

## 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**  
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) Natexis
- (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.

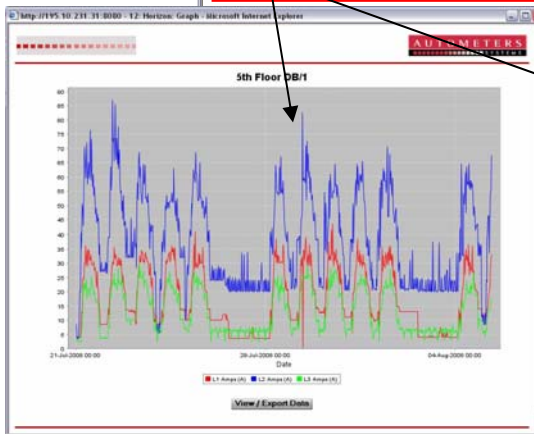
03: Horizon: Meters - Microsoft Internet Explorer  
Address: http://195.10.231.31:8080 - 03: Horizon: Meters

**AUTOMETERS**

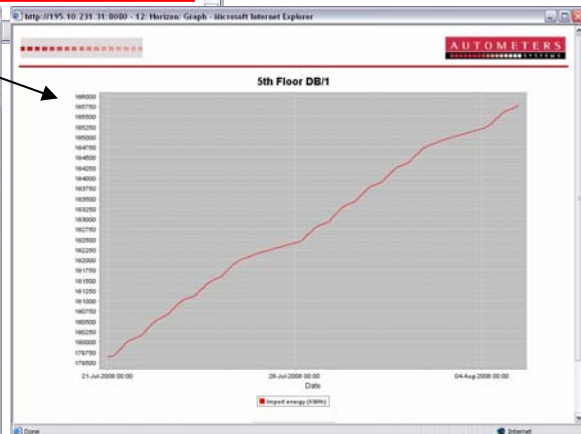
5th Floor DB/1

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: 05/06/2005  
Our Ref: C0591 - 020155  
VAT Reg. No.: 839 2213 44

Acting as Agent for: **Commerz Real Investmentgesellschaft mbH**

Registered in England No. 2600755, Registered Office 29 Deodar Road, London W14 8SL

Invoice To		Premises	
First Floor Capital House 85 King William Street London EC4M 7EL		First Floor Capital House 85 King William Street London EC4M 7EL	

If you have any queries regarding the account please call 0161 236 8844

New Charges Tar. 01672000 - Tm. 01672000										
Due Day	Meter Ref	Previous	Present	Usage	PPU	VAT %	Energy Cost	Standby Charge	VAT Amt	Gross Amt
01/07/05	16744 041	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 042	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 043	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 044	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 045	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 046	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 047	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 048	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 049	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 050	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 051	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 052	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 053	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 054	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 055	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 056	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 057	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 058	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 059	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 060	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 061	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 062	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 063	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 064	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 065	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 066	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 067	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 068	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 069	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 070	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 071	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 072	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 073	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 074	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 075	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 076	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 077	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 078	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 079	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 080	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 081	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 082	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 083	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 084	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 085	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 086	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 087	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 088	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 089	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 090	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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01/07/05	16744 092	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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01/07/05	16744 094	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 095	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 096	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 097	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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01/07/05	16744 104	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 105	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 106	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 107	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 108	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 109	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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01/07/05	16744 111	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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01/07/05	16744 113	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 114	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 115	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 116	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 117	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
01/07/05	16744 118	15070	16050	1000	0.170	17.5%	498.12	45.00	115.45	1120.45
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