ENERGY-PASSIVE CONSTRUCTION:

PASSIVE vs. LEED/ENERGY STAR/other BUILDINGS

OUTSIDER'S VIEW

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April 2012

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also five other hats as follows

- **Education Chair, Management Division, International Society of Automation ISA**
- **Education Director, Toronto E&HE Chapter, Institute of Electrical and Electronics Engineers IEEE**
- **Columnist, Nowy Kurier, Toronto (billingual ½ monthly)**
- **Chair, Toronto/Americas Chapter Association of Polish Journalists SDP**
- **Coach (CSCF), Instructor (CSIA, CASI)**

GREEN ENERGY

CONFUSION

VAST MULTIPLICITY OF:

- SOURCES
- NAMES, TITLES
- ORGANIZATIONS
- CODES/STANDARDS
- CODE VERSIONS
- CERTIFICATIONS

U.S. Dept. of Energy (DoE)

"Buildings use 39% of our total energy, two-thirds of our electricity, and one-eighth of our water. In light of fundamental environmental issues, and the increasing cost of energy … building energy efficiency is a key component of sound public policy"

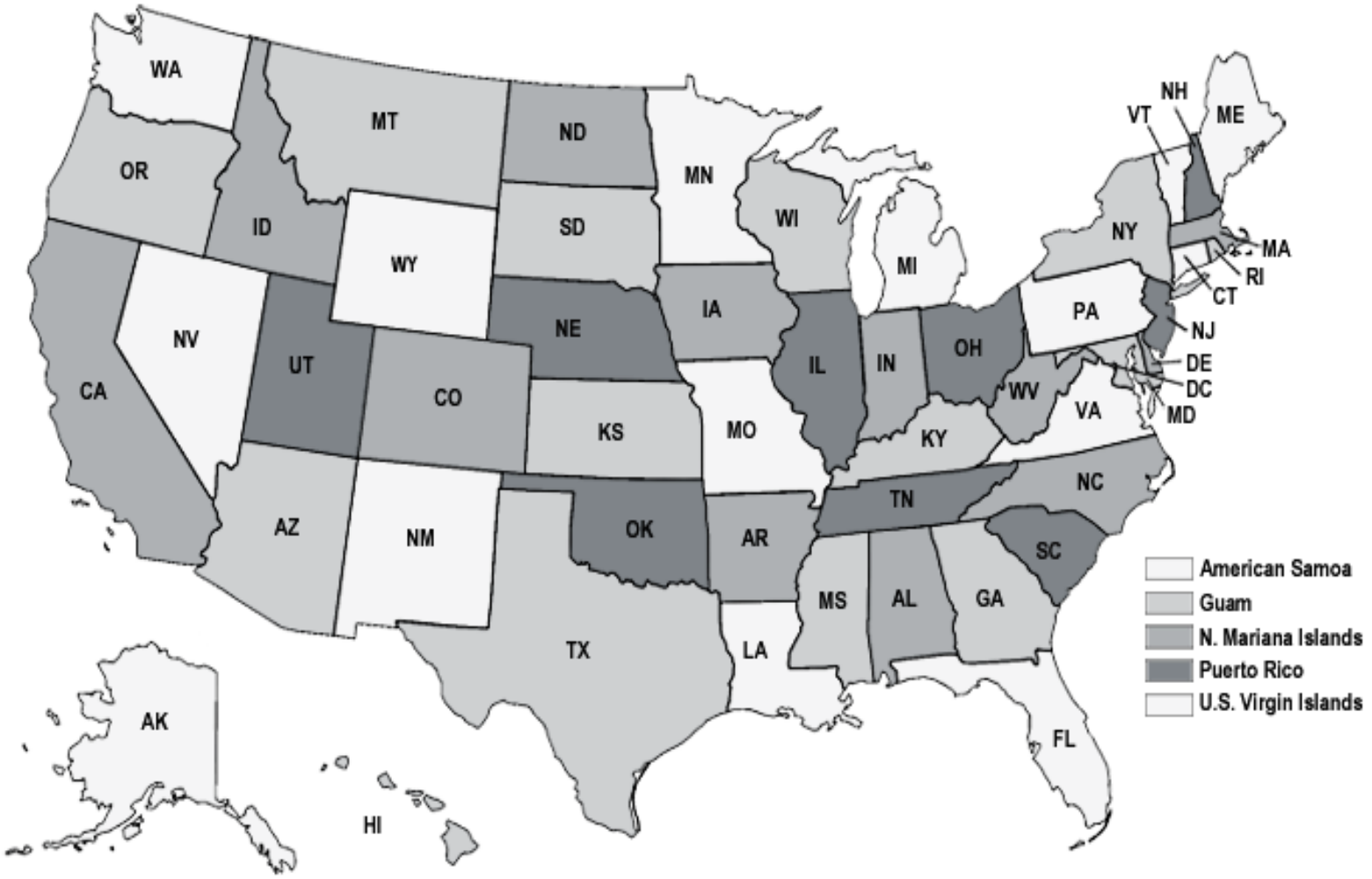
U.S. Dept. of Energy (DoE)

