



Incertameter Installations Success and Benefits

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Case Studies

1) AELTCC Wimbledon SW19

■ Scope

- 2 Meters installed on main feeding all 7 incoming supplies to the courts to measure usage throughout the fortnight they also can be used to split DMA into 3 halves with some additional valving and also to measure flows into Wimbledon Golf club

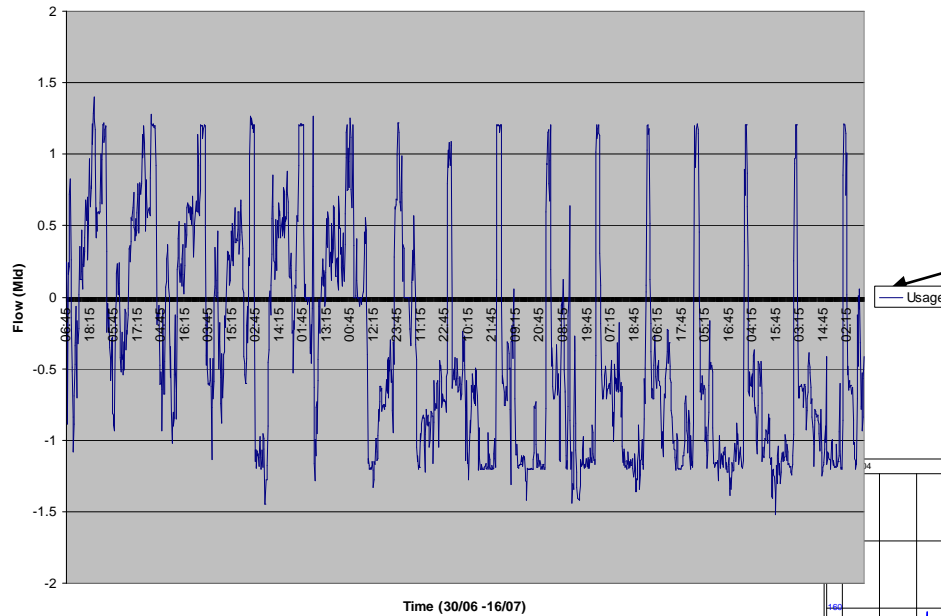
■ Benefit

- Incoming meter with outgoing flow minused off showed that the courts were using approx 2.5mld during the fortnight which we were not able to quantify before. These meters were installed within 1 week of placing order as a trial specifically to measure the AELTCC fortnight.



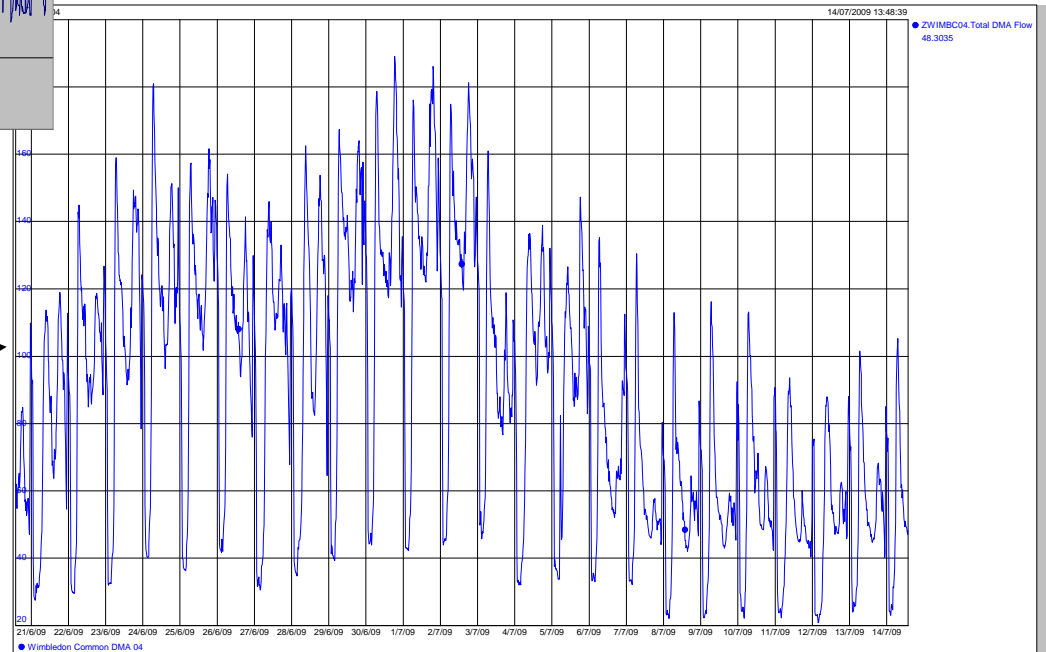
Data from AELTCC Meters

AELTC Usage



Incertameter data shows night usage at the AELTCC of up to 1.5 mld negative flow shows feeding in from opposite side

