


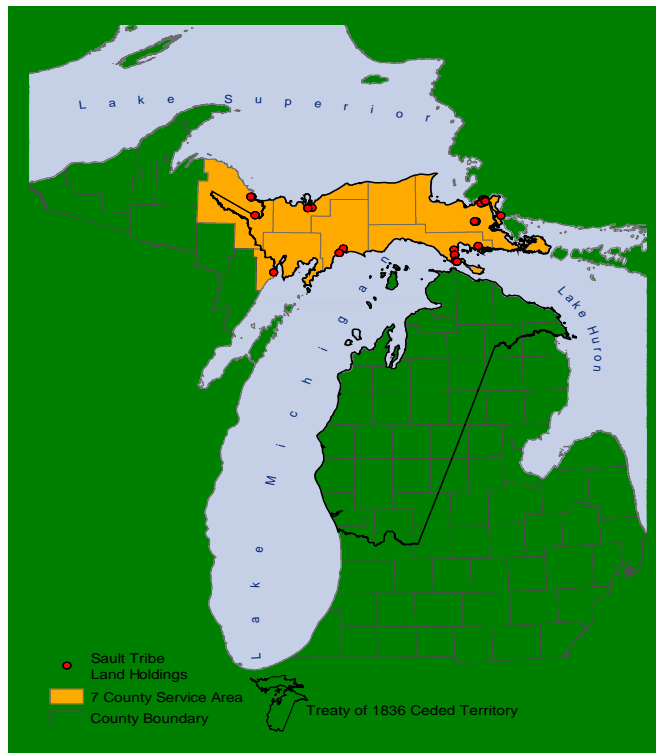
# Sault Ste. Marie Tribe of Chippewa Indians

## **Governmental Building Energy Audits & Training in Building Energy Audit Technologies**

March 24 – 27, 2014




# Summary of Tribe



- Federally Recognized in 1972
- Approximately 40,000 Tribal Members
- 7 - County Tribal Service Area:
  - Eastern Upper Peninsula of Michigan
  - Approximately 1,600 Acres Held in Trust
  - Upper Peninsula – 16,452 Square Miles
  - Tribal Service Area – 8,573 Square Miles

# Projects Overview

## Energy Audits

- 29 Commercial Audits
  - Energy Audit Equipment Purchases
- 
- 25 Residential Audits of Tribal Housing Units

## Technologies Training

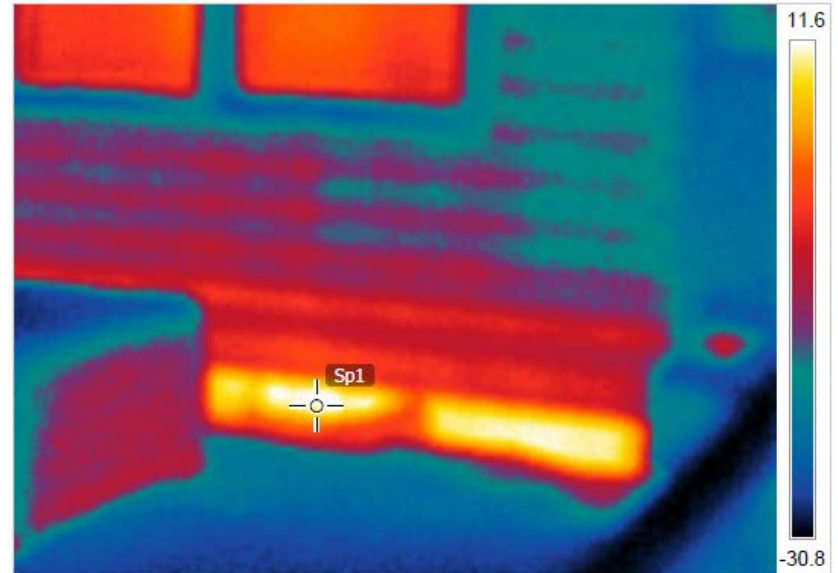
- Building Analyst
  - Building Envelope Professional
  - Advanced Energy Audit Technologies
- 