“Code Analysis & Development Activity
DoE encourages using new technologies and better building practices to improve energy efficiency. The Building Energy Codes Program works with the ICC, ASHRAE, IESNA, American Institute of Architects (AIA), the building industry, and state and local officials to develop and promote more stringent and easy-to-understand building energy codes and to assess potential code barriers to new energy-efficient technologies”

2012 IECC - International Energy Conservation Code

U.S.DoE: "A 2012 IECC International Energy Conservation Code will achieve a 30 percent increase in energy savings compared to its 2006 predecessor. Building Code officials from across the nation voted to pass a series of energy-saving code changes, a collaborative effort with the New Buildings Institute (NBI) and the American Institute of Architects (AIA)"

U.S. STATE ENERGY CODE VARIETY

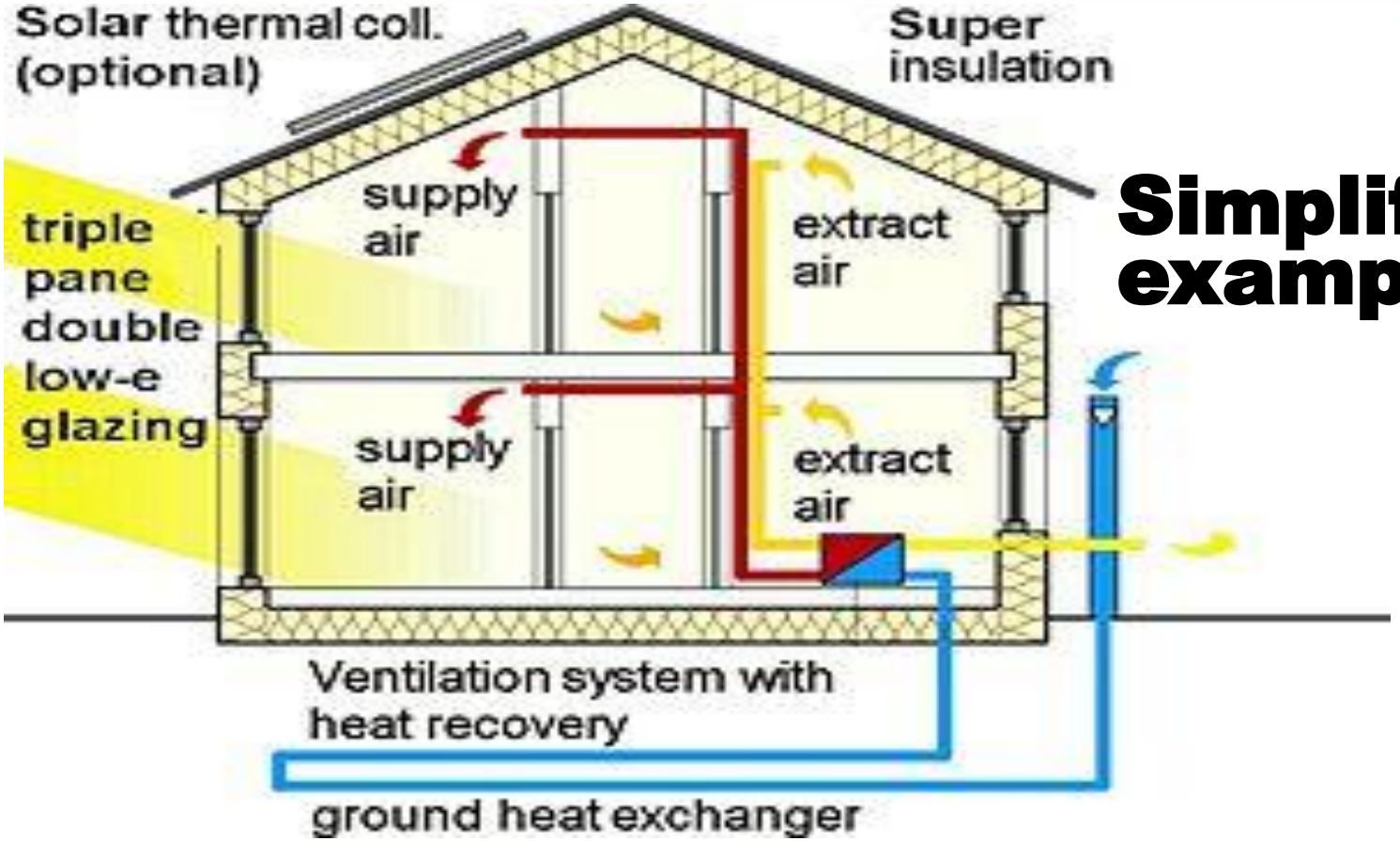


COMPARISON OF 'ENERGY HOUSES'

