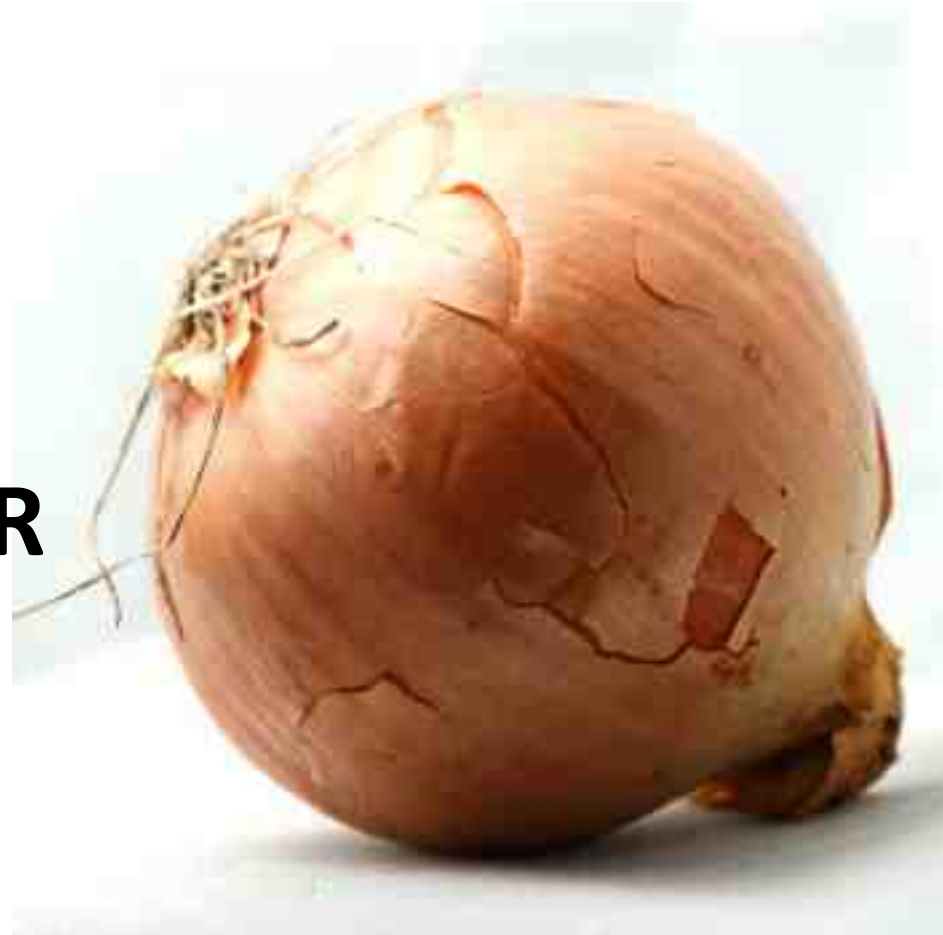
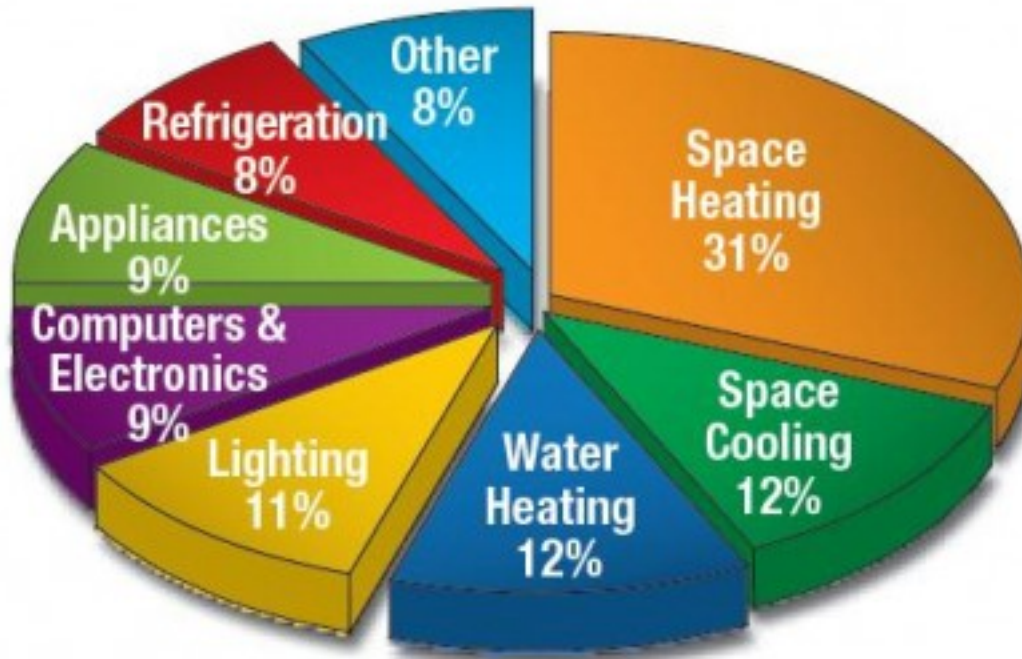


