The City of Boise

2011 Building Excellence Awards
Green Building Excellence Awards
Independent School District of Boise
Best New Residential
Construction Trades Program
First Student-Built LEED Gold Certified Home

1627 Watersilk Place
Single Family • 1 Story • 3 Bedrooms • 2 Bathrooms • Garage
General Information

- **Cost of Work**
  $180,000

- **Owner**
  Independent School District of Boise

- **Designer-Contractor-Instructor**
  Scott Larson

- **Square Footage**
  1850 sq. ft.

- **Other Contractors**
  - Meridian Plumbing
  - Western Heating & Plumbing
  - Elektra Services
  - Alpine Gas Appliances
Project Highlights

Boise School District’s Construction Trades Program

- House built by students in school district’s construction program
- Construction program is 30 years old
- Students perform carpentry work and take classes at the Dehyrl A. Dennis Technical Education Center
- Students construct new house each fall
Energy Conservation

- High efficiency gas furnace and air conditioner located inside the house
- Compact fluorescent lamps
- Low energy windows
- Motion detectors operate the ventilation system
- Air transfer grills above bedroom doors
- Energy Star Certified with a HomeEnergy Rating (HERS) of 60
- House is 40% more efficient than current minimum code requirements.
Water Conservation

- Super low flow fixtures and showerheads
- Water-smart landscaping
- Native or drought tolerant plants
- A little patch of Xeric turf in the back yard
- A “killer” sprinkler system; rain sensor, sprinklers won’t turn on if it’s raining
Healthy Indoors
Indoor airPlus Qualified Home

- Low VOC (volatile organic compound) paints
- Hard floor surfaces like linoleum, bamboo and stone to eliminate dust and off gassing
- Wool carpet and other natural products
- Installed bench in the entry way
- Plants placed at least 24 inches away from the house
- Radon resistant construction methods
- Indoor central vacuum to minimize dust
Biggest Challenge

- Verifying everything for LEED certification
Jacobs’ Residence Remodel
Best Green Remodel
Jacobs' Residence Remodel
Existing Home Renovation • Best Green Remodel
1225 Wilson
Increased energy efficiency • Added day lighting • Improved layout
General Information

- **Cost of Work**
  
  $172,000

- **Square Footage**
  
  1807 sq. ft.

- **Owner**
  
  Marjie Jacobs

- **Designer**
  
  Paul Hoffman

- **Contractor**
  
  Josh Bogle & John King
  Green Remodeling, LLC
Highlights

The most “Green” house is an existing house
Marjie Jacob’s wanted a house that was green, most contractors recommended starting from scratch. Green Remodeling LLC’s approach was different. They worked with her to:

- Utilize most of the existing structure
- Save several tons of landfill waste
- Reduce the project’s use of new lumber by 85%
Energy & Sustainability Improvements

- **Energy Star Certified**
  Energy Star certifier said house is 2x tighter than any house seen

- **Insulation is 42% better than code**
  - Insulated old foundation with R-15 to a depth of 24”
  - Thickened walls to allow for greater insulation; wall insulation went from R-11 to R28
  - Roof insulation went from R-11 to R-28
  - Stem wall went from 0 to R15
Energy & Sustainability Improvements

- Radiant heating in concrete floor supplied by 98% efficient gas boiler
- Replaced roof with white EPDM (Ethylene Propylene Diene Monomer) rubber roof
- Low flow plumbing fixtures
- Added 92% efficient gas water heater
- Blower door test 2.3 ACH at 50 pascals
- Zero VOC paint
Energy & Sustainability Improvements

- Sustainable finishes
- Floating cork floor
- Icestone in bathroom (reclaimed and ground up glass)
- Engineered quartz counters in kitchen
- Daylighting introduced into several interior areas
- Fiberglass windows with an average U value of .31
ReUse

- **Mahogany Doors**
  Found mahogany doors discarded from the Statehouse remodel project.

- **Hardware**
  Showroom samples

- **Kitchen Chairs**
  From Renewal

- **Heat Pump**
  Reused mini-split heat pump in master bedroom
Micron Chilled Water Economizer
Best Green Commercial
Micron Chilled Water Economizer

Chilled water keeps Micron’s various chip fabrication processes at the correct temperature.

- Chilled water economizer will reduce energy consumption by Micron’s current chilled water cooling system.

