

# WEATHERIZATION



Montgomery Township Environmental Advisory Committee

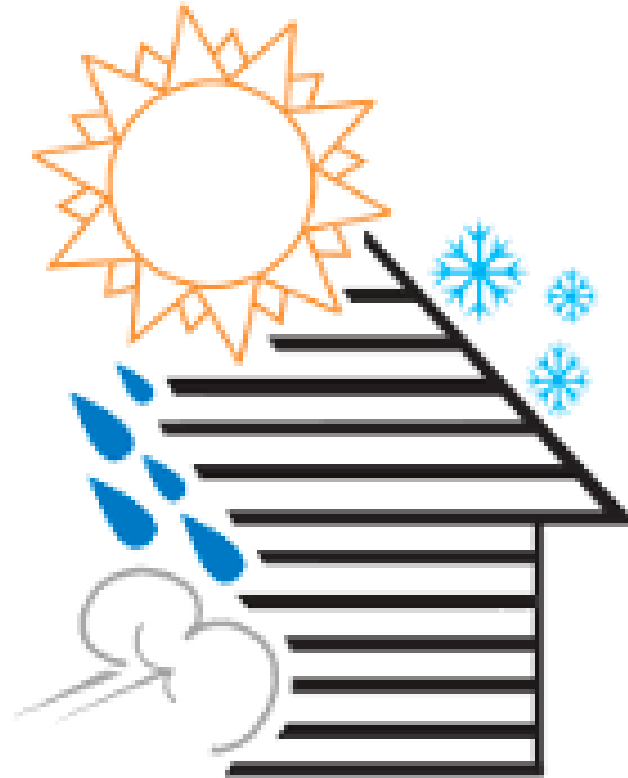
# What is Weatherization?

- Weatherization or weatherproofing is the practice of optimizing home performance by modifying the structure's interior to reduce energy consumption.



# The Process

- ▶ Energy Audit
  - ▶ Blower door testing
- ▶ Air Sealing
- ▶ Insulating
- ▶ Upgrading HVAC System
- ▶ Lighting Measures
- ▶ Water Saving Measures



# Benefits

## The Benefits of a Weatherized Home



ENERGY COSTS SAVINGS



WATER COST SAVINGS



LESS OUT-OF-POCKET  
HEALTH COSTS



LOWER LOAN INTEREST  
PAYMENTS

- ▶ Reduce Electricity Cost
- ▶ Reduce Heating Cost
- ▶ Tax Credits
- ▶ Increased Property Value
- ▶ Reduced Energy Dependence
- ▶ Reduced Water Consumption
- ▶ Reduced Carbon Footprint

# Energy Audit

- ▶ Checking for Carbon Monoxide and Gas Leaks
- ▶ HVAC Efficiency Testing
- ▶ Insulating Check in Attic and Basement
- ▶ Blower Door Testing
  - ▶ Air sealing measures
- ▶ Lighting Recommendations
- ▶ Water Saving Tricks