Graph shows increase in nightline of 2.5 mld during the Wimbledon fortnight





Case Studies

2) Fort Halstead MOD Research Base

■ Scope

- MOD would not allow Thames to install logging equipment on to the meter as they had their own logging equipment installed. We located a section of main where we could fit a meter and measure the night use

■ Benefit

- We had data showing night use that we were never able to prove before and this meant we were not looking for usage or leakage where none was present. This proved a 6lps usage at night which we could demonstrate Search Time £ Customer Losses £ rather than network losses £
- Pressure capability also built in



Case Studies

3) Waterloo High Recurrence DMA's

■ Scope

- Ahead of the Winter leakage event we picked 5 DMA's that had historically high Winter recurrence and we installed 11 Incertameters to split these DMA's up and improve targeting and repair cycle times

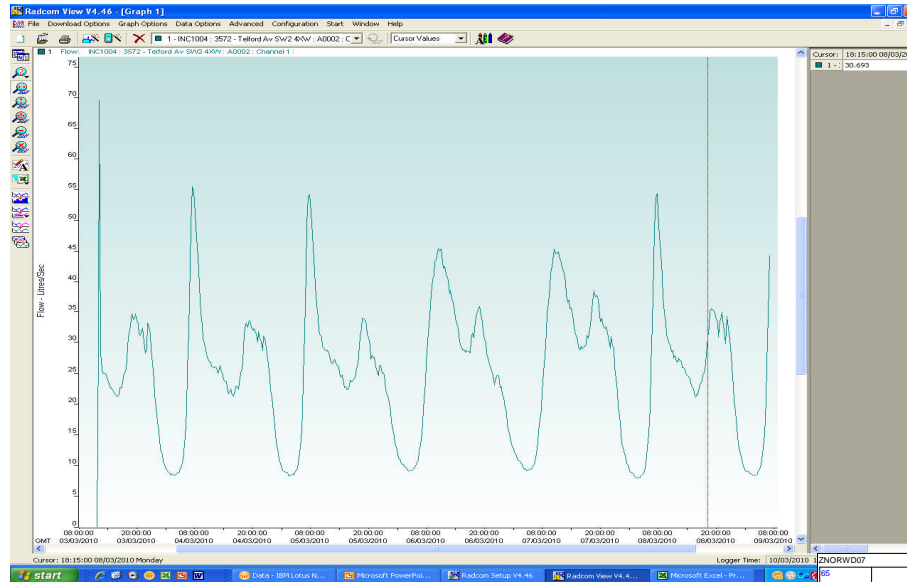
■ Benefit

Detection time halved and therefore cycle time halved and reduced overall leakage impact

