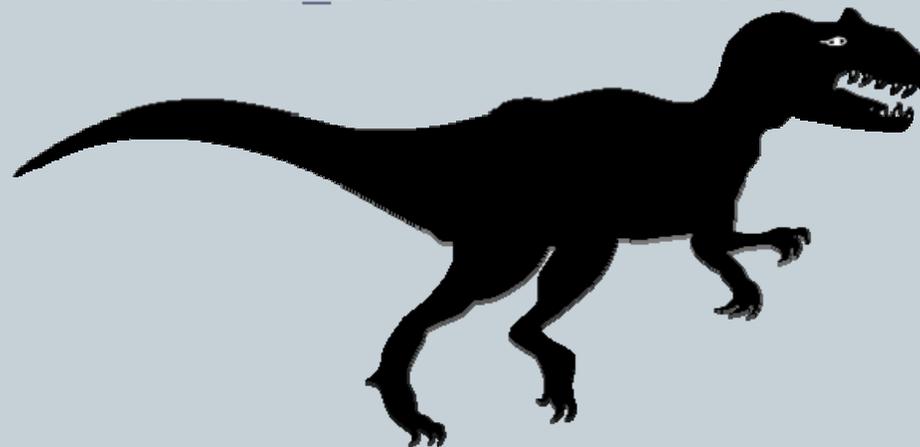


# Cleveland-Lloyd Dinosaur Quarry Visitor Center an Off-Grid Green Building



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# Summary



- **History of the Cleveland-Lloyd Dinosaur Quarry**
- **Green Building Measures**
- **Energy and Energy Efficiency**

