

Village Of Vernon Hills
Community Development Department
290 Evergreen Drive, Vernon Hills, IL 60061
Phone 847-367-3704 - Fax 847-367-2541 http:// www.vernonhills.org

BASEMENT REMODELING

This hand out is for **REFERENCE ONLY**. For more details see specific code sections.

This handout is intended to assist you in providing sufficient information with your application to allow for a complete code review of your permit. It provides general requirements for the completion of a basement remodeling and is not specific to any project.

Firestopping is an important part of the remodeling project and should be well thought out prior to framing the walls. All concealed vertical spaces (walls) must be firestopped from all concealed horizontal spaces (floor structures above and soffits). Firestopping delays the spread of fire, giving occupants more time to escape and allows firefighters more time to extinguish a blaze. You are encouraged to request a pre-framing inspection, after a permit has been issued. Please contact the Building Division concurrent with the start of your project.

APPLYING FOR A PERMIT:

1. Complete a permit application with a contractor's list. Homeowners may perform their own electrical and plumbing improvements without being licensed as long as they occupy the home themselves. If an outside electrical or plumbing contractor is being used, you must include a copy of their state or municipal license.
2. Provide two (2) copies of the proposed remodeling plan. The plans are to be drawn to a **minimum 1/4" equals 1 foot scale**, and are to be of sufficient clarity to indicate the extent of the work being performed. The information required to be included on each plan is listed below.
3. Complete the attached Combustion Air Worksheet
4. Provide a copy of the written and signed contract between the contractor and the homeowner (if applicable).
5. Submit the appropriate plan review fee (cash or check) with your application and plans. Your review fee is calculated by multiplying your total estimated job cost by .002 and rounded to the nearest dollar. The minimum review fee is \$25.
6. A plan review will be performed by the Building Dept. prior to issuing a permit to begin the work. Each review is completed with a response to the applicant within fifteen (15) business days or sooner.

Plans must include the following general information:

1. A floor plan showing the location of all existing walls, windows, stairs, light fixtures, smoke detectors and equipment such as the furnace, water heater, electrical panel, floor drains and the sump and ejector pumps.

2. The location of new walls being constructed.
3. Label the proposed use of each of the new rooms being created.
4. Dimensions for the all of the new and existing rooms.
5. The size of all new and existing doors.
6. The size of all existing windows. If any of the windows are of the emergency egress type, please indicate so on the plans. A minimum of one emergency egress shall be provided in a basement. If bedroom(s) are to constructed they require emergency egress windows (s) in each room.

Plans must include the following building information:

1. A typical wall section indicating the type of framing members being installed and their spacing. Treated sill plates must be used when in direct contact with the concrete floor. (Typical wall construction contains 2x4 studs at 16 inches on center)
2. The “R” value of the insulation being installed. All exterior walls must be insulated to at least R-11 and have a 6 mil or Kraft paper vapor barrier attached adjacent to the “warm side” of the room.
3. The thickness of the drywall being installed on the stud walls.
4. The height of the finished ceiling being installed. (7 foot minimum clearance)
5. The type of ceiling being installed. (Drywall attached to the floor joists or a dropped acoustical ceiling) Any electrical junction boxes, plumbing cleanouts, valves, ductwork damper controls concealed behind a drywall ceiling must remain accessible by installation of an access panel.
6. If the area below the stairs is enclosed and accessible, it must be drywalled.
7. If wood stud walls are set out from the foundation walls, a **firestop** must be installed at the intersection of the wall and ceiling joists. All openings in the top plate made for conduit, piping, etc. must be sealed with a **listed firecaulk** material. Firestop is not required with steel stud wall construction.

Electrical plans and specifications for the remodeled area.

1. All electrical wiring must be installed in minimum EMT conduit.
2. All telephone, cable television, alarm system wiring concealed behind a drywall wall or ceiling surface must be installed in conduit. This includes any existing wiring if it is to be concealed.
3. Indicate the approximate location of all lighting fixtures, the type of fixture and where they are to be switched on and off.

