Tribal Green Building

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U.S. EPA Region 9
Tribes: The First Green Builders

Mesa Verde Pueblo Cliff Dwellings, Colorado
Occupied from 600 - 1300 AD
U.S. Building Environmental Impacts

- **HEALTH**: Americans spend nearly 90% of their time indoors, poor indoor air quality threatens human health and productivity

- **Over 66% of solid waste materials generated** (Construction & Demolition Debris)

- **Nearly 40% of US energy use & 40% of carbon dioxide emissions**, the primary greenhouse gas (GHG)

- **More than 10% of U.S. freshwater usage**

*Green buildings improve community member health and reduce environmental impacts*
Overview

• Tribes possess nationhood status and retain inherent powers of self-government

• State and local building codes do not apply
• 1996-Native American Housing Assistance and Self Determination Act provides tribes flexibility to adopt and use their own building codes

• Some tribes are interested in sustainable building and renewable energy to support tribal sovereignty.
<table>
<thead>
<tr>
<th>Topic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENERGY CONSERVATION</td>
<td>100%</td>
</tr>
<tr>
<td>RENEWABLE ENERGY</td>
<td>92%</td>
</tr>
<tr>
<td>Indoor Air Quality</td>
<td>88%</td>
</tr>
<tr>
<td>Water Conservation</td>
<td>88%</td>
</tr>
<tr>
<td>Tribe’s Cultural Values</td>
<td>75%</td>
</tr>
<tr>
<td>Traditional Building Practices</td>
<td>68%</td>
</tr>
<tr>
<td>Natural Building Materials</td>
<td>60%</td>
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</tbody>
</table>

Survey conducted by the Intertribal Council on Utility Policy (2010)
EPA Tribal Green Building Toolkit

- Developed with tribal input throughout the process
- Covers tribes with and without building codes
- Provides checklists to help prioritize community needs

Tribal Toolkit - Topics

Toolkit priorities were identified by the Tribal Green Building Codes Workgroup:

- Land Use
- Materials & Resource Conservation - including Manufactured Homes
- Human Health
- Energy & Renewable Energy
- Water
- Resilience & Adaption
- Affordability

Plus Tribal Case Studies and Guidance for Code Implementation, Compliance, and Planning

Ohkay Owingeh tribe renovation reused building materials to reflect green and cultural values.
Manufactured Homes

Many new manufactured homes are weatherization candidates as they leave the factory

“Affordability” focuses on first cost sales price

**FIRST COST:**
Energy efficiency increased home sticker price: $1,203 - $2,657*

**Simple Payback Period:**
3.9 - 11.8 Years*

*Source: HUD/DOE 10 year analysis conducted in 19 communities

Trailor Park on Tribal Land, Thermal, CA (closed 2013). Photo: Rodrigo Pena
NEW WEBSITE:
Green Building Tools for Tribes
www.epa.gov/green-building-tools-tribes
Thank You – Gila River Indian Reservation

Tribal Green Building leaders!

- Piloted Tribal Green Building Toolkit with EPA

- Through coordination between Environmental and Building Departments, we learned that GRIC was already doing amazing green building work

  - Codes require greater energy efficiency than the State of Arizona

  - Conducted a Workshop for Arizona tribes

  - Developed Case Study

Gila River Indian Community Tribal Green Building Case Study:
THANK YOU!

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Tribal Green Building Toolkit:
https://www.epa.gov/green-building-tools-tribes