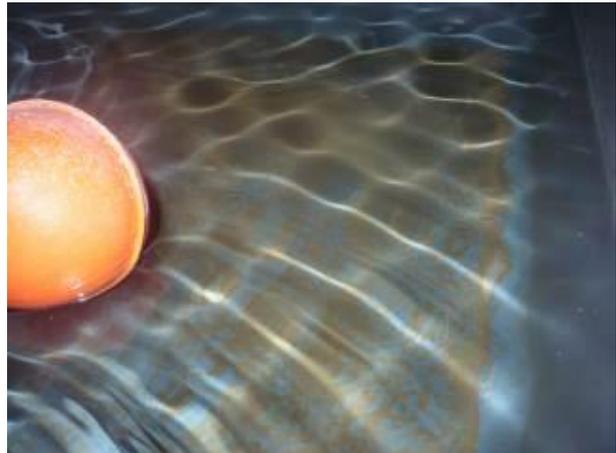


Bedsit cold water storage tank located in roof void above flat; this tank has not been cleaned and disinfected I would recommend it is scheduled in for cleaning and disinfection at earliest opportunity.



Building 110C

Internal view of bedsit water storage tank at the time of this Review, sediment build up on base of tank I would recommend it is scheduled in for cleaning and disinfection at earliest opportunity.



HOT WATER STORAGE

Building 110C

Hot water storage within building 110C is by two calorifiers one located within the cupboard space of the first floor bathroom and the other is in the cupboard space outside the bedsit flat. During the original Risk Assessment it was believed that the calorifier in the cupboard space outside the bedsit flat served all hot water outlets in building 110C; this is not the case.

The bedsit cupboard space calorifier serves the bedsit flat hot water outlets only; the calorifier is fitted with a poly fibre jacket for insulation this was in a good order; the calorifier has no return system fitted. At the time of this Review the calorifier storage was found to be very hot this was recorded at 77.0°C; all hot water outlets within the flat are served at a reduced temperature as there is a TMV fitted at floor level within the cupboard space. There is a long pipe run from the TMV to the bathroom outlets I would therefore recommend that individual TMV's be fitted as close to the outlets as possible to keep the reduced water temperature pipe runs as short as possible. At the time of this Review the TMV was not operating correctly as it was allowing water temperatures of 50.0°C at the outlets; I would recommend this is adjusted to deliver a maximum of 43.0°C or as recommended in the TMV temperature reference from NHS Estates Guidance (1988) and Thermostatic Mixing Valve Manufacturers Association (TMVA).

Building 110C bedsit calorifier flow temperature at the time of this Review was:

Calorifier Flow 77.0°C This is Satisfactory

I would recommend the calorifier storage temperature be reduced to 60.0°C

Building 110C

Bedsit Flat

Hot water calorifier located in the first floor bedsit flat cupboard space. Start temperature monitoring of the flow temperature on a monthly basis as soon as possible and record in logbook.



Maintain storage at 60.0°C.

At the time of this Review the TMV serving the bedsit flat was not operating correctly as it was allowing water temperatures of 50.0°C at the outlets; I would recommend this is adjusted to deliver a maximum of 43.0°C or as recommended in the TMV temperature reference from NHS Estates Guidance (1988) and Thermostatic Mixing Valve Manufacturers Association (TMVA).



Building 110C

The second hot water calorifier within building 110C is located within the cupboard space of the first floor bathroom; the calorifier is heated by the LTHW system and a single electric element at the top of the calorifier. This calorifier serves all hot water outlets within building 110C with the exception of the administration side and bedsit flat; there is a return system fitted with one circulating / return pump. This calorifier was not identified during the original Risk Assessment; the calorifier insulation is by poly fibre jacket this was seen to be in a poor condition and is in need of replacing to help prevent heat loss. There are no temperature gauges fitted to the flow and return pipe work to aid with monthly temperature monitoring I would recommend these are fitted. Monthly temperature monitoring of the flow and return temperature is not being carried out; I would again recommend this is started as soon as possible and recorded when carried out. There is a drain fitted at the base of the calorifier I would recommend this is purged to drain at least on a six monthly basis.

