



SUNCREST RETAIL PLAZA  
AT FULL OCCUPANCY

# FOCUS

## DIRECTOR'S CORNER

by Clay White

### BUILDING AND ENERGY CODE UPDATE

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The latest version of the International Codes went into effect on July 1, 2010. The codes are updated on a three year cycle and the Washington State Legislature adopts the various codes subject to state amendments. This version, the 2009 International Codes, includes some changes that raised concerns about balancing the need for affordable construction versus the costs for some new fire and life safety requirements. ***Chief among these changes is the requirement for sprinklering new single family residences. The Washington State legislature voted to NOT adopt that particular building code requirement.*** If you purchase a copy of the International Codes, be sure to visit the website listed below to get your own copies of the Washington State amendments.

There have also been questions regarding the delay in implementation of the 2009 Washington State Energy Code. As you may know, Governor Gregoire sent a letter to the State Building Code Council (SBCC) requesting that the implementation date be delayed to April 1, 2011. The following information is from the Washington State Building Code Council's website:

*In response to a request by the Governor, the Council took action to delay implementation of the Washington State Energy Code. The Council (unanimously) passed two motions:*

*1. to enter into emergency rulemaking for the purpose of delaying implementation until October 29, 2010.*

*2. to enter into regular rulemaking to determine whether implementation should be further delayed until no later than 4/1/11.*

*Public hearings will be held September 10 and October 15 to take testimony on the final implementation date.*

It is important to note that the council's action only effects the implementation date of the code. It does not reopen the code for changes. For more information visit the SBCC website at: <http://www.sbcc.wa.gov/>

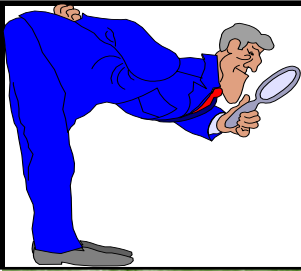
As of July 1, 2010, any building plans submitted for permit and plan review, will be reviewed under the new 2009 International Codes. Staff have compiled a new "Residential Code Summary" that incorporates the changes in the codes; this document is available at the Building Division office or at the Land Services webpage at [http://www.co.stevens.wa.us/landservices/building\\_forms.php](http://www.co.stevens.wa.us/landservices/building_forms.php). We also are planning to provide an informational workshop this coming fall to identify the everyday changes that will affect nearly every project. We will announce the day and time in various ways, so keep in touch if you are interested in keeping current with requirements. Let us know if you have any particular area of concern you would like discussed. If we don't have time at the workshop, our inspectors are available to sit down one on one to provide information and to learn about the issues you face in the field or on the drawing board.

#### CHANGE IN LAND SERVICES OFFICE HOURS

If you plan on visiting the Land Services offices, please know that due to budget cuts, the Land Services office is CLOSED for the following mandatory furlough hours each month (except November & December adjusted for holiday):

2nd Friday      11:00 am to 4:30 pm                      4th Friday      8:00 am to 4:30 pm

**INSPECTOR GADGET: BUILDING CODE CONNECTIONS**



**PROVIDING CODE INFORMATION AND ANSWERING QUESTIONS FROM THE CONSTRUCTION FIELD.**

**QUESTION:** I am building a new home and the glazing ratio to the conditioned floor area will be over 20%. Is R-19 wall insulation, R-38 ceiling insulation, R-30 floor insulation and a window U-value of .35 acceptable for compliance with the Washington State Energy Code (WSEC).

**ANSWER:** NO. WSEC 2001 Table 6-2 Unlimited glazing is allowed under options in Table 6-2 of WSEC. Option V, if the window “U” value is 0.35 and R-19 wall cavity insulation + R-5 foam sheathing, R-38 ceiling insulation and R-30 floor insulation. Option VI, if the window “U” value is .30 and R-21 wall insulation, and energy (high heel) roof trusses with R-38 ceiling insulation. Option VI requires R-49 ceiling insulation if standard roof trusses are used.

**QUESTION:** When installing a dishwasher that drains into a garbage disposal, does an airgap need to be installed above the flood level of the kitchen sink?

**ANSWER:** YES. Uniform Plumbing Code 2006 Section 807.4 No domestic dishwashing machine shall be directly connected to a drainage system or food waste disposer without the use of an approved dishwasher airgap fitting on the discharge side of the dishwashing machine. Listed airgaps shall be installed with the flood-level (FL) marking at or above the flood-level of the sink or drainboard, whichever is higher.

