



The Solutions Network

Rochester, New York

*Successful Energy Management
and
THINKING OUT OF THE BOX
at the
Arizona Army National Guard*

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State of Arizona-DEMA

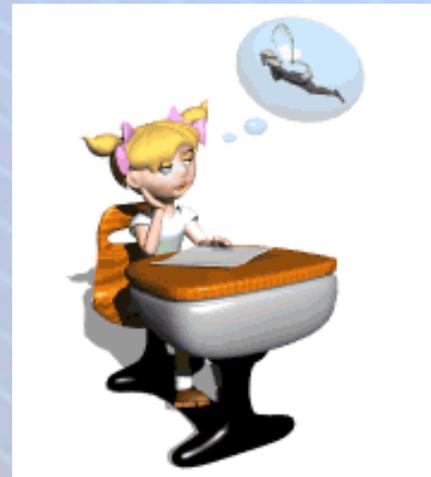
The Arizona Army National Guard





The Concept

**Develop projects to
conserve energy and
lower operating costs.....**



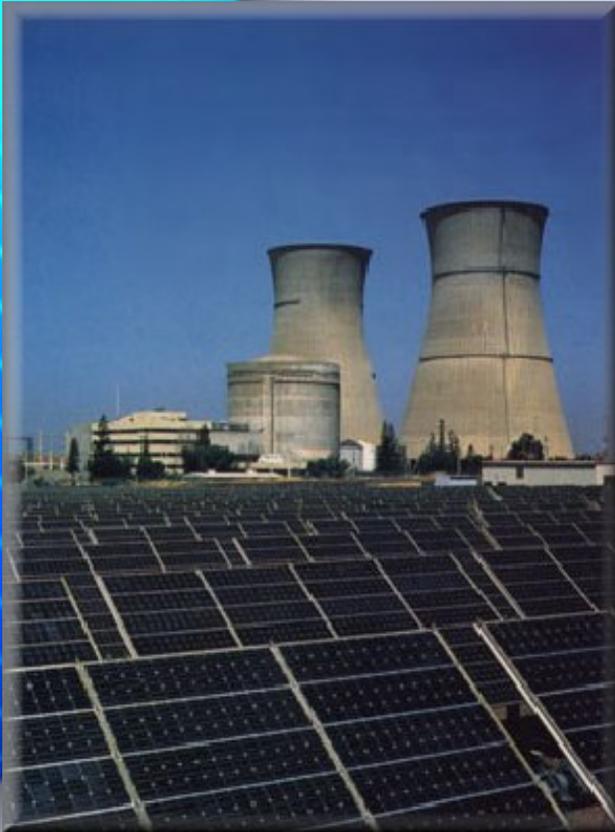
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The Goal

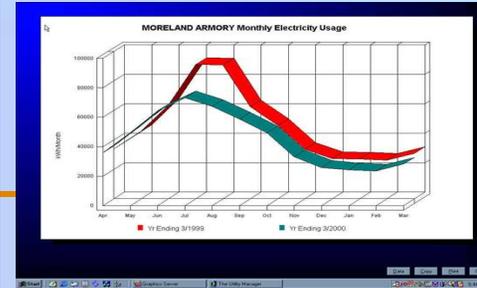
Clean, Safe Energy



- ❖ Reduce energy usage
- ❖ Increase efficiency
- ❖ Reduce energy costs
- ❖ Be a visionary !
- ❖ Offer a visual statement
- ❖ Invest in the future

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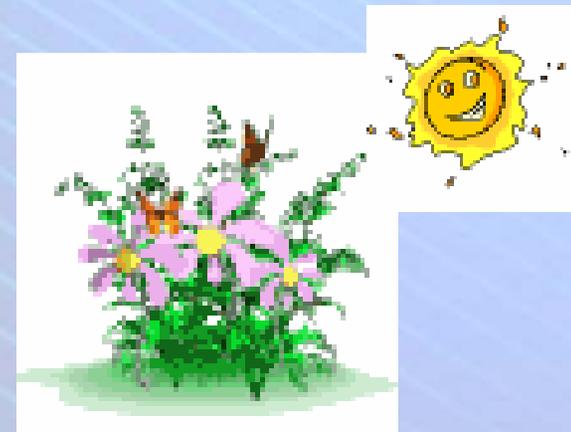
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The Facts

