United Way of Long Island

Re-Building Right

Post Sandy strategies for your home

Rick Wertheim **Senior VP Housing & Green Initiatives**

United Way of Long Island

“It was an extremely devastating and destructive storm, hopefully one that people will only see once in their lifetime"

Joe Pollina

National Weather Service meteorologist

Topics for review

United Way of Long Island

- Re-build, Repair, or Relocate?
- Your “House as a System”
- What is Green Building?
- Options for your construction project
- Incentive Programs

Re-build, Repair, or Relocate ?

United Way of Long Island

http://184.72.33.183/Public/Public_Documents/New_York_Homeowner_Guide.pdf

Rebuild ?

United Way of Long Island

- Home is substantially damaged

Repair ?

United Way of Long Island

- Repairs are less than 50% of the value of the home

Relocate ?

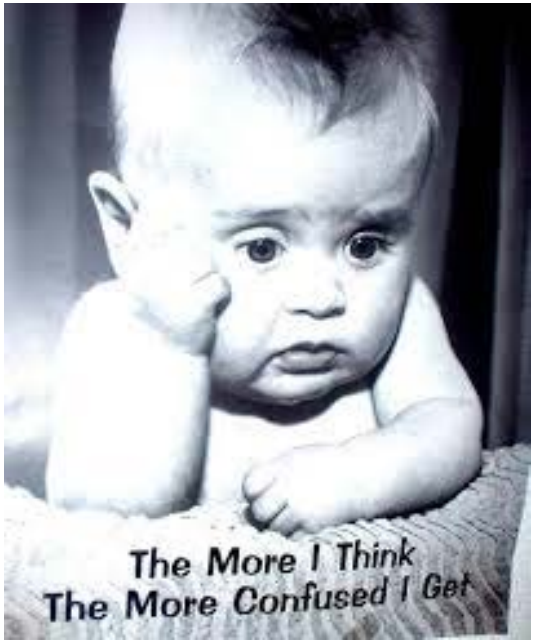
United Way of Long Island

- Property is substantially damaged
- Area prone to constant and repeated storm damage

