

Madhya Pradesh Bhawan

Office cum VIP Guest House, New Delhi

1. Building Profile-

1.1 Madhya Pradesh Bhawan is an Office cum VIP Guest House of Govt. of M.P. situated in VIP area 'Chanakyapuri', New Delhi. It has two buildings Old block and New block (Annex). These building are built in such a way that it ensures maximum cross ventilation and natural illumination

1.2 Old Block

The old building has a built-up area of about **2740 sq. mts** (ground+2) with:

- **H.E. Governor's Suite (App. Area 2000 sqft.)**
- **Speaker Suite**
- **Chief Secretary Suite**
- **12 nos. VIP suites**
- **8 nos. Dormitory**
- **Protocol Office**
- **Reception Counter,**
- **Kitchen Dining Rooms**
- **Conference Room**
- **V.I.P Lounge**

1.3 New Block- (Annex)

The second building with a built-up area of **1101.68 Sq.mts.** (ground+3) is an extension block with-

- **H'ble Chief Minister Suite (App. area 1800 sqft.)**
- **H'ble Chief Justice Suite**
- **One V.I.P Suites**
- **High Court Judge**
- **Resident Commissioner's Office.**

2. Air-Conditioned Area

2.1 Through the buildings is centrally air conditioned, there are certain areas such as Hon. C.M office and Resident Commissioner Office etc. window/split AC's are provided to avoid unnecessary run of plant for the period when these area are not in use.

3. Green Area-

3.1 There are two lush green lawns in the front side of the building and back side of the buildings. To keep more green cover creepers have been planted on the rear and back walls, the front wall is already covered by greenery. Construction is made in such way that there may be maximum exposure to south west and south east and maximum use of light are taken care. The tree plantation is done in such a manner that it reduces the heat, but does not reduce the light.



4. Energy Conservation Achievements-

4.1 It is our ambition to save energy wherever possible with a view to enhance the eco friendly profile of the building of the building and improve the end use efficiency. We have taken into account cost-benefit analysis in prioritizing the implementation of efficiency measures.

5. Achievements

5.1 **Award-** In recognition of our efforts so far, we have received the Energy Efficiency And Renewable Energy Award 2007. (photo copy attached at annexure 'C')

5.2 **Team Work-** We have a team of motivated and inspired staff and which puts in considerable effort towards the task of energy saving.

5.3 No compromise with comfort to the guests

Since this an office cum VIP guest house, so an important consideration is that there may not be any discomfort to the guests due to steps taken towards conservation of energy, and every effort is made accordingly.

6 Connected Load

6.1 **Load-** This Bhawan has a total connected load of 461 K.W. fed with 11 KV 3 phase and an indoor transformer installed by N.D.M.C (excluding staff quarters load). It has a 125 KVA silent Generating set duly installed in an acoustic enclosure.

7. Inspiration-



7.1 In the leadership of the Resident Commissioner, a team has been constituted to promote and monitor energy conservation continuing basis. The team consists of dedicated members with vast experience of field conditions. The Deputy Resident Commissioner is the head of the team with the Deputy Director (Accounts), Section officer, Executive Engineer, House Manager/ Protocol Officer and Assistant Engineer as members.

The above team not only monitors but also motivates other to conserve energy, and it is due to the unrelenting efforts of this team that we have been able to make substantial energy savings for the Bhawan as well as for the nation.



8 The following measures have been undertaken towards energy conservation.

8.1 **Solar Water Heater:-**

8.1.1 **Solar Energy:-**In 1988-89 energy saving solar water heater a system was first installed on the roof top. In the year 2006-07 and 2007-08 upgraded and more efficient solar water heating systems have been installed on each of the buildings on the roof top.

Old Building	Extension Block
	

8.2 **Use of C.F.L:-** In most of the areas incandescent bulbs have been replaced with CFL, saving much electricity.

Bulb Photo	CFL
	
Before	After

8.3 **Use of Scroll Chiller:-** During internal energy audit, it was found that a lot of electricity was consumed by water cooled chillers. Therefore, new technology chillers have been procured and adopted. In phase I old 90 TR water cooled centralized A.C plant has been replaced by air cooled scroll chiller (36+5+5+5TR). In 2nd phase 100TR(60+40) old water cooled A.C plant have been replaced by 48+48 TR stand by air cooled scroll chiller units.

Thus considerable saving has been effected.

9 **Other Energy Efficiency Measures:-**

9.1 Enhancing Energy efficiency is an ongoing endeavour for MP Bhawan. Some of the other such measures are:

9.2 **P.C.Monitor:-** Replacement of CRT monitors of office computers with TFT/LCD monitors, to have less electricity consumption which are also eco friendly.

9.3 **Pipe Line:-** Change of existing water pipes which carry hot water with PPR pipe lines resulting in reducing heat loss

9.4 **Sun Films:-** Sun Films have been pasted on corridor to reduce heat radiation but retain natural light. Every effort is made to use natural light as far as possible.