OR



Understanding Energy Use at Home

How do you use energy at home?



Chicago is Heating Load Dominated
6500 Heating Degree Days
750 Cooling Degree Days

US Dept Energy
2009

How do you use energy at home?



Average Midwest Home – 2200 Square Feet
Average Electrical Consumption – 9200 Kwh/year
Average Natural Gas Consumption – 950 therms/year

Moats Home – the Energy Exception



Moats Home – 1200 Square Feet
Annual Electrical Consumption From Grid – 1200 Kwh/year
Annual Natural Gas Consumption – 48 therms/year

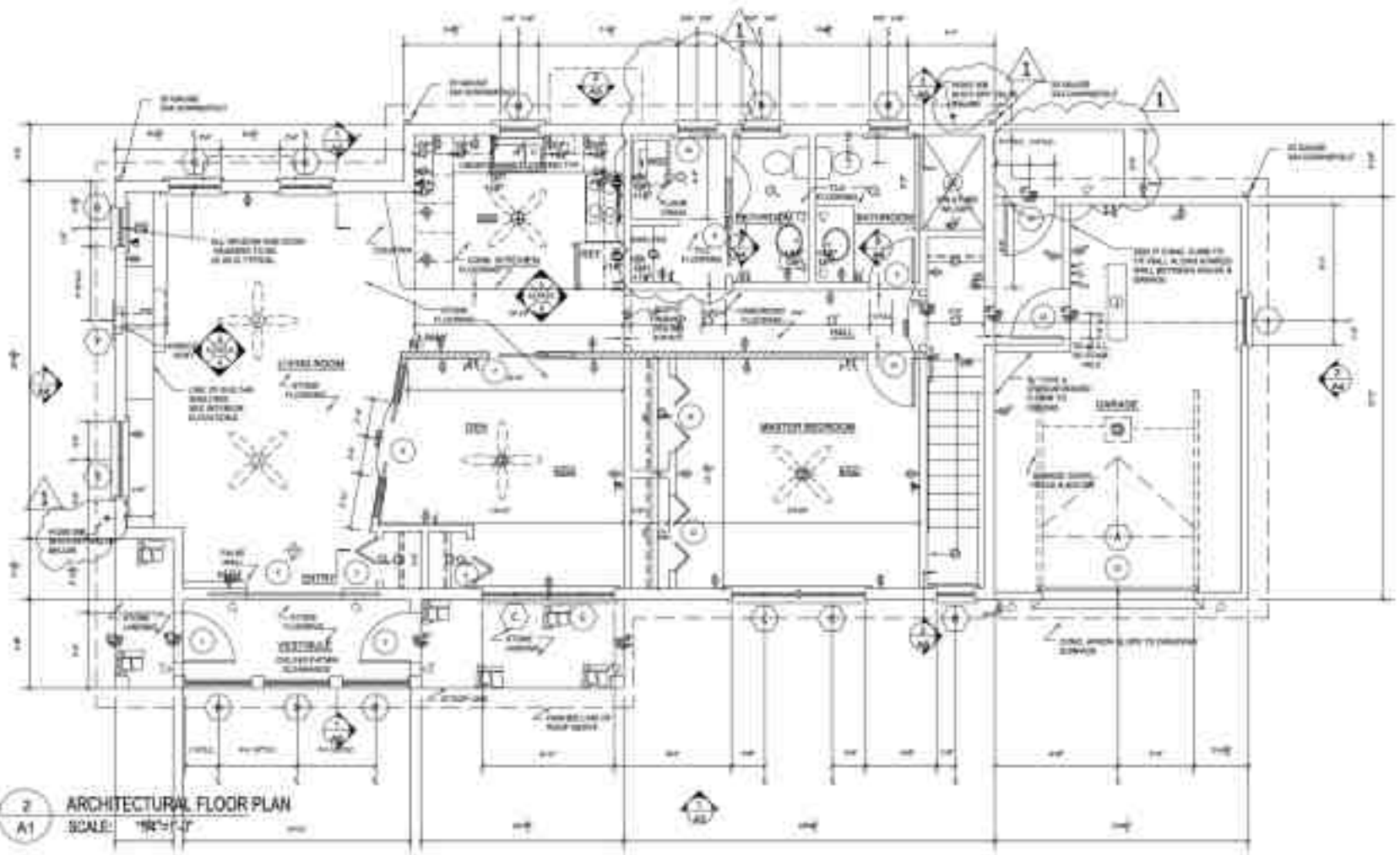
Apples to Apples – kBTUs/sf/yr



Combined Gas + Electrical Usage Energy
Average Midwest Home – 57.45 kBTUs/sf/yr
Moats Home – 7.44 kBTUs/sf/yr



East/West Orientation – Maximize Daylighting, Passive Solar Gain



2 ARCHITECTURAL FLOOR PLAN
 A1 SCALE: 1/8"=1'-0"



INSULATE – R35 Walls, R54 Roof. Existing Homes can be insulated too



Additional insulation to cover the gap at grade!



Triple Pane Windows (Weathershield U Factor 0.24) + Thermal Mass



**Daylight First, Then
High Efficiency Lighting
(like LED)**



**Daylight First, Brought
into Home with
Solatube**



Daylight First, south facing Clerestory vents heat + adds warmth from solar gain in winter



**High Efficiency System
like Geothermal
heating and cooling – 3
ton capacity**



**High Efficiency
Components like
Tankless Hot Water
Heater – Noritz NO-
84M 8.4 GPM**



**High Efficiency
Appliances like this
Conserv Refrigerator –
draws 47 watts or the
GE Front Load Washer
and Avanti Dishwasher
– both Energy Star
labeled**



