

**Office of Building Department**  
Town of Southington, Connecticut



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Requirements needed for basement remodel plans

1. Plan of complete basement with dimensions, including doors and windows.
2. Use of areas.
3. Combustion appliances, location, input BTU and combustion air source.
4. Ceiling heights.
5. Ventilation air for habitable area.

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Common issues to be addressed with basement  
being converted to living space

**Ventilation air requirements.** Most finished basement required ventilation air to be taken from an area that has ample ventilation air. Typically from the first floor by means of an inline fan. Exception: 4% of area openable area to the outside. Doors and windows.

**Combustion air requirement.** Combustion air cannot be taken from the area being finished. Typically combustion air must come directly from the exterior by a fan in a can or other means.

**Stairs.** Guards, handrail and 4" max. open riser.

**Stairs headroom.** 6'6" from nosing, riser height 9" and tread 8" (minimums).

**Ceiling heights.** 6'10" at beams and ducts 6'4" (minimums)

**Water heater pan.** In or adjacent to finished area.

**Fire stopping.** Walls adjacent to concrete wall (any concealed location).

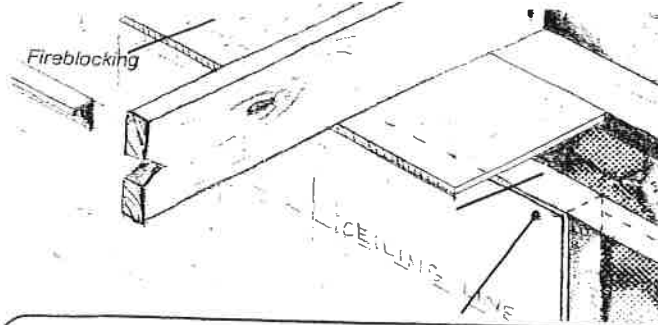
**Fire stopping.** Duct chase and drip ceilings.

**Heating.** Must be able to maintain space at 68°F.

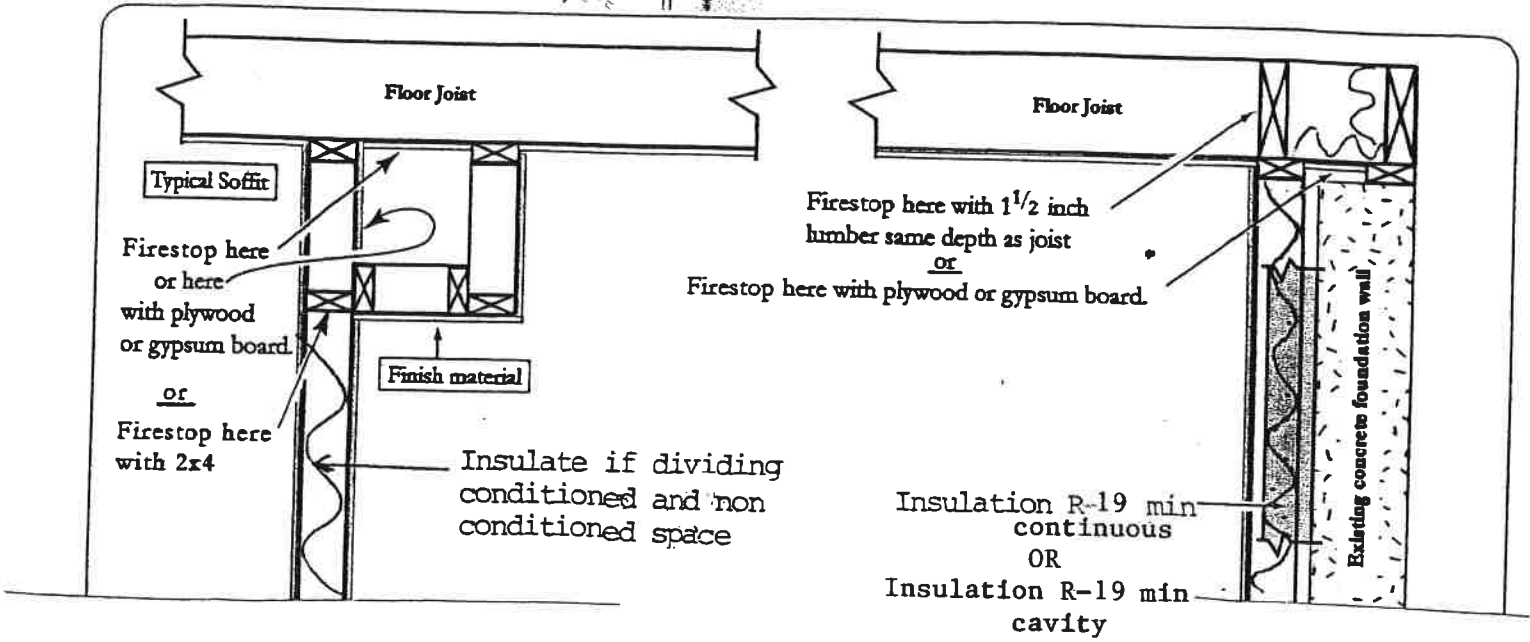
**Under stair protection.** Enclosed under stair area required to be sheet rocked.