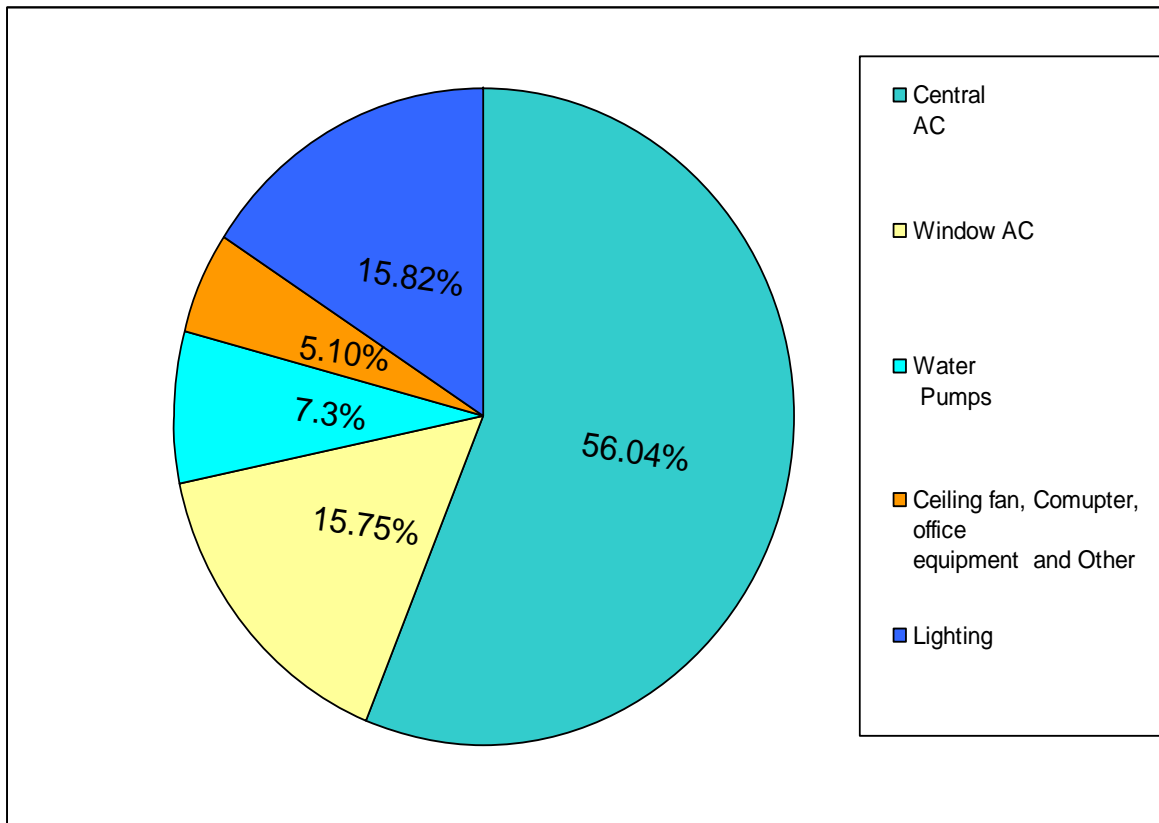
9.5 **Change of Cable:** Old cables were replaced which were heating resulting loss of electricity are changed with new one.

9.6 **Pumps:-** The centrifugal pumps which were consuming much electricity are replaced with submersible pump having zero suction head resulting saving in electricity. Five pumps of 10 H.P capacity are replaced with 5 H.P pumps.

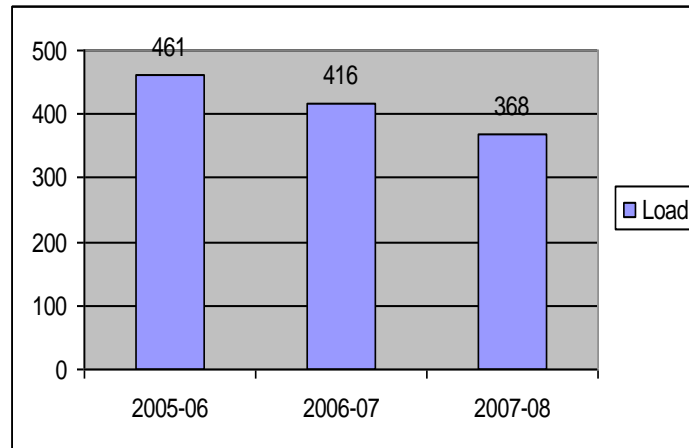
- 9.7 **Window A.C.-** Window/split A.C of old type are replaced with star rating window A.C to have saving in energy.
- 9.8 **Exhaust Fan :-** Exhaust fan 450 watt consuming more energy are replaced by 200 watt exhaust in the year 2005-06.
- 9.9 **Ceiling Fan:-** Ceiling fan 80/60 watt are replaced with energy saver fans 50 watts.
- 9.10 **Area Lighting:-** Halogen of 1500 watts were replaced with 1000 watts halogen in the year 2005-06 and subsequently replaced by halide in the year 2006-07 and further replaced with 150/175 metal halide in the year 2007-08.

