

UNIFORMITY OF INSPECTIONS COMMITTEE

FEBRUARY 2008 RESULTS

February Question #1 **Garage Clubhouse**

“A resident wishes to convert his 900 sq. ft. detached garage into a “clubhouse”. The idea includes insulation, paneling, gas-fired heating unit and adding a window in the upper area, which has a truss system, which was originally designed with 40 lb. live load storage trusses. The overhead door will remain (although he says he is going to disguise it with a mural).”

Does IRC allow this?	Yes	17	94%
	No	1	6%
Does your city Ordinance allow this?	Yes	12	75%
	No	3	25%
Permits required for just mechanical and gas line.		3	20%
Permits required for mechanical, gas line AND building.		15	80%
Total votes: 18			

Comments on this topic:

A) “I’ll take the easy way out of this nightmare by just answering the questions! Yes, I believe the IRC allows this. Yes, our city ordinance allows this. A Building and Mechanical permit would be required.

The gas line is included in our Mechanical permits. It’s still an accessory building and the owner can use it for whatever they want (no sleeping room or kitchen). There are a lot of Energy Code questions to be answered (7676). Ice barrier protection is required on the roof on an accessory structure, if it is heated. If it is on a concrete slab, is a vapor retarder now required under the slab? Our ordinance only allows one-story accessory buildings so the trusses are not an issue. Windows are OK.”

B) “Depends! What is a “clubhouse”? If the building official determines that a “clubhouse” is “customarily accessory to and incidental to that of the dwelling”, then the answer is YES. If the building official determines that a clubhouse is not accessory, then it would be regulated by the IBC. If the room is used for the owner and 4 buddies to play poker on Sunday mornings, I would say it is regulated by the IRC. If this space is used to house meetings of the 10,000 Lakes Chapter, I would look to the IBC.”

C) “Wow! What a loaded question. Yes the IRC would allow. Depending on your city... mine requires a 10’ setback from property lines for living space and a 5’ setback for attached garages. So maybe NO if the setback is not right. As stated above, energy code, foundation insulation, vapor barrier, and multiple other issues would need to be resolved.”

“Oops, I did not read detached - garage first time around, YES IRC allows, City Ordinances maybe, again city has regulations regarding two habitable dwellings on same lot, IE: does club house have running water, bathroom, possible sleeping ability (?) And ordinance also restricts operating a home business out of accessory buildings. AND: IRC 302.1 would require 5 foot setback unless rated walls and limited overhangs etc. in addition to all the energy, mech., etc. provisions noted above.”

UNIFORMITY OF INSPECTIONS COMMITTEE

February Question #2

Appliance Venting

“A residential atmospheric vented furnace is replaced with a direct-vented appliance and an atmospheric vented water heater remains connected to the existing Type B vent. Would this be appropriate for venting this single appliance, or is a reduction (or relining) required?”

For this example let’s say the flue is 6 inch and the remaining water heater connector is 3 inch.”

Yes, Appropriate the way it is.	15	100%
No, Needs to be relined.	0	No votes

Total votes: 15

Comments on this topic:

A) “See IFGC (MN amendments) Sec.503.6.9.1, Exceptions 1. & 2.”

B) “Both sections **503.5.5 and 504.28 in the IFGC** allow the vertical vent to be up to four times the area of the connector. The area of a typical four-inch water heater vent is 12.57 sq. inches; times four is 50.28 sq. inches. The common (vertical) vent could be up to eight-inch diameter (50.27 sq. inches). The **tables in 504** do not address a minimum size for the common vent of a natural draft appliance. Too many assumptions in the question and answer; what is the actual size of the connector and common vent?”

C) “It appears you can typically continue venting a single water heater through a larger vent. The **GAMA** tables and vent sizing charts typically only give maximums. They no longer give minimums (they used too).”

February Question #3

Vapor retarder under slab

“Is the vapor retarder of IBC 1910 or IRC 506.2.3 required to be placed directly under and in contact with the concrete floor, or may a layer of sand be placed on the vapor retarder prior to pouring the concrete be considered an “alternate method”?”

