Energy Efficiency, Energy Savings & Energy Monitoring in practice

Example of Schneider Electric HQ BC Dvintsev in Moscow



Professional Services Our Mission is to

Help our Customers to Get the Most of their "Energy"

Professional Services

Our Vision

To be the preferred Partner of Choice in Energy management services for our customers in Mining & WWW, Building, Oil & Gas by providing with

• Energy Audit and Consulting

- Energy Monitoring & Analysis
- Energy Management Project Design & Development
- Energy Bureau Services
- Performance Contracting

Case: Dvintsev office

 Area: 9431 m2, 8 Floors
 Monitored load: electricity, heat, cold, hot and cold water supply

✓ Milestones:

- Start June 2012
- Test launch October 2012
- Official launch December 2012

ИНЖИНИРИНГ. ПРОЕКТИРОВАНИЕ. СТРОИТЕЛЬСТВО





3 Systems for monitoring and control

BMS

Building Management System

Lighting Control

Control based on physical presence and illumination level

Fan Coil Control Control based on physical presence and schedule

Heat consumption Control

For each floor and the whole building



Energy Bureau Services: Energy Audit, Data analysis & Recommendations

BMS for building microclimate control



- Fan Coils grouped and controlled by zones from one room temperature sensor
- Room temperature control: control valve VZ & drive component MZ produced by Schneider Electric
- Cooling fans 3-levels speed control with expansion module Xenta 421A

Web interface

	TAC Vista ScreenMate
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TAC Vista ScreenMate web interface for zone / room microclimate control from workstations

Office floors architecture



Schneider Electric - Division - Name - Date

Lighting and drive components control on each floor



BMS Architecture



Power Monitoring Expert: Comprehensive monitoring functions



Instantaneous measurements



- Power and Energy demand profiles
- Summary WAGES demand
- Energy Load breakdown
- Daily, Weekly energy demand comparison
- Energy cost (hour, day, week, month, year)
- CO2 emission
- Heat, cold, water flow consumption etc.



Energy Operation: Cloud-based Service for data analysis





- Makes the invisible, visible.
 Indicates areas that require further review
- Benchmark energy KPI's, consumption, historical trends, normalize data
- Tailor energy data reporting to multiple audiences: Executives, Facility and Energy Managers, building occupants and public
- Evaluate savings possibilities



Energy Bureau Services: Final step for energy savings



Based on **Energy Monitoring System** results main following action plan was developed and deployed:

- ✓ BMS adjustment
- Engineering systems modes synchronization with office working hours
- Changing systems sets for more rational resource usage

Following this plan we achieved great results by the end of 2013 in comparable basis with the last year (normalized data):

- 5 % of electricity savings
- 7,49 % of heating saving
- 6,25 % of saving for both electricity and heating



Return of Investments: Dvintsev, 12







300 000 rub

750 000 rub

1 month: 1 100 000 rub 1 year: 13 200 000 rub Payback Period 1 year

Up to 5% savings

660 000 rub per year

Saving potential 10%



For more information on Energy Saving

Visit:



www.schneider-electric.com

