

## Test site 1 caravan site in Dorset.



## The situation

### The location

A large holiday park of static caravans, and mobile caravans, located on the Dorset coast, near Weymouth.



The campsite, in Dorset near Weymouth from the air



The campsite, in Dorset

### The problem

RINNAI Hot Water Heaters on this site have been known to stop working after just 6 weeks.

Shower heads have needed descaling every week. This meant costly maintenance.

Pipes on this site have had to be replaced regularly due to vast scale problems. In one location a 32mm pipe has been reduced by scale down to roughly the capacity of 15mm pipework.

### The set up

The supply pipe is a 42mm inlet pipe reduced to 2 lines of 28mm which are warmed by Rinnai thermal stores (which are fed by solar thermal panels) and in turn the 5 Rinnai warm water hot water heaters which will bring the water up to temperature, if necessary.

There is a secondary return on the hot water system plumbed in 22mm.

This has the capacity of 10.5 m<sup>3</sup> per hour, and caters for around 80 families.

Water pressure is from the mains and is set at 3bar.

The hardness of water supplied by Wessex water is recorded at 300 ppm (16.8° dh)



These pipes show the extent of the limescaling problem on this holiday site

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### The Solution

An AQUABION® H40 was installed on the supply pipe as well as an AQUABION® S20 on the secondary return, after the pump. This solution was not only supposed to provide a better protection than previous technologies but also a better value for money.

The contractor Norman Squire of Heatology Ltd installed the Riannai hot water heaters, thermal stores along with the solar thermal on the roof. The AQUABION® units were also installed by Norman, at the same time as the new heaters.



Heatology installed the new Rinnai hot water heaters along with the AQUABION®s to guarantee 100% efficiency.

#### **The testing procedure**

The first inspection will be done after 2 months with a complete shower head inspection.

Second inspection was due in month 4. The questions that were asked:

Do the shower heads need descaling?  
Are the warning light indicators flashing (LC)

The final inspection will be in October 2011 and the same procedure as above combined with the removal of the heat exchanger to be cut open by Rinnai.



The AQUABION®s installed on the mains and on the Secondary Return



Inside one of the washing facilities



## The inspections

The shower heads no longer need the weekly descaling and the boilers have worked very well season.

The advanced Rinnai hot water heaters have an early warning system. Once the heat exchanger starts to scale up the boiler will detect the drop in efficiency and display an error code.



The advanced Rinnai hot water heaters control panels report no limescale, indicating they are running as efficiently as when they were installed.



The showers no longer need weekly de-scaling

It should be noted that the bonding was not in place when inspected on the 10/6/11.

James Ridout of Aquabion-uk installed it when he did his inspection on site on the above date.

## The result

The caravan site owner is very pleased with the result and is ordering more AQUABION®'s and Rinnai for other sites he owns.