

The Housing/Energy Nexus Setting the Stage: How Did We Get Where We Are?

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Overview

- Some statistics
- A little history
- NAHASDA
- The energy efficiency v. first cost conflict
- EE and building codes
- EE and the climate crisis
- Passive solar design

Some Statistics

- 40 % of reservation housing is inadequate
- 12 % lack plumbing
- 28 % are overcrowded
- 70 % in need of upgrades and repairs
- Less than half connected to sewers
- At least 200,000 new units needed
 - Source: NAIHC testimony

The Legal Framework

- Most housing on Indian trust lands is built with federal financial assistance
- There is very little financing provided by private institutions
 - Leasehold mortgage is theoretical option

History – the 1937 Act

- In 1937, the Congress passed the landmark National Housing Act, declaring the country's intention to eliminate the unsafe and unsanitary housing conditions endured by low income American families
- 1937 Housing Act established the Public Housing Administration - later became Dept. of Housing and Urban Development - HUD

History – the 1937 Act

Public Housing Administration's **main focus** was the allocation of funding to various **public housing authorities** around the country, which built, operated, and maintained the federally-funded low-income housing stock.

No Tribal or Indian Program.

History – 1961 Interior Report

- ❑ A 1961 report written by a Department of Interior task force documented the compelling need for Indian housing programs.
- ❑ Report recommended that Public Housing Administration enlarge the low-rent public housing program to provide for Indians living in Indian Country.
- ❑ Public Housing Administration's General Counsel legal opinion determined that low-rent housing programs were authorized in Indian Country under the 1937 Housing Act.

History – 1961 Interior Report

- All that was necessary was that tribal governments exercise governmental powers and **establish a housing authority under tribal law.**
- Because the 1937 Act was structured to provide funding only through public housing authorities, the Public Housing Administration said that only independently-operated Indian housing authorities could receive funding under the Act.
- Nearly all these Indian housing authorities used the **same exact language in their charters or establishing ordinances** – the language in these charters was developed and required by HUD as a condition of receiving 1937 Act funding.

NAHASDA – 1996, 25 USC 4101

- Indian housing programs changed substantially with the enactment of the Native American Housing Assistance and Self-Determination Act in 1996.
- NAHASDA removed Indian housing programs **completely** from the 1937 Housing Act
- Established a separate, non-competitive block grant appropriation that would be allocated among tribes according to a needs-based formula.

NAHASDA

- While HUD still maintains general oversight of Indian housing programs, substantially **more control over planning and the day-to-day operations** of Indian housing was delegated to tribes.
- NAHASDA gave the tribes and their tribal designated housing entities (TDHEs) much more **flexibility in the design and operation** of housing programs.

NAHASDA – Use of Funds

- NAHASDA funds may be used for any of the seven affordable housing activities set out at section 202 of the Act (25 USC 4132)
- 1. modernization or operating assistance for 1937 Act funded units
- 2. housing development (acquisition, construction, reconstruction or rehabilitation of housing)

NAHASDA – Use of Funds, cont'd

- 3. housing services (counseling or assistance to owners, tenants and contractors involved in affordable housing activities)
- 4. housing management services (loan processing, tenant selection, inspections)

NAHASDA – Use of Funds, cont'd

- 5. crime prevention activities
- 6. model activities that provide creative approaches to solving affordable housing problems (must be approved by HUD)
- 7. reserve accounts for administration and planning activities

NAHASDA Regulations – 24 CFR Part 1000

- The purpose of the regulations is to implement the statute with specific requirements.
- The NAHASDA statute—like most statutes—contains very broad parameters.
- The regulations, which were developed through negotiated rulemaking, go into depth in each area.