After the Chaos of the storm, we have the opportunity to Re-Build differently

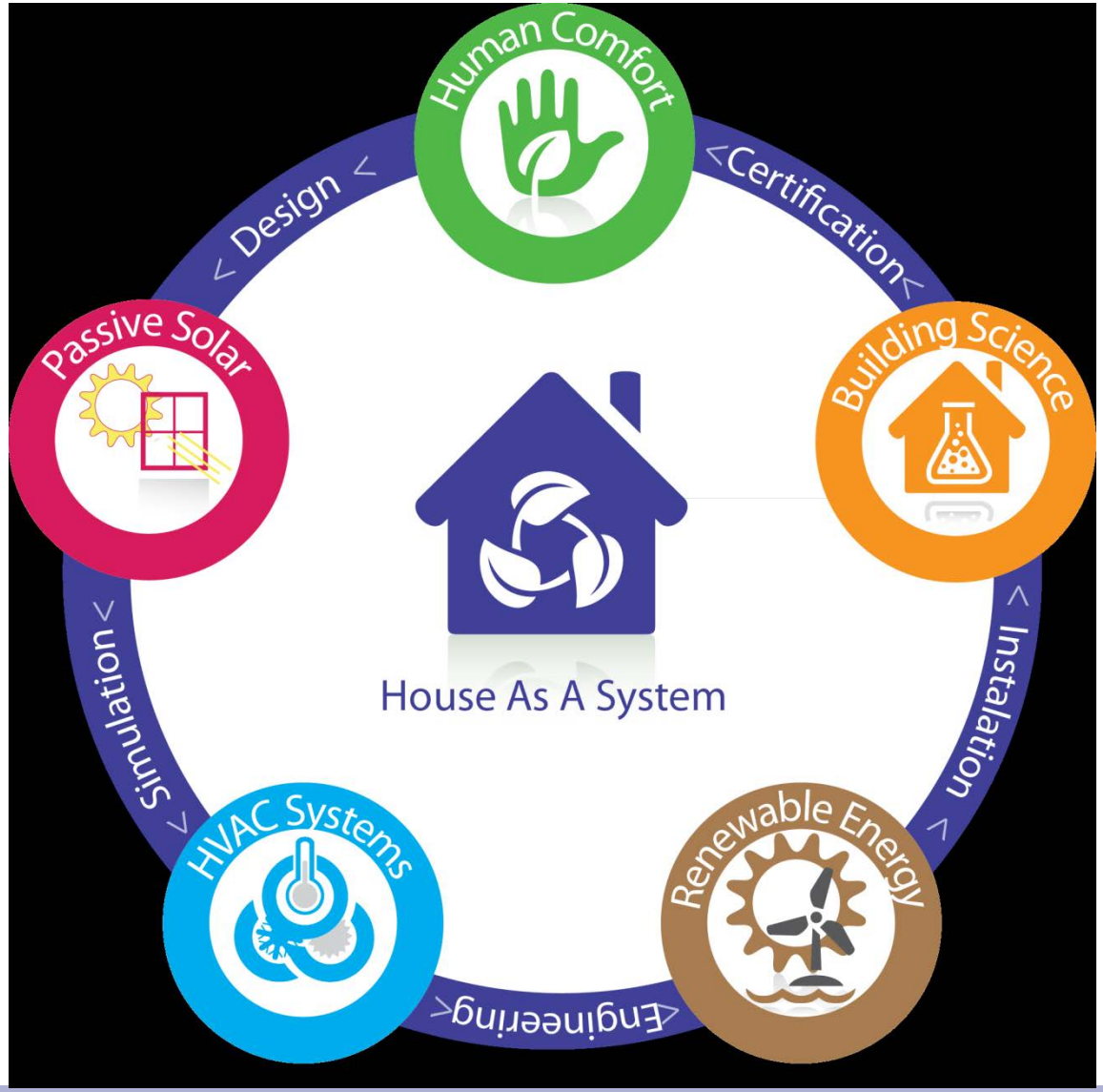
United Way of Long Island

- Looking at the parts of our homes as a set of integrated components
- How can we improve our living conditions of our home environment?
- What are my next steps?



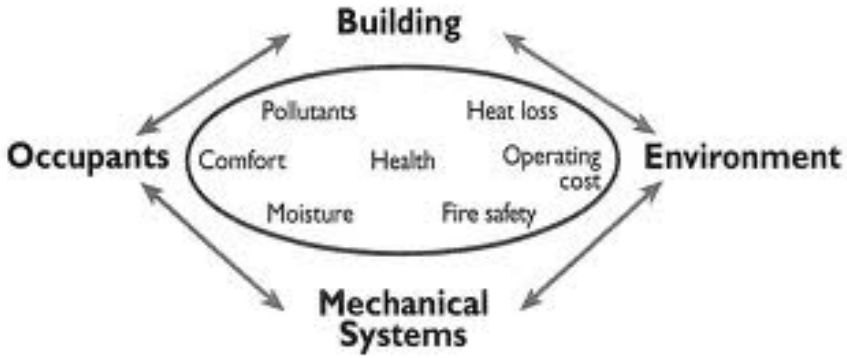
House as a System

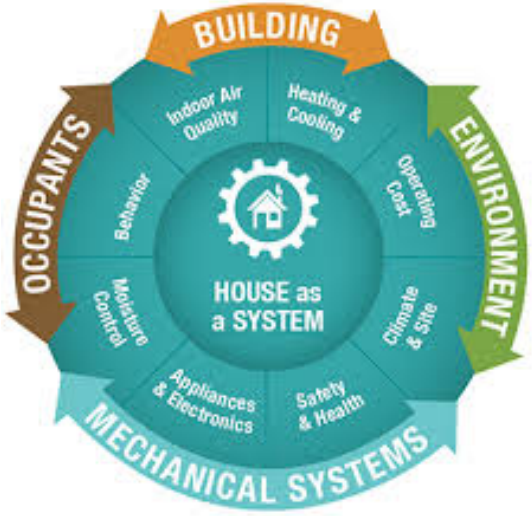
United Way of Long Island



House as a System

United Way of Long Island





Convergence of different building pathways

United Way of Long Island

National Center for Healthy Housing

What is Green Building ?