ENERGY SAVED = DOLLARS SAVED

- Good business sense
- Increases efficiency
- Reduces pollution



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The Plan: Energy Conservation

Lighting retrofits

Motion sensors

HVAC controls

Employee awareness

Solar projects



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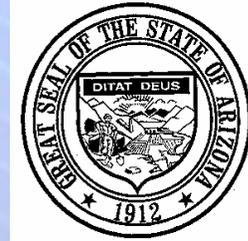
The Commitment



Diving into partnerships



DEMA



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Use in-house expertise & labor

TRAINING and LEADERSHIP !

Enjoy your job!

and believe in what you do!



Making it all Work!



Using our OWN techs
REAL in-house experts!



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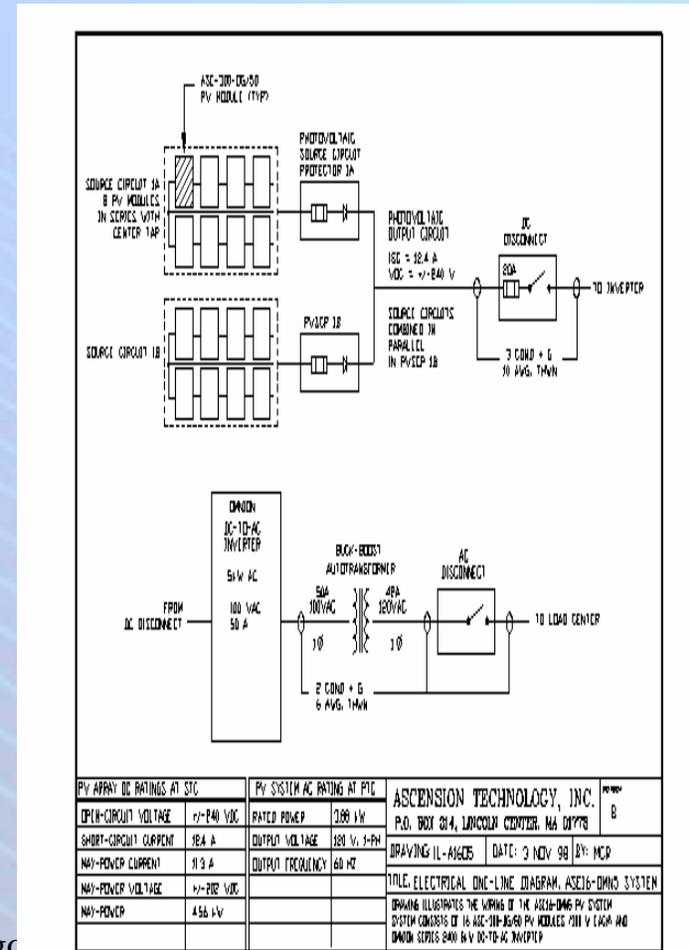
The Engineering

- ❖ Important to get it right!
- ❖ Use in-house expertise?
- ❖ Use utility partnerships?
- ❖ Choose PE's carefully!
- ❖ Ask lots of Questions!



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The Projects

Lighting

- ❖ T12-T8 retrofits
- ❖ Electronic ballasts
- ❖ Motion sensors
- ❖ LED exit signs
- ❖ Compact fluorescent
- ❖ Photocells w/ timeclocks



HVAC:

- ❖ Programmable T-stats
- ❖ Temperature settings
- ❖ BACnet EMS
- ❖ AWARENESS !



