



Retrofit West ›
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Retrofit of Properties: Enhancing Energy Efficiency

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Chris Kille, Managing Director of
BPM Contracting Services



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Introduction to Retrofit

Retrofit involves upgrading existing buildings to improve energy efficiency and comfort

Importance:

- Helps address climate challenges
- Reduces energy consumption
- Lowers utility bills
- Improves the comfort of your home
- Can enhance property value



Main Considerations for Retrofit

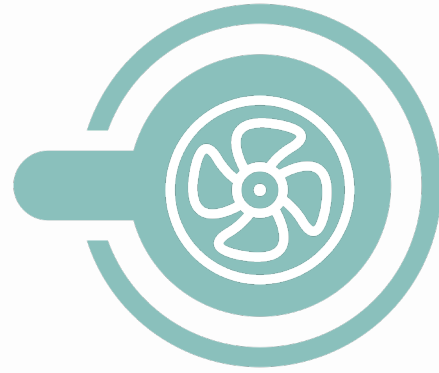
1 Insulation



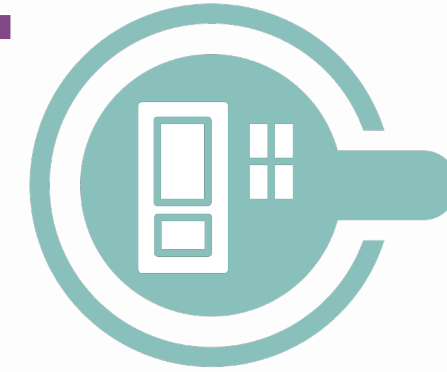
2 Heating



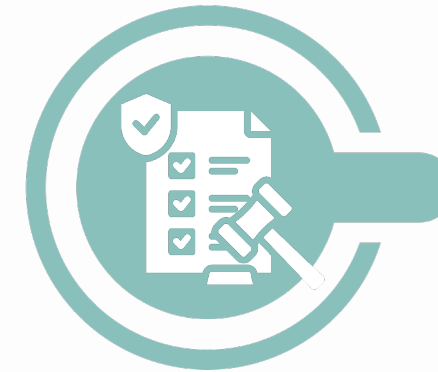
3 Ventilation



4 Air Tightness



Energy Efficiency
Measures for Doors and Windows **5**



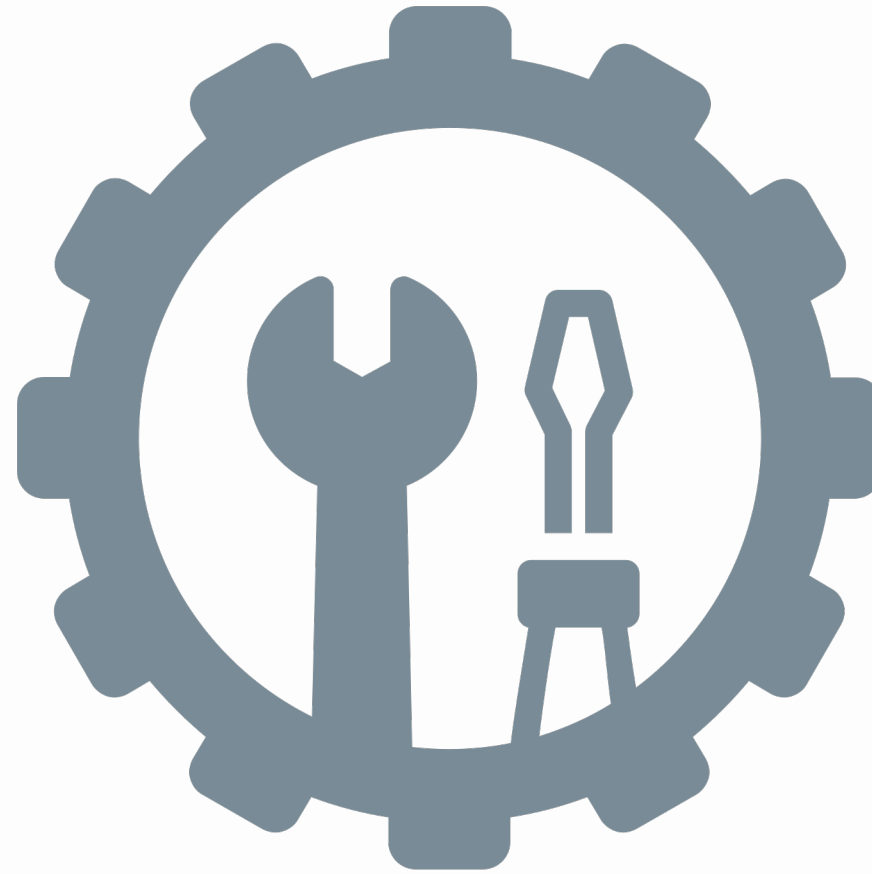
Regulatory
Compliance **6**

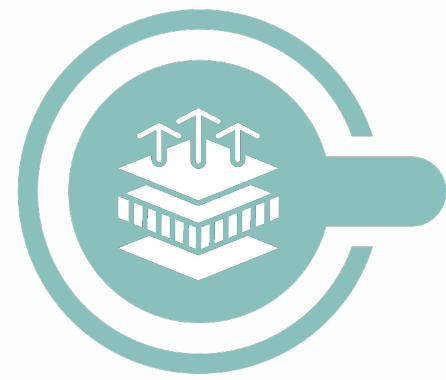


Professional
Guidance **7**



Energy Survey **8**





Insulation



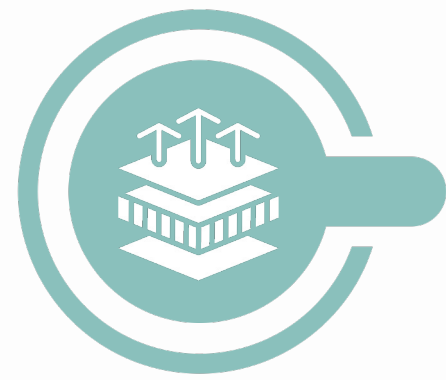
Types of Insulation:

- Internal Wall Insulation
- External Wall Insulation
- Roof Insulation
- Loft Insulation
- Floor Insulation

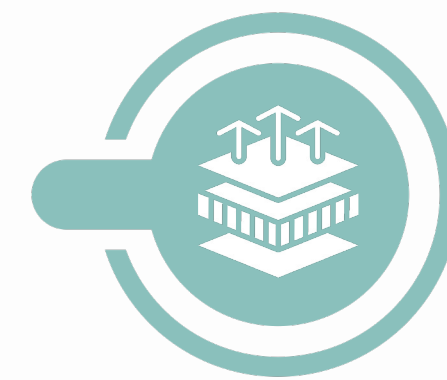


Choose appropriate materials (e.g. mineral wool, rigid foam, breathable materials)