United Way of Long Island

- Can mean different things
- Don’t forget the EE in Green (Energy Efficiency)
- Mostly speaks to
  - Sustainable
  - Durable
  - Healthy
  - Earth friendly

Options for your Construction Project

United Way of Long Island

1. Adhere to ALL Zoning, Building, Flood Zone requirements first
2. Foundation
3. Building Envelope a.k.a (Shell)
4. Thermal & Moisture protection
5. Mechanical Equipment
6. Equipment and Appliances

Building Codes

United Way of Long Island

1. Will be different for homes that are rebuilt
2. 50% rule
3. ALWAYS will require an architect or engineer
4. Flood Plane and house elevation
5. Building Dept. is there to insure

Occupant health and safety

Foundation Choices

United Way of Long Island

Concrete block

Foundation Choices

United Way of Long Island

Poured Concrete

Foundation Choices

United Way of Long Island

With Both of those choices

- **Insulation is the key!**

- **Exterior application**

Foundation Choices

United Way of Long Island

- **Interior application**

Foundation Choices

United Way of Long Island

High Performance Options

- **Modular Foundation**
  - **“Superior Wall Co.”**
  - **Insulation built in**

Foundation Choices

United Way of Long Island

High Performance Options

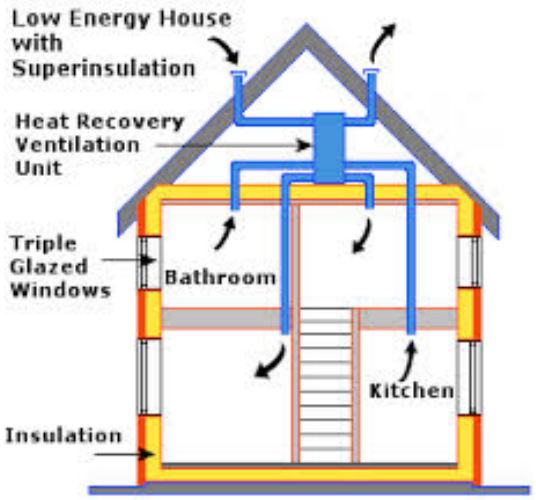
- **Insulated Concrete Forms**
  - **ICF's**
  - **Pour concrete in**
  - **Can build walls too**

Building Envelope Choices

United Way of Long Island

Rule #1

- ***"Build it tight, Ventilate Right"***
  - **Houses DO NOT need to Breath**
  - **They need Controlled Air exchanges**



Building Envelope Choices

United Way of Long Island

Traditional Framing

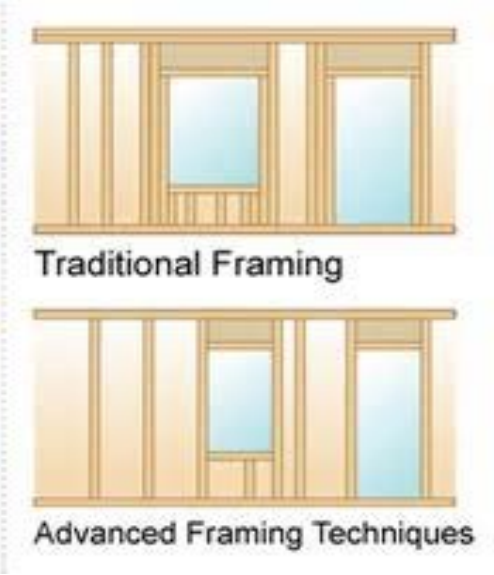
- ***If you go traditional wrap it with rigid!***
  - **Excellent thermal and moisture barrier**

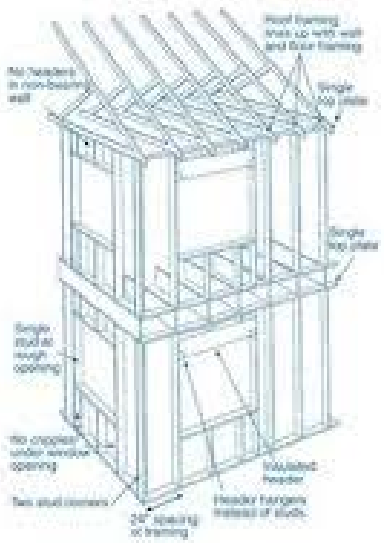
Building Envelope Choices

United Way of Long Island

Advanced or Stacked Framing

- ***aka; Optimal Value Engineering (OVE)***
  - **Less wood, more insulation, less money**
  - **What's the catch?**





