

THE SCOOP ON DIRT

Dirt is a vital component in the construction of all homes. While it is easy to underestimate its importance, the fact is homes are built on and surrounded by dirt. It must be treated like the critical building material it is, or there will be problems, and dirt problems create house problems.

Several “dirty” issues regularly faced by homeowners include signs of settling, excessive foundation cracks, settling of dirt around the structure, water draining toward, against or ponding around the home, and water seeping into the basement or crawl space. Erosion of dirt surrounding a home or building site; and soft, loose soil, and cracking, buckling or settling of driveways, patios and sidewalks are also problem indicators.

Address dirt issues prior to and during construction, especially on sites where previous excavation, grading or filling has occurred and/or if there are expansive soil conditions. A pre-construction soils report can be invaluable. Geotechnical engineers analyze soils and recommend measures for appropriate foundations.

Pre-existing house pads may have been contracted for the bottom dollar with no requirements for clearing or compaction placed on the contractor. Grading may have been performed without the required permits and additional fill work may be necessary before construction can begin. To avoid pre-existing dirt problems, consider the pros and cons of purchasing property that includes an existing building pad. Local municipalities are stringently enforcing grading requirements, and the only person they have to cite for a violation is the current landowner, even if they did not perform the work.

During construction previously hidden (buried) conditions should be examined for potential trouble, including ground water, rock, or loose soil. An excavation (dirt) contractor knowledgeable about soils will be able to troubleshoot problems and work with the team to design solutions.

Soils supporting a home must have sufficient strength to bear the applied weight, and fill must be properly compacted to sustain loads. Even if the footing is not bearing on the fill, areas where concrete slabs are placed must be adequately compacted to avoid future settling. A property owner should hire a soils engineer to monitor the process and certify fill construction. At a minimum, random areas of each compacted layer of soil should be analyzed by a soils testing firm.

Failure to control underground water early in construction can also have dire consequences. An owner’s initial reaction may be to proceed with construction in an attempt to avoid additional costs and prevent delays. This will likely lead to issues in the home, such as water soaking into basements and/or crawl spaces. Solutions to these problems are more expensive and complicated than those that are available to homeowners during the original construction process.

Drainage and water management should also be addressed during design and construction. A proper drainage plan sheds water away from the home and directs surface water to appropriate areas. Correct water management involves adequate waterproofing of the foundation, drainage panels, functional footing drains, and rain gutters with downspouts routed away from the home. More complex site-specific water concerns, such as the presence of underground water flows or a high water table, must be analyzed and addressed for each situation and could impact a home’s design.

Unfortunately, and primarily due to a lack of planning and substandard work, soil and water problems are discovered after construction is complete and when it is more difficult to fix problems. An engineer can analyze the affected area, develop a remedy and work with a qualified contractor to resolve issues. Some sites require little investigation; the project area is well documented, or the solution is straightforward. In these situations, an engineered solution may not be required. Hire a certified contractor and one experienced in remediation.

ExactEx is a general contractor, specializing in engineering, excavation, paving and grading. Certified professionals regularly help homeowners in trouble pull together the right team to address dirt and water related problems. Owners often think of engineers as an unnecessary expense, and some contractors consider them adversaries instead of allies. The reality is these highly qualified professionals can design solutions to prevent future problems or save a problem home. Money spent on these services up front is not wasted; and may save thousands of dollars in the future.

The right construction team along with proper compaction, water management, drainage planning, and engineered solutions to problem soil conditions will ensure a home is built on solid ground, or create solid ground beneath an existing problem home.