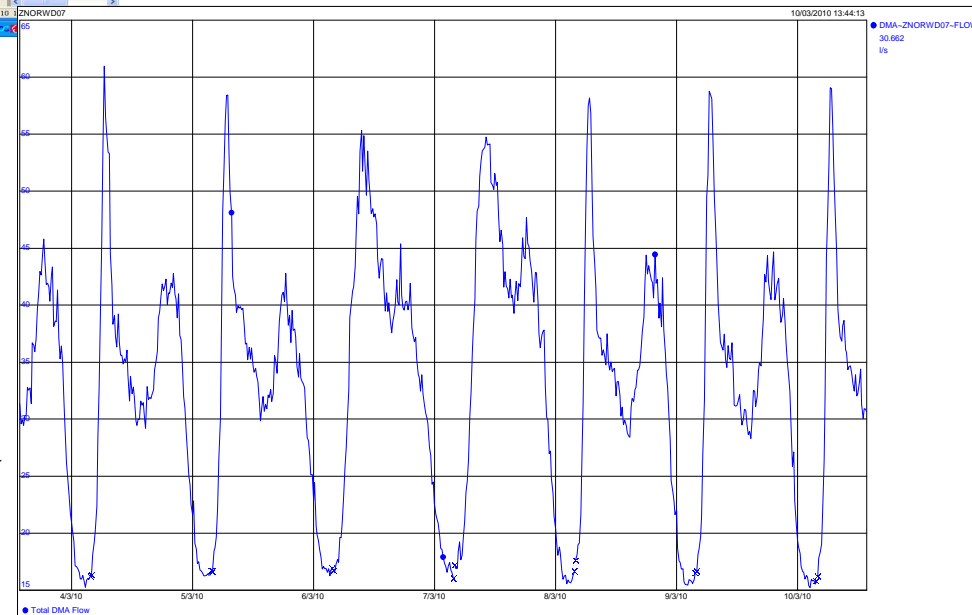
Data from Norwood 7 splitting Meter



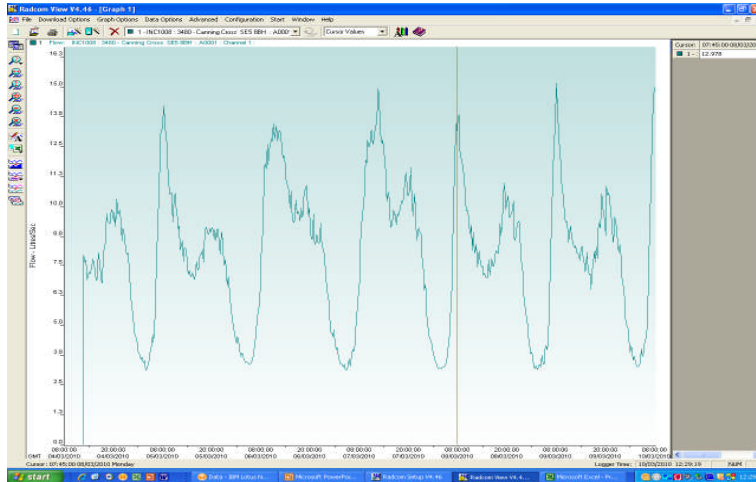
Telford Ave Night Usage of 8lps



Total DMA flow for same period was 15lps showing that we weren't looking for a single leak and that leakage was spread across DMA.



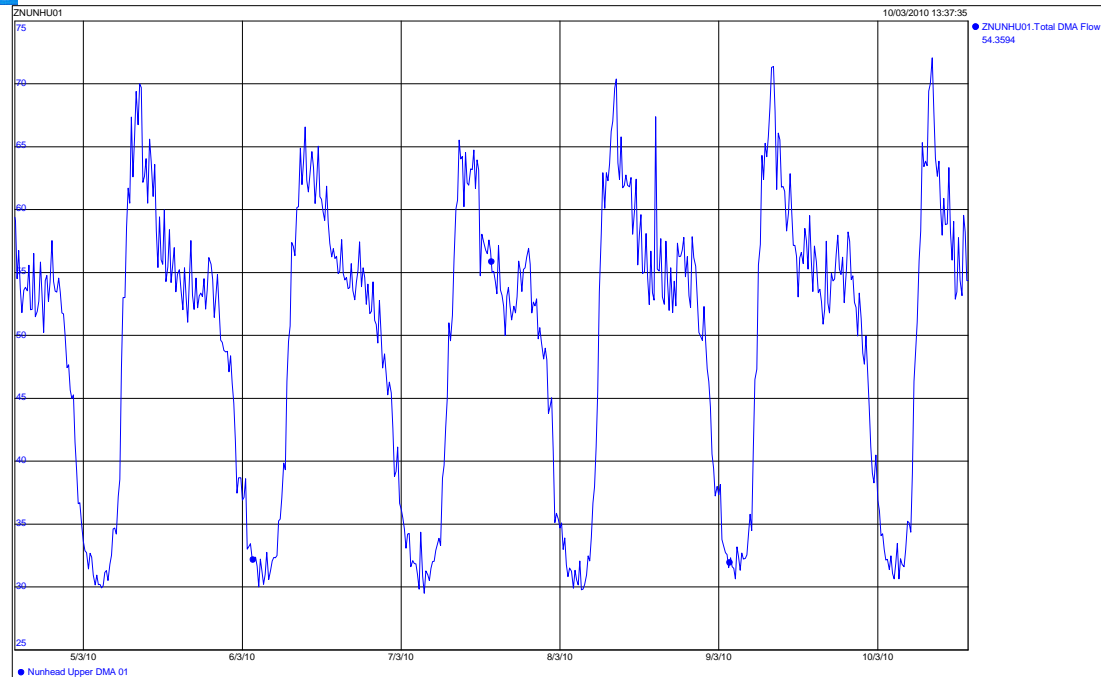
Data from Waterloo Meters



Canning Cross Incertameter showing half of DMA has Night Usage of 8lps

ZNUNHU1 running at 30lps meant that we had nightline of 22lps in one half which halved detection. Nightline is now 20lps for DMA