**Understand solutions at CLDQ and apply similar sustainable measures in your own projects.**

# History



# History

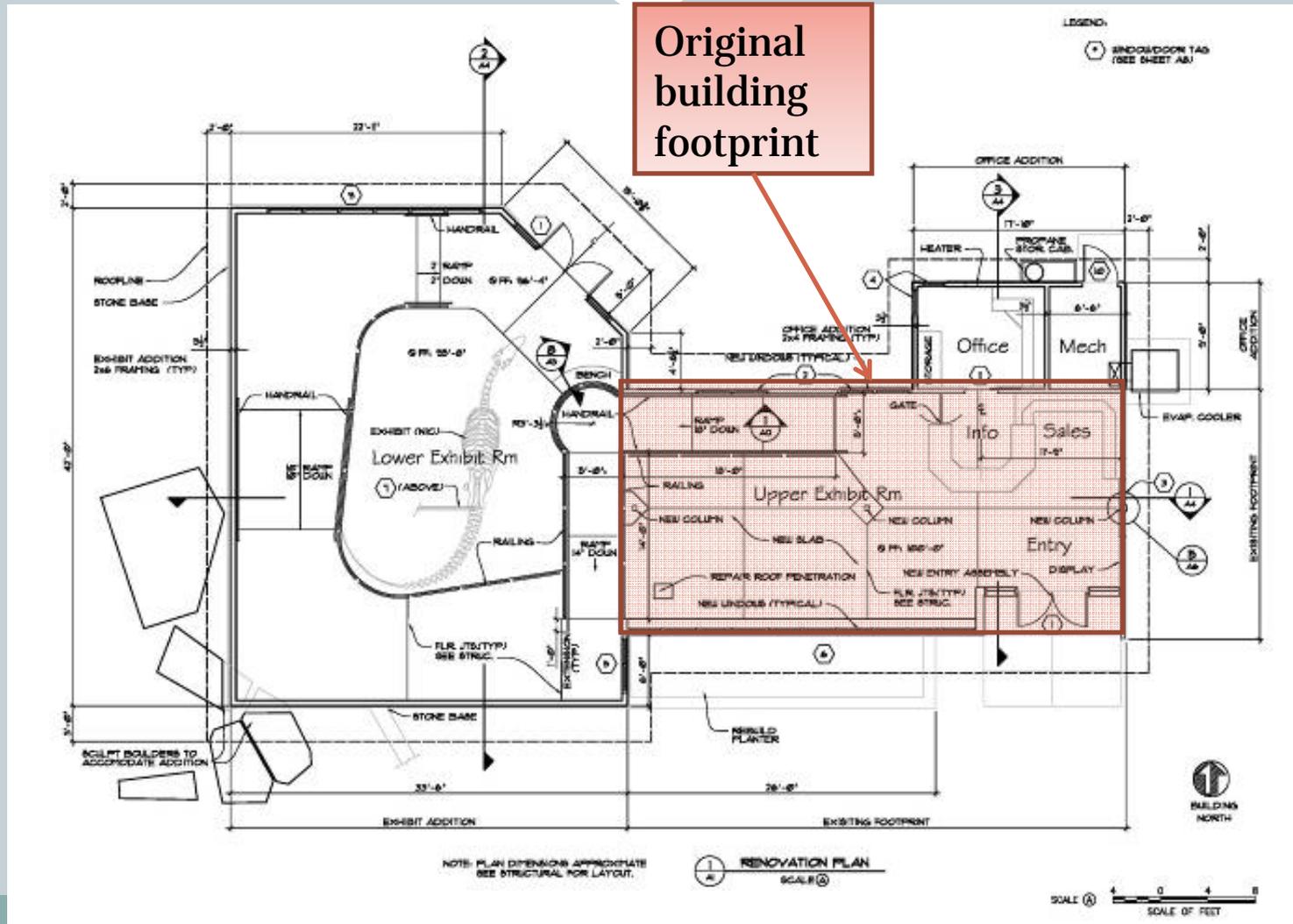


- **1920's Bones Discovered**
  - 12,000 Bones
  - 47 Allosaurus Individuals
  - 2/3 Meat Eaters
- **1968 Designated a National Natural Landmark**
- **1968 Visitor Center constructed**



- Original interior

- Increased Building size from 800 to 2,200 square feet



# Green Building Measures



- **Low VOC paints**
- **Local Stone**
- **Stained and polished concrete floor**
- **Built-up gravel roof matches surrounding soils**
- **Evaporative cooling with thermostat**
- **High efficient lighting**
- **Occupancy sensors**



- **Reused: Existing walls, ceiling and roof, foundation, window and door opening, exterior stone**

- Allosaurus Skeleton
- Stained and polished concrete floor





- Day-lighting with large operable windows
- Overhangs shade glazing



- **Accessibility Improvements:**
  - All sidewalks, entries and exits are accessible
  - Eliminated exterior stairs
  - Platforms inside quarry building are accessible



