Sustainable Energy at RC Fine Foods





#### **RC Fine Foods**

Second Generation Family Business Founded 1972

1995 - Moved into current building ~41,000 square feet

2011 – Needs New Roof and HVAC ... and so it starts



### We Need a New Roof

#### What Else Can We Do?

**Brought in Solar Consultant/Installer** 

- Solar Electric 30% of Our Electricity
  - Solar Hot Water 40% of Our Gas
- Replace HVAC and Refrigeration 10% Efficiency Gain

Now We're Thinking... and the snowball starts rolling...



### **Making Connections**

Solar Consultant/Installer brings in

#### **LED Lighting Rep**

- Replace Fluorescent and Metal Halide Bulbs
  - Reduce Electricity Demand by 20%



#### It All Starts on the Roof

Out with the Old
Rubber Membrane with river stone ballast (Dark)
In with New
TPO Mechanically Fastened Roof (Light)

Pros

- Cooler in the Summer
- All the Leaks are Gone
- Added More Insulation
- Reused river stone for fire lane and landscaping <u>Cons</u>
- Cooler in the Winter but offset by added insulation



#### It All Starts on the Roof

Out with the Old
Inefficient HVAC and Refrigeration
In with New
Higher Efficiency HVAC and Refrigeration
Pros

- Reduce Demand for Electricity and Gas
- Reduced Maintenance (HVAC Company here every week)
  - NJ Clean Energy Rebate

Cons

Rebalancing HVAC sensors (original install was bad)









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### **Light it Up**

Out with the Old
Fluorescent and Metal Halide Bulbs
In with New
LED Lighting

#### **Pros**

- No Flickering Better Lighting, Color and Bulb Life
  - LED Tubes are 15 W vs. 26 W
  - LED Warehouse Lights are 100 W vs. 455 W
- ROI 5 to 7 Years (15-20% drop in total electric demand)

#### Cons

LED Lights are Cooler – heating bill increased 0.4%



**Light it Up** 







### **Solar Electricity**

New 149.7 kW Solar PV System

**Pros** 

- It's Green & Cuts Electricity Usage by 30%
  - For Us No Down Side



### **Solar Electricity**

New 149.7 kW Solar PV System

#### Costs

Solar Installation: \$681,135

Fees and Permits: \$14,314

Total: \$695,449

Payments (Other)

Solar Loan Program, PSE&G\*: \$424,871

Federal Tax Grant: \$204,341

Total: \$629,302

Out Of Pocket: \$66,147

**Depreciation, Year 1: (\$119,199)** 

Year 1 Cost: (53,052)

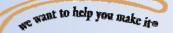
We Got Paid to Put Up SOLAR!



Solar PV



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### **Solar Hot Water**

**New UV** 

Pros

- Raises the temperature of water going into water heaters by 30°-70° F even in the winter
  - Reduces Our Natural Gas Use

#### Cons

First major installation for supplier – lots of issues



### **Solar Hot Water**





### What's the Payback?

#### The Necessary Pieces

Roof – Warrantied for Life of Roof (20+ years) HVAC – Warrantied 1 year, Life of HVAC

#### The Green

LED Lighting – ROI in 5-7 years

Solar PV – ROI 1 Year, total annual savings > \$ 25,000

Solar Hot Water – ROI in < 10 years

As of End of September 2012: Electricity Usage Down 31.8%, Gas Usage Down 4.7%



### **Changing the Thought Process**

"We're Green - We Recycle Paper and Cardboard"



"We're Green - We Get 30% of Our Power from the Sun"

