

**VARMATIC VARIO CASE STUDY
COLLEGE CAMPUS, ENGLAND**



SDC Industries installed the Varmatic Vario 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 Vario.

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

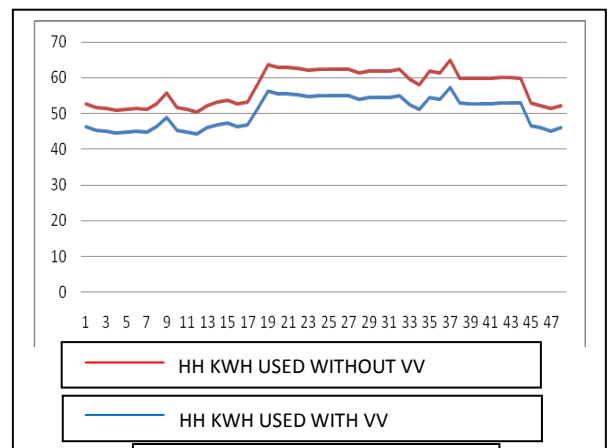
Installation would be performed on the incoming busbars after the main circuit breaker (rated 1250 Amps). This would not involve any co-ordination with the college’s electricity/utilities supplier, as no access is required to the incoming busbars which are fed from the transformer.

In this instance, the Varmatic Vario 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.

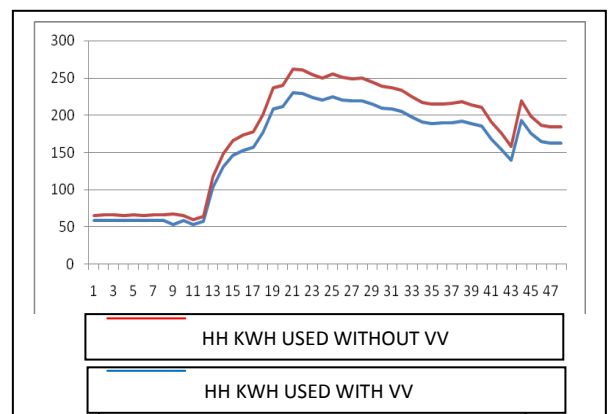
For this particular installation, SDC Industries manufactured and installed the unit. No external sub-contractors were involved.



HALF HOURLY DATA



**SUNDAY, 3RD FEBRUARY /
SUNDAY, 10TH FEBRUARY**



**WEDNESDAY, 6TH FEBRUARY /
WEDNESDAY, 13TH FEBRUARY**

COST SAVINGS

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

**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 Vario out of circuit, then the Varmatic Vario switched in-circuit. The results are listed below :

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

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)