Options other than NAHASDA

- USDA Programs
- BIA Housing Improvement Program
 - 25 CFR part 256
- Tax credit financing

Low Income Housing Tax Credits

- Federal program (section 42 of Internal Revenue Code) that facilitates public-private partnerships for construction or renovation of affordable, low-income housing
- Federal tax credits are allocated on a state-by-state basis
- Tax credit is a dollar-for-dollar reduction in the amount of federal tax that must be paid
- Tribes and TDHEs are eligible to receive the credits; must submit application to State housing finance agency

Low Income Tax Credits, cont'd

- Tribe/TDHE enters into a long-term partnership with a private investor
- Investor puts up capital for construction or renovation of affordable, low-income housing, and in exchange receives the tax credits
- The homes built must be maintained as low-income (numerous requirements on income, household size, rents, etc.) for 30 years if rental, or 15 if lease/purchase
- State entity and investor monitor construction and use of the homes to ensure use is consistent with the statutory and regulatory requirements

Energy Efficiency v. First Cost

- NAHASDA statute requires that homes be built —~~for~~ moderate design”
- To implement this —moderate design” requirement, regulations state that home must be built under Total Development Cost (“TDC”)
- Energy efficiency is allowable but optional, 25 USC 4132, added by 2005 Energy Policy Act

Total Development Costs

- TDC is the parameter established by HUD regulation, 24 CFR 1000.156, .158(c)
- HUD sets the TDC for each Tribe nationally per 1000.158(c)
- Based on estimate of regional costs for labor, land, materials, etc.

Total Development Costs

- **24 CFR 1000.158(b) – Relevant Section reads as follows**
- —In developing standards under this paragraph, the recipient must establish, maintain, and follow policies that determine a local definition of moderate design which considers: (1) Gross area; **(2) Total cost to provide the housing;** **(3) Environmental concerns and mitigations;** (4) Climate; (5) Comparable housing in geographical area; (6) **Local codes, ordinances and standards;** (7) Cultural relevance in design; (8) Design and construction features that are reasonable, and necessary to provide decent, safe, sanitary and affordable housing; and (9) Design and construction features that are accessible to persons with a variety of disabilities.”

Total Development Cost, cont'd

- HUD publishes the TDC for all tribes annually
- For Puyallup, the TDC for a two bedroom home is \$246,163 (which includes land acquisition costs)
- Any 2 BR home constructed with NAHASDA funds must be built within that TDC (with a 10% flexibility factor)

Case Study – Puyallup Tribal Housing Authority “Elder Healthy Home”




Environmental
WORKS
Community Design Center
407 15th Avenue East
Seattle, Washington 98112
206.379.4300
206.379.4304 Fax
ew@enviworks.org

EcoFab Housing
Tribal Healthy Home

January 22, 2006

Proj. No. 06-016



Case Study – “Elder Healthy Home”

- **Key Findings by PTHA**
- Partnerships with others in the community facilitate implementation of project
- Green and recycled materials are readily available at reasonable cost
- Contractors had to step back and learn how to incorporate new materials and construction methods, which delayed schedule and increased costs
- Heating system is particular specialty, would benefit from pre-qualifying subcontractors

Case Study – “Elder Healthy Home”

- **Where to go from here?**
- HUD regulations, as well as other regulations, place limits on use of federal funds for construction projects.
- Similar problems under Low Income Housing Tax Credit program (LIHTC):
- Limits on allowable basis for construction costs would be restrictive of this kind of building.

Case Study – “Elder Healthy Home”

- **Where to go from here (con’t)?**
- Yet federal law also encourages, and in some instances, requires energy efficiency.
- Need new approaches to calculating costs that incorporate these technologies.

EE in Public Buildings

- Energy Independence and Security Act of 2007, PL 110-140, title IV
 - Subtitle C – Federal Buildings
 - Subtitle E – High-Performance Schools
 - Subtitle G – Public and Assisted Housing
 - Application of ICC REC 2006 – EISA 481, 42 USC 12709
 - Does not include NAHASDA
 - Section 494 – Green Bldg Advisory Committee
 - No Tribal Government Representation

EPA Act 2005, Title V – Dept. of Housing & Urban Development

- Energy Efficiency in Federally Assisted Housing,
 - section 506, 42 USC 16001
- HUD – **“shall promote energy conservation”**
 - **EE technologies, including refrigerators and other appliances**
 - **Shared savings contracts**
 - **Discretion to use such other technologies & innovations as HUD considers appropriate**
- Amendment to NAHASDA –
 - **“improvement to achieve greater energy efficiency”**

Energy Efficiency in Buildings

- Department of Energy
Building Energy Codes Program
 - Free software and technical support for states and local governments
- U.S. Green Building Council
 - NOTE: LEED neglects passive solar design
- Architecture 2030

U.S. Department of Energy Building Energy Codes Program



Building Energy Codes Program



codes.

