

LEED Lessons Learned



Continuing Education
and Industrial Center



Reuse • Recycle • Repurpose

A Sustainable Adaptive Reuse Project



RANDOLPH
CONSTRUCTION

SMITHSINNETT
architecture

Where We Started



Why Recycle

- New Construction vs. Renovation: Saved \$38sf / \$1.8m
- Cost of Demolishing Existing Building: \$135,000
- Shorter Construction: 6 Months



Before



After

Why Repurpose

- Tax \$ Saved
- Acquired more Building / Land Available
- Character
- Story



Before



After



RANDOLPH
CONSULTANTS

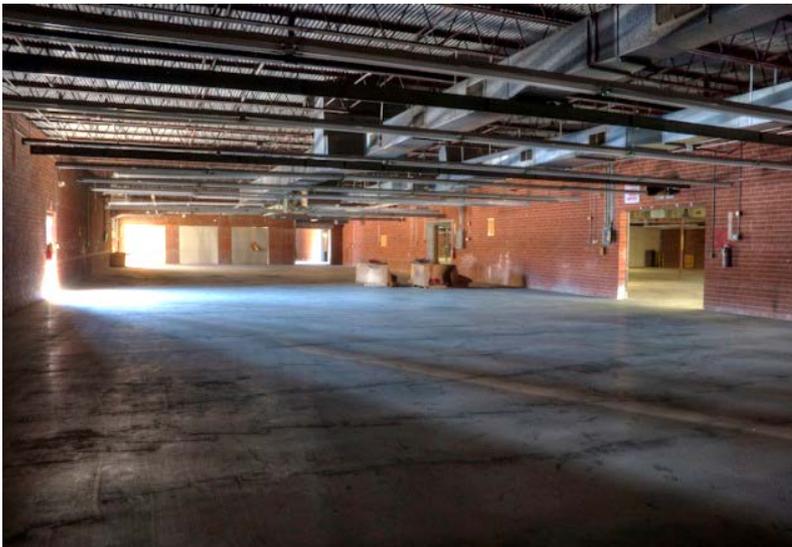
SB668 vs. LEED

SB668

- 50% Outdoor Water Reduction
- 20% Indoor Water Reduction
- 20% Energy Reduction (Ext. Blds.)
- Commissioning
- Measure and Verification

LEED v2.2

- WE1.1
- WE3.1
- EA1
- Prereg1 / EA3
- EA5



Before



After

How We Got There....

SB668

- 8 Points

Existing Building

- 4 Points

Design Elements with no cost added

- 16 Points

-
- 28 Points

- LEED Version 2.2

- Certified 26-32
- Silver 33-38
- Gold 39-51
- Platinum 52-69



Sustainable Sites

- SS1 – Site Selection
- SS4.2 – Transportation: Bicycle Storage & Changing Rooms
- SS4.4 – Alt. Transportation: Parking Capacity
- SS5.2 – Site Development: Maximize Open Space
- SS7.2 – Heat Island Effect: Roof

= 5 Points



Water Efficiency

- WE1.1 – Water Efficient Landscaping: Reduce by 50%
- WE1.2 – Water Efficient Landscaping: No Potable Use
- WE3.1 – Water Use Reduction: 20%
- WE3.2 – Water Use Reduction: 30%
- ID1.2 – Water Use Reduction: 40% (42.2%)

= 4 Points

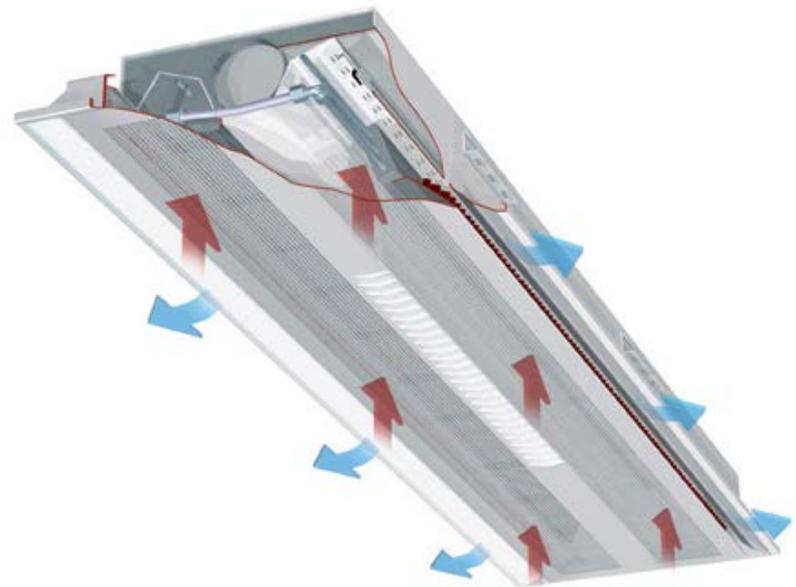
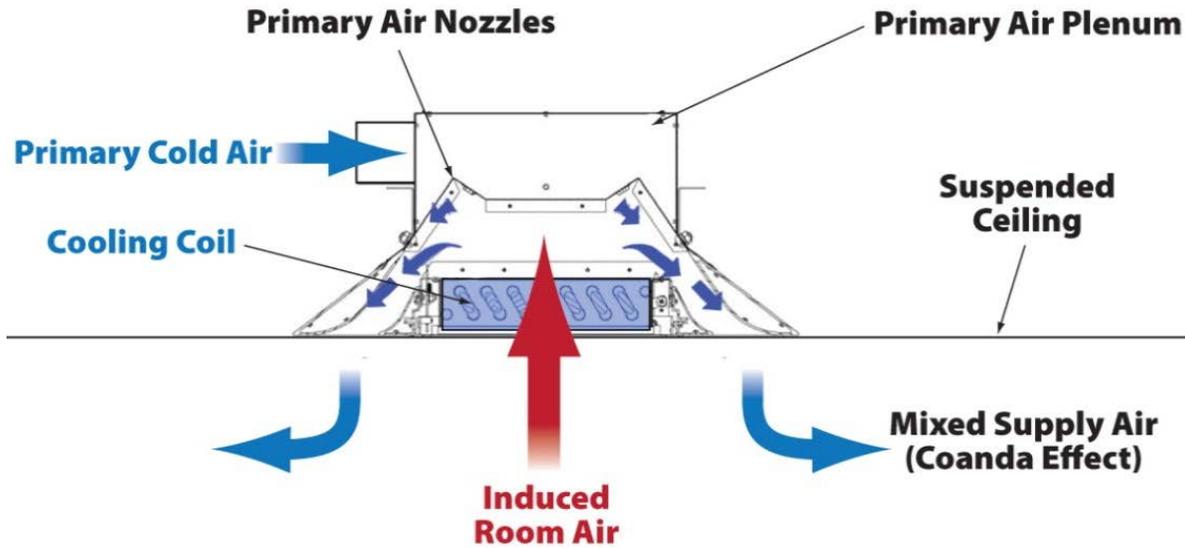


