Green Hotel Renovations

Craig Nicholson, LEED AP BD&C
Director of Sustainable Development
AJAX Consulting Services, Inc.
BUILDING ANATOMY

- Skeleton
- Pulmonary System
- Excretory System
- Respiratory System/Lungs
- Skin
- Brain/Nervous System
PEAK LOADS IN HOTELS

Guest Occupancy
- Heating/Cooling
- Lighting
- Plug Loads

Conferences
- Body Mass Factor
- A/V Equipment Loads

Dining/Restaurants
If we think of buildings as living systems, how can we design buildings that operate at peak performance during peak demand?
SHORT TERM SOLUTIONS

- Back of House areas
- Laundry
- Pools & Hot Tubs
- Housekeeping procedures
- Kitchen and Food Prep
- Public restrooms
- Guest service options & Choose to Conserve Programs
LONGER TERM SOLUTIONS

• Commissioning & Retro-Commissioning
• Daylighting
• LED’s
• Lighting control
• Water heating
• Building Envelope
• HVAC
  • Ventilation Control
  • Energy Management

“A society grows great when old men plant trees whose shade they know they shall never sit in.” Greek Proverb
THE RIGHT TEAM IS THE KEY TO SUCCESS!

- Owner
- Operator (GM, Engineering Staff, Green Team, etc.)
- Interior designer
- Architect
- Owner’s Rep/Project Manager
- Engineers & Consultants
  - Mechanical
  - Electrical
  - Lighting
  - AV
- General Contractor
- Purchasing Agent
CHOOSING APPROPRIATE METRICS

• Energy Star®
  - Products
  - Buildings

• Cradle to Cradle™
  - Material Health
  - Material Reutilization
  - Renewable Energy
  - Water Stewardship
  - Social Fairness

• LEED Interior Design & Construction
  - Integrative Process
  - Location & Transportation
  - Water Efficiency
  - Energy & Atmosphere
  - Materials & Resources
  - Indoor Environmental Quality
  - Innovation
  - Regional Priority
CRITICAL COMPONENTS

• Energy Efficiency
  - Install high-efficiency heating and cooling equipment
  - Install high-efficiency lights and appliances

• Water Conservation
  - Install water-efficient equipment

• Indoor Air Quality
  - Use low VOC finishes and adhesives
  - Properly commission air handling equipment
  - Thermal comfort

• Materials
  - Utilize sustainably harvested wood
  - Utilize rapidly renewable materials
  - Use durable products and materials
  - Buy locally
  - Reuse and Recycle
Case Study

“Action expresses priorities.”
-Gandhi
“We started playing with re-words – recharge, relax, reuse, rejoice, recycle—and it all became this fusion of the energy they wanted for this hotel—an urban retreat...edgy, yet casual. Recycled art became immediately part of the idea.”

–Andrea Dawson, Dawson Design Associates
INTEGRATED DESIGN

Sustainable Design as “Focal” Point

- In the literal sense
- Hotel Identity
- Value structure of target guests
- Art informs design
- Marketability
- The complete story

Chandeliers crafted from 600 pairs of recycled glasses welcome guests at Hotel Zetta
Water Efficiency

• Low Flow Faucets
• Low Flow Showerheads
• Dual Flush Toilets
Energy Efficiency

• HVAC upgrades & Commissioning

• LED Lighting Throughout

• Occupancy Sensors for lighting and thermal controls
Materials & Resources

• **Liquidation & Recycling**
  - Waste diversion
  - Upcycling

• **Flooring**
  - Durable/low maintenance goods
  - Remnant carpet

• **Nanotechnology Paint**
  - Non-toxic, Zero VOC, prevents mold & mildew
  - Energy savings

• **Furniture**
  - Domestic sourcing & ingredients
Indoor Environmental Quality

• **Low-Emitting Materials**
  - Adhesives
  - Paints

• **Thermal Comfort**
  - BMS with Local Control
  - Occupancy Sensors

• **Interior Lighting**
  - Daylight
  - Occupancy Sensors
  - Dimmable LEDs
“Chic, modern hotels are nothing new but when you add sustainable elements and high-class design, modern turns into marvel.”
- TheManual.com

“The place is big on reusing and recycling, but in a witty way. In the lobby Brian Mock’s dog sculpture is built from dead computer parts, while old photo negs make a modern mosaic.”
- Living Etc.

“a Second Life - Recycled art defines a San Francisco Hotel”
- Hospitality Design
Best Practices

“Learn from the birds what food the thickets yield;
Learn from the beasts the physic of the field;
The arts of building from the bee receive;
Learn of the mole to plow, the worm to weave.”
-Alexander Pope
RETROFITS IN EXISTING HOTELS

Lighting:

- Wireless Occupancy Sensors
- Plug-In Appliance Modules
- Daylight Sensors
RETROFITS IN EXISTING HOTELS

Heating/Cooling:

- T-Stats with Occ. Sensors
- Building Automation Systems
- Smart rooms – tied to reservation system
RETROFITS IN EXISTING HOTELS

Building Envelope:

• Façade inspections
• Replacement windows
• Insulation
CONTACT INFO

Craig Nicholson, LEED AP BD&C
Director of Sustainable Development
AJAX Consulting Services, Inc.

cnicholson@ajaxpartners.com
Phone: (781) 863-5070