CASE STUDY

The Energy Smart Distribution Center

Over 2 Miles of LED Tubes and 268,574 (kWh) of Solar output for Net Zero Cost of Lighting

57-22 49th Street Maspeth / Queens, NY 11378
The Benchmarks

Three Groundbreaking aspects of the D&W Energy Retrofit

The FIRST, the MOST Energy Efficient, and the LARGEST to date.

1. Davis & Warshow is the FIRST facility in America with a "Net Zero Cost of Lighting" through the combination of Solar and LED Tubes.

2. Davis & Warshow has the MOST ENERGY EFFICIENT Lighting in Watts per Square Foot of any Distribution Center in America to date. (More in Appendix)

3. Davis & Warshow is the LARGEST single facility LED Tube retrofit in America to date. With over 2 miles of LED Tubes it stands as an example of excellence in energy efficiency at a large scale.

Please note that each one of these benchmarks may be the record setter beyond America and across the world, but we cannot confirm the overseas facilities in all of Europe and Asia at this time.

Savings Percentage and Utility Company Incentive:

The new LED Tubes have reduced the operating cost on the lighting by over 62%. Con Edison also approved the American Made Independence LED Tubes for their Commercial and Industrial incentive program and provided rebates to David & Warshow on May 25th in the amount of $10,703.85 and $53,000.43, totaling $63,704.28.
Davis & Warshow (D&W) is the FIRST facility in America with a "Net Zero Cost of Lighting" through the combination of Solar and LED Tubes. D&W has the MOST ENERGY EFFICIENT Lighting in Watts per Square Foot of any Distribution Center in America to date. The ASHRAE Wattage Benchmark is .8 and D&W uses only .2 Watts / sq. ft. with the LEDs. D&W is the LARGEST single facility LED Tube retrofit in America to date. Please note that each one of these benchmarks may be the record setter beyond America and across the world, but we cannot confirm the overseas facilities in all of Europe and Asia at this time.

Company Type: Distribution Center
Location: Maspeth (Queens) New York
Retrofit Areas: Loading Bays, Racking Storage, Repair Shop, and
Facility Size: 209,000 sq. ft.
Avg. Cost per kWh: $.121
Avg. Run Time: 24 Hours 6 Days a Week
(Annual Illumination Hours 3,311 with energy saving sensors)

CHALLENGE:
Existing Lighting: Fluorescent Tubes: T12 8’ @ 65 Watts with Ballast factor
Lighting Cost / sq. ft.: $.24 per Year
Annual kWh: 412,236
Annual Lighting Cost: $49,880

SOLUTION:
New Lighting: LED Tubes: 8’ @ 30 Watts
Lighting Cost / sq. ft.: $.09 per Year
Annual kWh: 157,524
Annual Lighting Cost: $19,060

RESULTS:
Savings: 62%
Saved Cost / sq. ft.: $.15
Saved Annual kWh: 254,710.5
Annual Cost Savings: $30,820

Scale Impact:
# of Linear feet of LED Tubes: 11,396 feet
(For Perspective: Equivalent of 2.15 Miles or 38 Football Fields of Tubes end to end)
# of equivalent 4’ Tubes: 2,849
Solar: (http://www.solaresystems.com/davis-and-warshow/)

- **System Size:** 238.74 kilowatts (kW)
- **Module:** Schott
- **Inverter:** Satcon, SMA
- **Annual Energy Output:** 268,574 kilowatt-hours (kWh)
- **Emissions Offset:**
  - Carbon Dioxide: 486,119 lb/yr
  - Nitrogen Oxides: 568 lb/yr
  - Sulfur Dioxide: 1,650 lb/yr

**The Solar to LED Net Zero Offset:**
Annual kWh to operate the LEDs: 157,525
Monthly kWh to operate the LEDs: 13,127
Annual kWh produced by the Solar: 308,736 to 322800
  (Range annualized March and 1.2 factor on system size kwh)
Monthly kWh produced by the Solar: 25,728
  (average of March 2011 & March 2012) 30,250 for April
Support Information:

**Quote from Warehouse Employee at Davis & Warshow:** Q: Do you want to comment on the lights? A: “Oh, I like them very much. It makes things a lot brighter in here, much easier to read the paperwork. Much nicer!”

**Quote from Chairman and CEO of Independence LED Charlie Szoradi:**
"We were pleased to work with the whole Davis & Warshow Team, and we applaud their vision to execute a comprehensive energy strategy. They have set a new bar for others to strive for, and in so doing we have collectively set a benchmark with our American Made LED Tubes that will earn a place in American Energy history.”

**Direct Links to Davis & Warshow Videos:**
Better Light Testimonial: [http://www.youtube.com/watch?v=6m7FlDgF8bo](http://www.youtube.com/watch?v=6m7FlDgF8bo)
Flip The Switch: [http://www.youtube.com/watch?v=zo0fMys2qbk](http://www.youtube.com/watch?v=zo0fMys2qbk)

For Video & Technology Differentiator Support Files See: [http://independenceled.com/bootcamp](http://independenceled.com/bootcamp)
Davis & Warshow  Sample LED Photos

www.IndependenceLED.com