**FIELD NOTES: Energy Code Update** by Mike Clash



The Washington State Energy Code and the Ventilation and Indoor Air Quality Code have been in effect since 1991. The energy savings designed into the code has been well documented. Now, after working with the code for a time, we get into a routine and may not realize when the code is revised. A small change was incorporated in the 2006 revision that came into effect July 1, 2007. This change effected the R-3 (single family residence) unlimited glazing option with a glazing “U” value of 0.35 or less. The revised option with a glazing U-value of 0.35 or less now requires an exterior wall insulation value of R-19 + R-5 foam. There is still an option with unlimited glazing that allows the R-21 wall option, but the window “U” value has been reduced to 0.30 or less and the attic insulation has been increased to R-49 or R-38 Adv. Advanced framing in the attic requires raised heel trusses or rafters that allow full insulation value to continue to the exterior wall. Other options are still included that require the amount of glazing as a percentage of floor area to be

computed. Prescriptive requirement charts for Climate Zone 2 are available at the Stevens County Building Dept.

The Energy Code has achieved energy savings with increased insulation, better windows and a tightly sealed envelope. However the debate continues on how or if building durability is affected by moisture as a result of these code requirements. Concerns have been raised about adding plastic to the inside walls, and others question the air sealing techniques. These questions create a reluctance to follow the code.

On the coast in Seattle, where there is high moisture for much of the year, some premature failures have occurred in exterior wall systems used in multi-family structures. These failures bring into question the current design and construction practice, material use, and building code requirements. A survey was carried out on exterior wall construction of multi-family buildings in areas of high moisture loads, but the surveys were voluntary and addressed only a small percentage of units, so the results do not necessarily indicate large scale problems.

In order to establish a better database of information, the City of Seattle initiated a research project to study past and present performance of typical wall construction. A project building was constructed in Puyallup, Wash. with more than 10 separate monitored wall cavities. The heavily instrumented wall cavities were tested for 3 years, encompassing the seasonal changes in the region. Part of the overall project investigated the response of the walls as a function of weather-resistive barriers, wall venting or ventilation, and the influence of interior moisture generated by the building’s inhabitants.

The “Building Enclosure Hygrothermal Performance Study”, by Dr. Achilles and the Oak Ridge National Laboratory, assessed the performance of a set of wall systems (primarily stucco-clad) to heat, air and moisture. A copy of the report is available through the Washington State University Energy Web site.

*Field Notes Continued on Page 3*



*Field Notes Continued from Page 2*

The design industry has realized that one of the least understood areas of building performance is durability. Cost factors in the up-keep and maintenance of buildings are ever increasing, so the selection of features that can be attributed to the durability and service of a building are critical during the design phase. The presence of moisture in all three states, - vapor, liquid, and solid – influences the durability performance of the structure. However, it is our present level of understanding of the moisture transport phenomena that limits our technical ability to predict the durability performance of buildings. This includes the complex (heat, air, and moisture flow) interaction that is present at both the material level and at the system and subsystem building envelope level.

Through real life testing, laboratory data and advanced modeling (ASTM 2001), hygrothermal design tools are being developed to predict the performance of the prescribed code wall cavities. Some of the conclusions about the performance of wall assemblies in the Pacific Northwest marine climate that were learned from the test structure are:

- *The amount of cavity insulation does not change the moisture performance of walls significantly. Both R-11 and R-21 walls had similar moisture accumulation for the test years examined.*
- *Walls constructed with R-13 cavity insulation plus R-5 foam sheathing provides better moisture performance than a wall with R-21 cavity insulation only. Combined with a smart vapor retarder, the R-13+R-5 construction provides excellent performance.*
- *Cladding ventilation is effective at lowering the wood moisture content of insulated wall cavities. A fully ventilated cladding that includes openings to the exterior both high and low on the wall is critical. Simply providing an air space behind the cladding without openings to the exterior is not effective.*
- *Vapor retarders with a dry cup perm rating less than 1 are important in the Pacific Northwest climate. The use of a smart vapor retarder provides additional benefits by allowing additional drying to the interior from the wall cavity in the spring and summer. This is likely true for other marine climates.*
- *Long term study of wall performance under a variety of environmental conditions is needed to provide a reliable performance evaluation.*

The project provided information on a variety of wall assemblies, using the best test equipment and strategies available. However, a number of issues arose that lead to the development of some further research and development recommendations. These include:

- *Additional and more accurate instrumentation is needed in all test walls to further assess the movement of moisture in the walls.*
- *Product specific moisture content correction factors need to be developed.*
- *Window (opening) cavity effects need additional quantification.*
- *Additional wetting studies could be done, which would significantly advance modeling capability.*
- *Further experiments with identical cladding color on all walls should be conducted.*
- *Additional OSB and plywood products should be studied to assess their performance in wall systems.*
- *Further investigation should be done on the apparently promising effects of variable permeability "smart" vapor retarders.*
- *Further examination of foam clad wall systems should be conducted.*

