

TROUBLESHOOTING GUIDE

Problem Diagnosis & Quick Fixes

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TABLE OF CONTENTS

1. Introduction & Safety Guidelines
2. Heating & Cooling Systems
3. Ventilation System Issues
4. Electrical Problems
5. Plumbing Issues
6. Building Envelope Problems
7. Passive House Specific Issues
8. Emergency Situations
9. When to Call Professionals
10. Professional Contact Directory

1. INTRODUCTION & SAFETY GUIDELINES

This troubleshooting guide helps identify common building system problems and

provides safe, effective solutions. Always prioritize safety and know when professional help is required.

SAFETY FIRST

- Turn off power/gas before working on systems
- Never attempt repairs beyond your skill level
- Call emergency services (999) for immediate dangers
- Keep emergency contacts readily available
- Ensure proper ventilation when working with chemicals

BEFORE YOU START

- ✓ Identify the problem clearly
- ✓ Check obvious causes first
- ✓ Gather necessary tools
- ✓ Review safety precautions
- ✓ Document the issue for professionals if needed

2. HEATING & COOLING SYSTEMS

PROBLEM: No Heat/Inadequate Heating

QUICK DIAGNOSIS:

- ☐ Check thermostat settings and batteries
- ☐ Verify power supply to heating system

- ☐ Inspect air filters for blockages
- ☐ Check circuit breakers/fuses
- ☐ Look for error codes on system display

QUICK FIXES:

- Thermostat Issues:
 - Replace batteries
 - Set to "Heat" mode
 - Increase temperature setting by 5°F
 - Clean dust from thermostat

- Filter Problems:
 - Replace dirty air filters
 - Check filter direction (arrow points toward unit)
 - Use correct filter size and type

- Power Issues:
 - Reset tripped circuit breakers
 - Check that system switch is "ON"
 - Verify emergency shut-off switch position

CALL PROFESSIONAL IF:

- Gas smell detected
- System makes unusual noises
- Frequent cycling on/off
- No improvement after basic fixes
- Error codes appear

PROBLEM: Overheating/Poor Cooling

QUICK DIAGNOSIS:

- ☐ Check thermostat settings
- ☐ Inspect air vents for blockages
- ☐ Examine outdoor unit for debris
- ☐ Verify adequate airflow
- ☐ Check for ice formation

QUICK FIXES:

- Airflow Issues:
 - Clear blocked vents and registers
 - Remove furniture blocking airflow
 - Clean outdoor unit of leaves/debris
 - Replace dirty filters
- Thermostat Problems:
 - Lower temperature setting
 - Switch to "Cool" mode
 - Check programming schedule

CALL PROFESSIONAL IF:

- Ice formation on coils
- Refrigerant leaks suspected

- Electrical issues
 - System won't start
 - Unusual noises or odors
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3. VENTILATION SYSTEM ISSUES

PROBLEM: Poor Air Quality/Stuffiness

QUICK DIAGNOSIS:

- ☐ Check ventilation system operation
- ☐ Inspect air intake and exhaust vents
- ☐ Examine filters for dirt/blockages
- ☐ Verify fan operation
- ☐ Check for unusual odors

QUICK FIXES:

- Filter Maintenance:
 - Replace or clean ventilation filters
 - Check filter installation direction
 - Use appropriate filter grade
- Vent Cleaning:
 - Clean intake and exhaust grilles
 - Remove debris from external vents

- Check for bird nests or blockages
- System Operation:
 - Verify fan speeds are correct
 - Check timer settings
 - Reset system if needed

CALL PROFESSIONAL IF:

- Heat recovery unit malfunction
- Ductwork damage suspected
- Electrical issues with fans
- Persistent odors or moisture
- System efficiency concerns

PROBLEM: Excessive Noise from Ventilation

QUICK DIAGNOSIS:

- ☐ Identify noise source (intake/exhaust/ducts)
- ☐ Check for loose components
- ☐ Inspect fan operation
- ☐ Examine ductwork connections
- ☐ Verify proper installation

QUICK FIXES:

- Loose Components:

- Tighten visible screws and connections
 - Check grille mounting
 - Secure any rattling parts
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- Airflow Issues:
 - Clean filters to reduce strain
 - Check for duct obstructions
 - Verify proper vent sizing

CALL PROFESSIONAL IF:

- Motor bearing problems
 - Ductwork modifications needed
 - Electrical issues
 - Structural mounting problems
 - Persistent noise after cleaning
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4. ELECTRICAL PROBLEMS

PROBLEM: Circuit Breaker Trips Repeatedly

QUICK DIAGNOSIS:

- ☐ Identify which circuit is affected
- ☐ Check for overloaded outlets
- ☐ Look for damaged cords or appliances

- ☐ Examine for moisture/water exposure
- ☐ Note timing of trips

QUICK FIXES:

- Overload Issues:
 - Unplug non-essential devices
 - Redistribute electrical loads
 - Use appropriate wattage bulbs
 - Avoid daisy-chaining power strips
- Reset Procedure:
 - Turn breaker fully OFF then ON
 - Wait 15 minutes before resetting
 - Test with minimal load first

