

G.C.I.C. Conference

Effective Energy Management &
Infrastructure Opportunities

**“Frankly, I don’t know if I led or whether I followed.
I think that taking better care of ourself and our
world is good business.”**



Harry V. Quadracci

*When asked how he turned his more than 5,000 employees into active environmentalists
The e factor, 1993*

Objectives



- Relationship Between Energy Management and Environmental Impact
- Creation of a Conservation Culture
- Project Selection
- Infrastructure Opportunities
- Results

To Measure is to Manage



- Energy Culture
 - Cost vs. Consumption
- Baselines
 - BTU / Page Produced
 - Includes all energy
 - Includes pre and post press operations
- 2000 consumption rate was 7.3 BTU's / Page
- Water consumption rate was 1 Gallon per 2,039 Pages Produced



Project Selection Criteria



Sustainability

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Good For Business

Good For The Environment

Opportunities with infrastructure



- Humidity Control
- Chilled Water
- Lighting
- Steam
- High Pressure Air
- Low Pressure Air
- HVAC
- LEL Controls
- Water



Humidity Control



- Methods
 - Steam



- Compressed Air



- High Pressure Pumps
 - 1000 psi



Chilled Water



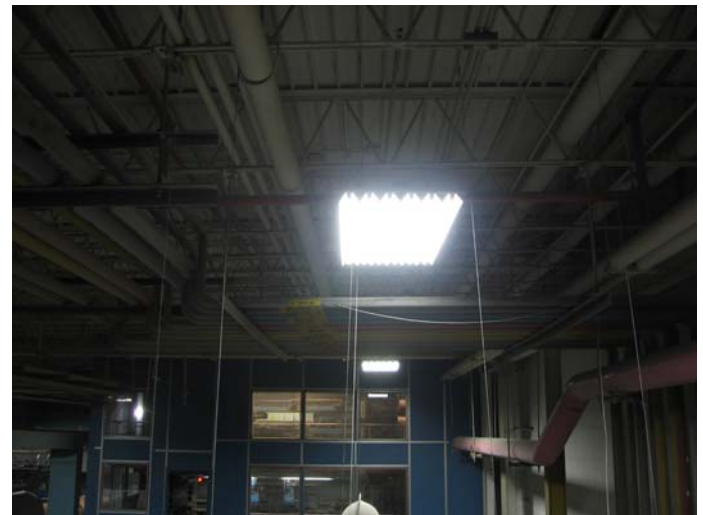
- Usage - Cooling
 - HVAC
 - Ink
 - Gear Boxes
 - Electrical Panels
- Opportunities
 - Use of VFDs
 - Temperature set points
 - Chill Loop
 - Space



Lighting



- Usage
 - Space
 - Task
- Opportunities
 - Eliminate H.I.D. Fixtures (High Intensity Discharge) Metal Halide
 - Fluorescent
 - 52% Energy Reduction
 - Heat Load Reduction
 - Fire Hazard Elimination



Steam



- Usage

- Dryers
- Humidification Bars
- Solvent Recovery
- Heat

- Opportunities

- Heat Recovery
- Insulation
- Combustion Management System



High Pressure Air/Low Pressure Air



- Usage

- Presses
- Stackers
- Turn Bars



- Opportunities

- Centrifugal Compressors
- Base Load Machines
- Leak Detection Program
- Use of LPA in lieu of HPA