I thought the test results were interesting and provided some support of the codes that we are required to follow. The wall assembly that failed in the test, which formed mold on the sheathing, was unvented stucco and utilized paint as the vapor barrier. The limited vapor control theory allows a wall cavity to accept more moisture but also allows it to dry faster, when conditions permit. The study further demonstrated that a wall with a 1 perm vapor retarder worked better at keeping the maximum moisture lower when the season is wettest. Additional protection may be provided by using a new product called a "smart vapor retarder". This product has variable vapor transmission characteristics which allow moisture to drive from the exterior to the interior, or back through the vapor retarder when spring heat or sun on the wall would cause the moisture in the cavity to vaporize. The brand tested was called Mem-Brain™ by CertainTeed. The wall with the exterior foam also worked well by keeping the cavity warmer, with less chance of condensation occurring.

The use of vapor retarders will continue to be debated, but through more scientific testing we are seeing that the theories and models are valid. What is the best product or method of vapor control for your next house? That may depend on the site, exterior siding, interior finish, lifestyle of the occupants and other variables. All of the vapor control methods work, for most applications, in our climate, due to less moisture loading and seasonal drying. Understanding the process of moisture movement in houses, proper flashings at roof penetrations, following manufacturer's window and door flashing requirements, and controlling site drainage are all critical to the long term performance of houses.

Copies of the study can be obtained through the Washington State University Energy Code web site, or stop by the Stevens County Building Department. If you are concerned about the longevity of your homes, your building department staff has information available and will be happy to discuss your building questions.



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**Fast Track:** The Land Services Planning Division offers fast tracking services for Site Analysis applications every Thursday with an appointment (509-684-2401). The review is done while you wait. We schedule these appointments every 30 minutes. It is very important that the applicant has the Site Analysis application filled out, including tax parcel number and legal description, accompanied with a Site Plan that includes everything already located on the property, anything proposed, the distance from all four property lines, the distance between the structures and, if there is a lake, stream or wetlands, how far the proposed development is from that water body or wetlands. If your project is for an outbuilding, deck or other small addition to your existing home, etc, then you can also schedule a fast track appointment with the Building Division following the fast track review with the Planning Division. You will need to coordinate the appointments by contacting the Building Division at (509) 684-8325.

The Planning Division also offers a “completeness review” for other land use applications on any day of the week. Just contact us at (509) 684-2401 and schedule an appointment with a planner to review your application for completeness prior to submitting the application. This review will establish that your application is either complete or you will go away with a list of items you need to provide to us.

**Application Submittals:** All of the applications for the Planning Division include a checklist as a coversheet that identifies all of the items you will need to provide at the time you submit your application. If all required items are not submitted, your application could be considered incomplete and will be returned to you until such time as you provide the missing information. The costs of the applications are located on our website at [www.co.stevens.wa.us/LandServices/index.php](http://www.co.stevens.wa.us/LandServices/index.php), under Applications and Forms. Just look for the fee schedule. All of our applications are also in PDF fill-in format for your easy use.

**Addressing:** The Planning Division no longer does the addressing for the County. You need to contact Eva Shoemaker-Maffei, at Information Services (509) 684-7505 or in Room 213 of the Stevens County Courthouse.

**Zoning:** Zoning information is also located on our website. Click on Plans and Ordinances, click on Title 3 and scroll down to the bottom of the page; you will see the zoning maps. They are broken down into several areas located within the county, and a legend will tell you the zoning designation of your property. There is no minimum lot size in the county, just density.

**Tax Parcel Information:** The Assessor has a very helpful website in locating tax parcel numbers, addresses, property owners, etc. The Assessor’s Office can be reached at (509) 684-6161. Their website is [www.co.stevens.wa.us](http://www.co.stevens.wa.us). (Click on Parcel Information.)

**Other Questions?** If you have a question about subdividing a piece of property, are wondering if a particular piece of land is considered a “buildable lot”, or have other land use development questions, contact the Planning Division (509) 684-2401. We are here to help you through the process.

**Staff and Telephone System Changes:** The Planning Division’s front desk person, Barb Lil’Jon, took another position in March with a local attorney’s office. Due to county budget cuts, the position has not been re-hired. As a result, an automated answering system is now in place for both building and planning. It offers the following selections: **#1** Address information.

**#2** Assessor Parcel information. **#3** Environmental Health for septic permit/test hole information. **#4** Planning information on zoning, platting, site analysis. **#5** Building information for building permits, inspections. The commonly requested phone number of Labor & Industry for electrical permits is also provided. Because there is no front desk person now in Planning, please check in with the Building Division when you come to the Courthouse Annex. Building staff will call downstairs and let them know you need to speak with Planning staff.