4. Indicate the approximate location of all electrical receptacle outlets. Receptacle outlets are to be spaced along all wall surfaces so that a six-foot long appliance cord will reach one from any place along the walls. (This means that one must be found within six feet of any door and no more than 12 feet center to center along the walls). Any wall space greater than 2 feet requires a receptacle.
5. It is required that a GFI protected wall receptacle outlet be installed in each unfinished area of the basement
6. Each sleeping area must contain an interconnected 110-volt smoke detector with battery back-up. Another must be located immediately adjacent to the sleeping area if separated by a door from the main room. If the furnace is to be enclosed in a separate room an additional detector must be located in that room.
7. If a clothes closet is installed and it is greater than 9 square feet in area, a pull chain or switched light fixture must be installed in the wall above the door or in the ceiling of the closet. If a surface mounted fluorescent or completely enclosed recessed incandescent light fixture is used, it must be 6 inches in front of any possible storage area. If a completely enclosed bulb, surface mounted incandescent light fixture is used it must be 12 inches in front of any possible storage area.
8. If a sump pump is to be enclosed in a closet, a pull chain light must be installed in the closet.
9. All bedroom outlets, lights, or smoke detectors must be arch-fault protected.

Mechanical plans and specifications for the remodeled area.

1. Each habitable room must contain at least one supply air duct and register and at least one return air duct and register.
2. If the furnace and water heater will be enclosed within a room, sufficient combustion air must be provided to that room through a grilled opening within 12 inches of the floor and another within 12 inches of the ceiling. Complete the attached Combustion Air Worksheet
3. If a bathroom area will be installed in the remodeled area, the following additional information must be included on the permit plan:
 4. An exhaust fan must be installed in the bathroom. It must be piped with metal ductwork directly to the exterior of the building through a louvered, screened opening.
 5. If a combination fan/light fixture is used, the fan and light must be switched independently.
 6. A separate dedicated 20 amp, GFI protected receptacle outlet circuit must be installed adjacent to each sink.
 7. A water riser diagram for the supply piping must be included. It must indicate the pipe size and fixtures served. Only "Type L" copper is permitted for supply piping.

8. A drawing of the waste and vent piping must be included. It must indicate the type of piping, pipe size and fixtures served. "Cell Core" piping will not be permitted.

CONSTRUCTION REQUIREMENTS:

1. No construction equipment or materials shall be deposited or stored within the Village Right-of-Way.
2. Damage to the Village Right-of-Way caused by any work shall be restored to the satisfaction of the Village Engineer. The Village will perform a pre-construction and post-construction inspection to identify damage.

Escape Window, Well and Ladder

Every bedroom & finished basement must have at least one emergency escape window. The escape window must be a maximum of 44 inches above finished floor, at a minimum of 5.7 sq ft, a minimum net clear opening height of 24 inches & minimum net clear opening width of 20 inches. The window well must be 3' x3' minimum with a ladder.

Attached is an example of a remodeling plan for your assistance. If there are any questions, please contact us at the Building Division of the Community Development Department at (847) 367-3704 for assistance.

REQUIRED INSPECTIONS:

Inspections must be scheduled at least a day in advance by calling the Building Dept. at 847-367-3704 between 8:30 AM and 3:30 PM, M-F. A permit number will be required.

- (optional) pre-framing inspection for fireblocking information
- rough electrical
- rough plumbing (if plumbing involved in project)

NOTE:

The above two inspections must be inspected and approved prior to scheduling a rough framing inspection. A rough framing inspection will not be scheduled at the same time as the rough electric and rough plumbing.

- rough framing/firestopping/mechanical
- insulation
- above ceiling electric (if applicable) prior to ceiling tile placement
- final electric, plumbing, and building (when the project is completed)

COMBUSTION AIR WORKSHEET

Address of property: _____

A. Determine the total BTU/HR

Add the BTU/HR input rating of all fuel burning appliances in the space

Gas furnace(s)	_____	Btu/Hr
Gas water heater(s)	_____	Btu/Hr
Gas dryer	_____	Btu/Hr
Other gas appliances	_____	Btu/Hr
Total	_____	Btu/Hr

Note: If there are two (2" or 3") PVC pipes connected to each High Efficiency furnace (one intake, one exhaust) then the BTU/HR of the furnace(s) does not need to be considered.

Note: If the building is sealed so tightly that infiltration air is not adequate for combustion, combustion air shall be obtained from outdoors or spaces freely communicating with the outdoors. Continue to section **F.** after completing section **A.**

B. Determine the minimum required volume of space (50 cu.ft./1,000 BTU/HR)

Total Btu/Hr _____ ÷ 1,000 x 50 = _____ **min. cu.ft. required**

C. Determine the volume of the space (length x width x height)

Length x Width x Height = _____ **cu.ft. (space volume)**

If **C.** (cu.ft. of the space) is greater than **B.** (min. cu.ft. required) then "STOP" the volume in the space is adequate. If **C.** (cu.ft. of the space) is less than **B.** (min. cu.ft. required) then continue to section **D.**

D. Determine the volume of the space of an adjacent room (length x width x height)

Length x Width x Height = _____ cu.ft. (adjacent space volume)

Cu.ft. of space **C.** = _____ cu.ft.