- Installation of three large plate and frame heat exchangers, pumps, and variable frequency drives, valving, instrumentation and controls.
General Information

- **Cost of Work**
  $1.39 million

- **Owner**
  Micron Technology, Inc.
  Marty Lindgren, Facilities Manager

- **Contractor**
  Micron Technology, Inc.
  Louis Schumacher, Project Manager

- **Construction Time**
  7 months
Project Highlights

Current System

- 13 large chillers use refrigerant as a cooling agent and typical industrial cooling tower system
- Cools 14,000 gallons of water to 42 degrees every minute
- Water circulates through closed-loop piping network
- Water returns to cooling tower at 56 degrees to be cooled and re-circulated
- Energy intensive process; expends 3,000,000 kilowatt hours (kWh) per month
- Micron’s biggest energy consumer
**New System**

- Chilled water economizer added to original chilled water cooling system
- System can either bypass or use existing chillers
- The economizer is a heat exchanger that uses cold air to cool the water circulating back from manufacturing processes
Economizer
Takes advantage of Boise’s colder climate

- **50+ degrees**
  Chillers used without economizer

- **50 degrees or below**
  Chillers staged off and on and economizer used

- **35 degrees or below**
  All cooling comes from economizer
Results

Energy Savings

- Estimated annual energy savings of 10,000,000 kWh per year.
- Approximately enough power to serve **800 households** per year.
Funding

Custom Efficiency Program

Idaho Power’s “Custom Efficiency” program provides funding for complex projects

- Financial incentive to modify an existing process or install more efficient equipment.
- Funded by Energy Efficiency Riders
- Submit idea to Idaho Power to get prior approval
- Demonstrate savings are achieved

Other Efforts

- Ride bicycles between buildings
- Culture of Improvement
First Presbyterian Church

Best Accessibility Remodel
First Presbyterian Church
Lindsay Hall Remodel • Best Accessibility Upgrade
950 W. State Street
Restroom Upgrades • Additional Exit • Energy Efficient Upgrades
First Presbyterian Church of Boise

- Aims to be "a beacon of hope and light in downtown Boise."
- Supports community programs within Boise and throughout the world
Church's Mission Hub
Lindsey Hall is the church’s “Mission Hub” and many community activities take place in the building.

- **Community Conversations**
  Lunch time speaker series focusing on civic issues.

- **Friendship Dinner**
  Free dinners held on the 1st Thursday of each month; anyone is welcome.

- **Food Bank**

- **Twelve-Step Programs**
  Alcoholics Anonymous and AlAnon meetings are held there.
Lindsey Hall

Before Upgrade

- Not updated since it was built in the mid-1960s
- Fire sprinklers only in the basement; rest of the building was not sprinklered
- Accessibility was a big issue
- Six stories/levels within the three buildings
  - Sanctuary
  - Education Building
  - Lindsey Hall
Funding & Mission

Congregation needed modern, functional facilities to help support outreach programs.

Fundraising not limited to raising money for remodel; added “mission” component and asked members to double tithe.

Raised $1 million

- $800,000
  Used for Lindsey Hall upgrade

- $200,000 (20%)
  Designated for “Mission” to be used “around the corner and around the world”
Work Completed

Church committee selected Matt Rhees of The Architects Office as design professional

Increased Accessibility

The men and women’s restrooms on all three stories were made accessible

Main Fellowship Hall

- Replaced finishes; flooring, old linoleum
- Added an exit
- Made all bathrooms accessible and added accessible shower room
- All windows went from single pane to double pane
- Attic insulation went from R-13 to R-40 insulation
- Replaced current lighting with compact fluorescents
- Made Geothermal heating more efficient
Remodeled Kitchen
Kept existing cabinets but installed new heating and cooling system and new commercial cooking equipment

Basement Remodel
- Added fresh air to basement
- Basement used by YMCA after-school program, Boy Scouts and Cub Scouts
  - Added restroom; up to 60 kids in general area at once, adding a bathroom made a big difference
- Levels 3 and 5
  - Classrooms and room to grow
  - Different classrooms for K-5, middle school and high school kids
- Expect other community groups will utilize portions of building in the future
“All of God’s Children deserve the protection of the building code!”
Building Excellence Awards

Fire & Life Safety
Building Excellence Awards

Fire & Life Safety

Best Fire & Life Safety Upgrade

805 Idaho Building

Best Fire & Life Safety Upgrade
805 Idaho Building
Best Fire & Life Safety Upgrade
Elevators • Fire Alarm System • Sprinkler Systems
Work Completed

- Accessibility and life-safety upgrades
  - Elevators
  - Fire alarm system
  - Sprinkler systems
- Renovated 100+ year old building
- Preserved building’s original architectural features
General Information

• **Cost of Work**  
  $289,000 for fire alarm and sprinkler work

• **Square Footage**  
  30,000 sq. ft.