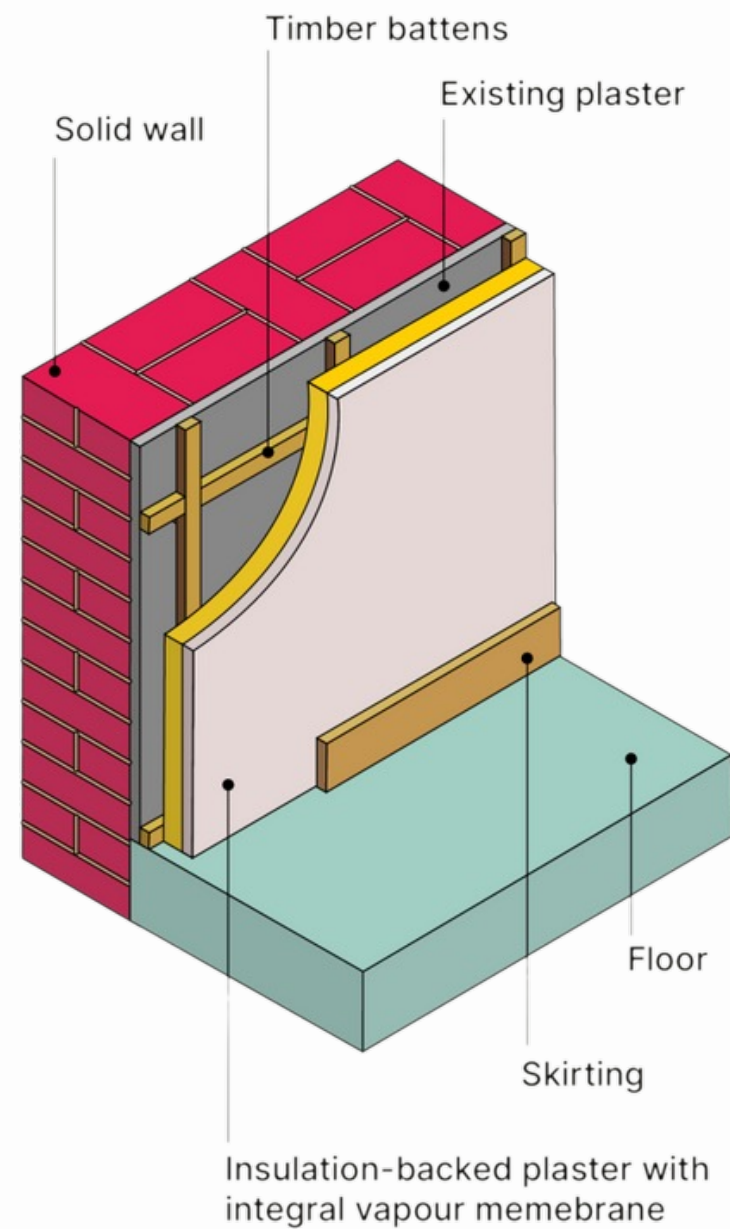
Consider thermal bridging and continuity of insulation



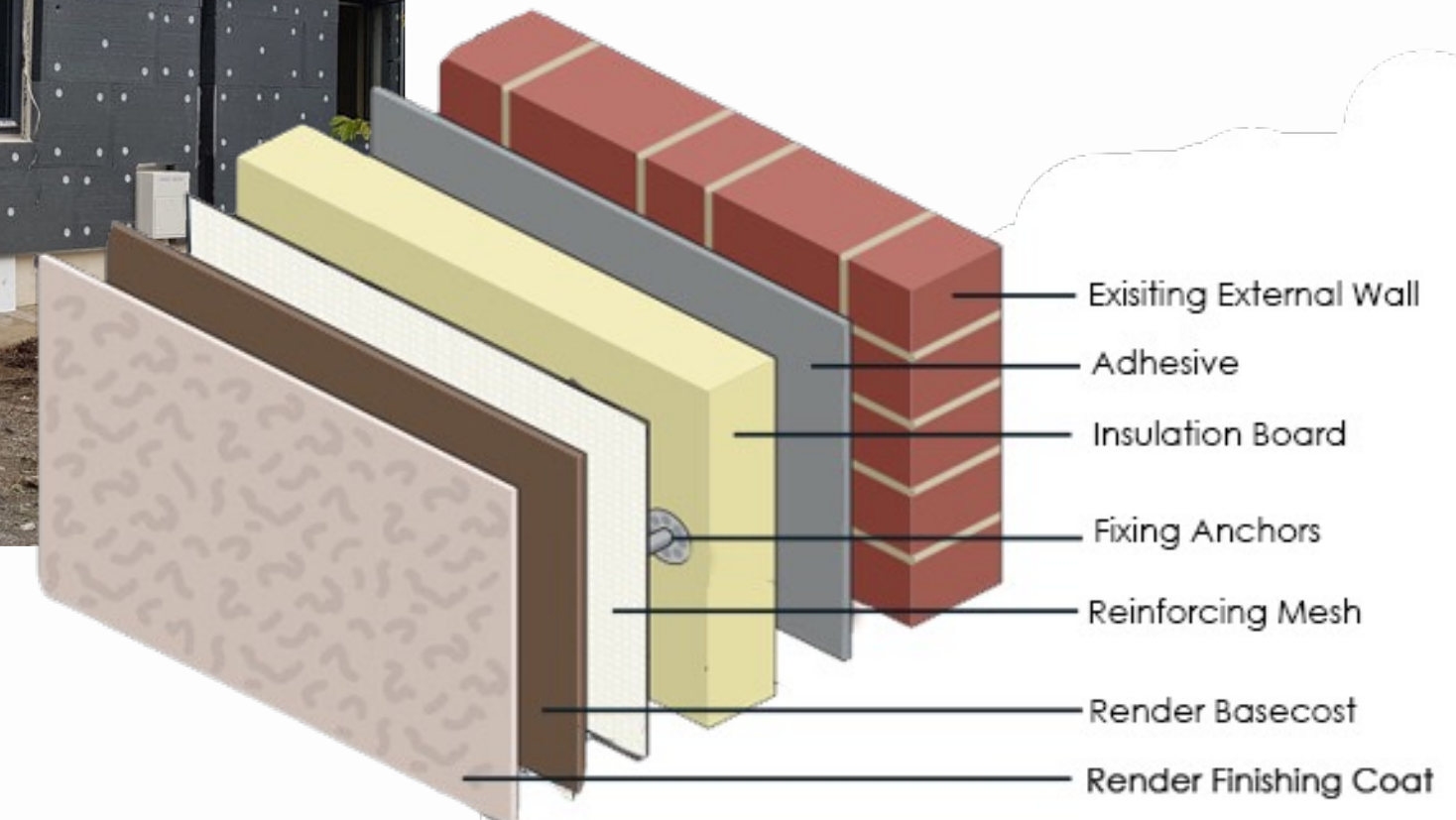
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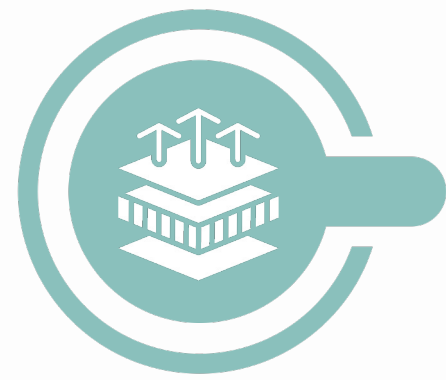