- Site view from hiking Trails



- Quarry Buildings

- Quarry Building Interior



# 100% Solar Power

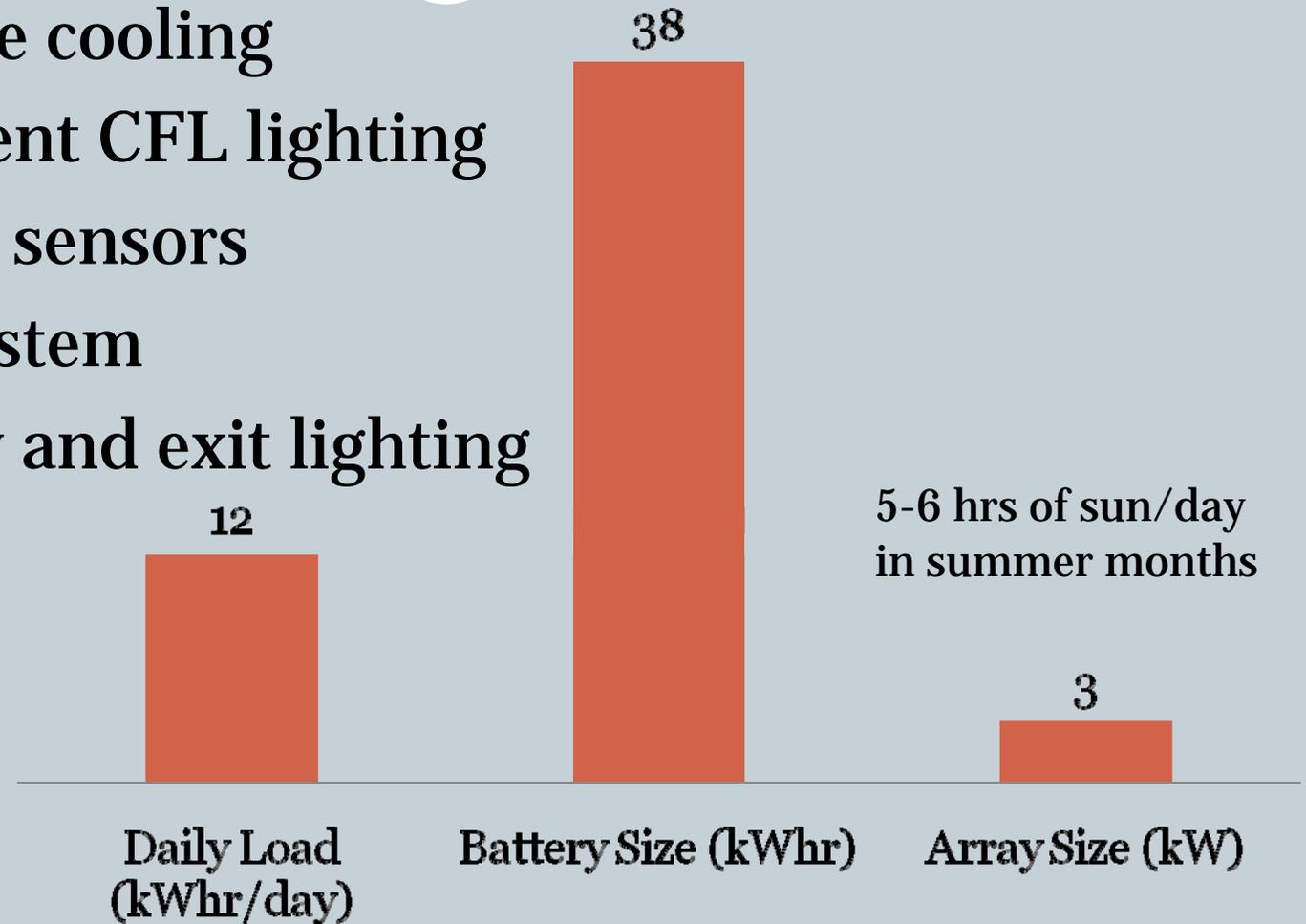


# 100% Solar Power

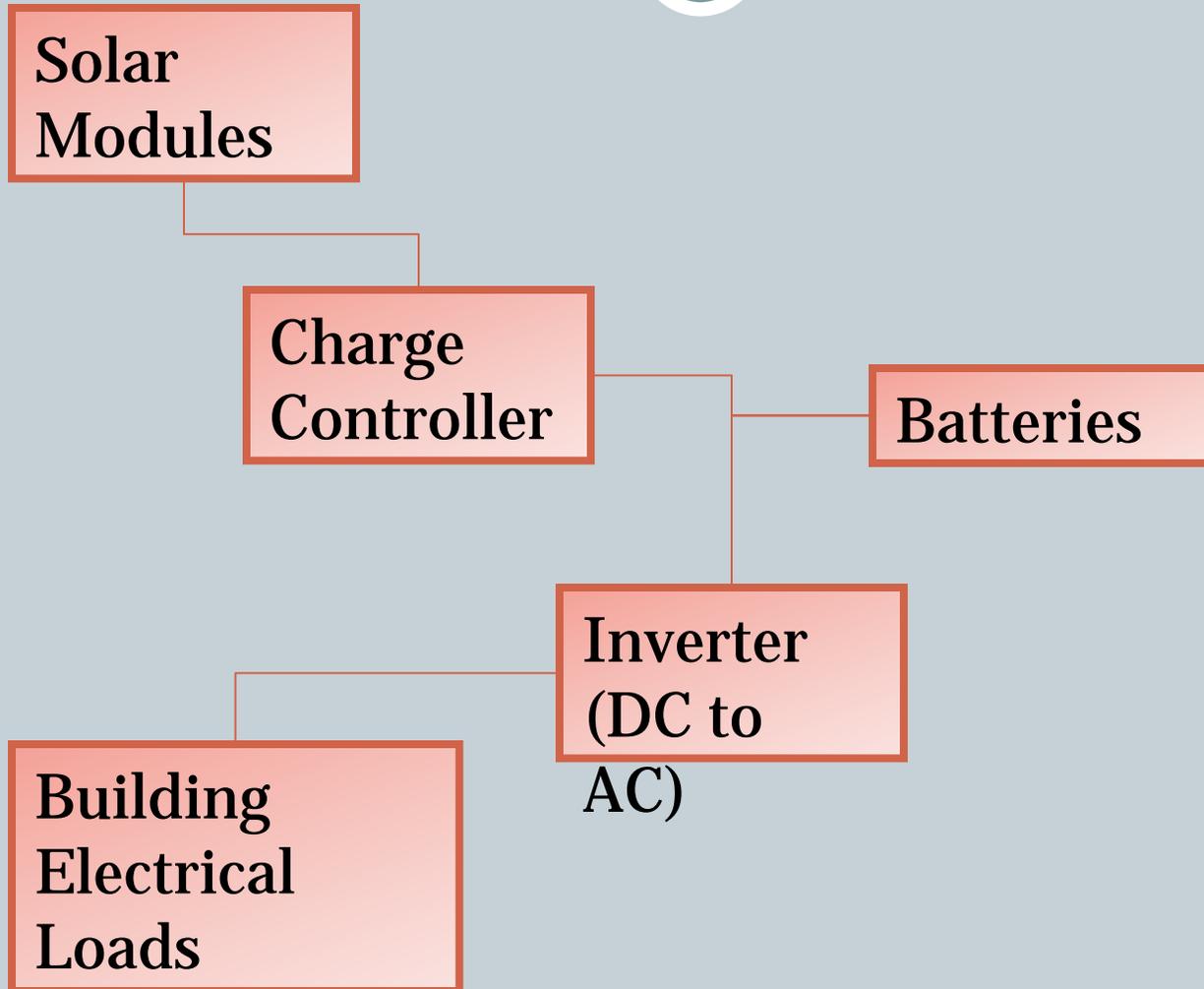


# Sizing the Photovoltaic System

- Evaporative cooling
- High efficient CFL lighting
- Occupancy sensors
- Security system
- Emergency and exit lighting
- Plug loads



