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City Dweller's Guide to the Purchase and Maintenance of a Country Home

City dwellers usually don't have to think about where the water in their faucets comes from or where their wastewater goes after it leaves the bathroom. Other concerns not generally felt by the city dweller are homesite drainage and the detrimental effects of surface and subsurface water. Many of the country homes in Sonoma and Marin County are self sufficient in terms of domestic water from a well and wastewater disposal in septic systems. These amenities generally operate efficiently but occasionally need attention or replacement.

Water Wells

Water wells have openings or a screen at depth within the groundwater zone that allows water to flow into the well casing or pipe. An electric pump brings the water to the surface where it generally flows into a pressure tank. From the pressure tank the water flows into the home for use. The parts and machinery at each step will eventually wear out and may need to be replaced. In some cases the groundwater source or aquifer has limited capacity for water to flow into the well or the capacity may lower over time. Limited capacity can translate to a temporarily dry well and stoppage of flow to the home. A low capacity well can have the available groundwater supplemented with a holding tank that fills slowly during times when domestic use is not required. A well expert is generally hired during escrow to evaluate the condition and anticipated longevity of a domestic well.

Wastewater Septic Systems

Domestic wastewater generally flows from the home into an outdoors septic tank where solids separate and remain in the tank. The tank is intended to catch and hold solids and required periodic pumping to maintain storage capacity. In most cases liquids flow from the tank into a leach field with one or more underground trenches filled with gravel and capped with soil. The wastewater seeps into the ground surrounding the trenches. Over time leach fields may lose their ability to receive wastewater and new lines may need to be constructed in fresh ground.

A septic system consultant is routinely engaged during escrow to evaluate the condition of an onsite septic system and may recommend upgrades to an inefficient septic system. Periodic inspections are recommended to keep the septic system functioning properly.

Drainage

Most hillside and some flat land lot problems are associated with water drainage. Uncontrolled water from broken pipes, septic systems or wet weather is generally the primary cause of slope damage. Therefore, drainage and erosion control are the most important aspects of home site stability. Drainage and erosion control devices must not be altered without competent professional advice, and maintenance must be carried out to assure their continued operations. When erosion features, ground soaked conditions, or foundation distress have occurred, the services a geotechnical expert are typically engaged during escrow. The country property owner will have an ongoing responsibility to monitor his property's drainage conditions on a regular basis.

The following is a checklist of recommended procedures for the homeowner:

1. Check roof drains, gutters and downspouts to be sure they are clear. If you do not have roof gutters and downspouts, you may wish to install them. Without gutters and adequate drainage, water falls from the roof eaves and collects against the foundations and basement walls which can be undesirable.
2. Clear surface and terrace drainage ditches and check them frequently during the rainy season, using a shovel, if necessary. Ask your neighbors to do likewise.
3. Surface drainage ditches and subdrains must be properly designed and constructed so that a constant downward gradient of not less than two percent is maintained. Drains must be watertight. Joints must be secure and leaks need to be fixed as soon as they are found. Be sure that all drainage ditches and subdrains have outlet drains that are open and completely unobstructed. Subdrains should be tested during dry weather. Usually this can be done simply with a hose. If blockage is evident, you may have to clear the drain mechanically.
4. Monitor the use of hoses and sprinklers. During the rainy season, little, if any, irrigation is required in the North Bay. Over-saturation of the ground is not only necessary and expensive, but can cause damage.
5. You should be aware of what is occurring on neighboring properties. Water backed up on adjacent areas or uncontrolled offsite drainage may eventually affect your property.
6. Water should not be permitted to collect or pond on your home site. Ponded water will tend to either seep into the ground, weakening fill or natural ground, or may overtop slopes and cause erosion. Once erosion is started, it is difficult to control and severe damage may result rather quickly.
7. Roof drains and gutters or downspouts should not be connected to subsurface drains. Subdrains are constructed to take care of ordinary subsurface water and cannot handle the overload from roofs during a heavy rain.
8. Loose soil or debris should not be left on or dumped over slopes. This could lead to a slide or mud flow that may clog terrace drain or cause damage to the slope or structures on or adjacent to the slope.
9. Water should not be discharged into subsurface "gravel and pipe" blanket drains close to slopes. These drains are sometimes used to contain and transport excess water when other ways of disposing of water are not readily available. Overloading these drains saturates the ground and, if located close to slopes, may cause slope failure.
10. Surface water should not be discharged into Septic tanks or leaching fields. Septic tanks are constructed for a different purpose. Overloading a septic system artificially during the rainy season may cause a malfunction which may in turn pose a health hazard.
11. Slopes should not be over-irrigated.
12. Hoses and sprinklers should not be left running on or near a slope, particularly during the rainy season. This will increase ground saturation which may cause a slope failure.
13. Water should not be allowed to pond against foundations, retaining walls or basement walls.
14. Groundsoaking can also lead to activation of clayey soils with shrink/swell potential. Such soils may undergo damaging volume changes upon wetting and drying that can damage foundations and concrete flatwork.
15. Swales that have been graded around your house or the lot pad should not be blocked and the grade should not be modified without the advice of a geotechnical consultant.