CALL PROFESSIONAL IMMEDIATELY IF:

- Burning smell or sparks
- Repeated tripping after reset
- Hot electrical panels
- Water near electrical components
- Any uncertainty about safety

PROBLEM: Outlets Not Working

QUICK DIAGNOSIS:

- ☐ Check circuit breaker position
- ☐ Test GFCI reset buttons
- ☐ Verify other outlets on same circuit
- ☐ Look for loose connections
- ☐ Check for tripped safety switches

QUICK FIXES:

- GFCI Issues:
 - Press RESET button on GFCI outlets
 - Check GFCI outlets in other rooms
 - Test with GFCI tester if available
- Circuit Breaker:
 - Reset tripped breakers
 - Check main electrical panel
 - Verify proper breaker position

CALL PROFESSIONAL IF:

- Multiple outlets affected
- Burning smell or heat
- Sparks or unusual sounds
- Water damage suspected
- Wiring appears damaged



5. PLUMBING ISSUES

PROBLEM: Low Water Pressure

QUICK DIAGNOSIS:

- ☐ Check if problem affects hot, cold, or both
- ☐ Test multiple fixtures
- ☐ Examine aerators and showerheads
- ☐ Look for visible leaks
- ☐ Check water meter for continuous movement

QUICK FIXES:

- Fixture Problems:
 - Clean aerators and showerheads
 - Remove mineral deposits with vinegar
 - Check for debris in fixtures
 - Replace worn washers
- Supply Issues:
 - Verify main water valve is fully open
 - Check individual fixture shutoffs
 - Look for obvious leaks

CALL PROFESSIONAL IF:

- Pressure loss throughout house
- Main line issues suspected
- Water meter shows continuous usage

- Multiple fixture failures
- Pipe damage suspected

PROBLEM: Clogged Drains

QUICK DIAGNOSIS:

- ☐ Determine if single fixture or multiple
- ☐ Check for visible blockages
- ☐ Test drain flow rate
- ☐ Look for backup in other fixtures
- ☐ Note any unusual odors

QUICK FIXES:

- Minor Clogs:
 - Use plunger for toilets/sinks
 - Remove visible debris
 - Try hot water flush
 - Use drain snake for deeper clogs
- Preventive Measures:
 - Avoid putting grease down drains
 - Use drain screens
 - Regular hot water flushing
 - Clean pop-up stoppers

CALL PROFESSIONAL IF:

- Multiple drains backing up
 - Sewage odors present
 - Water backing up in other fixtures
 - Tree root damage suspected
 - Chemical drain cleaners ineffective
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6. BUILDING ENVELOPE PROBLEMS

PROBLEM: Drafts and Air Leaks

QUICK DIAGNOSIS:

- ☐ Feel around windows and doors
- ☐ Check electrical outlets on exterior walls
- ☐ Examine baseboards and ceiling joints
- ☐ Look for visible gaps or cracks
- ☐ Use candle or tissue to detect airflow

QUICK FIXES:

- Window/Door Sealing:
 - Apply weatherstripping to gaps
 - Use caulk for small cracks
 - Adjust door thresholds
 - Install door sweeps

- Outlet Sealing:
 - Install foam gaskets behind outlet covers
 - Use outlet sealers for unused outlets
 - Check for gaps around outlet boxes

CALL PROFESSIONAL IF:

- Structural gaps or settling
- Major window/door adjustments needed
- Insulation problems suspected
- Thermal bridging issues
- Blower door test recommended

PROBLEM: Moisture/Condensation Issues

QUICK DIAGNOSIS:

- ☐ Identify moisture location and timing
- ☐ Check humidity levels
- ☐ Look for water intrusion sources
- ☐ Examine ventilation adequacy
- ☐ Note weather correlation

QUICK FIXES:

- Humidity Control:
 - Use exhaust fans during cooking/bathing

- Open windows for ventilation
 - Run dehumidifier if needed
 - Check clothes dryer venting
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- Surface Treatment:
 - Wipe condensation immediately
 - Improve air circulation
 - Check for cold surfaces
 - Ensure adequate heating

CALL PROFESSIONAL IF:

- Mold growth appears
 - Structural moisture damage
 - Ventilation system inadequate
 - Insulation problems suspected
 - Persistent moisture despite fixes
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7. PASSIVE HOUSE SPECIFIC ISSUES

PROBLEM: Energy Performance Below Expected

QUICK DIAGNOSIS:

- ☐ Compare current vs. design energy usage
- ☐ Check ventilation system operation

- ☐ Examine building envelope integrity
- ☐ Review occupant behavior patterns
- ☐ Monitor indoor temperature/humidity

QUICK FIXES:

- System Optimization:
 - Clean/replace ventilation filters
 - Adjust ventilation settings seasonally
 - Check thermostat programming
 - Seal obvious air leaks
- Occupant Adjustments:
 - Review heating/cooling habits
 - Optimize window operation
 - Check for thermal bridge issues
 - Monitor internal heat gains

