

# VARMATIC VOLTAGEMASTER



## CASE STUDY

### COLLEGE CAMPUS, ENGLAND

SDC Industries installed the Varmatic VoltageMaster Voltage Optimiser in a college building situated in England. This particular campus covers a vast area, and the facilities include computer suites, seminar rooms and a theatre. Its facilities are available for use by both students and businesses; therefore, these facilities can be in use over a large number of hours per day. As a result, annual electricity costs can be quite excessive.



To counteract this, the college estates department decided to explore the benefits of utilising voltage optimisation. Their Estates Manager contacted SDC Industries to discuss the options available to them, and we provided information on the benefits of installing the Varmatic VoltageMaster.

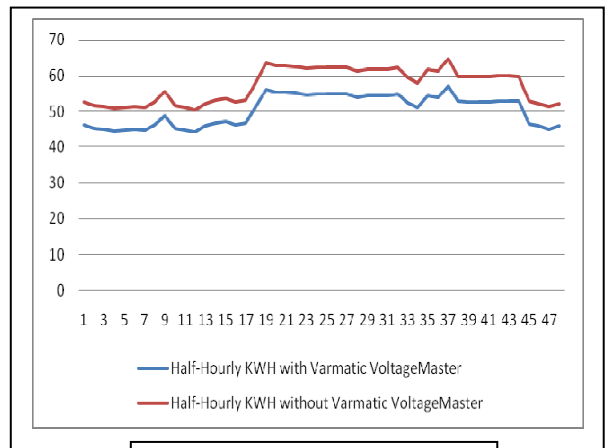
From the half hourly data obtained, and from analysing the load details, SDC Industries engineer advised that installation of an 800KVA Varmatic VoltageMaster would be required. The load on site is estimated at : partly non-electronically controlled (60%), and electronically controlled (40%).

Installation would be performed on the incoming busbars after the main circuit breaker (rated 1250 Amps). This would not involve any co-ordination with the college's electricity/utilities supplier, as no access is required to the incoming busbars which are fed from the transformer.

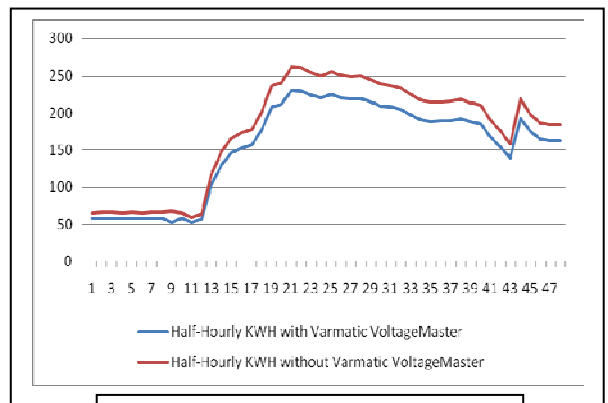
In this instance, the Varmatic VoltageMaster was delivered to site and accommodated in the electrical switchroom. Our installations team arrived at site early to carry out the preparatory works before fitting the unit. The works were completed in two days.

For this particular installation, SDC Industries manufactured and installed the unit. No external sub-contractors were involved.

#### HALF HOURLY DATA



**SUNDAY, 3<sup>RD</sup> FEBRUARY /  
SUNDAY, 10<sup>TH</sup> FEBRUARY**



**WEDNESDAY, 6<sup>TH</sup> FEBRUARY /  
WEDNESDAY, 13<sup>TH</sup> FEBRUARY**



## COST SAVINGS

<b>SIZE OF VARMATIC VOLTAGEMASTER</b>	:	800KVA
<b>UNIT SIZE**</b>	:	<b>Control Panel</b> : 600mm long x 600mm deep x 1800mm high  <b>Optimiser</b> : 1300mm long x 850mm deep x 1250mm high
<b>NUMBER OF WEEKS SYSTEM IN FULL OPERATION</b>	:	40 WEEKS PER ANNUM
<b>OPTIMISATION LEVEL</b>	:	8%
<b>LEVEL OF SAVINGS</b>	:	12%
<b>ANNUAL ELECTRICITY COSTS (WITHOUT VARMATIC VOLTAGEMASTER)</b>	:	£187,570
<b>ANNUAL ELECTRICITY COSTS (WITH VOLTAGEMASTER)</b>	:	£165,062
<b>ANNUAL TOTAL SAVINGS (12%)</b>	:	<b>£22,508</b>

\*\*Sizes can be subject to change – please check before ordering

## CO2/CARBON SAVINGS

The trial was conducted under controlled circumstances during the course of two weeks (to enable a more exact measurement to be taken). Calculations were taken with the Varmatic VoltageMaster out of circuit, then the Varmatic Voltagemaster switched in-circuit. The results are listed below :

<b>DATE</b>	<b>KWH WITHOUT VM</b>	<b>DATE</b>	<b>KWH WITH VM</b>
Sunday, 3 <sup>rd</sup> Feb	2753.7	Sunday, 10 <sup>th</sup> Feb	2422.5
Monday, 4 <sup>th</sup> Feb	7640	Monday, 11 <sup>th</sup> Feb	6723.2
Tuesday, 5 <sup>th</sup> Feb	7862	Tuesday, 12 <sup>th</sup> Feb	6918.56
Wednesday, 6 <sup>th</sup> Feb	8453.5	Wednesday, 13 <sup>th</sup> Feb	7432.58
Thursday, 7 <sup>th</sup> Feb	8103.6	Thursday, 14 <sup>th</sup> Feb	7131.16
Friday, 8 <sup>th</sup> Feb	7532.3	Friday, 15 <sup>th</sup> Feb	6628.42
Saturday, 9 <sup>th</sup> Feb	3137.2	Saturday, 16 <sup>th</sup> Feb	2760.73
<b>TOTAL KWH USED</b>	<b>45,482.3</b>		<b>40,017.15</b>

**TOTAL KWH USED PER ANNUM = 1,819,280KWH**

**TOTAL KWH SAVINGS PER ANNUM = 5465.15 x 40 WKS PER YEAR = 218,606KWH**

**TOTAL CO2 SAVINGS PER ANNUM = 218,606KWH x 0.43\* = 94,000.58KG CO2**

**TOTAL CARBON SAVINGS PER ANNUM\* = 25,662.3KG**

\*Calculation taken from National Energy Foundation (www.nef.org)