Less energy use = More savings



# Energy Audit

## The Secrets to a Healthy Home



Indoor Air Quality



Energy Efficiency

### VENTILATION

- VENTILATION SYSTEMS 
- HVAC  
- AIR SEALING  
- DUCT SEALING  

### TECHNOLOGY

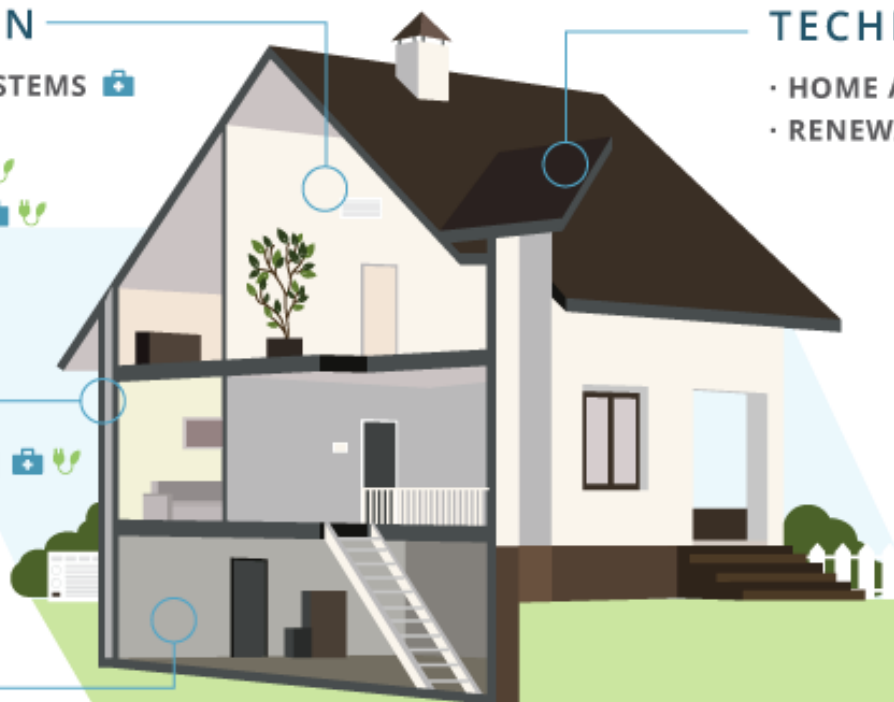
- HOME AUTOMATION 
- RENEWABLE ENERGY 

### INSULATION

- SPRAY FOAM INSULATION  
- BLOWN CELLULOSE  

### CRAWLSPACE

- CRAWLSPACE SEALING  
- RADON MITIGATION  



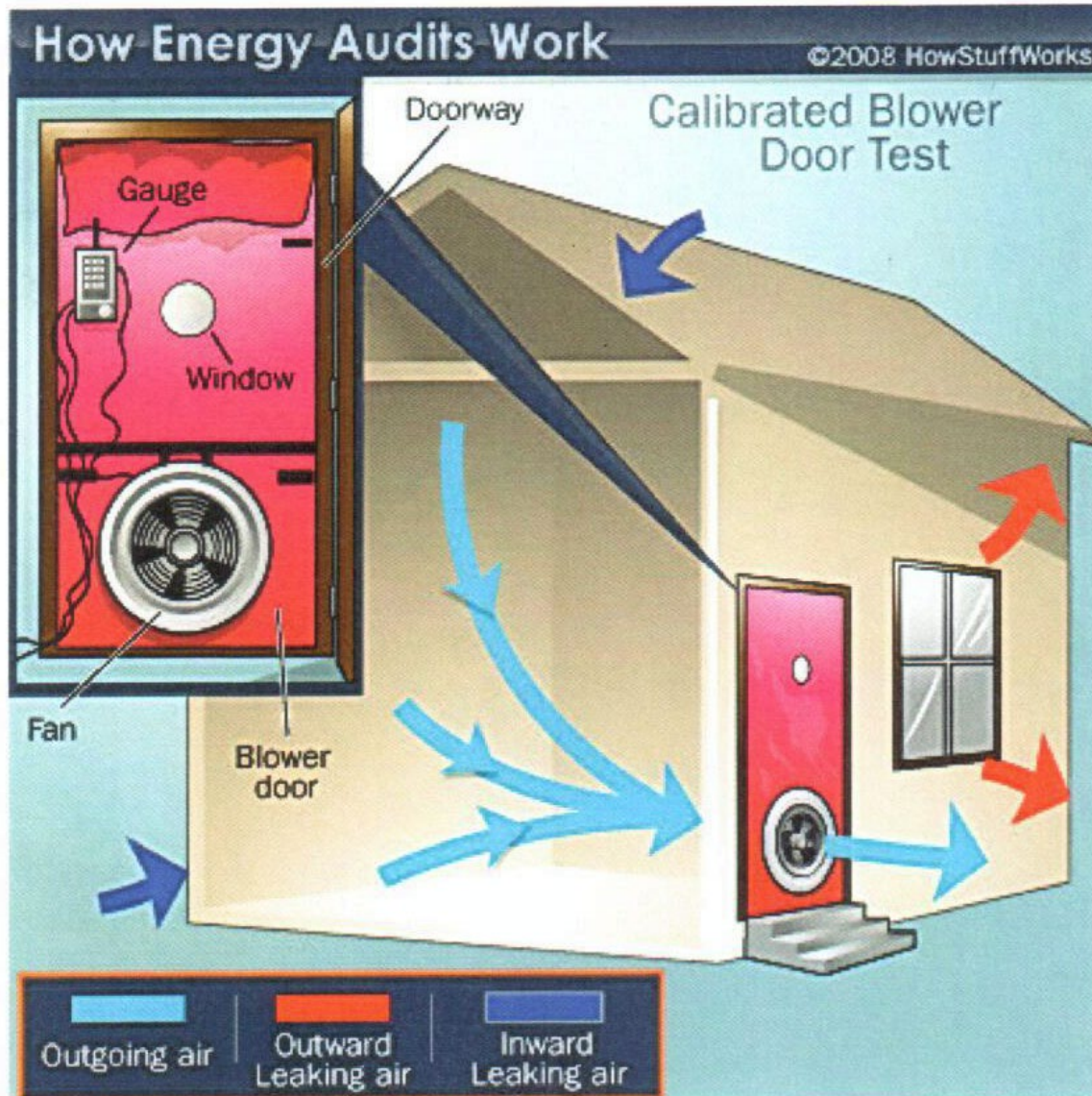
# Blower Door Testing

- ▶ Cold Air Enters in the Lower Level (Basement) and Pushes Warm Air Out Through the Upper Level (Roof).
- ▶ Normal Points of Entry
  - ▶ Windows and Doors
  - ▶ Sill plates
  - ▶ Penetrations (holes) to the outside:
    - ▶ Vents, pipes, wires, etc.
  - ▶ Holes from the basement to the living space
    - ▶ Pipes, ducts, wires, etc.





# Blower Door Testing





# Air Sealing

- ▶ Cold air enters in the lower levels (basement) and pushes heater air out through the upper level (roof).
- ▶ Normal Points of Entry
  - ▶ Sill plates
  - ▶ Windows and Doors
  - ▶ Penetrations (holes) to the outside:
    - ▶ Vents, pipes, wires, etc.
  - ▶ Holes from the basement to the living space
    - ▶ Pipes, ducts, wires, etc.



# Insulating

- ▶ Attic, Basements, Walls, Floors
  - ▶ R-30 in Attics
  - ▶ Tighten up any chase openings
  - ▶ Blown in cellulose or spray foam can achieve high R-values
- ▶ Crawlspace need more care
  - ▶ Water proofing with a vapor barrier on the floor and covering the wall
