





Figure 2.2

developed wherein it was possible to fit new a static separator in the existing building. For the Cyclone Separator and Circulating Fan, a new civil structure was made near the existing building.

**Project Management**

The downtime was curtailed to a

maximum of 14 days.

**Upgradation Results**

After upgradation, the capacity of Ball Mills has increased by 30 per cent and additional savings in specific power consumption is

around 3.17 kwh/tonne. The results are tabulated in Table 4;

**Conclusion**

After upgradation of grinding circuit from pre-grinding mode to semi-finish mode, Maihar Cement Limited has achieved the desired results. Further improvement in



Fresh feed to VRPM

Cement Mill no.2 is possible.

It has been clearly demonstrated that by the proper co-ordination between the user and the supplier it is possible to make best use of existing equipment to achieve substantial savings in power consumption and increase in production capacity.

Table 1

Equipments	Equipment Specifications	After Up-gradation
VRPM	Model: AVM 230-3 Table Dia.: 2300mm Roller Dia. X Width: 1400mm X 500mm No. of Rollers: 03 Motor: 1200 kW/ 980 RPM	Existing    Removed
Vibro Feeder & Mogensson Sizer	Model: SL-3048 Capacity: 300TPH	
Static Separator	Air Volume: 165000 m3/hr Capacity: 240 TPH	Added
Circulating Air Fan	Volume: 200000 m3/hr St. Pressure: 400 mmWG Motor : 300KW/1000RPM	Added
Separator Bag Filter Fan	Volume: 35000 m3/hr St. Pressure: 330 mmWG Motor : 40 KW	Added
Ball Mill (2 nos.)	3.8 M Dia. X 11 M Long Motor: 2 x 1250 Kw	Existing
Sepax separator (2 nos.)	Make: L & T / FLS Model: 375-M-222 Motor :250 Kw	Existing
Circulating Air Fan (2 nos.)	Volume: 200000 m3/hr St. Pressure: 550 mmWG. Motor : 425 KW	New

## GUEST COLUMN

Fresh clinker to VRPM	
seive (mm)	Cum. Wt % (Retained)
40	2
25	9
20	23
16.3	49
12.5	65
6.3	90

Product from Static Separator to Ball Mill outlet	
sieve (mm)	Cum. Wt % (Retained)
2	2
1	8
0.5	22
0.212	40
0.09	67
0.045	90



VRPM product sent to Ball Mill

Table 3

Cement Mill Grinding Media (Before Grinding Media loading pattern re Up-gradation)					Cement Mill Grinding Media (After Up-gradation)		
Ball Size, mm	CM 1		CM 2		Ball Size, mm	CM - 1 / 2	
	1st Chamber	2nd Chamber	1st Chamber	2nd Chamber		1st Chamber	2nd Chamber
50 mm	6	-	18	-	50 mm	17	-
40 mm	24	-	14	-	40 mm	26	-
30 mm	15	-	10	-	30 mm	10	13
25 mm	5	53	8	53	25 mm	-	21
20 mm	-	47	-	45	20 mm	-	29
17 mm	-	-	-	-	17 mm	-	25
15 mm	-	-	-	-	15 mm	-	8
Total	50 TON	100 TON	50 TON	98 TON	Total	53 TON	96 TON

Plant availability has been increased due to elimination of downtime on account of maintenance on the vibrating screen.

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Circulating air fan for VRPM Circuit



Static separator

Table 4

Performance of Cement Mill at M/s Maihar Cement Limited (CM 1 + CM 2 + VRPM)							
Parameters	Unit	Before Up-Gradation			After Up-Gradation		
		CM 1	CM 2	Total	CM 1	CM 2	Total
Product		PPC	PPC	PPC	PPC	PPC	PPC
Output	TPH	90	80	170	123	103	226
Fineness	Blaine	3300	3300	3300	3280	3120	3200
Sp. Power	kWh/t	31.09	31.09	27.92	27.92		