The Costs

Keeping your costs down

- ❖ Life cycle costing upfront
- ❖ USE GSA PRICING for purchases
- ❖ Shop Around for Materials!
- ❖ Use Creative Project Management
- ❖ Get everyone involved up front
- ❖ Don't be afraid to ask for help!
- ❖ In-house labor saves much of cost



Look for:
Simple Paybacks < 7 years



A Question of Labor

State technicians being trained for:



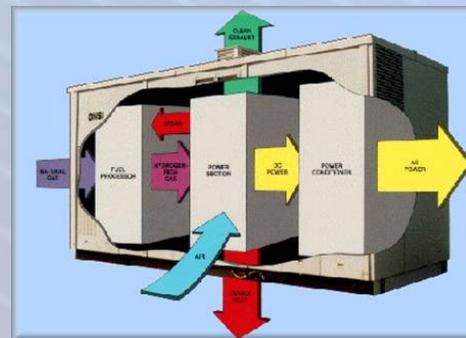
- ❖ **Installation**
- ❖ **Operating**
- ❖ **Troubleshooting**
- ❖ **Maintaining**

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Embrace technology!

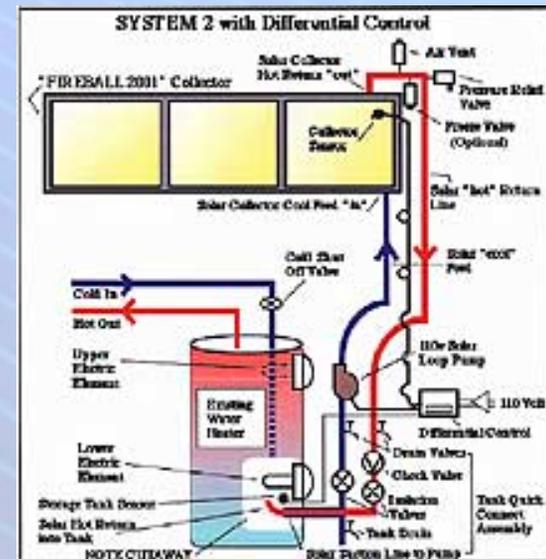


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Renewable Projects



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DEMA BACnet



Why BACnet?

The screenshots show various BACnet software interfaces:

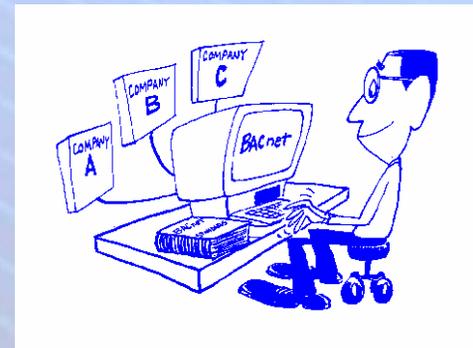
- Top Left:** A 3D cutaway model of a building's HVAC system with labels like 'Subtotal 77.8 °F', 'Max 98.9 °F', and 'Cool Deck 14.6 °F'.
- Top Right:** A 'Zone Setpoint' and 'Operating Status' window. It includes a table for 'Zone Setpoint' with columns for 'Occupied Mode', 'Space Temp', 'Unit Fan', 'Cooling Status', 'Heating Status', and 'Economizer Status'. Below it are sections for 'Zone Setpoint', 'Operating Status', and 'Miscellaneous' with various control parameters.
- Bottom Left:** A 3D model of a 'CENTRAL PLANT' with various pumps and tanks.
- Bottom Middle:** A floor plan titled 'National Guard Head Quarters Building First Floor Plan' with 'BACnet EMCS' and 'State of Arizona - DEMA' labels.
- Bottom Right:** A floor plan titled 'National Guard Roosevelt Army First Floor Plan'.



That's why!