Building Envelope Choices

United Way of Long Island

Advanced Choices

- ***SIPS – Structural Insulated Panels***
  - **Styrofoam sandwich**
  - **Super Tight and Efficient**

Super Hi Performance SIPS Home

47 Patton St, Brentwood

United Way of Long Island

Super Hi Performance SIPS Home

47 Patton St, Brentwood

United Way of Long Island

Super Hi Performance SIPS Home

47 Patton St, Brentwood

United Way of Long Island

Built with Pride by YouthBuild Long Island Student/Trainees

Super Hi Performance SIPS Home

47 Patton St, Brentwood

United Way of Long Island

Built with Pride by VetsBuild Long Island Student/Trainees

Building Envelope Choices

United Way of Long Island

Rule # 2

- ***If you insulate, you must ALSO…***
  - **Air Seal**

Thermal and Moisture protection Choices

United Way of Long Island

Types of Insulation

- ***Fiberglass Batts***
  - **DOES NOT Air Seal**
  - **Virtually impossible to install perfectly**
  - **Loses effectiveness when compressed**

Thermal and Moisture protection Choices

United Way of Long Island

Poor installation

- Compressed
- Gaps
- Stapled wrong
- Lost over 30% of its effectiveness

Thermal and Moisture protection Choices

United Way of Long Island

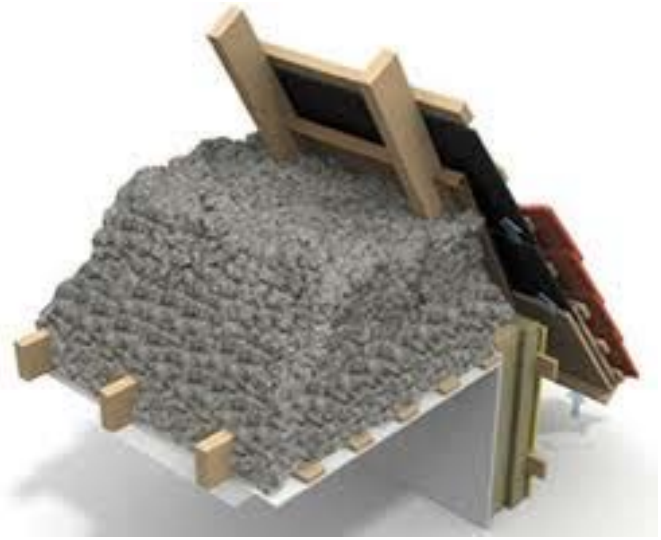
Cellulose

- Recycled newspaper
- Fire proof
- Safe to handle
- Can be applied 3 ways

Thermal and Moisture protection Choices

United Way of Long Island

Loose Fill in Attic



Thermal and Moisture protection Choices

United Way of Long Island

Damp Spray in Walls

Thermal and Moisture protection Choices

United Way of Long Island

Dense Packed in Walls

Thermal and Moisture protection Choices

United Way of Long Island

Spray Polyurethane Foam (SPF)

- **Fills wall cavities well**
- **Air seals AND insulates**
- **Must be done by qualified installers**
- **Can be done on walls or underside of roofs**

Thermal and Moisture protection choices

United Way of Long Island

Spray Polyurethane Foam (SPF)

Two formulations are:

- **Open Cell**
- **Closed Cell**

Open Cell vs Closed Cell

	Open Cell	Closed Cell
Cost	Less Expensive	More Expensive
Moisture	Vapor Permeable	Vapor Barrier
R-Value per inch	3.6*	6*
Rigidity	Soft and Flexible	Hard and Durable
Hayes Products	Icynene, Certainteed	BASF, Certainteed, Dow, Icynene

Thermal and Moisture protection Choices

United Way of Long Island

Other insulations:

