



Building Department Newsletter

April 2011

Special points of interest:

- Converting a Garage into a Living Space
- Drilling & Notching of Studs
- Over Sized Top Plate Holes

CAN I CONVERT A GARAGE INTO A LIVING SPACE?

Converting a garage into a living space can be an attractive way to increase the usefulness of a home. Unfortunately we find garage conversions done without obtaining required building permits. Building permits are required for such work by the Washington State Building Code. Many times a garage conversion is brought to our attention when the homeowner sells or re-finances. When non-permitted work is discovered, lending institutions may become reluctant to approve loans and insurance companies may deny coverage because they have no assurance that the non-permitted work is safe and complies with the minimum standards of the applicable building codes.



There are several things to consider before converting a garage into a living space:

Fuel Burning Appliances: Many garages have the furnace and water heater located within them. If the appliances are of the fuel burning type (natural gas, propane, wood) there are concerns with providing adequate combustion air that the appliances need to operate efficiently and safely. There are also restrictions placed on where fuel burning appliances can be placed for reasons of safety. Fuel burning appliances are prohibited in rooms used for sleeping, bathrooms, toilet rooms, storage closets or in a space that opens only into such rooms or spaces. An appliance without proper venting or combustion air can be deadly to the inhabitants due to lack of oxygen, carbon monoxide poisoning or fire danger.

Smoke Detectors and Carbon Monoxide Alarms: Smoke detectors are required in every bedroom, in areas adjacent to bedrooms and one is required on each floor level. Carbon Monoxide alarms are required in areas adjacent to bedrooms.

Egress: Bedrooms are required to have an egress window or door that opens directly to the exterior. Bedrooms may not open into a garage (doors or windows).

Plumbing: Improperly installed plumbing can cause problems such as inadequate water supply; drain pipes can cause backups and flooding; improper venting can result in sewer gas entering the building which can cause health and respiratory problems.

Zoning: Adding bedrooms may affect the number of required off-street parking spaces. Pullman's Zoning Ordinance requires a set number of off-street parking spaces based on the number of bedrooms. If a garage is converted into living space, the parking spaces lost may need to be made up elsewhere on the property.

TRIVIA

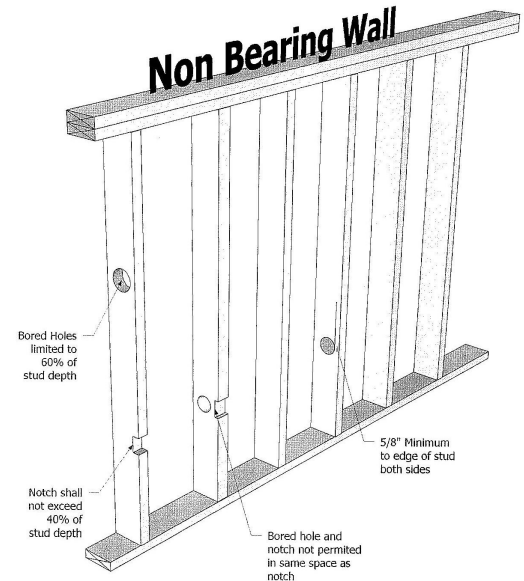
Where enforcement of a mechanical code provision would violate the conditions of the _____ of the *equipment or appliance*, the conditions of the _____ and the manufacturer's installation instructions shall apply.

Answer on back.

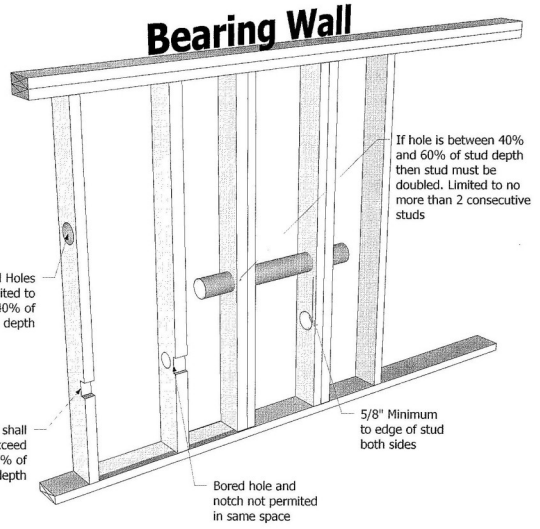
DRILLING AND NOTCHING OF STUDS

The International Residential Code (IRC), Section R602.6, allows for drilling and notching of studs for exterior walls, bearing partitions and non-bearing walls with the following limitations. These limitations will still provide the structural integrity after drilling and notching.

- Notching of exterior or bearing walls is limited to 25 percent of the stud width. A non-bearing stud can be notched up to 40 percent of a single stud.
- Drilling or boring is allowed on any stud, provided no more than 60 percent of the stud width is removed, the holes edge is not greater than 5/8 inch to the edge of the stud, and the hole is not located within a notched section. When exterior or load bearing studs are drilled between 40 to 60 percent of the stud width, the IRC requires an additional doubled-up stud for reinforcing and no more than two consecutive studs so reinforced.



*See figures for limitations of notching and drilling.



Answer:
listing
listing
IMC Section
102.8

TRIVIA

The first documented building inspection was recorded in Greece in 341 B.C. The inspection was of doweling and leading of joints in stones.

STRAP THOSE OVER-SIZED HOLES!

The International Residential Code (IRC), Section R602.6.1, states when drilling or notching of double top plates at exterior walls or interior load bearing walls, the utmost care should be taken not to oversize the openings beyond the IRC acceptable criteria. The IRC does provide a prescriptive design for strapping when it's necessary to remove more than 50 percent of the top plate to accommodate plumbing, heating or other equipment. The strapping must be a galvanized metal tie not less than 0.054 inches thick and 1 1/2" wide and attached to the upper plate section of the double top plate. The strap must span at least 6 inches beyond the hole and be attached with 8-16d (.148 inch diameter) nails on each side. To avoid splitting of the top plate pre-drilling might be needed. The strapping of the top plate across oversized opening helps retain the structural integrity of the wall system. The figure illustrates how or when top plate strapping should be installed.

