



JULY 21, 2011

COOL, EFFICIENT AND GREEN

PATHWAYS TO SUSTAINABLE ROOFTOPS

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SUSTAINABLE ROOFTOPS THE CENTER'S MISSION

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- Identify strategic potential of our nation's rooftops
- Develop effective decision tools to design and select sustainable roofing systems
- Recognize achievement of sustainable roofing practices

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OUR NATION'S ROOFS STRATEGIC RESOURCE

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- **Energy Efficiency**
 - Over 700 Trillion BTU Annual Savings Potential¹
- **New Energy Production**
 - Over 25 Grand Coulee Dams of Solar Energy Potential²
- **Beyond Energy**
 - Improved air quality / reduced heat island effects
 - Reduced water pollution / increased water supply
 - Reduced construction waste
 - Renewable / recyclable / reusable materials
 - Expanded building service life
 - Enhanced occupant safety and productivity

3 ¹ Nonresidential Roofing and National Energy Transformation (Center, 2010)
² Source: Successful Rooftop Photovoltaics (Center, 2010).




OUR NATION'S ROOFS STRATEGIC RESOURCE

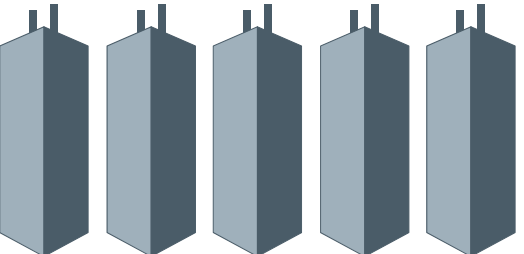
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THE MULTIPLIER EFFECT OF REROOFING

NONRESIDENTIAL ROOFING MARKET: 2010



NEW BUILDINGS
< 0.5 BILLION SQ. FT.



EXISTING BUILDINGS
>2.5 BILLION SQ. FT.

EACH BUILDING REPRESENTS 500 MILLION SQ. FT. OF ANNUAL ROOFING OPPORTUNITY

4 Source: 2010 Roofing Market Forecast (TEGNOS Research, 2011)




SUSTAINABLE ROOFTOPS
EFFECTIVE DECISION TOOLS

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Single-Attribute Multi-Attribute
Building System Whole Building


*For roofing, What is Needed is a
Multi-Attribute, Building System tool*

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SUSTAINABLE ROOFTOPS
A NEW DECISION TOOL


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ROOFPOINT

- A consensus-based decision tool for complete roofing systems
- Multi-attribute matrix covering energy, environmental, life-cycle impacts
- Useful to design, compare and assess sustainable roofing strategies
- Pilot program currently underway, with projects evaluated across North America
- Free download available via www.roofingcenter.org


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ROOFPOINT PROJECT PROFILE

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Desert Oasis



- ◆ Special design for water storage in desert environment. Super high R insulation and cool roof reduce evaporation
- ◆ Project included recycling program for existing metal roof and structural system. New roof insulation contains over 30% recycled content
- ◆ 40 KW rooftop solar installation with the remainder of the roof designed to be solar-ready

Yuma NAVFAC
Yuma, AZ



ROOFPOINT PROJECT PROFILE


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Urban Oasis



- ◆ Extensive vegetative system offsets building footprint for storm drainage and heat island effects
- ◆ Existing waterproofing membrane repaired and covered with redundant membrane to accommodate planting media and pavers
- ◆ Ground-penetrating radar technology used to verify building load capacity



Sam Nunn Federal Center
Atlanta, GA





ROOFPOINT PROJECT PROFILE

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Sustainable School





- ◆ Integrated wall and roof daylighting is combined with a demand-controlled ventilation system to reduce overall energy consumption while allowing effective classroom illumination
- ◆ Comprehensive rain water collection and storage provides non-potable water and supports rain garden area
- ◆ High albedo roof surface increases PV efficiency, reduces cooling loads and lowers ambient temperature

Turkeyfoot Middle School
Edgewood, KY


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ROOFPOINT PROJECT PROFILE

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Sustainable Government Center



- ◆ Integrated solar carports provide clean energy and shade
- ◆ Rooftop solar system provides 70% of total building power
- ◆ R-30 roof insulation and high albedo roof surface reduce building energy demands
- ◆ Traffic management plan assures roof system longevity under maintenance loads

High Desert Government Center
Hesperia, CA

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