CALL PROFESSIONAL IF:

- Significant performance degradation
- Blower door test needed
- Thermal imaging required
- System commissioning needed
- Energy modeling updates required

PROBLEM: Mechanical Ventilation Malfunction

QUICK DIAGNOSIS:

- ☐ Check system power and controls
- ☐ Examine heat recovery unit operation
- ☐ Test airflow at supply/exhaust points
- ☐ Look for error codes or alarms
- ☐ Verify filter condition

QUICK FIXES:

- Basic Maintenance:
 - Replace filters per schedule
 - Clean intake/exhaust grilles
 - Check and clean condensate drains
 - Reset system controls

- Airflow Issues:
 - Remove obstructions from vents
 - Check damper positions
 - Verify fan speed settings
 - Balance supply and exhaust

CALL PROFESSIONAL IF:

- Heat recovery efficiency low
- Motor or electrical problems
- Ductwork modifications needed
- Controls malfunction
- System rebalancing required

8. EMERGENCY SITUATIONS

IMMEDIATE ACTIONS FOR EMERGENCIES

GAS LEAK

1. DO NOT use electrical switches or create sparks
2. Evacuate building immediately
3. Call gas emergency line: 0800 111 999
4. Do not re-enter until cleared by professionals

ELECTRICAL FIRE

1. Turn off power at main breaker if safe
2. Use Class C fire extinguisher only
3. Call 999 if fire spreads
4. Evacuate if situation worsens

WATER LEAK/FLOODING

1. Shut off main water supply
2. Turn off electricity to affected areas
3. Remove water and dry area quickly
4. Document damage for insurance
5. Call plumber and insurance company

HEATING SYSTEM FAILURE (Winter)

1. Check obvious causes first
2. Use alternative heating safely
3. Prevent pipe freezing
4. Call heating contractor immediately
5. Consider temporary accommodation if needed

POWER OUTAGE

1. Check if neighbors affected
 2. Report to utility company
 3. Use flashlights, not candles
 4. Keep refrigerator/freezer closed
 5. Use generators outdoors only
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9. WHEN TO CALL PROFESSIONALS

ALWAYS CALL FOR:

- Gas-related issues
- Major electrical problems
- Structural damage
- Water heater problems
- HVAC system repairs
- Plumbing beyond basic fixes

CONSIDER PROFESSIONAL HELP FOR:

- Recurring problems
- Multiple system failures
- Energy efficiency concerns
- Safety-related issues
- Complex diagnostics needed

BEFORE CALLING:

- ✓ Document the problem clearly
- ✓ Note when it started
- ✓ List what you've tried
- ✓ Gather model numbers
- ✓ Prepare access to problem areas

QUESTIONS TO ASK:

- Are you licensed and insured?
 - What's your availability?
 - Do you provide estimates?
 - What's included in the service call?
 - Do you offer warranties?
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10. PROFESSIONAL CONTACT DIRECTORY

PRIMARY CONTRACTOR

APMBuild Ltd - Passive House & Energy Efficiency Specialists

- Website: www.apmbuild.co.uk
- Services: Construction, renovation, passive house systems
- Specialization: Energy-efficient building solutions, troubleshooting
- Coverage: West Midlands, Wales, Great Britain
- Contact: Through website contact form

EMERGENCY SERVICES

- Emergency Services: 999
- Gas Emergency: 0800 111 999
- Electricity Emergency: 105
- Water Emergency: [Local water company]

SPECIALIZED SERVICES

- HVAC Contractor: _____
- Licensed Electrician: _____
- Licensed Plumber: _____
- Roofing Contractor: _____
- Insulation Specialist: _____

PASSIVE HOUSE SPECIALISTS

- Ventilation Systems: ventermo.pl, climaterecovery.pl
- Thermal Testing: [Local certified company]
- Blower Door Testing: [Certified testing service]
- Energy Assessment: [Local energy assessor]

MATERIAL SUPPLIERS

- SkandPol - European Building Materials
 - Aluplast Windows & Doors: [Local certified dealer]
 - Atlas Building Materials: [Local distributor]
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TROUBLESHOOTING QUICK REFERENCE

STEP 1: SAFETY FIRST

- Turn off power/gas if needed
- Ensure personal safety
- Call emergency services if immediate danger

STEP 2: BASIC DIAGNOSIS

- Check obvious causes
- Test simple solutions
- Document the problem

STEP 3: ATTEMPT FIXES

- Try safe, simple repairs
- Follow manufacturer instructions
- Don't exceed your skill level

STEP 4: CALL PROFESSIONALS

- When safety is concerned
- For complex problems

- When simple fixes don't work

STEP 5: PREVENT RECURRENCE

- Follow maintenance schedules
 - Address root causes
 - Keep records for future reference
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DOCUMENT CONTROL

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This guide should be kept accessible for quick reference during building system issues.

For complex problems or safety concerns, always consult qualified professionals.

For technical support or questions about building systems, contact APMBuild Ltd through www.apmbuild.co.uk