- **Rock wool**
- **Cotton batts**
- **Slag Wool**

Thermal and Moisture protection Choices

United Way of Long Island

Moisture Protection

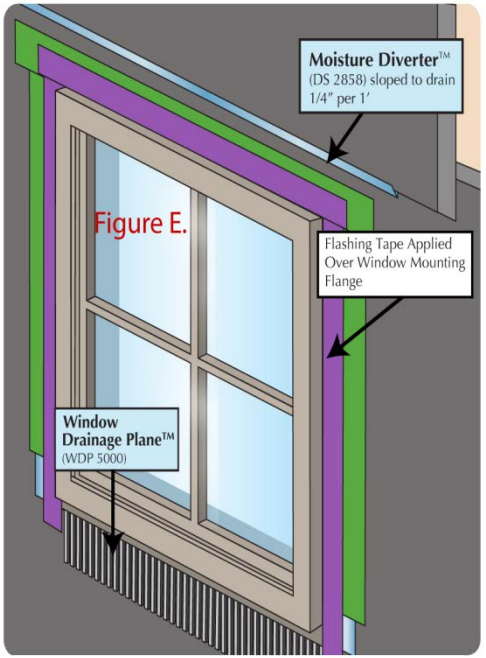
- ***Rule # 3***
  - **Create a “Drainage Plane” between siding and house**
  - **Allows water to drain**

Thermal and Moisture protection Choices

United Way of Long Island

Moisture Protection

- ***Rule # 4***
  - **The definition of a window or door is:**
  - **“A hole cut in your house that will eventually leak”**
  - **When leak occurs- Drainage plane directs water**



Thermal and Moisture protection Choices

United Way of Long Island

Moisture Protection

- ***Types of Drainage planes:***
  - **Wood strips (vertical only)**
  - **Roll or sheet goods**

Mechanical Systems Choices

United Way of Long Island

Heating Equipment

- ***Warm Air Furnace***
- **Boilers**
- **Geo-Thermal**
- **Radiant**
- **Combination systems**

Mechanical Systems Choices

United Way of Long Island

Heating Equipment

- ***Warm Air Furnace***
  - **Efficiency up to 98%**
  - **Variable speed**
  - **Multi stage**
  - **Modulating burner**
  - **Can add HEPA filtration**
  - **Direct vent**

Mechanical Systems Choices

United Way of Long Island

Heating Equipment

- ***Wall hung Boilers***
  - **Efficiency up to 96%**
  - **Condensing**
  - **Direct vent**
  - **Modulating burner**
  - **Many options**

Mechanical Systems Choices

United Way of Long Island

Heating Equipment

- ***Geo-thermal***
- ***Renewable Energy***
- ***Solar Thermal***
- ***Electric***

Mechanical Systems Choices

United Way of Long Island

Hydronic Heating distribution

- ***Baseboard***
- ***Radiator***
- ***Radiant***
- ***Hydro-coil***

Mechanical Systems Choices

United Way of Long Island

Cooling Equipment

- ***Central Air***
- ***Seer up to 21***
- ***Ductless Mini Splits***
- ***Multiple blowers***
- ***No ductwork***