**Back water valve.** Basement plumbing connected to public sewer.

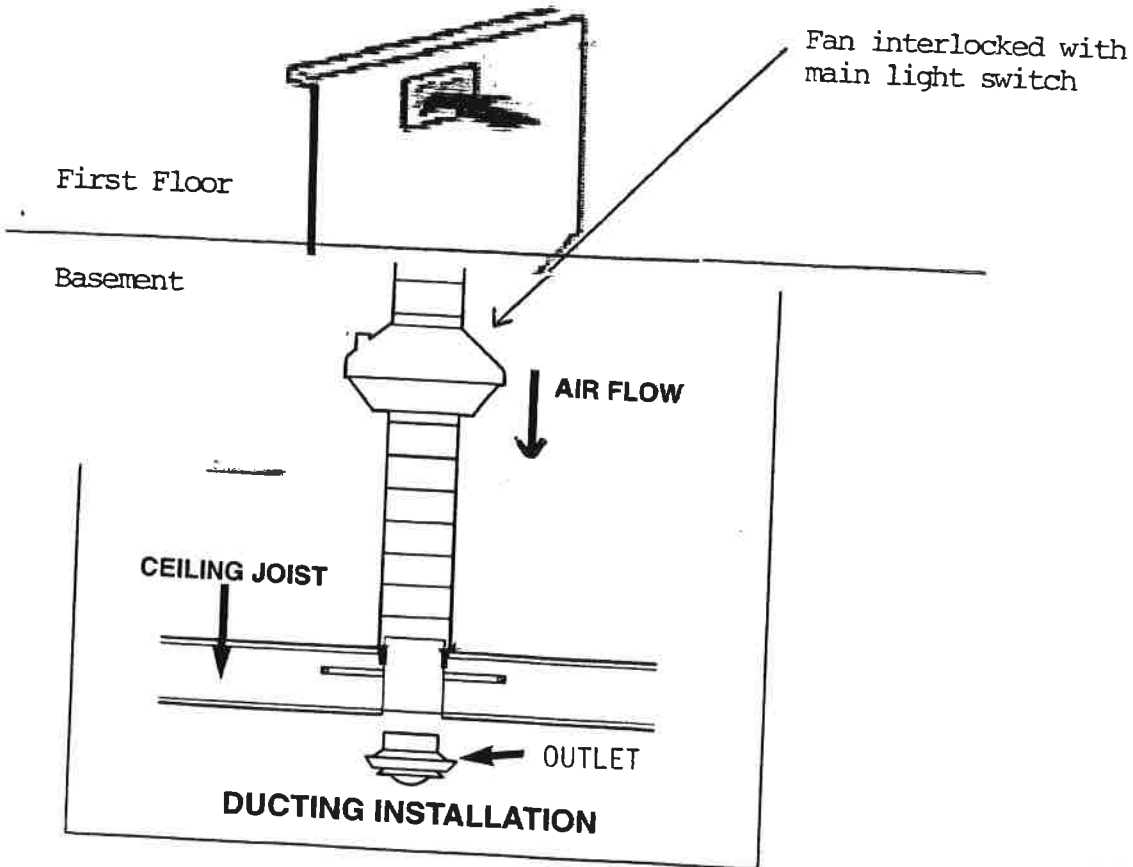
**Insulation.** Updating basement windows and box insulation.



**BASEMENT FINISH DETAILS**



Ventilation Air Detail



## STEP 1 EXAMPLE

*Directions: Determine if the unconfined space provides sufficient combustion air for the following situation:*

- A 100,000 Btu/hr. gas furnace and 35,000 Btu/hr. gas water heater have been installed in an enclosed room 10 feet long, 10 feet wide, with an 8-foot ceiling.

### Step 1 Worksheet

1. Calculate actual volume of room containing fuel-burning equipment and any adjacent rooms:

A. Room containing appliances:

Length x Width x Height = Volume

Volume 1: \_\_\_\_\_ ft x \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ Cubic feet

B. Any adjacent rooms with openings having no doors:

Length x Width x Height = Volume

Volume 2: \_\_\_\_\_ ft x \_\_\_\_\_ ft x \_\_\_\_\_ ft = \_\_\_\_\_ Cubic feet

C. Add the two volumes: \_\_\_\_\_ Cubic feet

2. Determine total Btu/hr. input of all fuel-burning equipment in the room:

Appliance 1 \_\_\_\_\_

Appliance 2 + \_\_\_\_\_

Appliance 3 + \_\_\_\_\_ = \_\_\_\_\_ Total Btu/hr.

3. Calculate required volume:

Divide total Btu/hr. by 1000. Then multiply by 50 cubic feet.

\_\_\_\_\_ (total Btu/hr.) divided by 1000 x 50 cubic feet = \_\_\_\_\_ Cubic feet

4. Compare actual volume to required volume.

Is additional combustion air needed? YES \_\_\_\_\_ NO \_\_\_\_\_