Total = _____ **cu.ft. (total volume of both spaces)**

If **D.** (total cu.ft. of both spaces) is greater than **B.** (min. cu.ft. required) then continue to section **E.** If **D.** (total cu.ft. of both spaces) is less than **B.** (min. cu.ft. required) then continue to section **F.** Combustion air must be supplied from outdoor air.

E. Determine the size of each opening between both spaces (1 sq.in./1,000 BTU/HR)

Total BTU/HR _____ ÷ 1,000 = _____ **sq.in.** (100 sq.in. min. each)

Metal louver considered 75 percent of required opening.

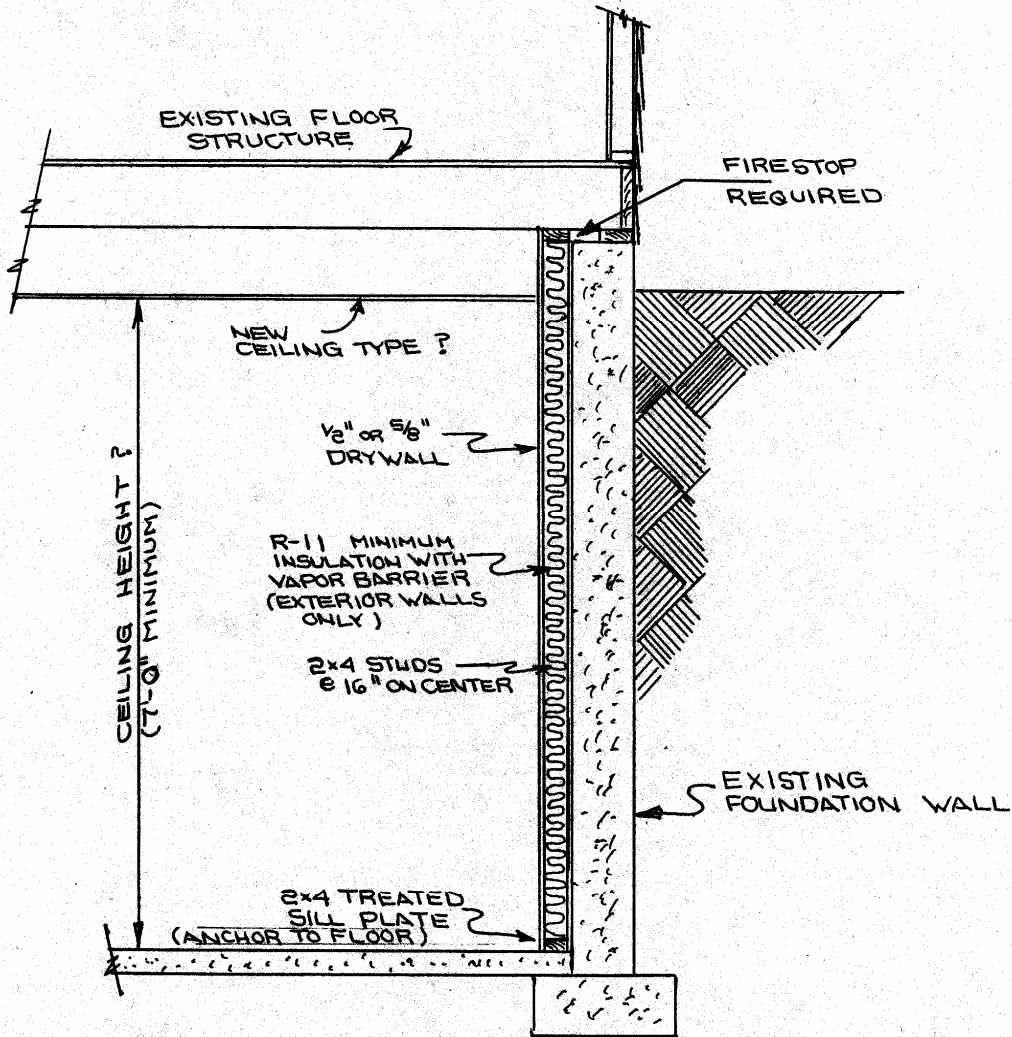
Wood louver considered 25 percent of required opening.