Consumption Pattern

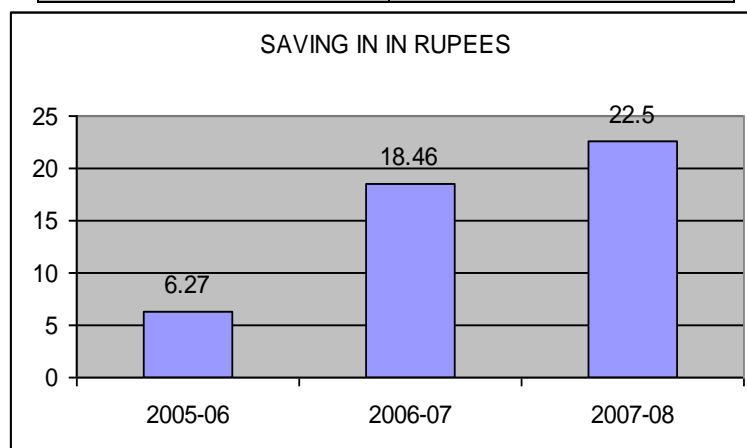
Central AC	Window AC	Water Pumps	Ceiling fan, computer, office equipment and Other	Lighting
56.04%	15.75%	7.3%	5.10%	15.82%



Load Consumption in K.W	
Year	Load
2005-06	461
2006-07	416
2007-08	368



FINANCIAL SAVING	
Year	Rs. In Lakhs
2005-06	6.27
2006-07	18.46
2007-08	22.5



The annual savings are as follows:-

Year 2005-06

S.No.	Particular Old	Particular New	Qty.	Energy
1.	Exhaust fan 450 watt	Exhaust fan 200 watt	12 nos.	3.00 KW
2.	Ceiling fan 80/60 Watt	Energy saver 50 watt	20 pcs.	0.40 KW
3.	Geyser 2000 Watt	Use of Recold make Power Save 1500 Watt	6 Pcs.	3.00 KW
4.	100 Watt Bulb	Fluorescent fitting 1x 60 Watt	100 Pcs.	3.00 KW
5.	Halogen 1500 watt	Halogen 1000 watt	6 NOs.	3.00 KW
6.	Bathroom Tube Light 40 watt	Bathroom Tube Light 20 watt	15 Nos.	0.30 KW
7.	Submersible Pump 7.5 HP	Submersible Pump 5 HP	5 NOs.	9.3 KW
8.	Fire Pump 10 HP	Fire Pump 5 HP	1 NOs.	3.70 KW
		Saved Energy		25.7 KW
		Diversity Factor 60%		15.54 KW

Saving in KWH = $15.54 \times 12 \times 30 \times 24 = 1,34,265.60$ KWH

Saving in Rs. = $1,34,265.60$ KWH x Rs. 4.675 = 6,27,692

Year 2006-07

S.No.	Particular Old	Particular Item	Qty.	Energy
1	100 watt bulb	60w bulb	250 pcs.	10.00
2	1000 watt halogen lamp	400 watt metal halide	12 pcs.	7.20 kW
3	Air conditioning 60TR(30TR Stand bye water chiller plant)	A.C scroll chiller 36 TR plant	1 No.	51.0 KW
4	Solar system 24 KW	New Technology 16 KW		8.00 KW
		Saved Energy		76.2 KW
		Add 60 % Diversity Factor		45.72 Kw

Saving in KWH = $45.72 \times 12 \times 30 \times 24 = 3,95,02.80$

Saving in Rs. = $3,95,020.80 \times \text{Rs.}4.675 = 18,46,722.24$

Year 2007-08

S.No.	Previous Item	Replaced Item	Qty.	Load
1.	100 Watt Bulb	12/18W CFL	250 Nos.	21.250 KW
	Florescent fitting 2x40W	Mirror optic 3x18W CFL fitting	50 Nos.	1.30 KW
2	400 Watt Halogen	150/75w metal halide	12 Nos.	3.00 KW
3	Air Conditioning 100 TR water chiller plant	Air cooled plant 84 TR		54.00 KW
4	Solar heating system 24 KW	New technology solar system element 12 KW		12 KW
5	Corridor Light 2X40 Watt Tube Light	Corridor Light 2X13 Watt Tube Light	25 Nos	1.3 KW
		Saved Energy		92.85 KW
		Add 60% Diversity Factor		55.71 KW

Saving in KWH = $55.71 \times 12 \times 30 \times 24 = 4,81,334.40$ KWH

Saving in Rs. = $481334.40 \times \text{Rs. } 4.675 = 22,50,238.32$

MADHYA PRADESH BHAWAN

Office cum VIP Guest House, New Delhi



***Energy Conservation & Management
October-2008***

***OFFICE OF THE RESIDENT COMMISSIONER
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