Internal Wall Insulation

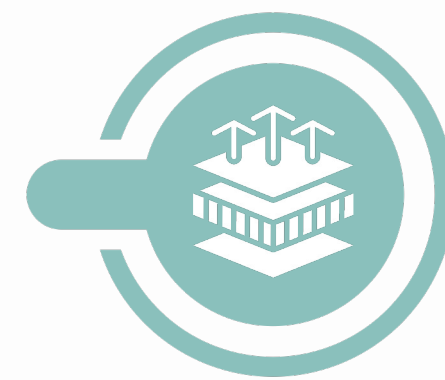


External Wall Insulation





Insulation



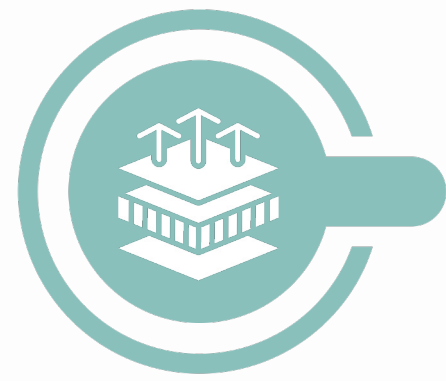
Roof Insulation



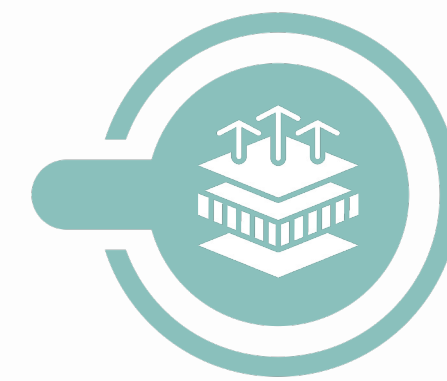
TLX Gold roofing felt and insulation



A 0.15w/m2k U-Value can be achieved



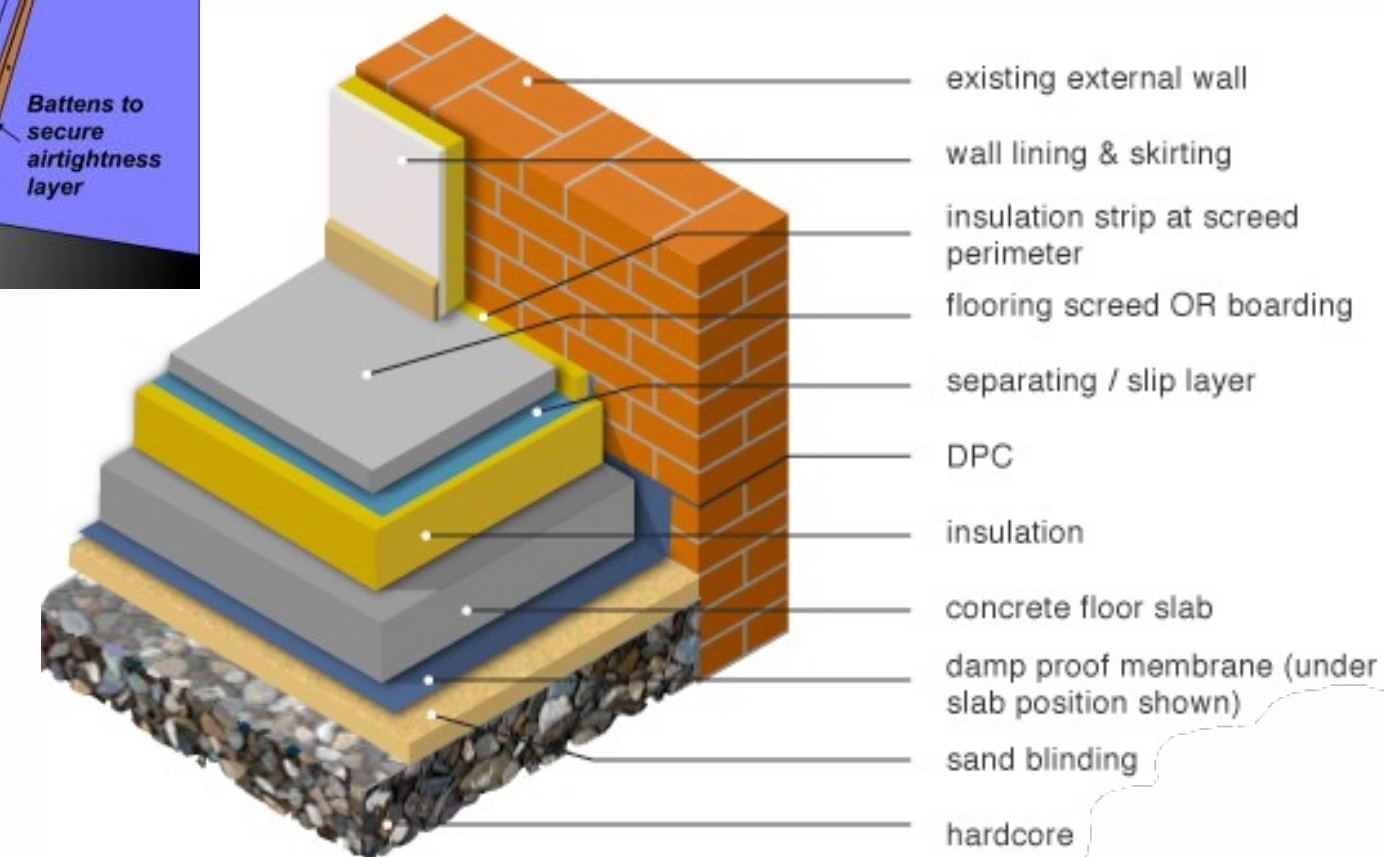
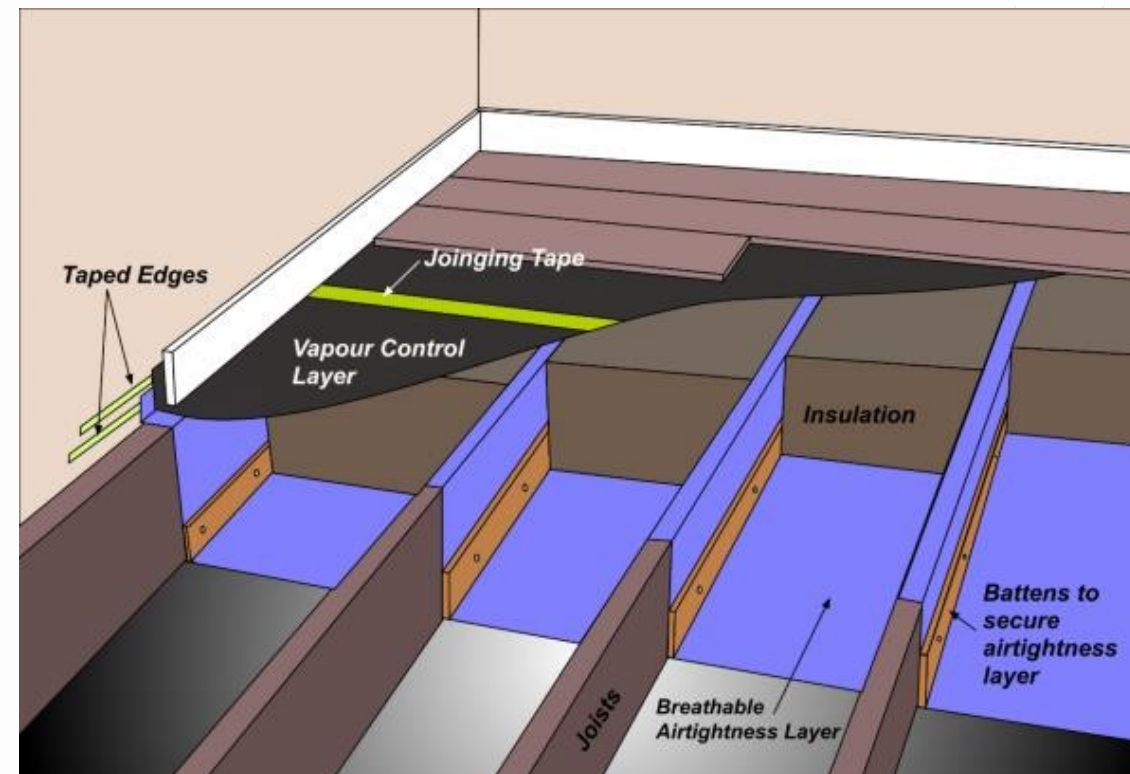
Insulation



Loft Insulation



Floor Insulation



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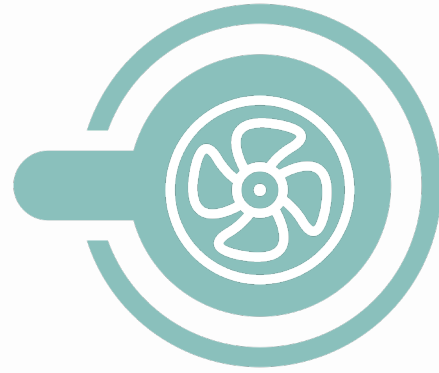
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2 Heating



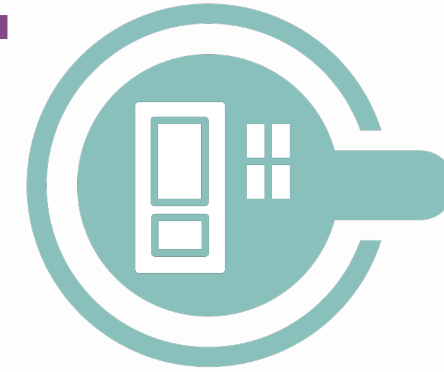
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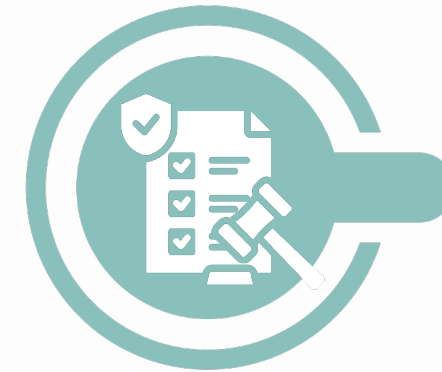
4 Air Tightness