# Photovoltaic System Components



# Installed System Components



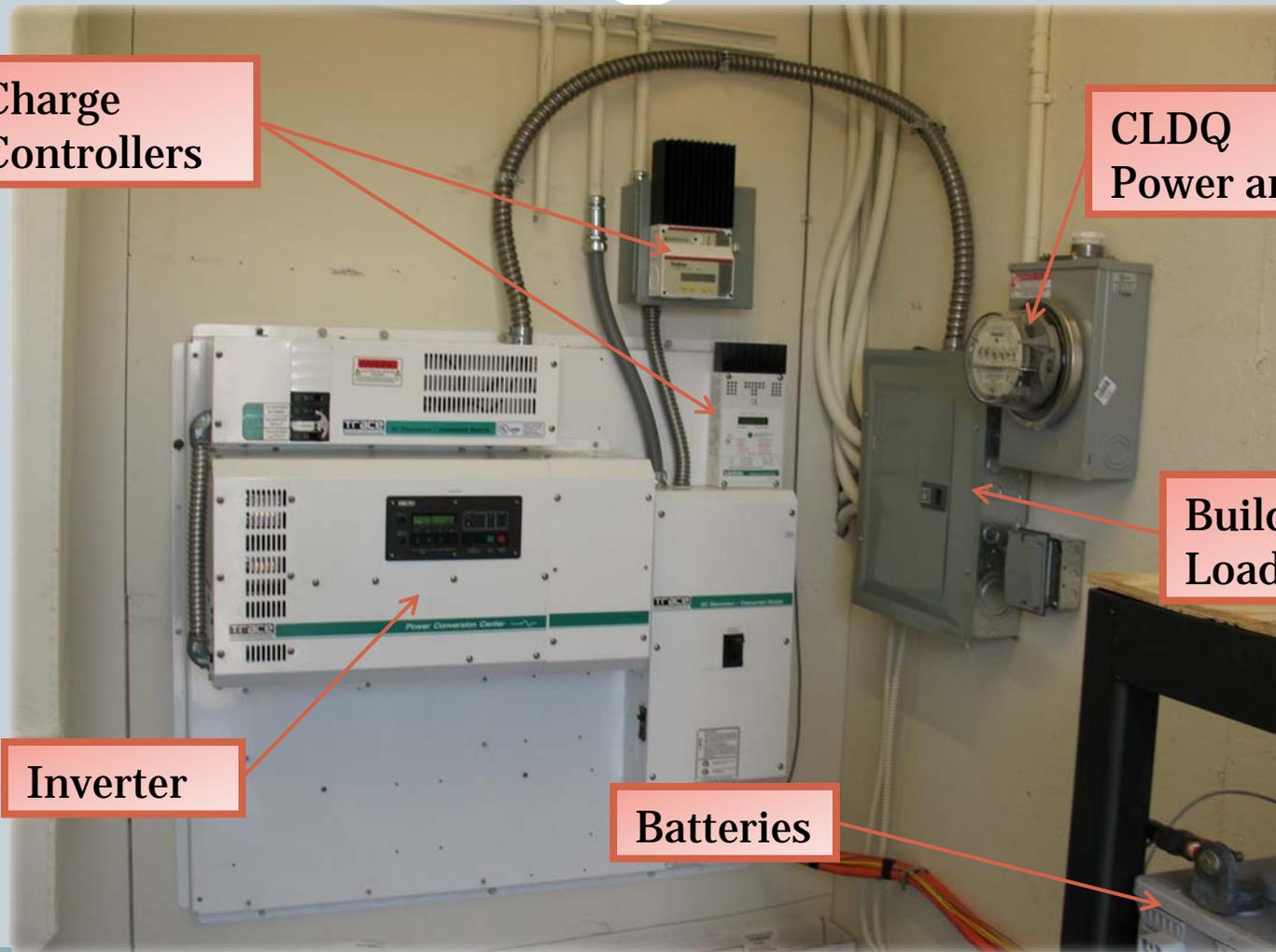
Charge  
Controllers

CLDQ  
Power and Light

Inverter

Batteries

Building  
Loads



- Dedication Ceremonies

- 2007

Identical podiums

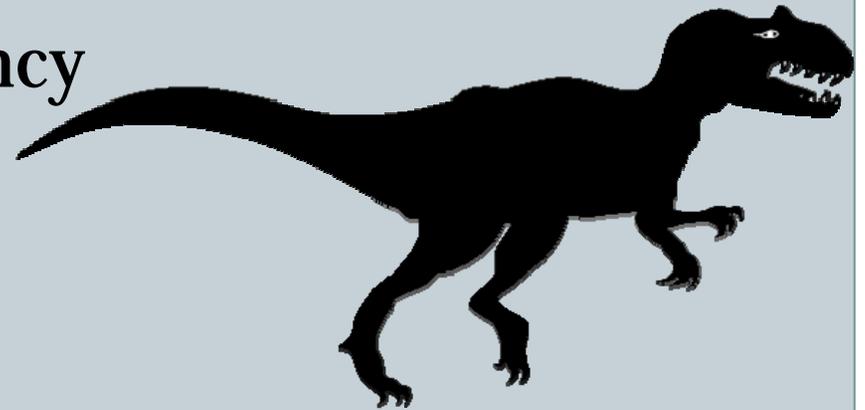


- 1968

# Summary



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- Energy and Energy Efficiency



Department of Interior - Environmental Achievement Award  
presented to the design team in November 2007