Gem Utilities

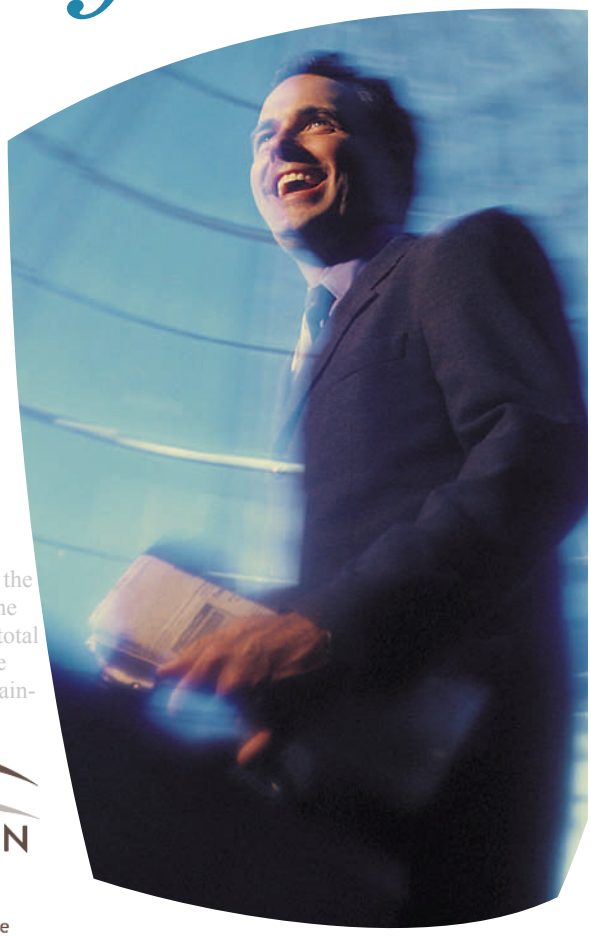
▶ GEM DELIVERS 19.5% REDUCTION IN GAS USE AT UL ARENA

▶ GEM PRODUCES LOWEST KWH GAS CONSUMPTION OVER 3 YEARS IMMEDIATELY AFTER M2G INSTALLATION

Technical *focus*

ADDRESSING THE NEEDS OF ESTATES AND MULTI-BUILDING CAMPUS FACILITIES .

In March 2007 4 M2G boiler optimising systems were installed to the boilers in the UL Arena which service the National 50M Pool, National Strength & Conditioning centre and Sports Hall. The reduction in gas consumption for the first 6 months after installation against the same 6 months prior was 19.5%. There have been no call-outs or maintenance associated with M2G since installation.



Helping you achieve your energy goals

Building heating plant characteristics:
The total floor area (TFA) of the UL Arena is 12,090M². The space heating and hot water is delivered by 4 x Cast Iron Sectional forced draught Hoval SR Plus boilers rated 750 kWh Natural Gas fired by Weishaupt Monarch type G5 burners. The lead burner is of the modulating variety type G5 ZD. The combined total boiler thermal output is 3 Mw.

The building's primary day-time heat source is Combined Heat & Power Plant (CHP) which acts as the lead boiler to maintain the common header primary circuit temperature set points through the sophisticated Building Energy Management System. Should the header temperature begin to drift then the boilers are enabled in sequence. The modulating boiler is always enabled first in the sequence.

As part of the standard operating procedure the CHP is disabled in the night-time through the BEMS whereupon the boilers maintain the total thermal base load of the building and ensure that all the secondary heating circuits are maintained within strict limits.