Energy Efficiency
Measures for Doors
and Windows **5**



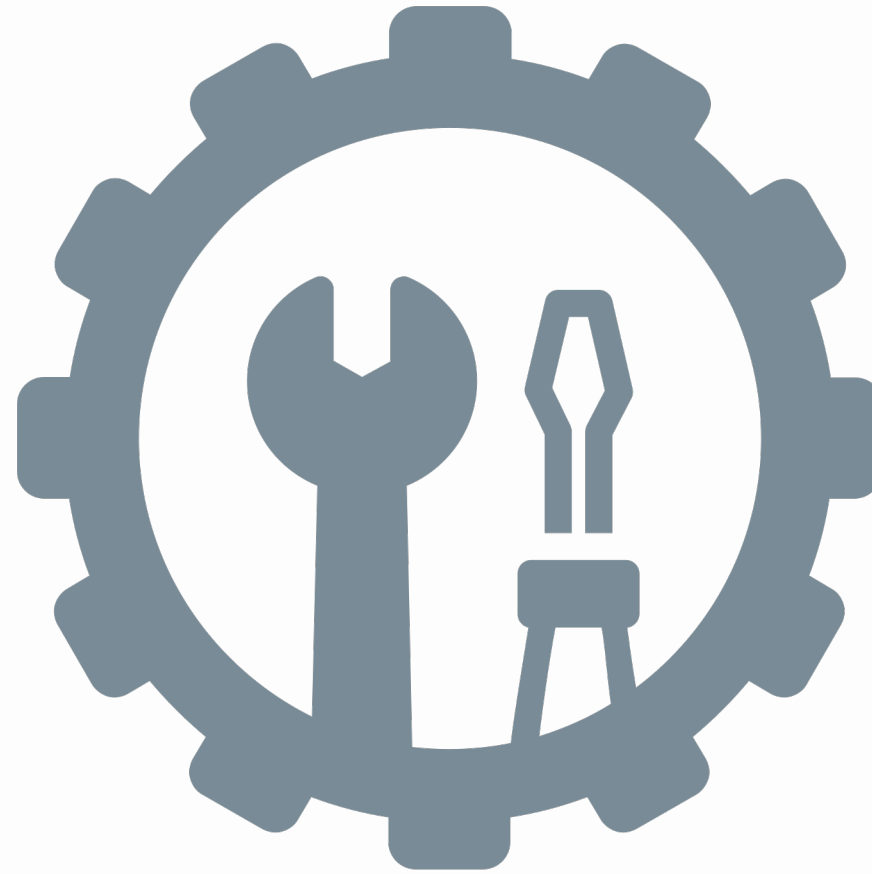
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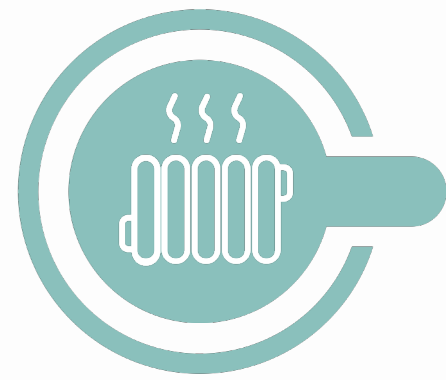


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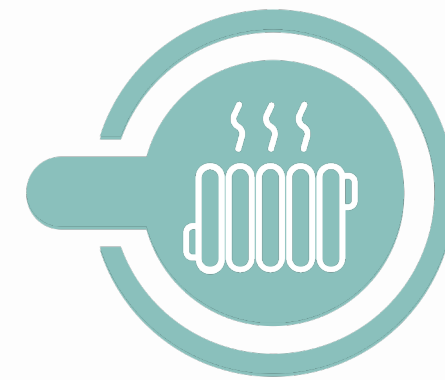


Energy Survey **8**



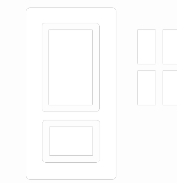


Heating



Upgrade Heating Systems:

- Energy-efficient boilers (condensing, combi)
- Heat pumps (air source, ground source)
- Underfloor heating for enhanced comfort



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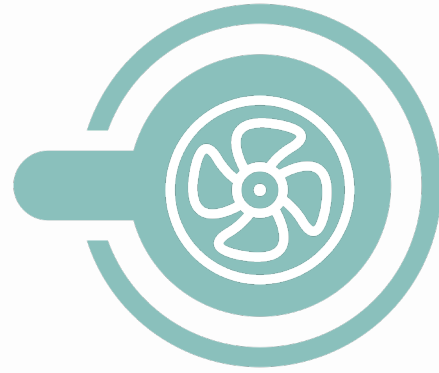
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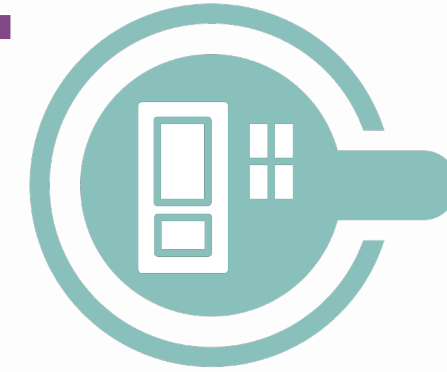
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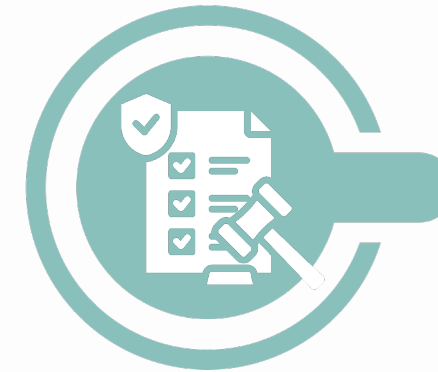
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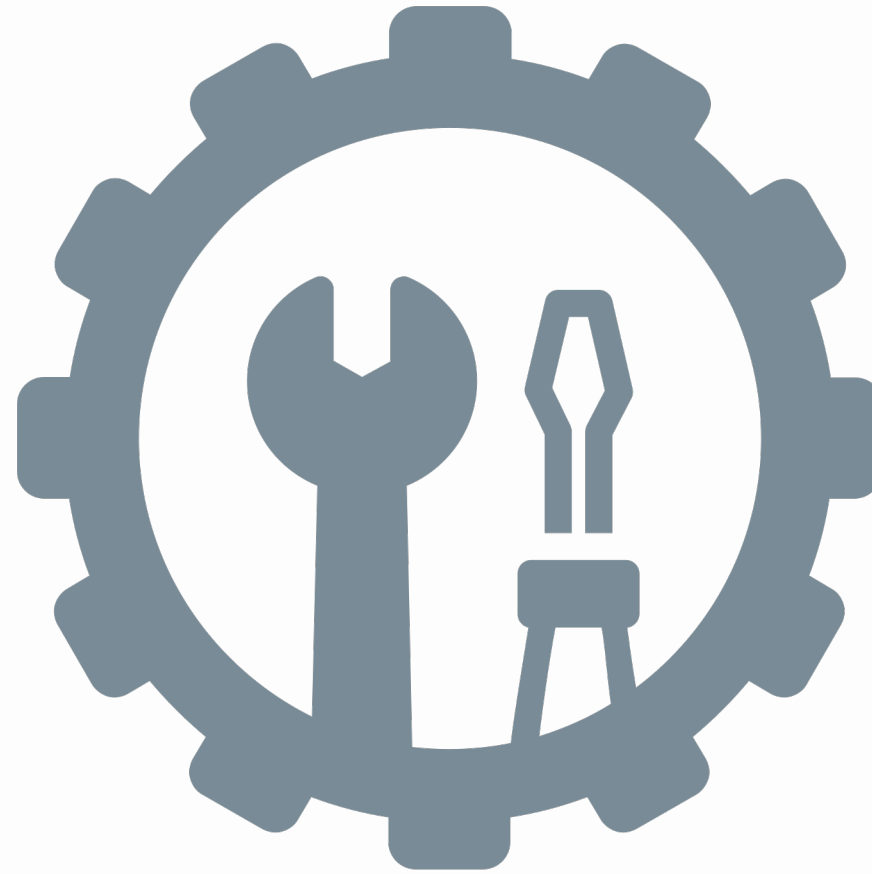
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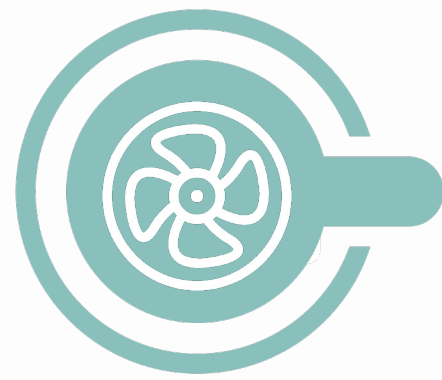