# Photos – Energy Audits

1/17/2013 9:31:24 AM



1/17/2013 9:31:24 AM



## Mary Murray Culture Camp, Sugar Island, Michigan

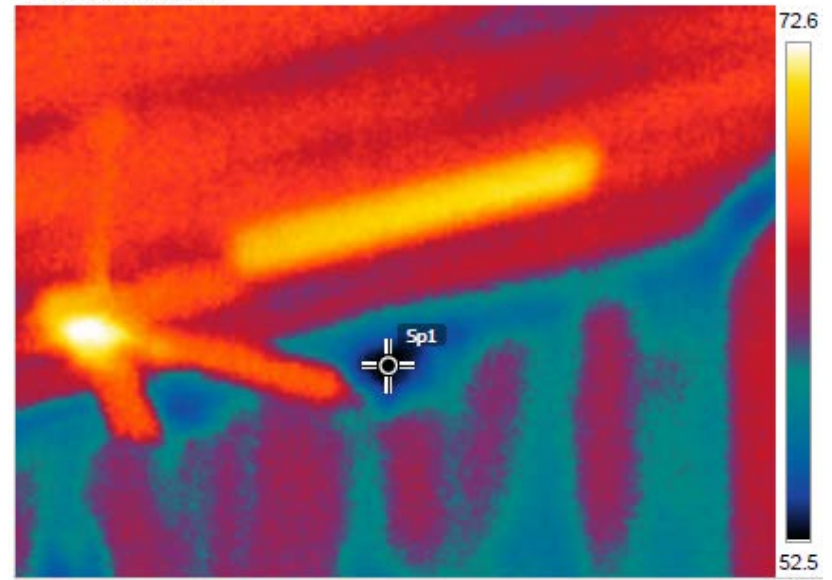
FLIR E40 Infrared Camera Photos  
UP Engineers & Architects, Inc.

# Photos – Energy Audits

1/17/2013 10:05:26 AM



1/17/2013 10:05:26 AM



## Mary Murray Culture Camp, Sugar Island, Michigan

FLIR E40 Infrared Camera Photos

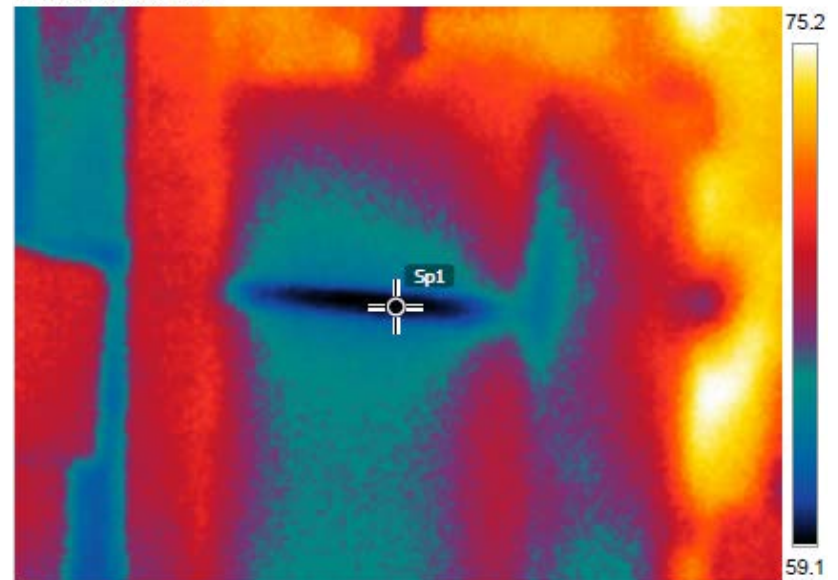
UP Engineers & Architects, Inc.