DOE's Building Energy Codes Program is an information resource on national model energy codes. We work with other government agencies, state and local jurisdictions, national code organizations, and industry to promote stronger building energy codes and help states adopt, implement, and enforce those

The Program recognizes that energy codes maximize energy efficiency only when they are fully embraced by users and supported through education, implementation, and enforcement.

Free Software



REScheck

[REScheck](#), [REScheck-Web](#), [REScheck Package Generator](#)



COMcheck

[COMcheck](#), [COMcheck-Web](#), [COMcheck Package Generator](#)

Technical Support



Resource Center

[Resource Center](#)



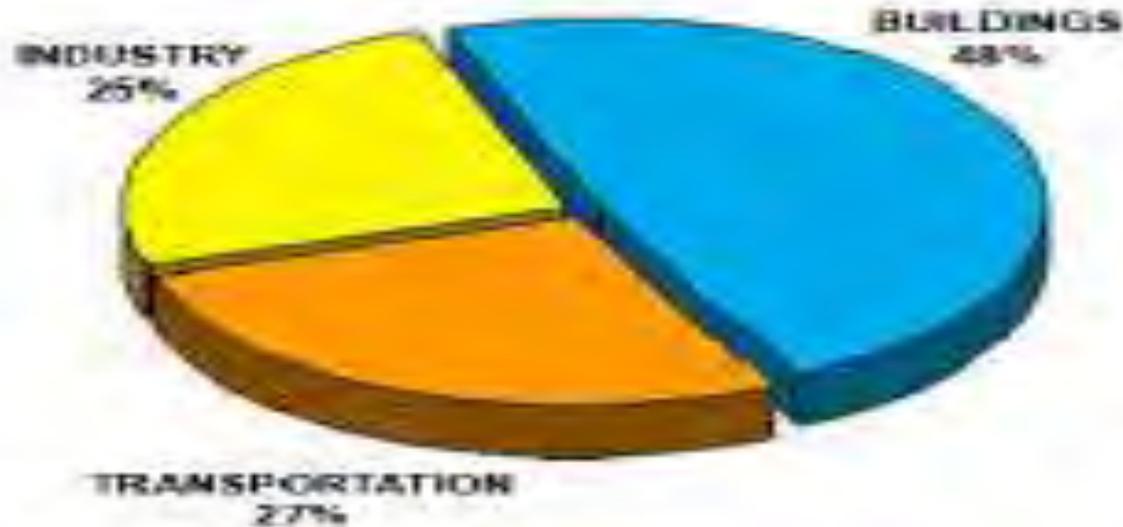
Ask an Energy Codes Expert

[Ask an Expert](#)

U.S. Department of Energy Building Energy Codes Program

- Federal statute authorizes assistance to states and local governments to improve energy efficiency requirements in building codes – 42 USC 6833
- Statutory language does not mention tribal governments

The Big Picture – CO₂ Emissions and the Built Environment



US Energy Consumption (Figure 2)

Source: Architecture 2030, Research Center, Building Sector

www.architecture2030.org

- The 2030 Challenge – zero net energy in all new construction by 2030
- Endorsed by Waxman-Markey bill (2009)

Studies on the website:

- The 2030 Blueprint: Solving Climate Change Saves Billions, Good for Economy, Jobs (April 2008)
- Meeting the 2030 Challenge Through Building Codes (June 2008)