Mechanical Systems Choices

United Way of Long Island

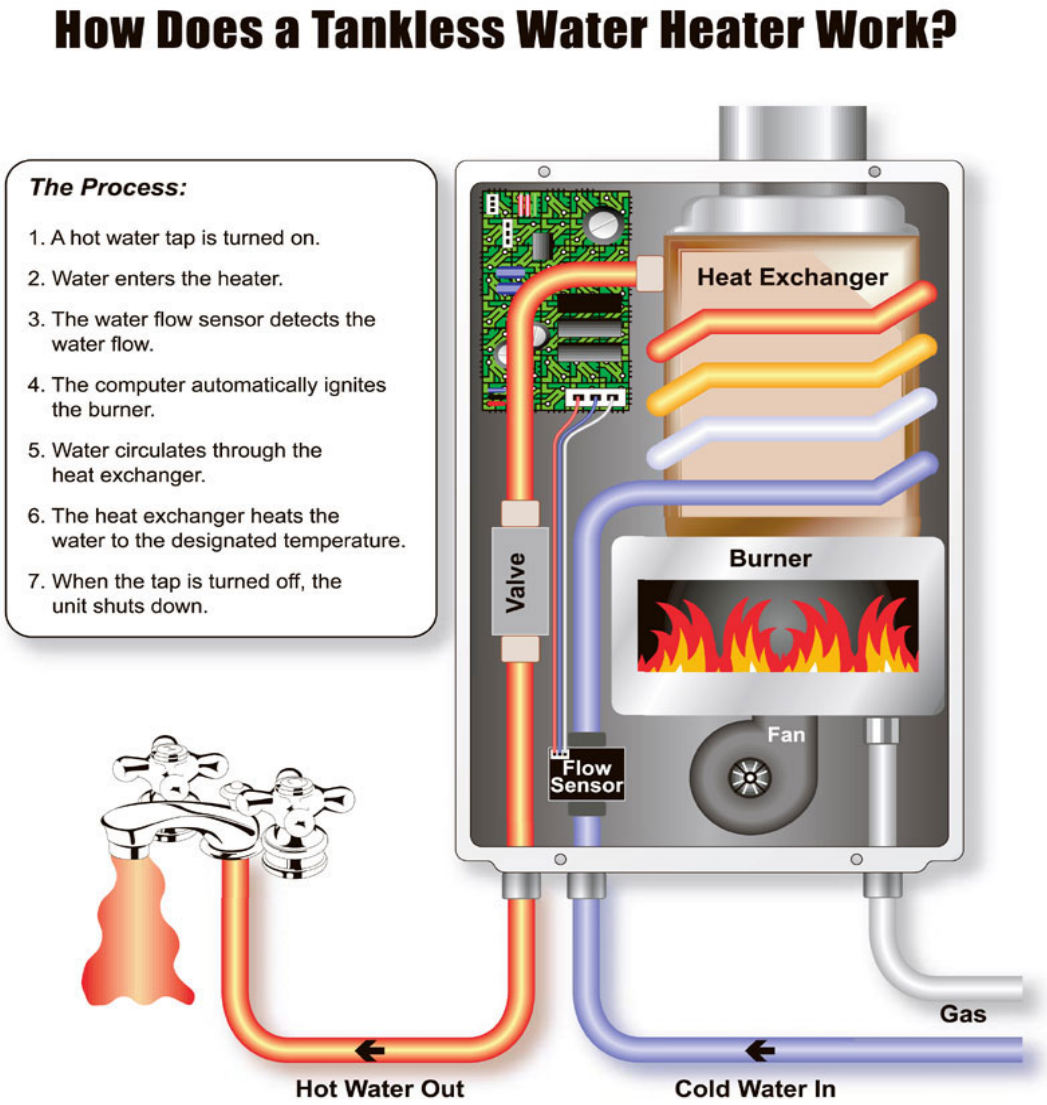
Hot Water Heaters

- *Fuel- gas, oil, or electric*
- *Indirect from boiler*
- *Stand alone heater w tank*
- *On demand (tankless)*
- *Electric heat pumps*

Mechanical Systems Choices

United Way of Long Island

On Demand



Mechanical Systems Choices

United Way of Long Island

Ventilation

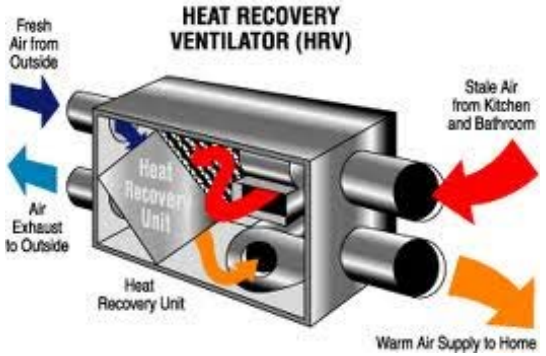
- ***Most important feature of Hi Performance homes!***
- ***Contributes to better IAQ***
- ***Moisture control***
- ***Balanced and controlled***
- ***Automatic***

Mechanical Systems Choices

United Way of Long Island

Types of Ventilation systems

- ***Exhaust fans***
- ***HRV (Heat Recovering Ventilators)***
- ***ERV (Energy Recovering Ventilators)***
- ***Pre-heats the cold incoming fresh air***
- ***Balanced ventilation solution - Best***