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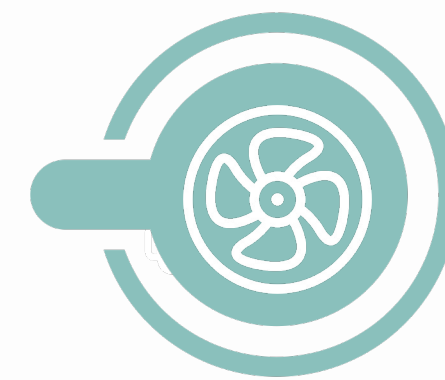


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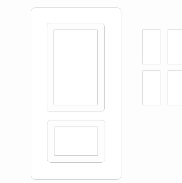




Ventilation



Ventilation Strategies:



- Ensure adequate ventilation to prevent moisture build up
- Mechanical ventilation with heat recovery (MVHR) systems for efficiency



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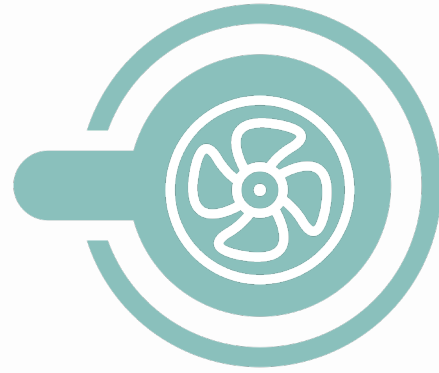
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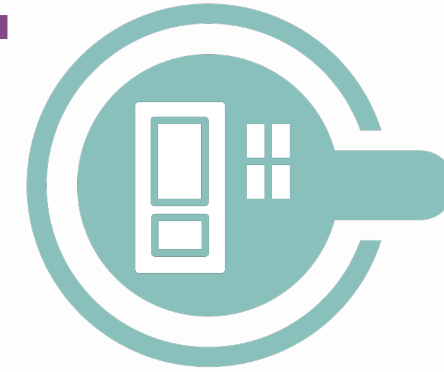
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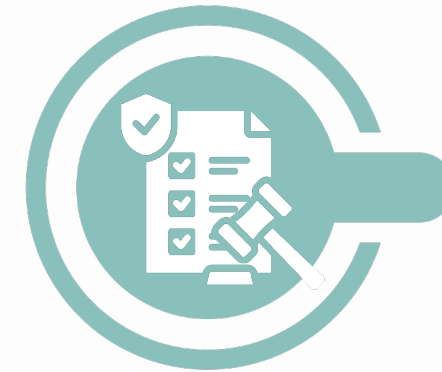
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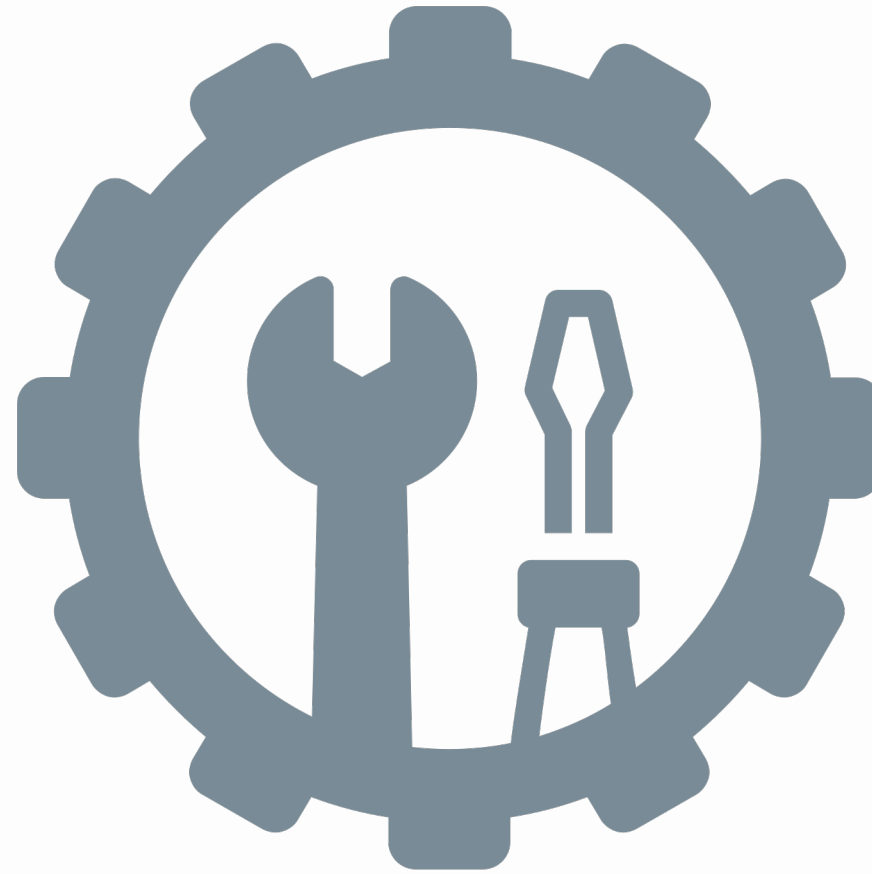
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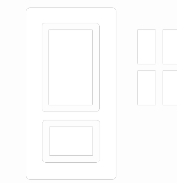


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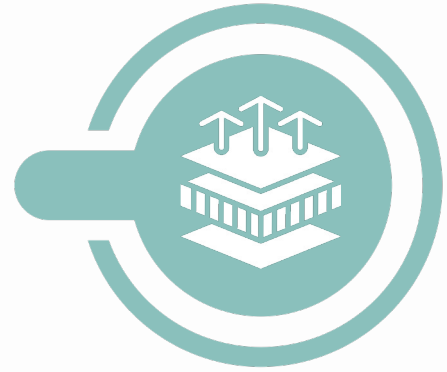
Importance of Air Tightness:

- Reduces drafts and energy loss
- Requires careful sealing of gaps and openings



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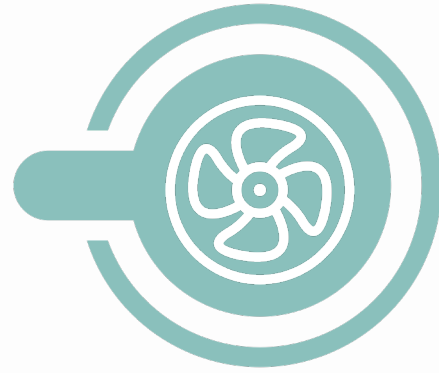
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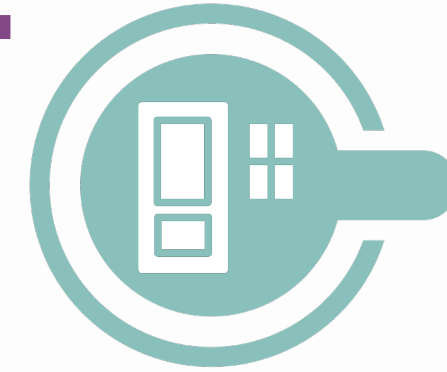
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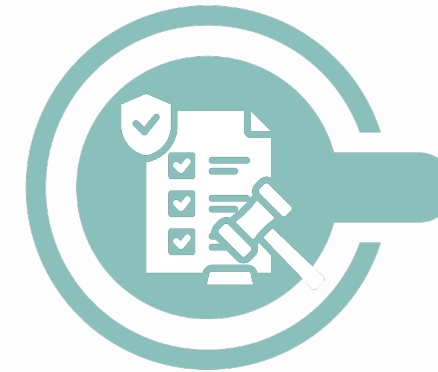
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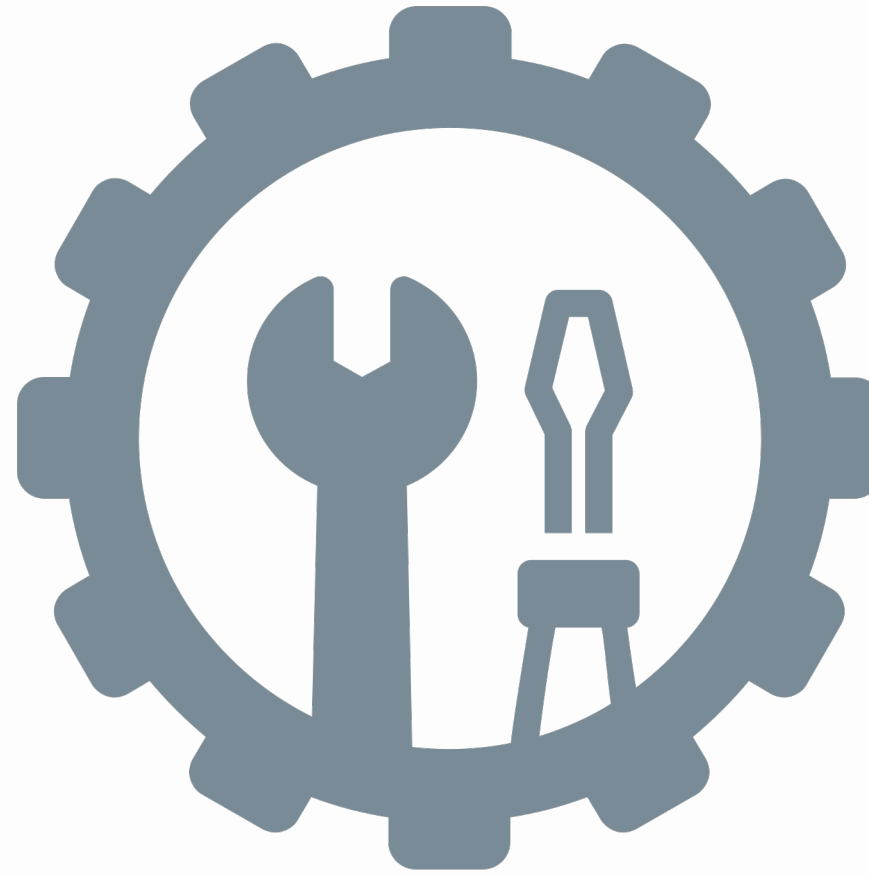
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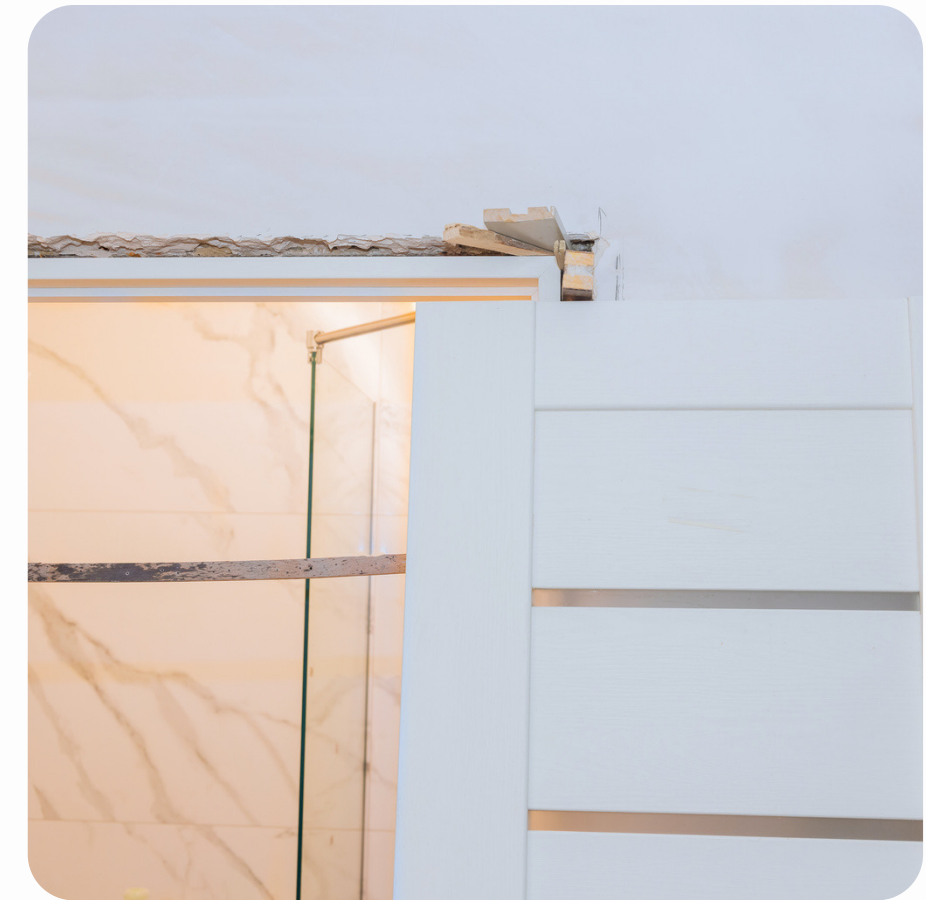
Energy Survey **8**



Energy Efficiency Measures for Doors and Windows

Upgrade Options:

- Double or triple glazing for windows.
- Energy-efficient doors with improved seals and materials