• **Originally Constructed**  
  1890, 5 story building includes basement and mezzanine

• **Owner**  
  Mike Ferry, Rocky Mountain Management & Development

• **Architect**  
  Andy Erstad, Erstad Architects

• **Contractor**  
  Pacific Sierra Construction

• **Length of Construction**  
  July 2009 through July 2010
Building-Life Safety Highlights

Scott Arellano, the City’s fire plan review and inspection supervisor nominated the project.

- **Complete fire sprinkler system upgrade** (replaced old sprinkler heads with quick response sprinkler heads)
- Building had life safety upgrades ten years ago; this upgrade completed previously started work
- Building accessibility improvements
- Upgraded emergency lighting and exit signs
- Created new egress/exit path to eliminate exiting through old Boise Tower site
Building-Life Safety Highlights

Complete fire alarm system upgrade

- Replaced panel, notification devices and initiating devices
- Monitor modules for sprinkler system monitoring
- HVAC shutdown
- Pull station
- Connection for the kitchen hood
- Notification throughout the first floor tenant
- Notification in the core areas (central corridors and public restrooms) for the basement through the penthouse
Energy & Sustainability Highlights

- Installed energy efficient windows
- Replaced exterior windows on the 2nd, 3rd and 4th floor
- Replaced existing windows with low-e windows; style consistent with original building style
- Added LED lighting to building exterior
- Upgraded geothermal controls
Accessibility Highlights

• Repaired elevator shaft walls and machinery components
• Sped up elevator
• Metal exterior ramp system added
Other Features

The Old

- **Original Wood**
  Kept wood from Simplot Corporate offices

- **Sandstone walls**
  24 inch sandstone walls

- **Nine bank vaults**
  Jazz winebar anyone?
The New

- **Rebranding**
  Rebranded building from Boise City National Bank to “805 Idaho”

- **Lobby Lamps**
  Bought striking lobby lamps in Thailand

- **Building Canopy**
  Mike Ferry based canopy design on a picture he took on a trip to Europe about 20 years ago
Best Overall
Lowell Elementary
Best Overall Project
Lowell Elementary
1507 N 28th Street • Boise, Idaho 83703

Work Completed
Full remodel/upgrade of a 100 year old building
• ADA compliance
• Fire and Life-Safety upgrades
• Technology
• Energy efficiency
• Preserved the building’s original architectural features
Lowell Elementary

General Information

- **Cost of Work**
  $4,408,000

- **Square Footage**
  41,741 s.f.

- **Owner**
  Boise School District

- **Architect**
  Hutchison Smith Architects

- **Contractor**
  CM Company - Designer/Builder

- **Length of Construction**
  July 2009 through July 2010
Project Highlights

Building-Life Safety

- Added automatic fire sprinklers
- Replaced outdated fire alarm system
- Installed horn/strobe alarms and pull station in all school areas
Project Highlights

Building-Life Safety

- Structural seismic upgrades
- Added connections at each floor to the exterior walls and roof to wall connections along entire wall length
- Upgraded doors and hardware
- Replaced handrails on all stairs
- Updated guardrails
- Installed new emergency lighting
- Upgraded exterior stairs to meet IBC requirements
Energy and Sustainability Improvements

• Added energy efficient windows

• Uncovered old window openings and replaced windows with Low “E” glass
  • As efficient as old covered-up windows, but now more daylight

• Replaced steam and condensation piping with new energy efficient HVAC systems in some areas
Energy and Sustainability Improvements

- Installed energy efficient lighting
- Added automatic light sensors in the library
- Installed awnings over south/west facing windows
- Took advantage of Idaho Power programs for lighting and mechanical system rebates
Accessibility

- Installed new five-stop elevator
- Added two exterior ramp systems to access both the main and basement levels
- Upgraded all interior door hardware
Other Features

- Each classroom has a smart board and an “ELMO”
- Renovated playground and new baseball field
- Discovered two different kinds of brick after power washing the building
- Playground black-top has a map of the world instead of the US
- Replaced gym floor with cushion backed laminate product, saving thousands of dollars a year in refinishing costs.
2011 Building Excellence Awards

Special thanks to BOMA for hosting the BEA presentation

Making Boise the Most Livable City in the Country