Moving toward Net Zero Energy

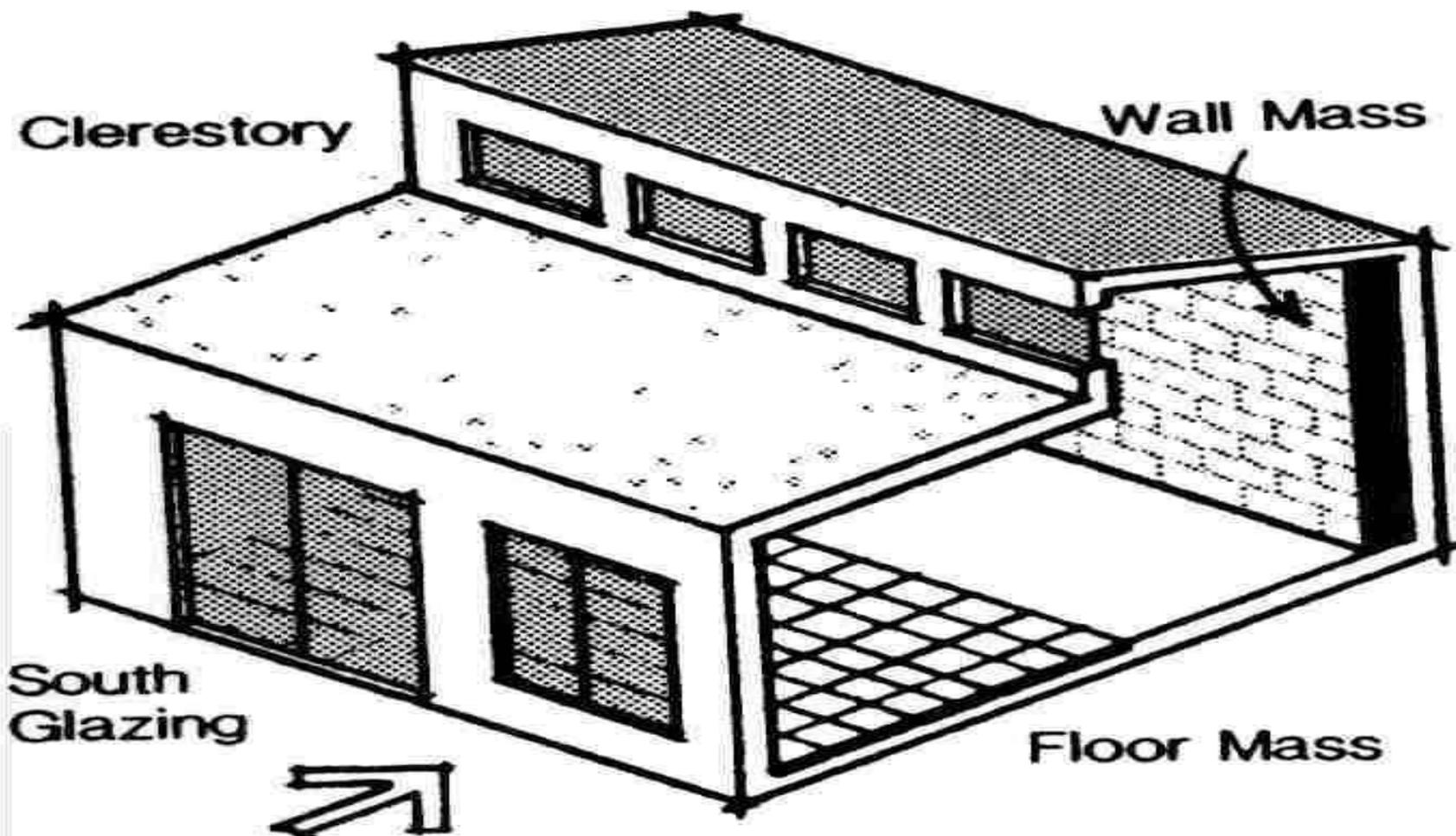
- Energy 10 Software from the Sustainable Buildings Industry Council and NREL, website: www.sbicouncil.org
 - Heating and cooling load calculations
 - Passive solar design strategies, comparisons
 - Thermal mass – optimizing choices