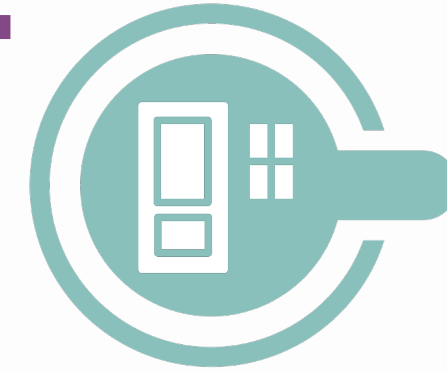


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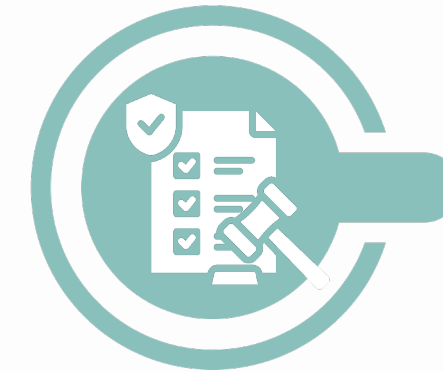
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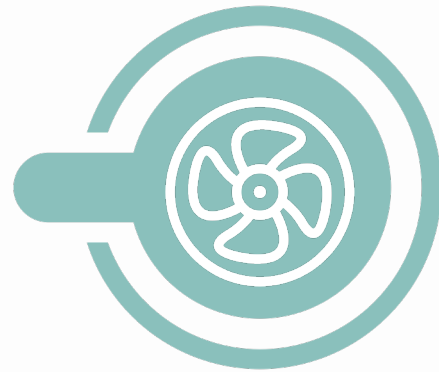
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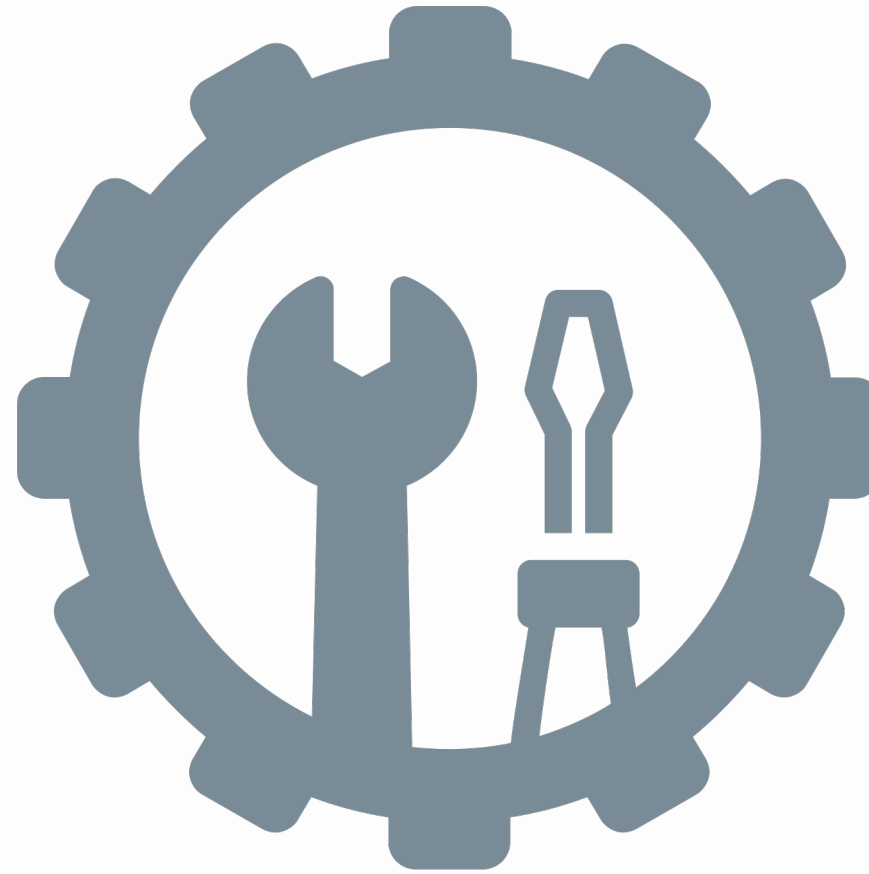
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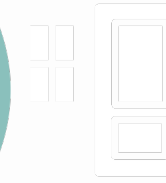


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Regulatory Compliance



Consider local building codes and energy efficiency standards

Listed buildings/ Conservation areas



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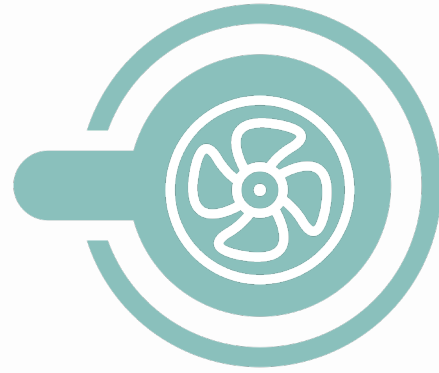
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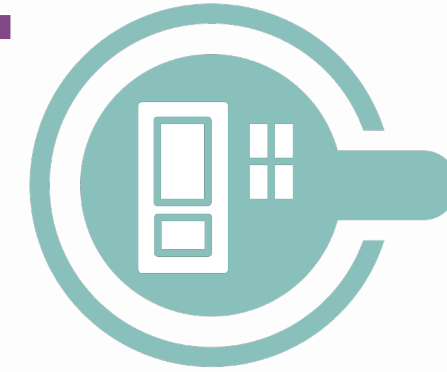
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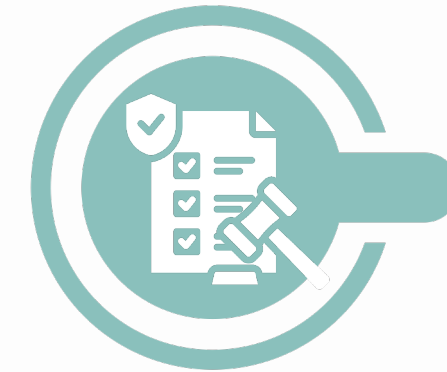
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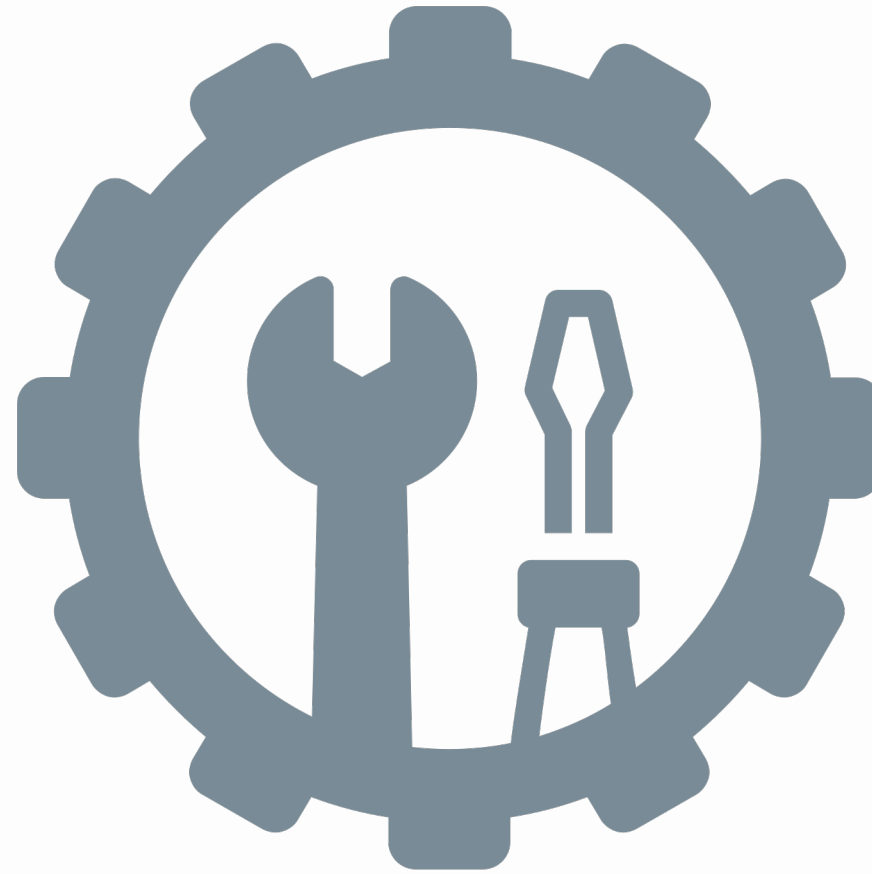
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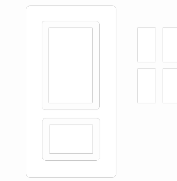


