MPW

Home Builder • Homeowner • Home Buyer

HVAC Checklist

Before you build new or replace your forced air heating and cooling system, make sure your HVAC contractor has taken these critical steps to maximize performance and efficiency.

Compare your contractors here with this checklist of the steps needed to create an efficient, high-performance forced-air heating system.	MP&W RECOMMENDS	CONTRACTOR A	CONTRACTOR B	CONTRACTOR C
Get the right size. *Perform a room-by-room heating load and cooling load calculation using Manual J.*	✓			
*Avoid the temptation to buy an oversized furnace or air conditioning unit. **Manual J** allows you to specify equipment that meets your home's design. A **Manual J** heat loss and heat gain calculation considers most of the factors that affect HVAC equipment sizing, including the climate, the size, shape and orientation of the house, the home's air leakage rate, the amount of insulation installed, the window areas, window orientations, and glazing specifications, the type of lighting and major home appliances, and the number and even the age of the occupants.*				
For the calculations to be meaningful, information on all of these factors must be correctly entered.				
Get the right kind. *My contractor explained the benefits of several high performance options and gave me a choice.*	✓			
***Geo-thermal ground-source heat pumps** and **air-source heat pumps** are highly efficient ways to heat and cool. **Mini-split heat pumps** allow you to create zone comfort without all the ductwork. **Condensing furnaces** use a second heat exchanger to extract extra heat from water vapor that would normally be vented outside, making the same energy work harder and reducing operating costs. Explore your options before you decide.*				
Put it in the right place. *The proposed furnace has been located in or near the center of my basement.*	✓			
Unless you're using a mini-split, centering the furnace allows for shorter duct runs overall and less heat/cooling loss.				
Get your ducts in order. *The ductwork system has been designed using Manual D.*	✓			
*Your contractor should design your duct system using **Manual D**. (Manual D depends on the room-by-room heat loss and heat gain numbers supplied by the **Manual J** calculations.)*				
• *Proposed duct runs are short & straight, with as few elbows as possible.*	✓			
Anything that restricts the air flow or requires conditioned air to travel farther reduces efficiency. It's also better for ducts to be slightly oversized than undersized.				
• *All ducts are located within the home's thermal envelope.*	✓			
Ductwork located in unconditioned attics and crawlspaces is less efficient than ducts within the heated or cooled spaces of the home.				
• *The use of flex duct has been minimized and if used, it is supported properly and runs are not twisted, crushed or pinched.*	✓			
• *The return air system is designed with multiple return air grilles rather than a single central return.*	✓			
• *The plan includes a return air path from every conditioned room back to the furnace's return air plenum.*	✓			
• (Optional) *In homes with high-performance windows and low air leakage rates, the contractor has considered the option of locating supply registers on interior walls.*	✓			

Before specifying a furnace or air conditioning unit for your next project, remember that other options exist.
An increasing number of high-performance homes are heated and cooled with two or three ductless mini-split heat pumps.

Don't forget your Rebates! *MP&W offers rebates for Ground-Source Heat Pumps, Air-Source Heat Pumps and AC units with a rating of 14 SEER or higher. Learn more at* ***mpw.org/rebates***

ENERGY STAR

When buying furnaces and air conditioners, look for the **Energy Star** logo.