

Results of Blind Measurements

South African Test Background

South Africa has an acute electricity shortage which causes periodic brownouts and blackouts. It has been estimated that it will be five to seven years before the utility infrastructure will be adequate to meet the countries needs. This is particularly problematic because a principal industry in South Africa is mining.

Due to the electricity shortage, brownouts, and blackouts, the South African government is committed to a demand reduction program until electrical production is significantly increased.

The South African government requested testing on In'Flector Window Insulators as an energy demand reduction measure. South Africa is under pressure from its citizens to eliminate the brownouts and blackouts and is aggressively working to become much more efficient, so they sanctioned third party testing at North West University where a member of their National Energy Commission works.

The attached test was the result of the third party testing at North West University in South Africa. Feel free to contact Dennis G. Roberts of Energy Efficiency Done Right at dennis@energyefficiencydr.com with any questions.

TEST PROCEDURE

- Three offices were instrumented
 - Lj Grobler (Blinds fitted)
 - Ilze Combrinck (Hanging Blinds)
 - Johan Markgraaf (Normal Office)
- Measurements (10 minutes)
 - Room temperatures
 - Outdoor temperatures
 - Power consumption of AC units
- AC units were set on 24° C

- AC units were set to operate 24 hours of the day
- Measurements were taken every 10 minutes and integrated to an hour
- Measurements used for this analysis were for the periods 27-28 June and 1-3 July 2008

Blinds

Prof. LJ Grobler's office with new blinds



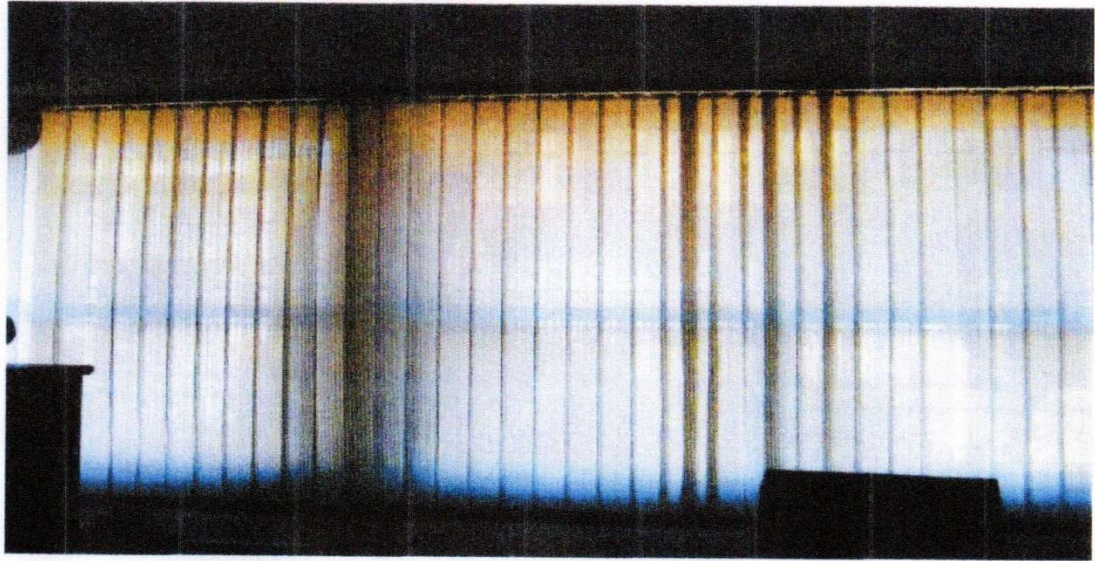
Ilze office with new blinds



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Blinds

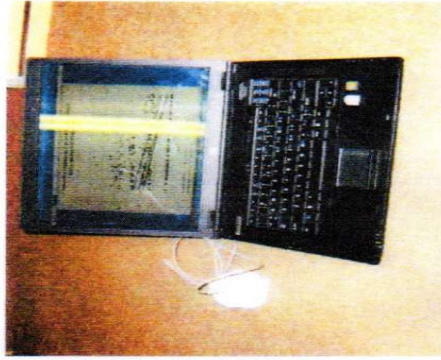
Prof. Markgraaff office without new blinds