**BIPV Sun Energy
Shingles – 3 Kw array**

**60 Shingles at 50
watts ea.**

Moats Home – the Energy Exception



Moats Home – 1200 Square Feet

2141.4 Kwh produced by 3 Kw Solar Array

Annual Electrical Consumption From Grid – 1200 Kwh/year

Total Annual Onsite Kwh consumption = 3341 Kwh

Apples to Apples – kBTUs/sf/yr



Combined Gas + Electrical Usage

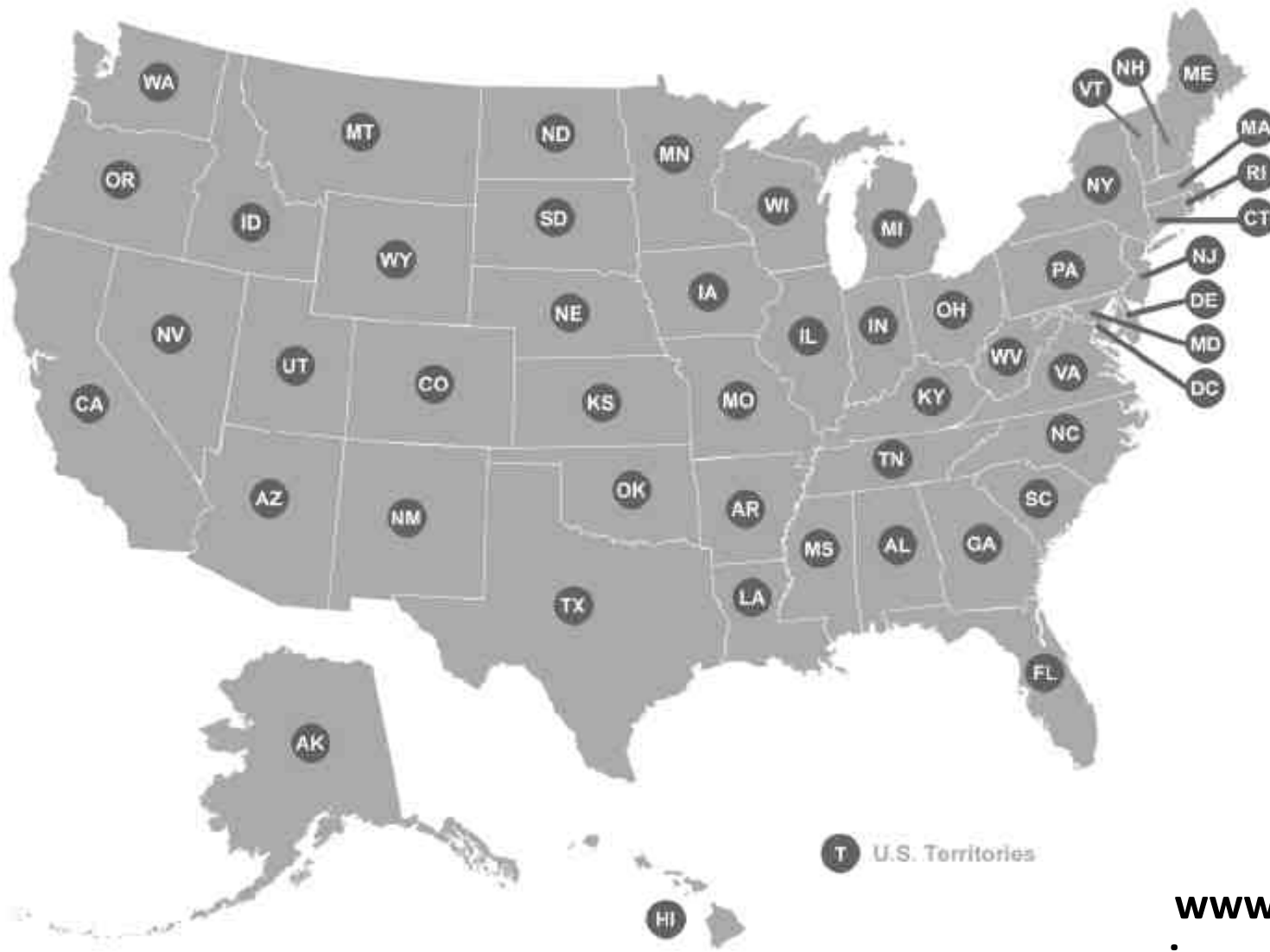
Average Midwest Home – 57.45 kBTUs/sf/yr

Moats Home – 7.44 kBTUs/sf/yr

Moats Home w/o On Site Renewable Energy -- 13.53/kBTUs/sf/yr



**SMARTRE grid-tie
system and battery
system to store power**



www.dsireusa.org has incentives and rebates for efficiency and renewable energy

Thank You!



**Michael Moats – m.moats@3arts.us
Lois Vitt Sale - lvittsale@wightco.com
data.digitalgnomon.com/users/5401Lane**