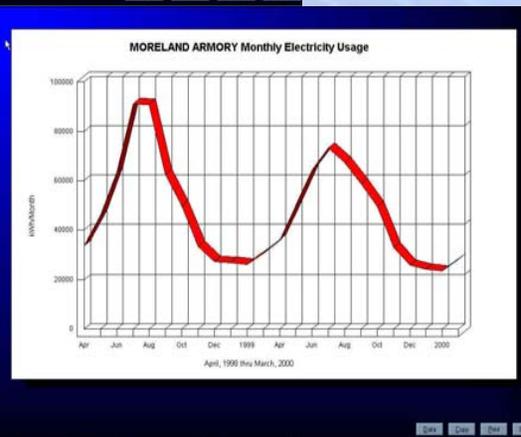
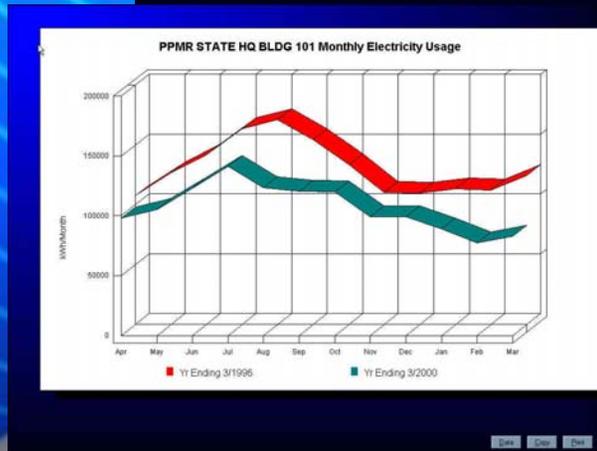
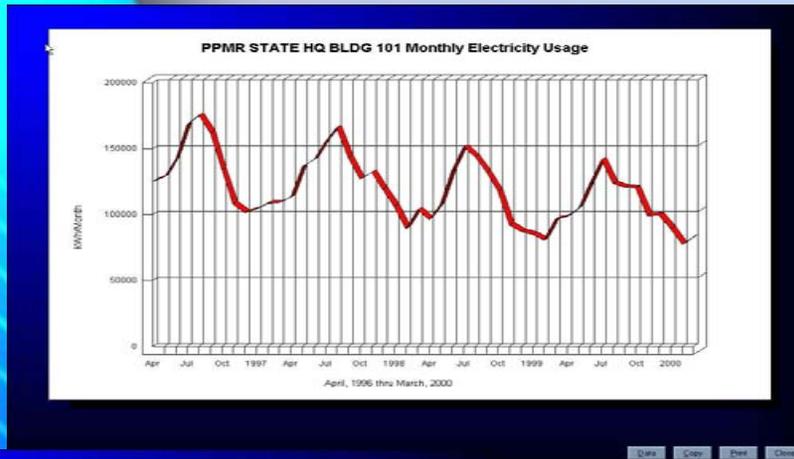
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Practical Benefits



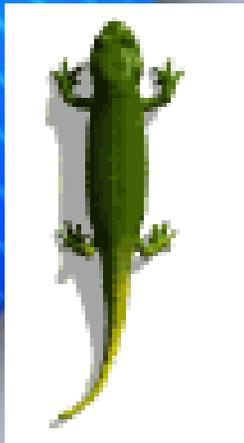
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Meeting the Objectives

- ❖ Use Energy Wisely
- ❖ Reduce Operating Costs
- ❖ Increase Awareness



- ❖ Lead as the Visionary
- ❖ Protect Environment

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Summary

Saving ENERGY saves \$!

- ❖ Start with an energy accounting system: find the HOGS!
- ❖ Savings can continue to fund new projects.
- ❖ Many new technologies out there – use what you can!
- ❖ Partnerships & Networking are important.
- ❖ Use in-house expertise to save LABOR COST\$
- ❖ TRAIN your own people who show interest to learn.
- ❖ Life cycle cost the projects and TRACK their performance.



Questions?

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