Installation Of Meters

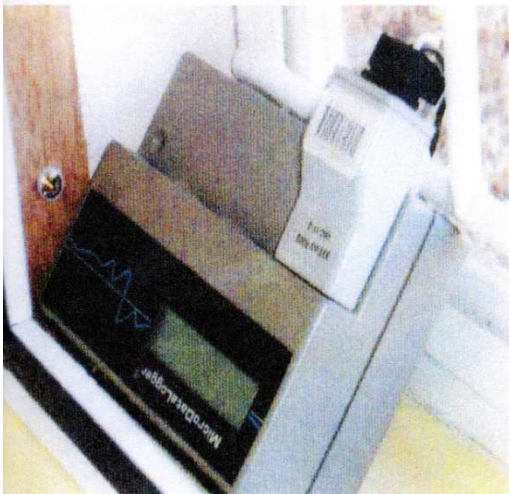


Downloading of Meters

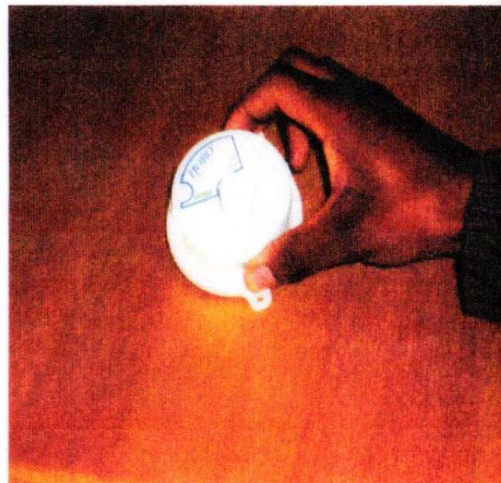


Meters Used

Micro data logger



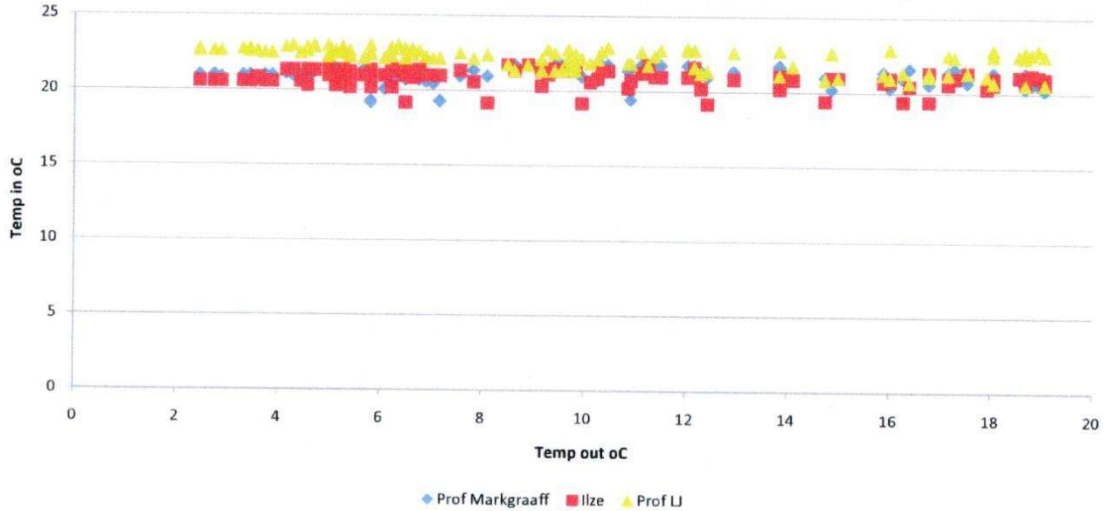
Hobo RH Temp



THE RESULTS

Room Temperatures

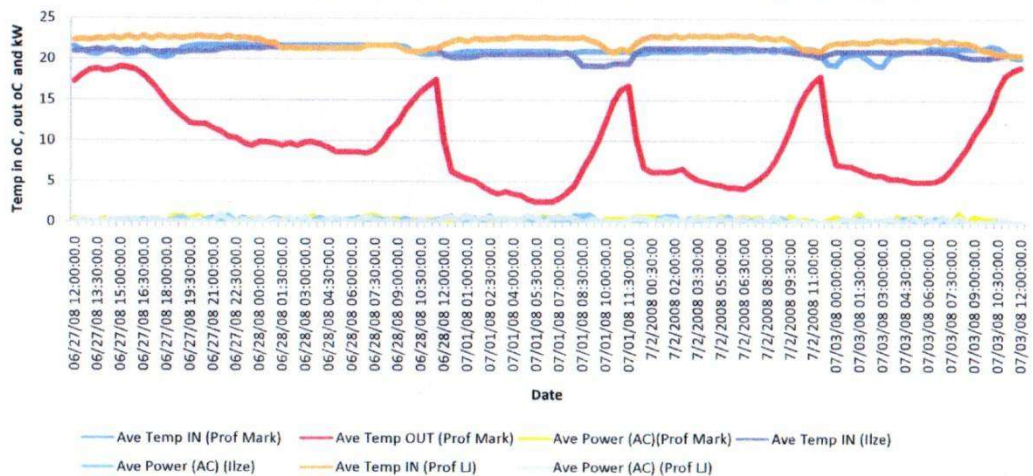
3 offices Temperature in vs Temperature out 27-28 Jun 08 Fri, Sat and 1-3 July 08 Mon,Tue, Wen (Data in 30 min Interval)



