

G4 ESTATE, CATTERICK GARRISON.

REPORT / NOTES ON THE TRIAL OF AERATED SHOWERS

Following observation in the technical press it was decided to look further into aerated showers.

The only fully approved unit on the market today is the 'Aquiv8' Shower units. These are designed in the UK and manufactured in Sweden. The designers and manufactures are AL Challis Ltd , based in Maidenhead Berkshire.

The initial analysis showed a considerable saving could be achieved with the installation of these heads on normal commercial showers.

Principles of Aerated Showerheads.

The process is a specially designed unit, which is engineered to mix at the showerhead water and air in such a way that they are thoroughly combined so that the water droplets are expanded at the same time that conventional aerosols are not formed.

The processed droplets then travel more slowly in a wider area and thus wet and clean the skin that they touch, cleaning the skin more efficiently. In theory the users experience a softer shower using less water than conventional units. The end user has a satisfying shower whilst using less water.

Up until recently the manufacturing capability for these units was fully taken up in Scandinavian Countries where the saving of water is treated more importantly than here, however with manufacturing expansion the units are now being marketed in the UK.

The units are approved for compliance with Water Regulations and BRE / HSE for Legionellosis.

Appendix 1 & 2 indicates WR.A approval Certificates for the showerheads.

Current shower installation can and are on many occasions, set by the designer as a compromise in pressure terms, to facilitate the rest of the mechanical installation. These heads compensate for these compromises so as to give the ideal shower situation.

Following a discussion with ALC, a trial was carried independently on this Garrison, using the lower floor of the Sandhurst Block at Somme Barracks. The Regiment occupying the Barracks at that time were asked to give feedback on how they found unit in practice.

During a period of 18 days, the Water usage was compared with that of a similar period in time, to which the occupying unit confirmed was of similar operational usage / occupation.

Meter readings were taken and compared with the site profile for the Barracks to confirm this usage.(Appendix 3 & 4 indicated the site profiles).

The savings in water in profile terms shows an average saving of 0.575 m³/ hr over the period concerned, and was broken down further to confirm this assumption to be correct.

Findings

Flow rates when in occupation:

Originally. =15 litres/ min.

With ALC units. = 7 litres /min

Thus:

Saving in water of, = 8 litres/min.

Saving in Sewage of. = 7.1 litres / min.

Logged saving in water use over the trial period via site profile indicated an average saving of 0.575 m³/br for the 18 days, equating to 193 m³. Subsequent actual meter recording on the building concerned confirmed this to be a reasonable profile assumption ie 196m³, This being a timed period with and without the units installed equated to 18 days.

This gives a saving per annum of 3833 m³ of water.

This equates to a saving in water and sewage charges of £4887.00p per annum.

Unit cost of the showerheads at a one off price for quantities of say 20 or less, plus fitting would give a crude pay back of 7.98 weeks, say 8 weeks.

Unit charges with a bulk discount using say 100 or more units, plus fitting, would give a crude payback of 4.97 weeks say 5weeks.

The response from the unit occupying the building concerned was very positive, in that they felt the heads were a vast improvement on the existing situation. Whilst the occupying unit were warned that the showers may be of a gentler nature, their feedback indicated that in practice 9 Out of 10 users felt that the shower were more invigorating and were ideal for general purpose showering.

Conclusion.

In Military 'SLA' terms these showerheads should give 5-8 weeks payback period against installation costs invested in the normal situation.

The whole of the above analysis does not take into account additional energy savings in terms of producing less hot water for the purposes of showering. This should give an additional saving of around 10%, however it would depend upon the fuel used for this purpose.

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