# Photos – Energy Audits

1/17/2013 9:34:21 AM



1/17/2013 9:34:21 AM



## Mary Murray Culture Camp, Sugar Island, Michigan

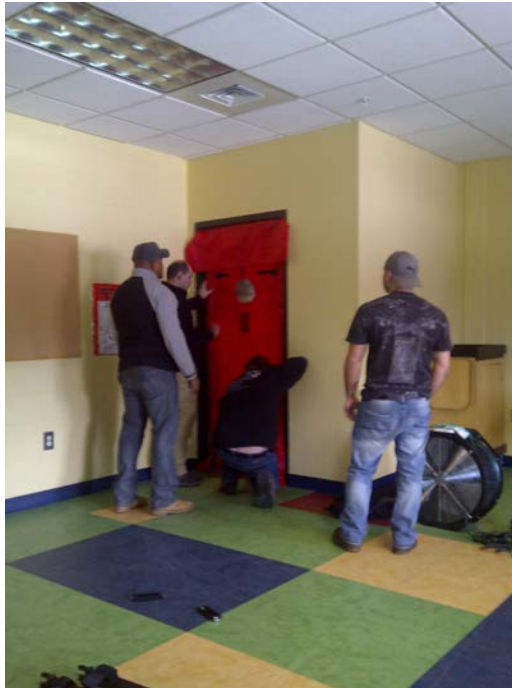
FLIR E40 Infrared Camera Photos

UP Engineers & Architects, Inc.

# Photos – Equipment



# Photos – Technology Training





# Projects Locations

## Energy Audits

- Elder & Youth
- Ceremonial & Culture
- Judicial & Enrollment
- Health/Social Services
- Housing/Construction
- Environmental
- Retail, Office & Rental

## Technologies Training

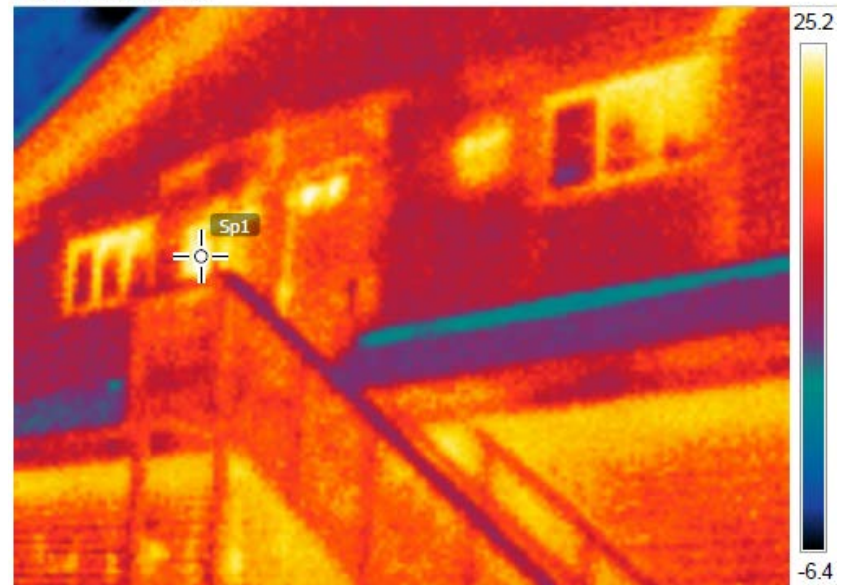
- Tribal Administration Classroom
- Test Site Provided by Tribal Housing – Stand Alone, Unoccupied Residence
- Chi Mukwa Recreation Center Classroom

# Photo – Energy Audit Location

1/16/2013 8:18:13 AM



1/16/2013 8:18:13 AM



## Fred Hatch Environmental Building, Sault Ste. Marie, Michigan

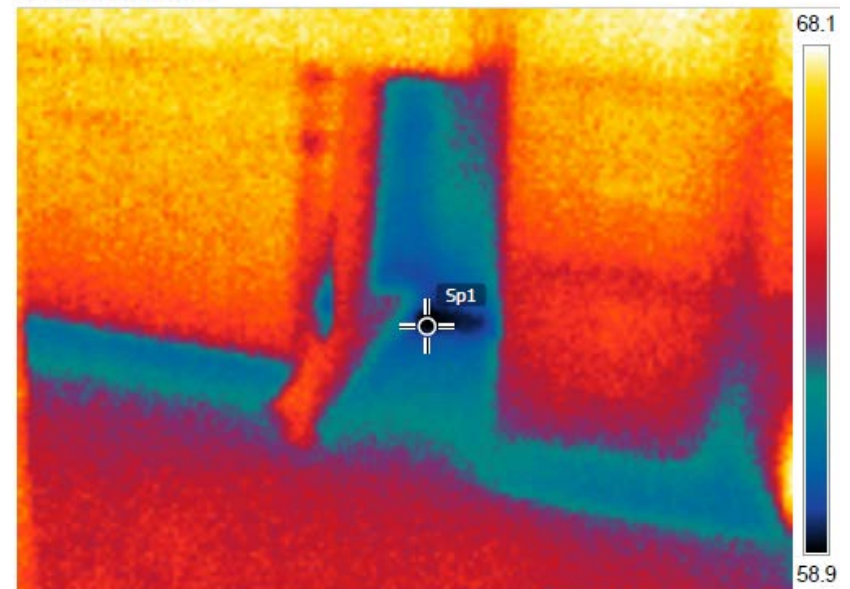
FLIR E40 Infrared Camera Photos  
UP Engineers & Architects, Inc.