  - ▶ Install Sump pump(s)
  - ▶ Air Sealing
  - ▶ Then you can insulate the ceiling



# HVAC

- ▶ Furnace or Boiler, Water Heater
- ▶ No Efficiency Under 80% Will Pass
  - ▶ Older units lose efficiency
  - ▶ Ideally 90% or better, sometimes it's not feasible
- ▶ Carbon Monoxide Testing
- ▶ Gas Leak Testing
- ▶ Draft testing for chimney
- ▶ Duct Testing
  - ▶ Seal and insulate ducts



# Electrical Loads

- ▶ Upgrade all bulbs to LEDs (Light Emitting Diodes) or Change Light Fixtures
- ▶ Eliminate Phantom Loads
  - ▶ Electronics that are in constant use
  - ▶ Use energy saving power strips to make sure TVs, cable boxes and video games are off when not being used



# Water Savings

- ▶ Update Aerators on Faucets or Replace Old Ones with Water Saving Fixtures
- ▶ Replace Showerheads
- ▶ Repair Leaking Faucets and Toilets
  - ▶ Running toilets are a big offender for high water bills
- ▶ Install a Rain Barrel to Decrease the Need for Using the Hose When Watering Gardens



# Open Forum

Q & A



# Learn More About Weatherization

- ▶ Weatherization Assistance Program
  - ▶ *Incentive program primarily for low-income families*
  - ▶ *A terrific resource to learn more*
- ▶ Pennsylvania Weatherization Task Force
  - ▶ Also for low-income families or elderly residents
  - ▶ Another great resource for information
- ▶ PECO - Home Energy Audits
  - ▶ Minimal fee for Audit
  - ▶ Will provide a comprehensive list of measures and potential contractors