"STOP". Note: two permanent openings to adjacent spaces shall be provided. One opening shall be within 12 inches of the top and one within 12 inches of the bottom of the space.

F. Determine the size of each opening to outdoor air (1 sq.in./2,000 BTU/HR)

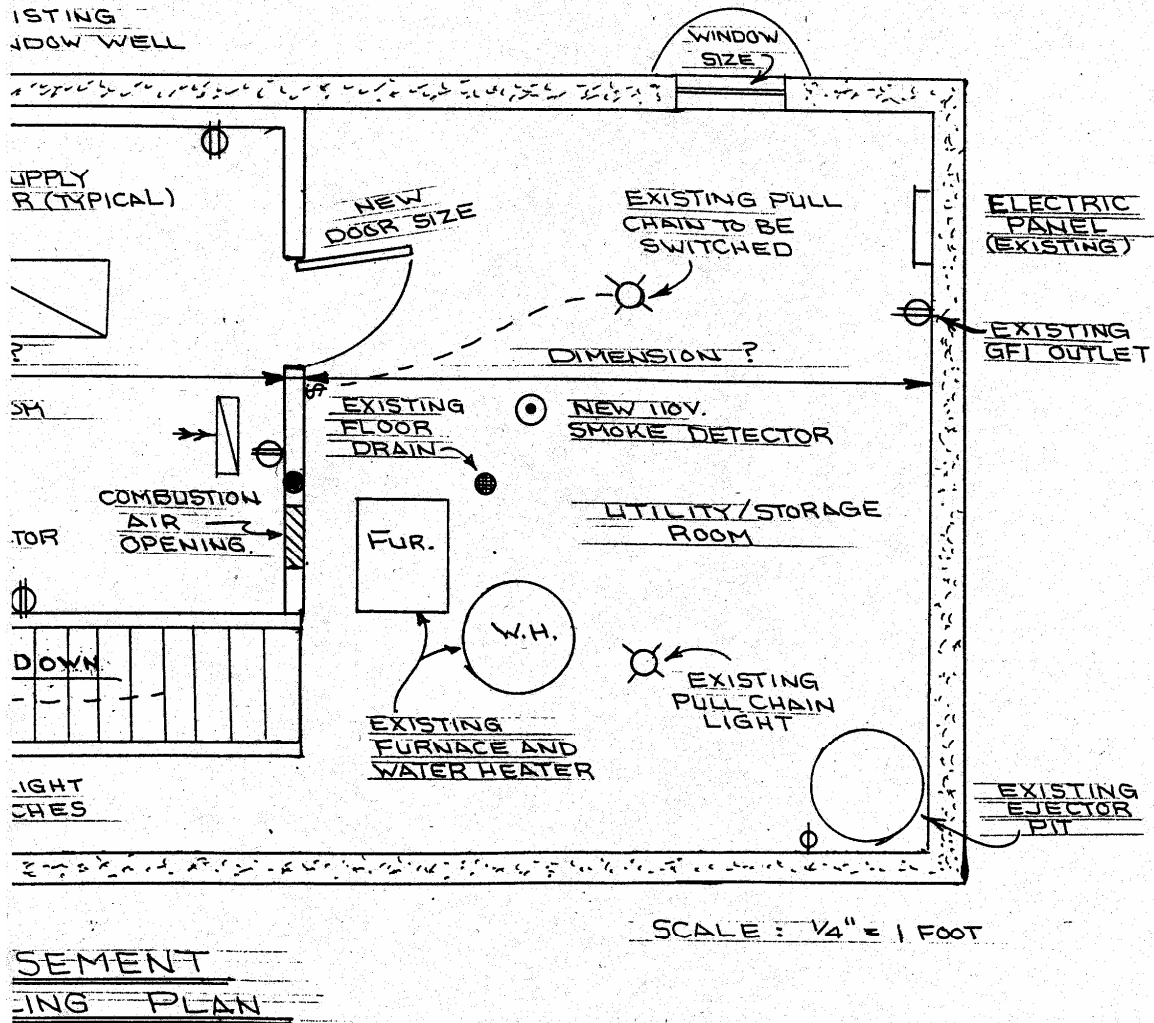
Total BTU/HR _____ ÷ 2,000 = _____ **sq.in.** (3 in. rect. duct min.)

"STOP". Note: two permanent openings to outdoor air shall be provided. One opening shall be within 12 inches of the top and one within 12 inches of the bottom of the space.



TYPICAL WALL SECTION

Example Plan Layout (1 of 2)



Example Plan Layout (2 of 2)