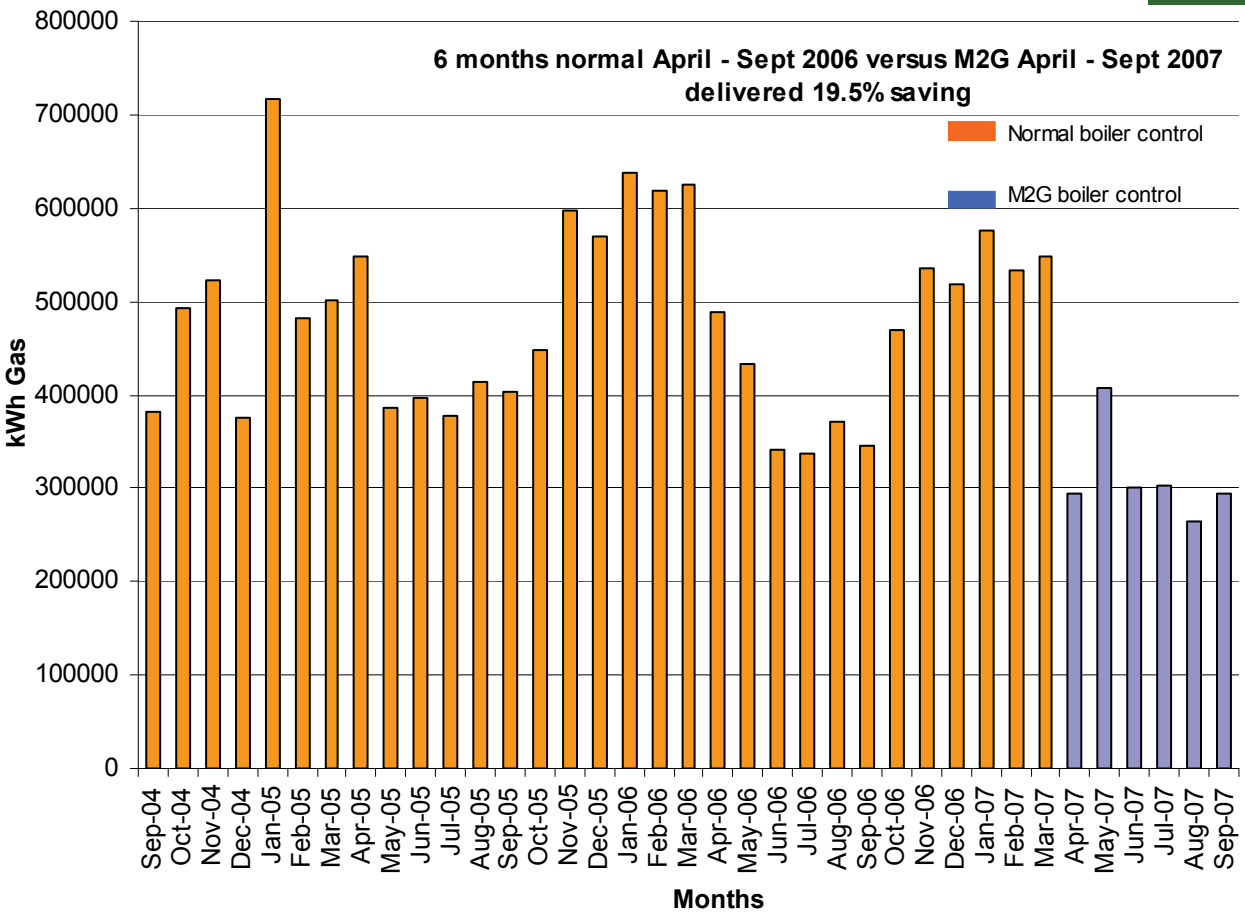
M2G is Carbon Trust Approved

CARBON TRUST
Making business sense of climate change

WATCH THIS SPACE

The UL Arena is Ireland's largest indoor sports complex and houses the only FINA approved 50M competition pool in the country . The combined total floor area (TFA) is 12,092 comprising 4 wooden-sprung courts, a suspended 200 M indoor jogging track, world-class cardio vascular and strength training centre, weights rooms, team rooms, aerobics and classrooms. The project was completed in 2002 at a total cost of €28 M. Over 500,000 people use the facility each year.

UL Arena Gas Consumption kWh Prior & Post M2G Boiler Optimisation



M2G boiler optimisation:
By monitoring each individual boiler flow and return circulating water temperature every second M2G builds a profile of boiler performance and heat loss over time. This profile is then utilised to optimise the boiler firing pattern, eliminate wasteful boiler firing, restrict purge losses and capitalise on any boiler over-shoot.

The M2G programme can mimic current boiler performance under heavy load conditions. The software also has the ability to slow the rate of boiler response when the loading demand drops to a minimum.

Importantly, the M2G boiler optimising strategy upholds the common header pipe-work temperature set points thus ensuring that the same heat is delivered into the building on variable and constant temperature circuits.

M2G savings

DELL 35%
Milford Hospice 20%
Ulster Bank 25%
Tipperary Energy Agency 20%
Superquinn 13%
Inst Mechanical Eng 17%
O^2 27%