Energy Survey **8**





Professional Guidance



Consult with trained professionals to tailor solutions to specific properties



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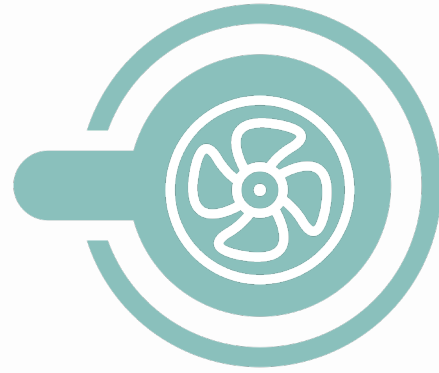
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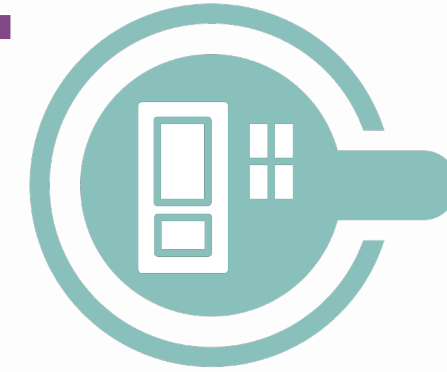
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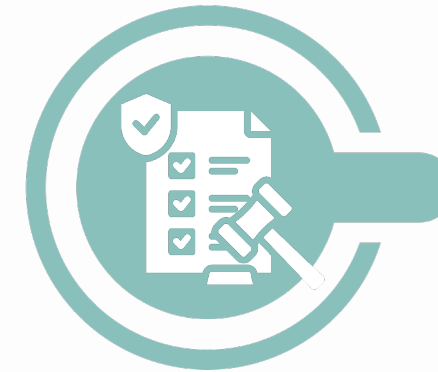
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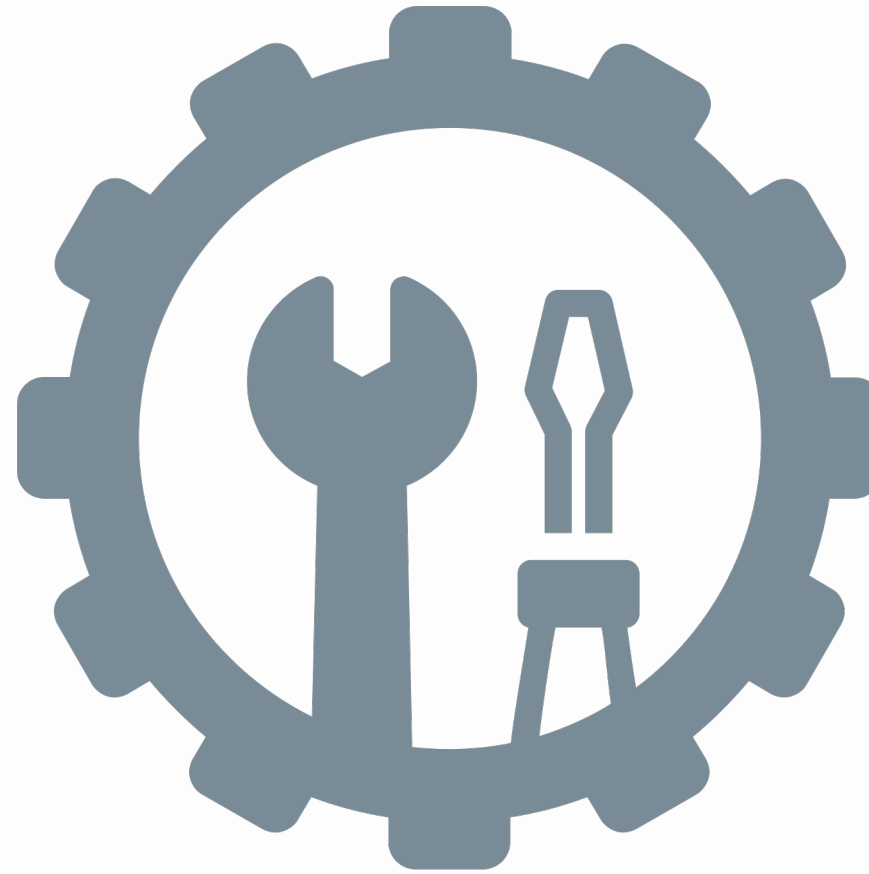
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Energy Survey **8**





Energy Survey



Importance of an Energy Survey:

- Consider having an energy survey carried out before significant retrofitting
- This will form the basis for identifying required improvements and those with the maximum impact



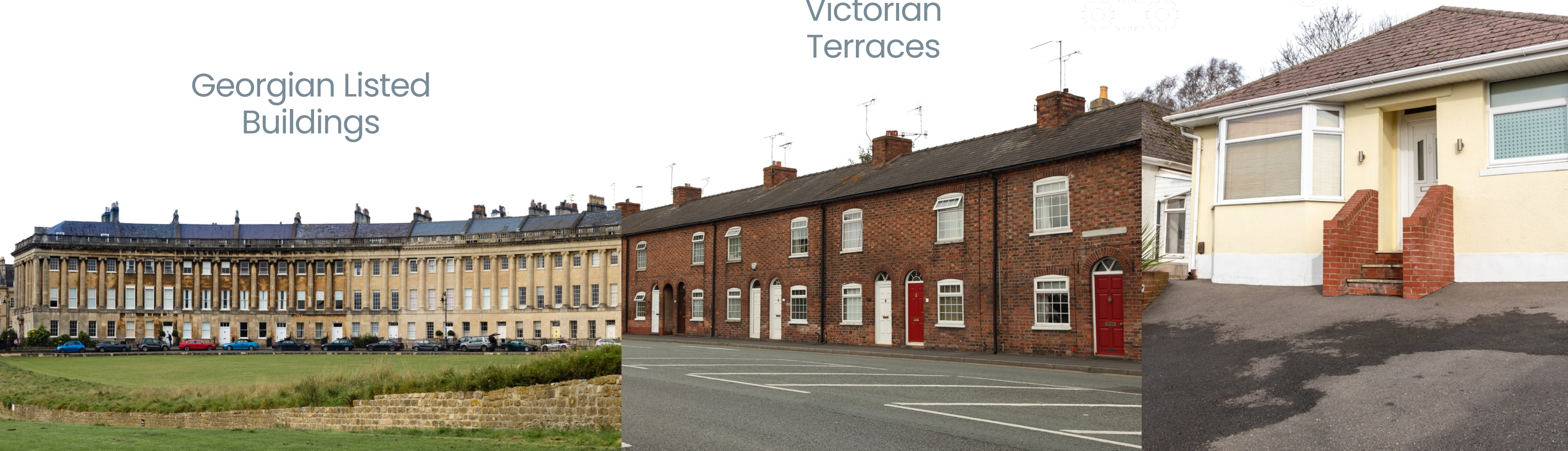
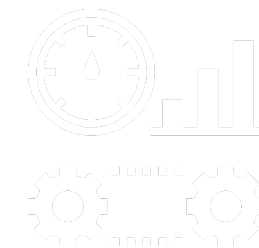
Types of Housing

Each type has unique architectural features and regulatory challenges

Georgian Listed
Buildings

Victorian
Terraces

1960s-1970s
Buildings



Georgian Listed Buildings

Characteristics

- Symmetrical facades
- Sash windows
- Stone construction

Insulation Challenges

Limited by regulations:

- Breathable solutions for walls
- Sash windows pose challenges

Windows/Doors:

- Repair and draught-proof
- Secondary glazing for insulation

Heating & Ventilation Considerations:

- High-efficiency, heritage-compatible systems
- Proper ventilation for air quality

Victorian Terraces

Queen Victoria's Reign
(1837–1901)

Insulation Solutions

Solid Wall Insulation:

- Internal or external
- Roof (loft) insulation
- Floor insulation

Windows/Doors:

- Replace or retrofit for efficiency

Heating & Ventilation Considerations:

- Modern heating (condensing boilers, heat pumps)
- Ventilation systems to control moisture

Characteristics

- Very often, no or little foundations
- Generally, 9-inch solid walls (no cavity)

1960s – 1970s Buildings

Characteristics

- Uninsulated cavity walls typically

Insulation Solutions

- Walls (external/internal)
 - Roof
 - Loft and floor
- Windows/Doors:
- Double/triple glazing
- Heating & Ventilation:
- Heat pumps
 - Mechanical ventilation



Benefits of Retrofit



- 1 Energy Efficiency**
Significant reduction in energy consumption
- 2 Comfort**
Improved indoor temperature regulation
- 3 Value Enhancement**
Increased property market value
- 4 Environmental Impact**
Lower carbon footprint
- 5 Renewable Energy Options**
Consider solar panels and battery storage for additional energy savings

Conclusion

Retrofit offers a pathway to enhancing energy efficiency across various housing types, with careful consideration for historical properties

Thank you!





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Questions & Discussion



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References

<https://renewables.bpm-cs.co.uk/>

<https://www.ecologicalbuildingsystems.com/>