	Energy saving
ENERGY PLUS	**N/A**
ZERO ENERGY	**100%**
PASSIVE (mainly Austria. Germany)	**70-90%**
LEED (USA, Canada)	**~30%***
ENERGY STAR (USA, Canada)	**~20%***

*** AVERAGE FROM A VARIETY OF SOURCES**

PASSIVE HOUSE



Simplified example

SIMPLE SPECIFICATION, STRAIGHTFORWARD REQUIREMENTS FOR CERTIFICATION

LEED: USGreenBuildingCouncil+ USDoE

Canadian LEED virtually the same

Leadership in Energy and Environmental Design

LEED CREDIT POINT SYSTEM

1. Location and Transportation

To **incentivize** environmental, economic, and social benefits

2. Sustainable Sites

To **emphasize** the vital relationships between projects & ecosystems

3. Water Efficiency

Step towards an integrated water budget with water metering.

4. Energy and Atmosphere

Focus on high performing operations of systems, buildings and sites. Extra points for green energy and infrastructure.

5. Materials and Resources

To **focus on** resource reuse, assessment and optimization, human and ecological health and waste management

6. Indoor Environmental Quality

Focus on: indoor air, light, sound and experience

From US passive house buiders

… Dennis Wedlick and custom builder Bill Stratton, the "Hudson Passive Project," as it's known, doesn't follow the same certification playbooks most American green builders have come to rely on. Rather than adhering to LEED or similar blueprints (e.g. Energy Star) for sustainability

…"I equate LEED with the IRS," Wedlick says. "It's about as much paperwork and it's easier to cheat"…

LEED :

WIDELY APPLIED IN THE U.S. AND IN CANADA

SEE e.g. http://www.usgbc.org

FOR LIVE COMMERCIAL SPACE CERTIFICATION COUNT IN THE U.S.

AND

A MULTIPLICITY OF GREEN ACTION WEBSITES IN THE U.S. AND CANADA

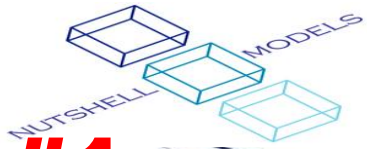
RIDEAU RESIDENCES OTTAWA 2012:

PASSIVE HOUSE CERTIFICATION CONTROVERSY (German vs. U.S. Institute)

ENERGY STAR: US EPA + US DoE

Canadian ENERGY STAR the same

- International standard for energy efficient energy products including buildings and houses
- Popular in US and Canada
- Complicated certification
- Ongoing controversy over bogus certifications



OUTSIDER'S OBSERVATION #1

EXAMINING VOLUMES OF LEEDS & ENERGY STAR INFO LEAVES AN IMPRESSION OF EXCESSIVE COMMITTEE WORK WITH SIGNS OF:

- **VASTLY COMPLICATED BURDEN WITH LOTS OF MAKE WORK ITEMS**

- **'GROUPTHINK' SYNDROME WHERE OBJECTIVITY IS LOST E.G. CUBAN CRISIS BAY OF PIGS AND SHUTTLE CHALLENGER DISASTER FIASCOS**

OUTSIDER'S OBSERVATION #2

'PASSIVE HOUSE' ENGINEERING APPROACH IS BY FAR SUPERIOR:

- **2-4x ENERGY SAVING**

- **SIMPLE, EASY TO IMPLEMENT AND MUCH LESS COSTLY**

- **OTHER APPROACHES CLEARLY MIX ENGINEERING WITH NICE TO HAVE SOCIAL ISSUES THAT SHOULD BE ADDRESSED SEPARATELY**

CONCLUSION

PASSIVE HOUSE IS NOT A GREEN SOLUTION

IT IS A SUPERGREEN SOLUTION

OFFERS SOME >30% ENERGY SAVINGS WORLDWIDE (40% IN THE U.S.)

LEEDS & ENERGY STAR FOR BUILDINGS SHOULD BE SCRUTINIZED ASAP AS THEY SEEM TO BE NOT ADEQUATE AND TOO COSTLY FOR BOTH GREEN AND OVERALL ENERGY CHALLENGES.