Energy & Atmosphere

- EA1.1 – Optimize Energy Performance (22.6%)
- EA3 – Enhanced Commissioning
- EA4 – Enhanced Refrigerant Management
- EA5 – Measurement & Verification



Energy & Atmosphere



Energy & Atmosphere

- Energy Cost Savings and Expected Pay Back of Mechanical System
 - Saves approximately \$30,000/year or \$0.60/sq. ft.
 - Payback in less than six years
- Progress Energy Reimbursement (Approx. \$60,000)

= 7 Points



Material & Resources

- MR1.1&1.2 - Building Reuse: Maintain 75%, 95% (95.1%)
- MR2.1&2.2 – Const. Waste Mgmt.: Divert 50%, 75% (87.9%)
- MR4.1&4.2 – Recycled Content: 10%, 20%
- MR5.1&5.2 – Regional Materials: 10%, 20%
- ID1.3 – Recycled Content: 30% (30.9%)
- ID1.4 – Regional Materials: 40% (52.9%)

= 8 Points



Indoor Environmental Quality

- IEQ1 – Outdoor Air Delivery Monitoring
- IEQ3.1&3.2 – Const. IAQ Mgmt. Plan: During Const. / Before Occ.
- IEQ4.1, 4.2, 4.3&4.4 – Low Emitting Materials
- IEQ5 – Indoor Chemical & Pollutant Source Control
- IEQ6.1&6.2 – Controllability of Systems: Lighting / Thermal Comfort
- IEQ7.1&7.2 – Thermal Comfort: Design / Verification

= 12 Points



Innovation in Design

- ID1.1 – Bld. as a Teaching Tool: Education and Awareness of Sustainable Features
- ID1.2 – Water Use Reduction: 40% (42.2%)
- ID1.3 – Recycled Content: 30% (30.9%)
- ID1.4 – Regional Materials: 40% (52.9%)
- ID2 – LEED Accredited Professional

= 5 Points



LEED – *GOLD*

Total = 41 Points



LEED GOLD: 39-51 Points



After



Before

Potential Pitfalls

- Ceiling Height and Coordination
- Adequate staff to sustain operation



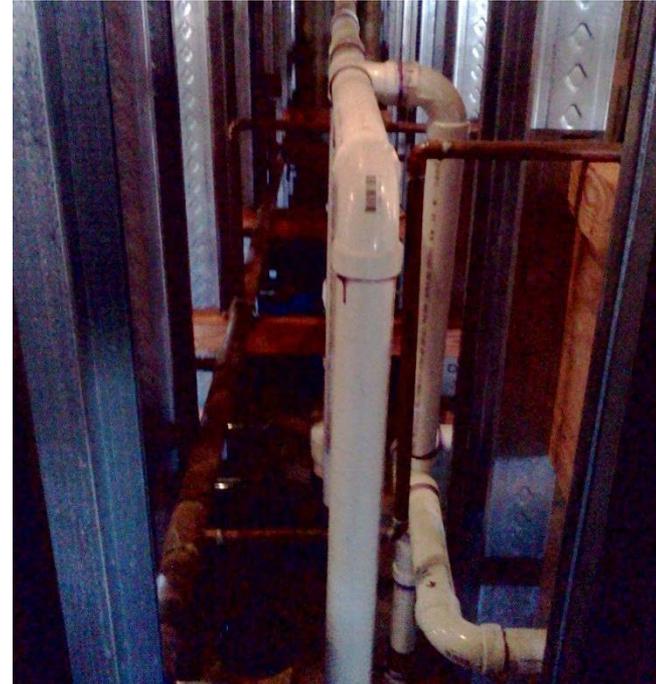
Potential Pitfalls

- Reinforcing Existing Structure
- New Structure for Rooftop Units



Potential Pitfalls

- Selective Slab Cuts
- Minimize Demolition to Existing
- Salvage Existing Materials



Potential Pitfalls

- Additional Insulation Requirements
- Improve Building Envelope



LEED Gold