And many other kinds of details

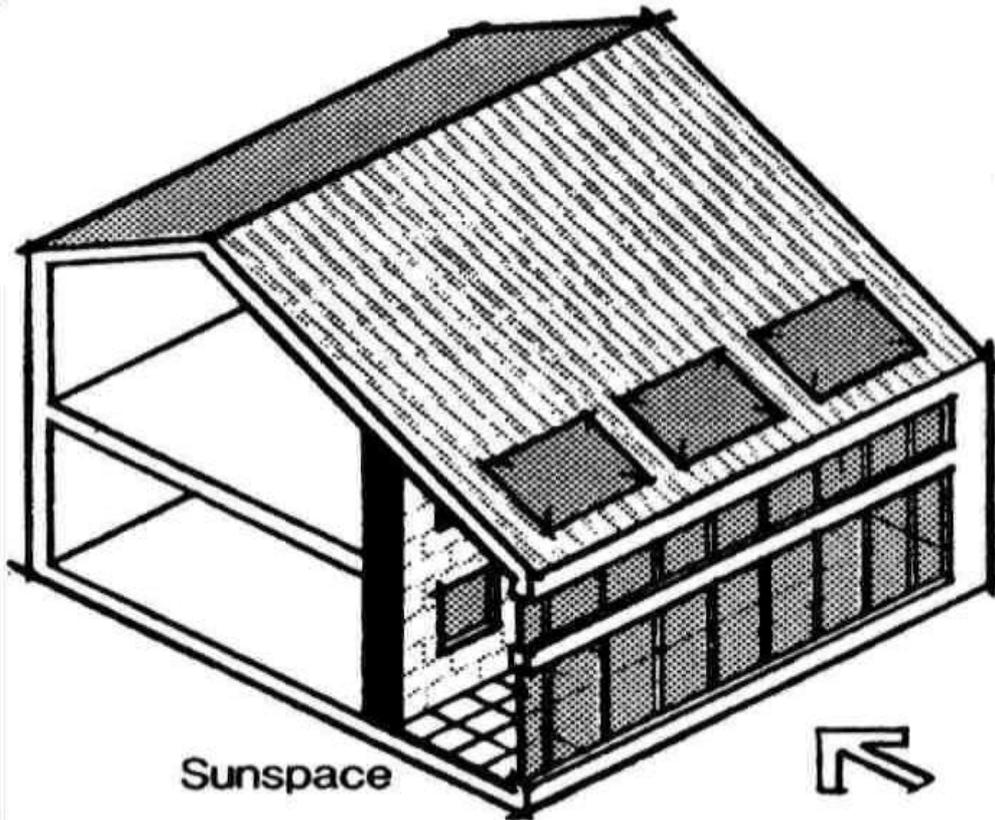
Some Basics of Solar Design

- Energy efficiency is a pre-requisite.
- Solar design features are less costly and work better if built in from the start than if added on later.
- Orientation is a critical factor.
- Thermal mass is needed to store and release heat, and to provide thermal inertia.