Appliances and Lighting Choices

United Way of Long Island

Appliances

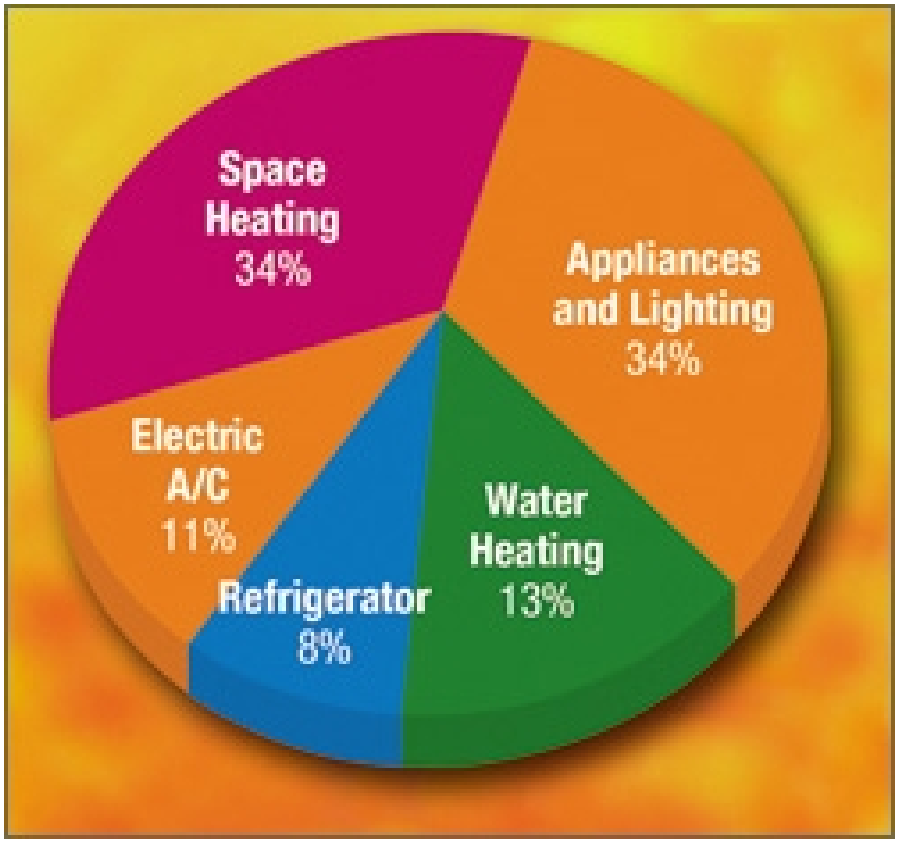
- ***Always choose appliances that have the Energy Star Label***

ENERGY STAR
EPA DOE
SAVING THE EARTH. SAVING YOUR MONEY.

Appliances and Lighting Choices

United Way of Long Island

Energy Consumption in your Home



Appliances and Lighting Choices

United Way of Long Island

Lighting

- ***Better Choices, better designs/shapes***
- ***CFL***
- ***LED***

Tips

United Way of Long Island

Choose Contractors Wisely!

- ***Not all builders have the requisite training***
- ***Check References***
- ***Ask for Certifications***

RESNET EnergySmart Builder

BPI Building Performance Institute Inc. — Accredited Contractor

Member NAHB National Association of Home Builders

NARI National Association of the Remodeling Industry Member

LIBI Long Island Builders Institute — Advocating Responsible Building & Remodeling

Tips

United Way of Long Island

If you are building new…

- ***Make sure you have a HERS rater working on your project***

RESNET® HERS® Rater

- ***Most towns require the HERS index to pass energy code***
- ***Enroll in LIPA's Energy Star Labeled Home Program***

Next Generation Building

United Way of Long Island

Incorporates Building Science and Proven Green Building Techniques

- ***New Breed of Contractor***
- ***Home Performance Contractor***

BPI Building Performance Institute Inc. — CERTIFIED PROFESSIONAL

EfficiencyFirst HOME PERFORMANCE CONTRACTOR

ENERGY STAR HOME PERFORMANCE WITH ENERGY STAR

RESNET® ENERGYSMART HOME PERFORMANCE TEAM

Utility Incentives

United Way of Long Island

Get $$$$ back for Energy Efficiency & Green Building

LIPA:

http://www.lipower.org/residential/efficiency/rebates/Home Performance Contractor

National Grid:

http://www2.nationalgridus.com/index_li.jsp

United Way of Long Island

Operation Rebuild & Recovery

United Way of Long Island

- Assistance available to Long Islanders with unmet long term needs
- Call 211 hotline for help
- online at www.211longisland.org

Don’t Forget to ASK to be assigned a free Disaster Case Manager (DCM)

- Additional Resources available at our website

www.unitedwayli.org

Copies of this presentation will be posted for future reference

United Way of Long Island

Thank you

Invest in what matters. Changing lives where you live.