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

Building 110C calorifier flow and return temperatures at the time of this Review were:

Calorifier Flow	43.0°C	This is Not Satisfactory
Calorifier Return	43.0°C	This is Not Satisfactory

Hot water should be stored at 60°C at all times and the hot water return temperature should be maintained at 50°C or more at all times; I would recommend adjustment to achieve this.

Building 110C

Hot water calorifier located in the first floor bathroom cupboard space. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.



Maintain storage at 60.0°C.

Calorifier insulation is in a poor condition and in need of replacement to prevent heat loss.



Hot water calorifier circulating/return pump. Start temperature monitoring of the flow and return temperatures on a monthly basis as soon as possible.



Maintain return temperature at 50.0°C or more at all times.

GENERAL

It was recommended in the original Risk Assessment that the adjustable showerheads within buildings 110A, B and C be replaced with new non adjustable showerheads, this has not been carried out. I was informed that the procedures implemented by Hampshire County Council regarding the cleaning and disinfection and descaling are being carried out but are not being recorded within the logbook documentation.

All tap outlets and infrequently used outlets within buildings 110A, B and C are being flushed on a weekly basis and this is being recorded within the water systems logbook when carried out.

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

The TMV's within buildings 110A, B and C are assumed to be being serviced and maintained by contractors; no records were seen for this at the time of this Review.

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

General

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



It was recommended in the original Risk Assessment that all showerheads are changed to the non adjustable type.

Ensure all showerheads are cleaned and descaled at least quarterly or as required.



Ensure all TMV's are being serviced, maintained and adjusted if required; record when carried out.



HOT & COLD WATER TEMPERATURES

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

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

Building 110A Ground Floor Sluice Room Sink		
Hot	54.0°C	Satisfactory
Cold	11.8°C	Satisfactory
Building 110A First Floor Bathroom Wash Basin		
Hot	54.0°C to TMV 42.0°C from TMV	Satisfactory Not Satisfactory
Cold	13.1°C	Satisfactory
Building 110A First Floor Room 5 Wash Basin		
Hot	51.7°C to TMV 41.0°C from TMV	Satisfactory Satisfactory
Cold	13.0°C	Satisfactory

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

Building 110B Ground Floor Sluice Room Sink		
Hot	62.0°C	Satisfactory
Cold	11.9°C	Satisfactory
Building 110B Ground Floor Kitchen Sink		
Hot	58.2°C to TMV 42.0°C from TMV	Satisfactory Not Satisfactory
Cold	11.9°C	Satisfactory
Building 110B First Floor Toilet Wash Basin		
Hot	60.0°C to TMV 42.0°C from TMV	Satisfactory Not Satisfactory
Cold	13.9°C	Satisfactory
Building 110B First Floor Bathroom Wash Basin		
Hot	60.0°C to TMV 40.0°C from TMV	Satisfactory Satisfactory
Cold	14.1°C	Satisfactory

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

Building 110C Ground Floor Shower Room Wash Basin		
Hot	42.2°C to TMV 42.0°C from TMV	Not Satisfactory Not Satisfactory
Cold	16.1°C	Satisfactory
Building 110C First Floor Bedsit Flat Kitchen Sink		
Hot	77.0°C to TMV 50.0°C from TMV	Satisfactory Not Satisfactory
Cold	13.7°C	Satisfactory
Building 110C First Floor Toilet Wash Basin		
Hot	43.0°C to TMV 41.0°C from TMV	Not Satisfactory Satisfactory
Cold	16.1°C	Satisfactory
Building 110C First Floor Bathroom Wash Basin		
Hot	43.0°C to TMV 40.0°C from TMV	Not Satisfactory Satisfactory
Cold	17.7°C	Satisfactory

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

RECOMMENDATIONS & SUMMARY

During the Risk Assessment several items were recommended for buildings 110A, B and C:-

Commence temperature monitoring of the domestic hot and cold water system as soon as is practicable. Record in the logbook when carried out.