# Photo – Energy Audit Location

1/16/2013 8:55:36 AM



1/16/2013 8:55:36 AM



## Fred Hatch Environmental Building, Sault Ste. Marie, Michigan

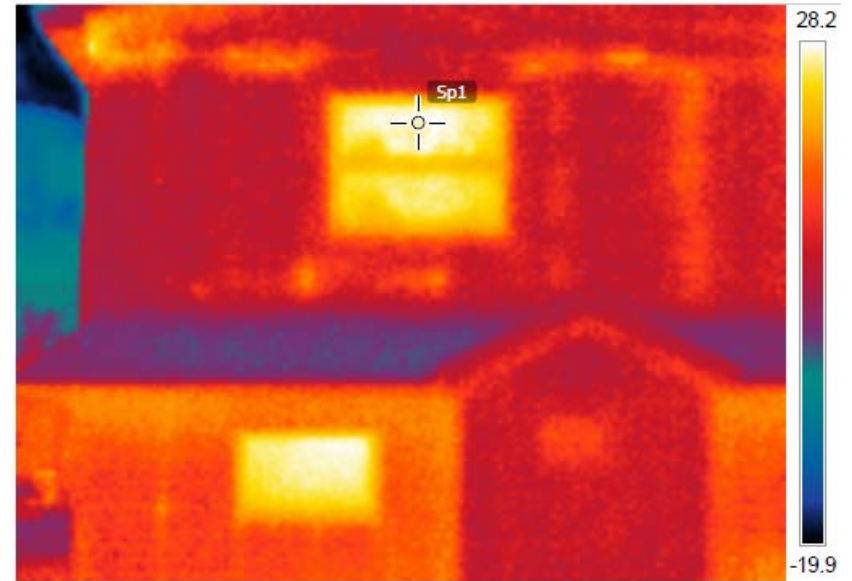
FLIR E40 Infrared Camera Photos  
UP Engineers & Architects, Inc.

# Photo – Energy Audit Location

1/16/2013 8:16:40 AM



1/16/2013 8:16:40 AM



## Fred Hatch Environmental Building, Sault Ste. Marie, Michigan

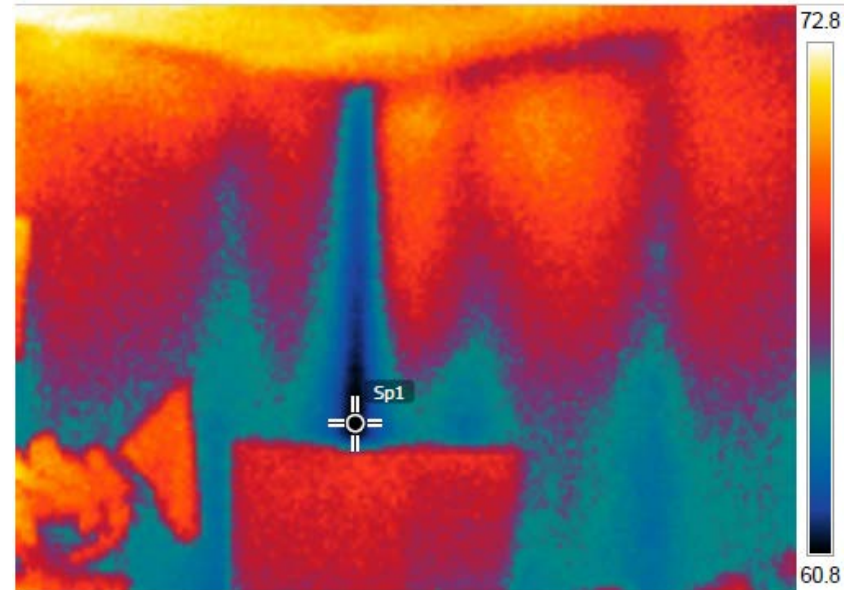
FLIR E40 Infrared Camera Photos  
UP Engineers & Architects, Inc.