Direct Gain

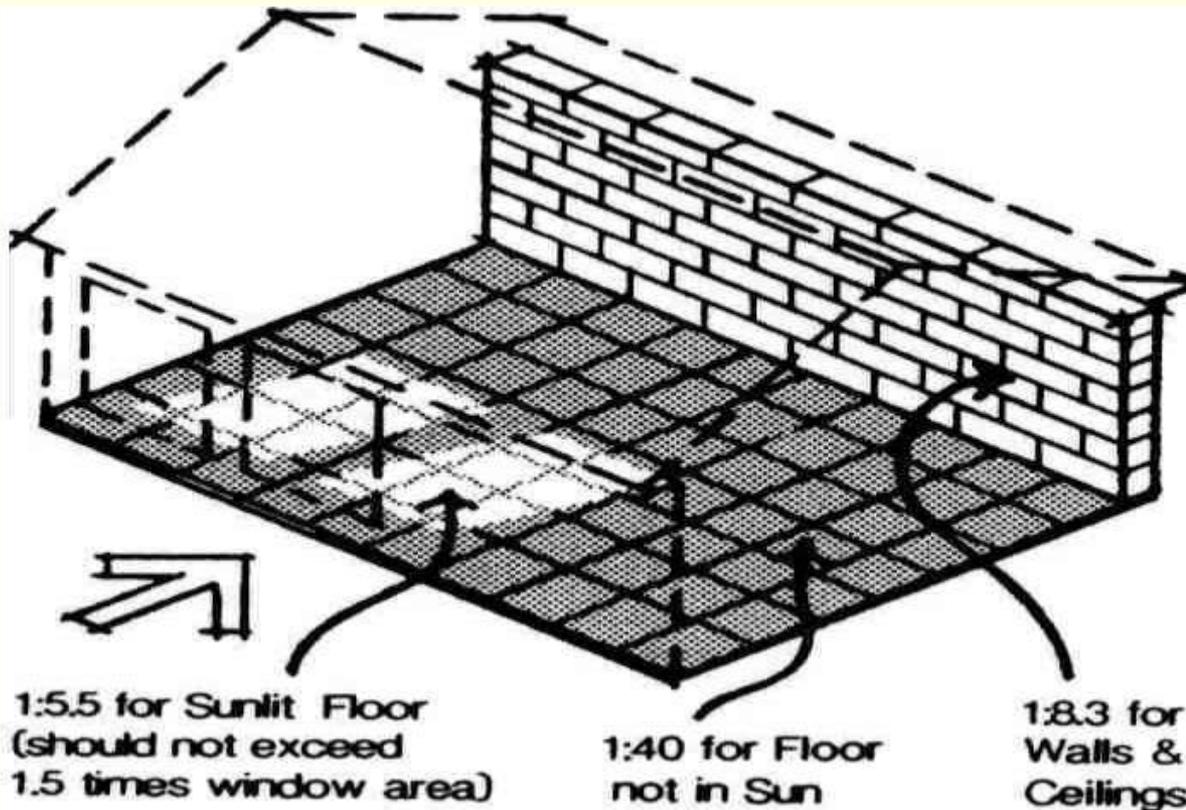


Isolated Gain



Sunspaces provide useful passive solar heating and also provide a valuable amenity to homes

Thermal Mass

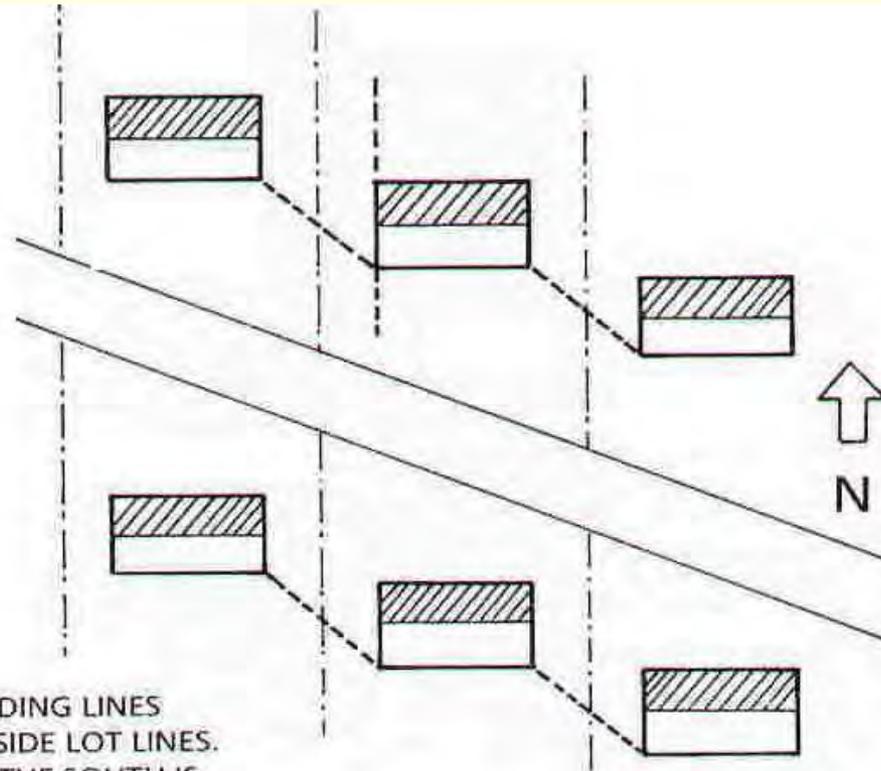


Additional mass must be provided for south-facing glass over 7% of the floor area. The ratio of mass area to additional glass area depends on its location within the direct-gain space.