Room Temperatures

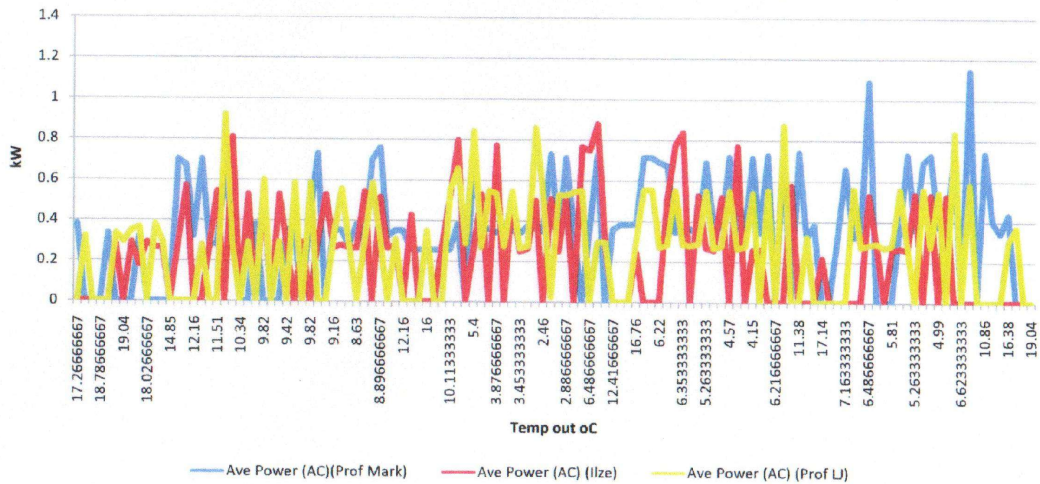
Room Temperatures

3 offices Temperature in, kW and Temperature out 27-28 Jun 08 Fri, Sat and 1-3 July 08 Mon,Tue, Wen (Data in 30 minutes interval)



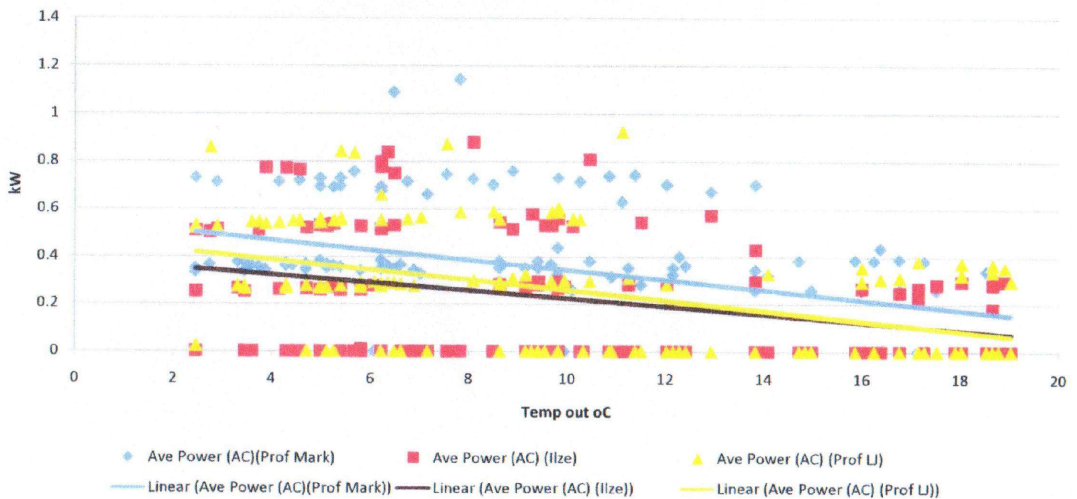
Power Graphs

3 offices kW vs Temperature out 27-28 Jun 08 Fri, Sat and 1-3 July 08
Mon, Tue, Wen (Data in 30 minutes interval)



Power vs Temperature

3 offices kW vs Temperature out 27-28 Jun 08 Fri, Sat and 1-3 July 08
Mon, Tue, Wen (Data in 30 minutes interval)



Summary of Results

Description	Prof Markgraaf	Ilze Combrick	LJ Grobler	Units
Average	0.35	0.23	0.26	kW
Average/day	8.39	5.46	6.33	kWh
Rate	40	40	40	c/kWh
Cost/day	R 3.36	R 2.19	R 2.53	
Saving/day		R 1.17	R 0.82	
% Saving		35%	25%	
COP	3.00	3.00	3.00	
Electric Heating Cost/day	R 10.07	R 6.56	R 7.60	
Electric Heating Saving/day		R 3.52	R 2.47	

Discussion of Results

- The office of LJ Grobler used 25% less energy than the standard office of Prof Markgraaf
- The office of Ilze Combinck uses 35% less energy than the standard office of Prof Markgraaf
- Both Ilze and LJ Grobler's offices were fitted with the blinds
- Ilze Combrinck's 35% saving compared to LJ Grobler's 25% cannot be explained. It is expected that external factors influenced this. The office is also slightly smaller