Does the vapor retarder need to be directly under the slab?

Yes	16	53%
No	14	46%
Total votes: 30		

Comments on this topic:

- A) “**IRC 506.2.3** requires the vapor retarder "shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists." So, yes, it is required to be placed directly under and in contact with the concrete floor. I would also say that, yes, I would approve as an alternate putting a cushion of sand over the top of the vapor retarder unless the sand is the type they have in Ramsey that continues to weep water for decades. But if it is your normal, inert, water-free sand, why not? Is there any rule that requires a concrete floor in a basement, slab on grade house, or heated garage? Could I use pavers? What about class V? Would I still need the vapor retarder?”
- B) “I believe the intent for the vapor barrier is to minimize moisture migration from the ground to the building. The location of the vapor barrier would make little difference for that intent. The concrete experts would require placement of sand over the plastic and in direct contact with the concrete to minimize curling of the slab. The mold experts would not allow sand in the confined area between the slab and the plastic, as it is an excellent breeding area for nasties. The placement of sand on top of the plastic would be an acceptable alternate but I personally would use an open graded gravel vs. sand.”
- C) “The most informative discussion that I've found on the subject of the under-slab vapor retarder is located at the following link (highlight the link, right-click, and select "search the web" to follow the link). I encourage you all to read the article and tell us what you think.”
[http://www.buildingscience.com/document ... main topic](http://www.buildingscience.com/document...main_topic)
- D) “I'm convinced by available science that best practice and the intent of the code are served only by assuring that the vapor retarder is placed in contact with the slab. Placement of a sand blotter between the slab and the vapor retarder provides a reservoir of moisture to migrate upwards through the slab, to condense on the underside of the floor covering, providing a perfect environment for mold and defeating the purpose of the vapor retarder.”
- E) “The "poll" question is not the same as the "discussion" question. The discussion question asked if the vapor retarder was "required" to be directly under and in contact with the slab. The code is pretty black and white on that. The "poll" question asks if the vapor retarder "need be" directly under the slab. I might say that, yes, the code requires the vapor retarder directly under the slab but, no, it not need be directly under the slab to properly perform its function. The poll question is more a matter of opinion.”
- F) “Yes, the vapor barrier is required (see exceptions), no it does not have to be in direct contact with the slab. I reference the **2006 IBC commentary volume 2 section 1910** " The tendency for concrete to develop both plastic and drying shrinkage cracking and the slab has a tendency to curl because the bottom of the slab remains moist longer than the top portion due to the vapor retarder... if none of the exceptions apply; one solution would be to place a 2-3 inch layer of sand on top of the vapor barrier prior to concrete placement. The sand will absorb some of the excess water from the concrete and allow earlier finishing. If a layer of sand is used, it must be compacted by wetting the day before the concrete is placed. However, if

UNIFORMITY OF INSPECTIONS COMMITTEE

the sand is to function effectively as a "blotter", it must be free of drainable water at the time of concrete placement". This leads me to believe you can place sand between the concrete and the vapor barrier. That's all folks."

G) "The IBC commentary would lead one to believe that a blotter of sand under the slab is acceptable. But are we being lead or mis-lead? How much sand is acceptable? 2 inches? 4 inches? 2 feet? Isn't a moisture blotter exactly what we seek to avoid by requiring the vapor retarder? Again, I refer you to Joe Lstiburek's website which has posted a thorough discussion of this matter.

[http://www.buildingscience.com/document ... main_topic](http://www.buildingscience.com/document...main_topic)

The science is clear. It is detrimental to trap a sand blotter of moisture between the slab and the vapor retarder. The moisture has only one way to dry, through the slab. This is not my opinion. This is basic physics. Curling and shrinkage of the slab can be avoided by using only enough water in the mix to support curing. Quality concrete is the result of curing not drying. A quality concrete mix wouldn't need a blotter to absorb excess moisture. There wouldn't be any excess moisture."