Living & high activity spaces should be located on the south



ORIENTATION TO THE SUN RATHER THAN TO THE ROAD



SIDE BUILDING LINES
FOLLOW SIDE LOT LINES.
AREA TO THE SOUTH IS
MORE OFTEN UNDER THE
CONTROL OF ITS OWNER

Source for Passive Solar Graphics

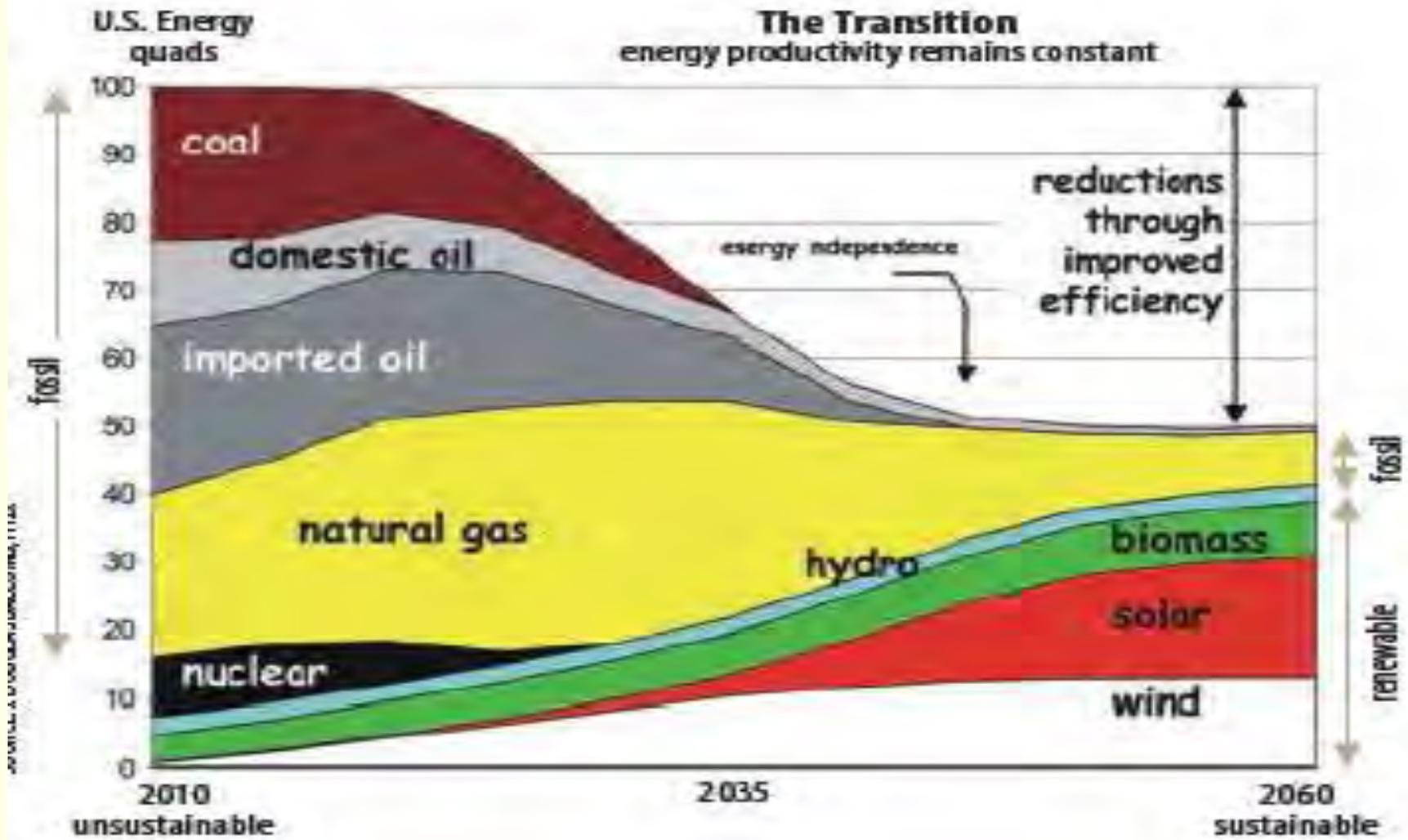
**Our Home: Buildings of the Land;
Energy Efficiency Design for Indian Housing**

March 1994, HUD-1410-CPD

Prepared for HUD and DOE by NREL

Author: Dr. J. Douglas Balcomb

The Transition energy productivity remains constant



Source: Doug Balcomb, Solar Today, May 2010

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