# Photo – Energy Audit Location

1/16/2013 8:45:25 AM



1/16/2013 8:45:25 AM



## Fred Hatch Environmental Building, Sault Ste. Marie, Michigan

FLIR E40 Infrared Camera Photos  
UP Engineers & Architects, Inc.

# Photo – Tech Training Location

**Chi Mukwa  
Community  
Recreation Center**

**Sault Ste. Marie, MI**



**Training Site for *Advanced  
Energy Audit Technologies***

**Training Provided by  
Building Science Academy**



# Projects Participants

## Energy Audits

- Energy Team
- Facilities Management
- Tribal Departments
- Engineering Firm

## Technologies Training

- Environmental Department
- Health Division
- Housing Division
- Maintenance Personnel
- Recreation Center
- Technology Trainers

# Projects Objectives

## Energy Audits

- Establish Commercial Building Energy Priorities
- Acquire Blower Door and Infrared Camera Equipment for Training and Testing
- Establish Residential Energy Priorities

## Technologies Training

- Train Tribal Personnel in Building Energy Audits and Equipment
- Conduct Energy Audits of Tribal Commercial Buildings and Tribal Housing Units



# Past Related Activities

## Energy Audits

- 2002 – Wind Energy Feasibility Study
- 2009 – ARRA Lighting Retrofits
- Energy Rebates
- 2009 – 9 Energy Audits of Tribal Governmental Buildings

## Technologies Training

- Wind Energy Anemometer Training
- Wind Energy Training
- Energy Webinars
- Energy Certifications of Tribal Personnel

# Projects Status

## Energy Audits

- Activities Completed:
  - 38 Tribal Governmental Building Energy Audits
  - 2 Blower Door Systems and 4 Infrared Cameras Purchased
- Outstanding Items:
  - Building Energy Audit
  - Housing Energy Audits

## Technologies Training

- Classes Completed:
  - Building Analyst
  - Building Envelope Professional
  - Advanced Energy Audit Technologies
- Outstanding Items:
  - Certifications
  - Additional Field Experience



# Accomplishments

## Energy Audits

- Energy Priorities Identified
- Energy Awareness Raised
- Energy Saving Retrofits Installed
- Energy Saving Procedures Implemented

## Technologies Training

- Certifications
- Equipment Operational Knowledge
- Energy Audits Implemented
- Tribal Energy Strategy
- Confidence in Tribal Personnel Capabilities

# Lessons Learned

## Energy Audits

- Energy Concerns with Tribal Facilities Confirmed
- Rebate Application Process Established
- Need for Engineering Specifications Identified

## Technologies Training

- Coursework More Difficult Than Expected
- Training Requires Mathematics and Science Knowledge
- Time Commitment Is Barrier – Workload & Reduced Personnel

# Activities to Complete

## Energy Audits

- 1 Commercial Energy Audit
- 25 Residential Energy Audits
- Attend DOE Annual Program Reviews
- Grant Reporting

## Technologies Training

- Certifications
- Additional Field Experience
- Attend DOE Annual Program Review
- Grant Reporting



# Photo – Tribal Housing Site

**Potential Site of  
25 Residential  
Energy Audits**

**Kincheloe, MI**



Aerial Photo by  
Kathleen Brosemer,  
Sault Tribe Environmental  
Program Manager



# Future Plans

## Energy Audits

- Find Funds for Engineering Specifications
- Implement Energy Improvements in Tribe's Commercial Buildings
- Continue Applying for Energy Rebates
- Research Funding for Initial Renewable Energy Options

## Technologies Training

- Find Funds for Training to Certify Tribal Personnel as Trainers
- Find Funds for Energy Department, Energy Manager & Energy Capacity Assessment Tribal-wide
- Provide Basic Technologies Training & Certification to Additional Personnel

# Acknowledgements

Sault Tribe is implementing energy retrofitting to protect natural resources, improve Tribal membership economic well-being, foster self-sufficiency and sustain operational continuity.

***Sault Tribe expresses appreciation to the U. S. Department of Energy for providing the funding, which makes these projects possible.***

***Miigwech***