8 Thames Water 6/2/2010



South London Incertameter Installs

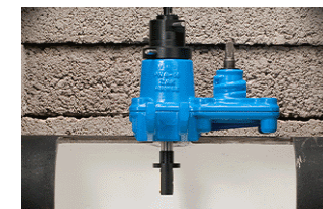


Priority	DMA	Incertameter Point	Logger ID	Reporting	Anayesd	Main diamet	Purpose
1	3623	269 Earlsfield RD SW18 3DF	2534	H		12"	Split 12.56 km and 1433 properties. DM paid for and to be installed here by Kew. Incertameter for winter.
2	Str08	Bleu, 327 Railton Rd SE24 0JN	N/A			12"	Split 2.6 km of 12" main from DMA, Install after T before DMA
3	NUNHU01	Green Man Pub Hinton Rd SE24 0HJ	N/A			16"	Split 2.4 km of 16" main from DMA
4	NUNHU01	Canning cross SE5 8BH	3480	Y	Y	5"	Split 1217 props from DMA, Possible PRV also. No leakage in this part of the DMA.
5	3623	1 Church Row, Sw18 1ES	N/A			15"	Split 2.9 km of 15" main from DMA.
5	3623	1 Swandon way sw18 (new address for Marl rd job)	N/A			12"	
6	NUNHL02	129 Gordon Rd SE15 3RR. Post PRV	1570	H		9"	Flow measure Gordons Road PMA
7	NUNHU02	Adys Rd, SE15 4DX	2955	Y	Y	7"	Flow meter Adys Rd PMA issue with data scaling. No Leakage in this area.
8	3621	1 Nine Elms Lane SW8 5NQ	N/A			15"	Split DMA into 4. Look to rezone properties
8	3621	9 Albert Embankment SE1 7HG	N/A			12"	Split DMA into 4. Look to rezone properties
8	3621	City and Urban 64A Albert Embankment SE1 7TP	N/A			12"	Split DMA into 4. Look to rezone properties
9	Str06	142 Brixton Hill SW2 1RS. George IV PH @ JO Waterworks Lane	N/A			12"	Split 2.7km of mains from the Res to the DMA. Will assist with leakage detection
10	Str03	63A Emmanuel Rd SW12 0HP				5"	Possible 2 Points split 3.2 km of 12" from DMA 60%
10	Str03	109 Telford Ave SW2 0XW	3572	Y	Y	12"	Alternate point split 2.6km 12" from DMA 50% less Done Approx 1 l/s leakage on 12" main from Res to DM5813 and Probe. Most of leakage is in DMA. Send for LCA investigation.
11	Str04	3 Poynders Road, SW4 8NX	N/A			12"	Could use a second point for insertameter (JO Streatham Place and New park Road SW2 4QE on 7") or isolate 3 valves (2x3" valves 1x 7" valve) to meter this SOM 1.6 km. .
11	Str04	o/s 184 Atkins rd sw12 (New address for 37 lagholm close job)	N/A			12"	could isolate 0.76 km of 12" main.
12	3602	1 Kenwick Rd SW15 2HL	2458	H		4"	Allows Dma to be split into 2 with 1524 props in one and 2768 in other. (35.5% of props and 31% of mains length) IF we use a valve isolation here it may work but poor pressures may be experienced. Also an insertameters allows 3 valve ops to be done to isolate the 12" on West Hill fed with end by DMs 4403 and 4404 and will mean that 1.271 km of 12" can be investigated.
13	BER03	1-14 gaptaper hse Southwark pk rd se16 3RT FROM 57 Lockwood Square SE16 2HT	N/A			6"	Split Dma in 2 parts 40% top, 60% bottom
13	BER03	171 Lower Road SE16 2XL	3000	H		12"	
14	3604	2 Cambridge Rd SW11 4BS	2997	Y		12"	
14	3604	51 Albert Bridge Rd SW11 4QA	N/A			4"	Split Dma in 2 parts approx 50/50

Installation Method



- Meters are installed under pressure using a Hawle saddle and strap with a small valve between meter and main meaning that meter installations cost no more than a simple excavation and no disruption to supply
- Once installed meter sits within a fire hydrant size chamber and meter can be accessed easily using a key supplied by Vernon Morris.
- Meter installed in approx 1 hr and data available immediately
- Footprint and environmental impact reduction of 80%





Data Retrieval Method

- Data can be manually downloaded, sent back via SMS logger or by Radio logger
- We have used both Technolog Cello flow logger and Radcom SMS lite logger
- Cello logger sends back to Web based Webpmac site and SMSlite logger sends back to a Thames Server at Orpington
- Vernon Morris are developing an SMS logger that can be supplied with the incertameter. Currently they can also supply a Radio logger that transmits back to a laptop locally included within the Incertameter price.



Cost Benefits

- Basic cost of 1 Incertameter is £785.00
- Fittings up to 12" cost £200
- Installation is £1150 to install 3 meters in one day (£383 Each)
- Once installed minimal maintenance is required.
- One Meter splitting a DMA into half would also half detection time and resource and allow points of interest to be located in half the normal time.
- Average Detection 250 props per day per man
- Average DMA size of 6000 = 14 days at cost of £1200 per 5 days. Total detection cost of £3360
- Incertameter Cost £1368
- Cost saving by halving search area and Incertameter installation costs 7 days detection + Incertameter = £2848 (£312 saving on first use and £1680 on subsequent sweeps)