HVAC



- Usage

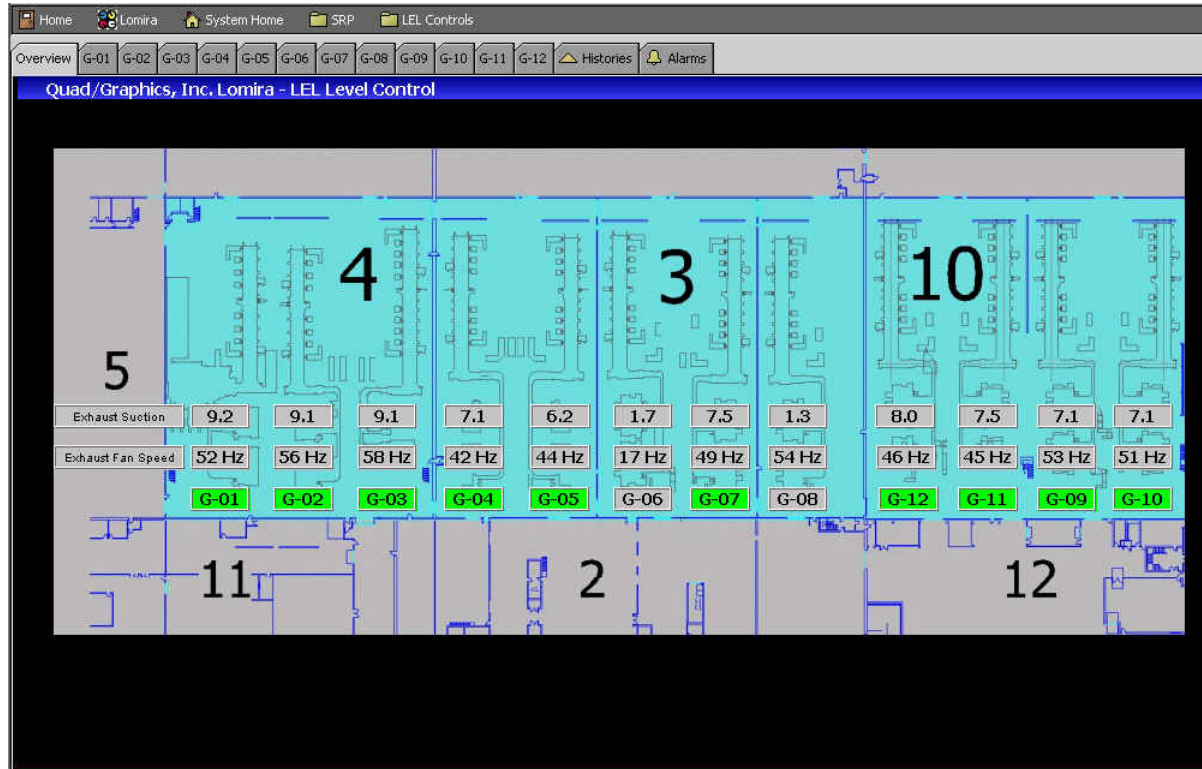
- Building Envelope
- Control Rooms
- Electrical Panels



- Opportunities

- Eliminate Steam Humidification
- Higher Summer Set Points
- Lower Winter Set Points
- Spot Cooling

LFL Controls – Bldg. Management



- Building Management System
- Use of VFD's on Blowers
- Overall Toluene Control Efficiency in Excess of 99%

Water



- Elimination of Steam
- Reduced Cooling Loads
- Heat Recovery for Steam
- Air Cool vs. Liquid Cool



The Results - Energy



- BTU's / Page Produced

– 2000	7.3
– 2006	5.7



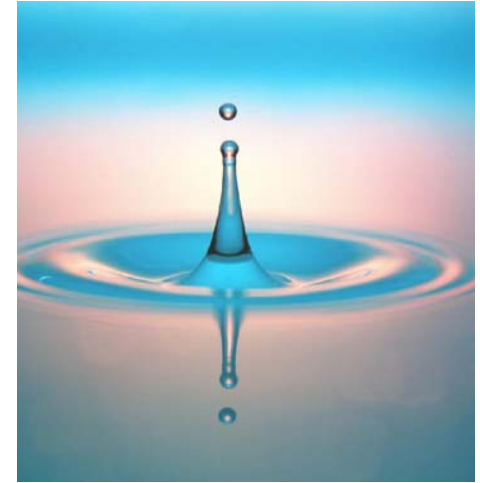
- 21.9 % Reduction

- Elimination of 75,000,000 kWh

The Results - Water



- Pages Produced per Gallon
 - 2000 2,039
 - 2006 2,742
- 34.4% Improvement



Environmental Impact



- Based on a Wisconsin MFG. Plant
 - Energy Mix
 - Direct
 - Indirect

- Reduction of GHG Emissions
 - 60,000 Tonnes Annually
 - 74,000 Trees
 - Returning 750 Acres to Forest



- Industry GHG Emissions <.25%
- The preservation, annually, of 32,160,000 gallons of water
Or



- 343,000,000 Cans of Beer



Thank-you