

## Office Monitoring and Billing Requirement

A leading London Based Property Services Company contacted Autometers about a metering/monitoring application they were giving consideration to in one of their prime office locations in central London. The building was let to several companies on various floors each of which had electrical supplies being fed from a range of distribution boards.

### Customer Requirement

To meter all supplies using multi Function Power meters to enable Current Loads and kWh consumption to be monitored, summated and billed to each client. All metered values and information MUST be available both by the building manager and remotely by head office.

### Installation

Various electromechanical meters of different manufacturers, Some with pulse outputs, most without.

### Solution

- Fitting of 28 Information Centre IC970 meters with Modbus communication on all required supplies giving Measurement and full communication of required parameters, kWh, Amps etc.



Link all meters on a 2 Wire Modbus network to a Central location.

- Installation of Horizon Data collection system with GPRS facility.
- Creation of Logical groups for Costing and Billing Purposes.
- Creation of Local and remote user names and passwords.

Due to the age of the building and the cable runs available for the Modbus network the meters were interconnected in a non sequential manor as shown, i.e. 8<sup>th</sup> Floor – 1<sup>st</sup> Floor to Ground floor etc.

# Case Study

02: Horizon: Customer - Microsoft Internet Explorer  
Address: http://195.10.231.31:8080/METERS/customer.do?group=242

**AUTOMETERS SYSTEMS**  
METERS ADMIN LOG OUT Tuesday 5th August 2008

Customer: [Dropdown]  
Customer Site: King William Street [Dropdown]

- (3) Banca Monte Dei Paschi Di Siena
- (3) Cushman & Wakefield
- (5) Drivers Jones
  - 5th Floor DB/1
  - 5th AC Ctrl core 2
  - 5th DB/R1 core 2 ←
  - 5th Floor DBT/2
  - Basement - 5th Floor
- (1) Manon Cafe
- (2) N M Rothchild & Sons
- (8) Nateris
- (6) Trading Technologies

Logical View  
Switch View Graph Historical Data

Once all meters had been installed a “Logical” view was created to enable all relevant meters for each client to be grouped together.

7 Groups, each with their relevant measured supplies.

The Group shown has 4 meters located on the 5<sup>th</sup> floor and a 5<sup>th</sup> meter located in the basement.

Present current load and historical data is viewed by simple button clicking to view the below

Full data for each meter is available by clicking on the relevant meter. Graphs are then available with date selection.

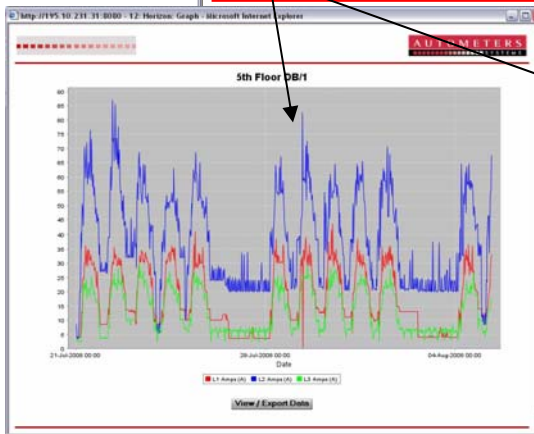
03: Horizon: Meters - Microsoft Internet Explorer  
Address: http://195.10.231.31:8080 - 03: Horizon: Meters

**AUTOMETERS SYSTEMS**

5th Floor DB/1

FREQUENCY	L1	L2	L3	TOTAL
VOLTS	243.90	246.50	246.50	
AMPS	33.00	67.50	17.50	118.00
KW	0.00	0.00	0.00	29.08
KVA	0.00	0.00	0.00	29.13
KVAR	0.00	0.00	0.00	1.66
PF	0.00	0.00	0.00	1.00
IMP KWH	185781.88			EXP KWH
IMP KVARH	743.91			EXP KVARH
KVAH	188967.48			AH

GRAPH AMPS VOLT POWER H-THD SETUP



3 Phase Current Load



kWh Consumption

# Case Study



In line with client requirements cost centres were entered to enable the automatic production of client billing.

These bills are generated on a quarterly basis and emailed to both the client and their tenant.

All tariff and customer changes are managed by the client using the Administration facility.

In the event that an interim bill or end of tenancy bill is required a manual facility is available.

**VAT Invoice**

Demand Number: **D000168**

Date Issued: 05/06/2003  
Our Ref: C0591 - 021155  
VAT Reg. No.: 839 2213 44

Acting as Agent For: **Commerz Real Investmentgesellschaft mbH**  
Registered in England No. 380075, Registered Office 29 Grosvenor St, London W1K 3JQ

Invoice To: **First Floor  
Capital House  
85 King William Street  
London  
E2 9JL**

Prebills: **First Floor  
Capital House  
85 King William Street  
London  
E2 9JL**

If you have any queries regarding the account please call 0161 238 8844

Due Day	Meter Ref	Previous	Present	Usage	PPU	VAT %	Energy Cost	Standby Charge	VAT Amt	Gross Amt
01/06/2003	16700	16700	16700	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16701	16701	16701	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16702	16702	16702	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16703	16703	16703	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16704	16704	16704	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16705	16705	16705	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16706	16706	16706	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16707	16707	16707	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16708	16708	16708	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16709	16709	16709	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16710	16710	16710	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16711	16711	16711	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16712	16712	16712	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16713	16713	16713	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16714	16714	16714	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16715	16715	16715	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16716	16716	16716	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16717	16717	16717	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16718	16718	16718	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16719	16719	16719	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16720	16720	16720	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16721	16721	16721	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16722	16722	16722	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16723	16723	16723	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16724	16724	16724	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16725	16725	16725	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16726	16726	16726	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16727	16727	16727	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16728	16728	16728	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16729	16729	16729	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16730	16730	16730	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16731	16731	16731	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16732	16732	16732	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16733	16733	16733	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16734	16734	16734	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16735	16735	16735	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16736	16736	16736	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16737	16737	16737	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16738	16738	16738	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16739	16739	16739	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16740	16740	16740	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16741	16741	16741	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16742	16742	16742	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16743	16743	16743	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16744	16744	16744	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16745	16745	16745	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16746	16746	16746	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16747	16747	16747	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16748	16748	16748	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16749	16749	16749	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16750	16750	16750	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16751	16751	16751	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16752	16752	16752	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16753	16753	16753	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16754	16754	16754	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16755	16755	16755	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16756	16756	16756	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16757	16757	16757	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16758	16758	16758	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16759	16759	16759	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16760	16760	16760	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16761	16761	16761	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16762	16762	16762	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16763	16763	16763	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16764	16764	16764	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16765	16765	16765	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16766	16766	16766	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16767	16767	16767	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16768	16768	16768	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16769	16769	16769	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16770	16770	16770	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16771	16771	16771	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16772	16772	16772	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16773	16773	16773	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16774	16774	16774	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16775	16775	16775	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16776	16776	16776	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16777	16777	16777	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16778	16778	16778	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16779	16779	16779	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16780	16780	16780	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16781	16781	16781	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16782	16782	16782	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16783	16783	16783	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16784	16784	16784	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16785	16785	16785	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16786	16786	16786	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16787	16787	16787	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16788	16788	16788	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16789	16789	16789	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16790	16790	16790	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16791	16791	16791	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16792	16792	16792	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16793	16793	16793	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16794	16794	16794	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16795	16795	16795	17.576	0.000	17.576	0.000	0.000	0.000	0.000
01/06/2003	16796	16796	16796	17.576	0.000	17.576	0.000	0.000		