This is now being carried out with the exception of the monitoring of the calorifier flow and return temperatures.

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

This was carried out in November 2010 on all tanks with the exception of one tank in 110C roof void; recommend this is continued annually if required.

Remove calorifier vent pipe and pipe to a foul drain via an air gap.

This has been carried out on the tanks within buildings 110A and 110B.

Seal vent pipe aperture in lid with WRAS approved material.

This has been carried out in building 110B but not in 110A.

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

No record of this being carried out in any of the buildings.

Descale hot water calorifier annually if required.

No record of this being carried out.

Manually check circulating pump monthly to ensure effective operation.

No record of this being carried out.

Fit temperature gauges to the hot flow and return pipe work on the calorifier.

These have not been fitted to any of the calorifier pipe work in any of the buildings.

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

All tap outlets and infrequently used outlets are being flushed weekly and recorded when carried out in all three buildings.

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

No record of any water sampling being carried out.

Clean and disinfect showerheads quarterly. Record when carried out.

Showerheads are being cleaned and disinfected weekly and descaled on a quarterly basis as implemented by Hampshire County Council in all three buildings; this is recorded when carried out.

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

No records were seen for servicing and maintenance at the time of this Review.

Thermostatic mixing valves to be adjusted to achieve the correct outlet temperatures as set out in HTM 04-01.

No records were seen for servicing, maintenance and adjustment at the time of this Review.

Replace adjustable spray showerhead with non adjustable items as recommended in HTM 04-01.

This has not been carried out.

Ensure washing machines are appropriate WRAS approved healthcare units.

It is assumed the industrial type washing machine is appropriate for health care units.

Replace sluice wash down hose with a shorter hose or remove and install a pot wash unit.

This has not been carried out where fitted in two of the buildings.

It is recommended that the following are carried out:-

- Continue with all current procedures implemented by Hampshire County Council and continue to record in water systems logbook.
- Continue monthly temperature monitoring of all domestic sentinel hot and cold water and additional outlets in all three buildings and record in water systems logbook.
- Continue to clean and disinfect cold water storage tanks and continue annually if required. File certification in water systems logbook when carried out.
- Start monthly temperature monitoring of the hot water calorifier flow and return temperatures in all three buildings and record in water systems logbook.
- Start purging all calorifiers to drain on at least a six monthly basis and record in the water systems logbook when carried out.
- Inspect all cold water storage tanks on a six monthly basis and take water temperature from tank and ball valve and record in water systems logbook.
- Bacteriological and Legionella water samples to be taken annually or more frequently if temperatures fall outside limits or the buildings have 'at risk' clients.
- Start servicing and maintaining TMV's in all three buildings carry out adjustment to achieve correct water temperatures where required.
- Ensure all staff have up to date Legionella awareness training.

SUMMARY

As reported a new water systems logbook has been issued by Hampshire County Council for 2011 for 110A, B and C West Street, one logbook is being used for the three buildings and monthly temperature monitoring is being carried out by site staff. It should be ensured that the calorifier flow and return monthly temperature monitoring is started as soon as possible and recorded in the water systems logbook; the circulating return pump should be checked for the correct operation on a monthly basis; this should be carried out in all three buildings.

I would recommend that the site staff be supplied with a digital thermometer with the appropriate immersion and surface probes to carry out monitoring of the calorifiers correctly. Both probes can be used to carry out temperature monitoring of the tap outlets and also for the monitoring of the TMV's which at present is not being carried out. Sentinel TMV's should be monitored on a monthly basis and recorded in the water systems logbook when carried out.

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

It was recommended in the last Risk Assessment that all adjustable showerheads be replaced with the non adjustable type; this has not been implemented.

I would recommend that the current procedures and checks that have been implemented be continued; and continued to be recorded within the logbook documentation. I would also recommend that all staff have up to date Legionella awareness training.