

Managing the Risks of Going Green

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5600 Wilshire in Los Angeles features a healthy indoor environment for residents through the provision of low-emitting materials, such as carpets, paints, and adhesives.

THE RISK OF CONSTRUCTION defect litigation in attached housing has become quite familiar over the last 15 years. The movement toward green building in residential settings has brought more complexity and an increased risk of litigation that must be addressed.

The standard risks for all attached housing, whether offered for sale or for rent, include a laundry list of potential disconnects. These range from water intrusion through inferior window, wall, and roofing designs and installations; related indoor air quality concerns driven by moisture, mildew, and mold growth; acoustical performance of floor/ceiling and common-wall assemblies; homeowners association (HOA) and property management issues surrounding a lack of preventative maintenance; as

well as structural, foundational, and mechanical, electrical, and plumbing (MEP) issues in some communities in selected regions of the United States.

The paradigm shift from conventional to green building is creating further confusion and increasing the risk of litigation through a lack of clearly defined standards specific to design concept, site planning, building product, component selection, construction processes, commissioning, and actual building performance. As expectations for good building performance have grown, so too has the risk of failure for not delivering the promised performance as well as the potential risk for litigation. The following discussion will attempt to clarify what constitutes green or sustainable development and to assess the possible risks.



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Residential Development and Process

Green or sustainable development has expanded from its application originally to commercial office buildings to the development of individual homes, attached townhomes and condominiums, and small- and large-scale rental properties. Large-scale master-planned communities also are being developed with the goal of being sustainable.

The concept of risk management in connection with green building requires a focus on three essential elements: 1) integrated design and construction; 2) third-party verification; and 3) measurement of actual system performance through a commissioning (testing) process.

Voluntary Green Building Programs

Successful green development programs integrate both design and construction elements. At present, most are pursued on a voluntary basis, although jurisdictions at various levels are taking up the cause, resulting in the rapid adoption of development standards that effectively constitute a greening of building codes. At some point in the future, much of what is now voluntary will likely be required as a matter of course.

Not all voluntary programs rely upon third-party verification or measurements of actual system performance upon completion and startup of a project. While some programs require more technical



The Stadium Park Apartments is an infill community in Anaheim, California.

discipline and rigor than others, the driving forces behind all are common and include the awareness of global warming issues, increasing customer expectations, desire for healthier living environments, and a perceived need for stronger environmental stewardship. Following are several programs outlined and ranked starting from the least comprehensive and progressing to the most comprehensive: A) local government-spon-

sored green building initiatives; B) the National Association of Home Builders' (NAHB) Green Building Guidelines; C) the U.S. Environmental Protection Agency (EPA) Energy Star Certified New Homes; D) the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Home (LEED-H)—pilot testing is expected to launch the rating systems on November 7; and E) the Department of Energy's Zero Energy Homes.

Leadership in Energy and Environmental Design

It is important to understand how green or sustainable compliance can be achieved and how it is measured. In this context, the LEED program guidelines promulgated by the USGBC provide a good overview, as intellectual objectivity is well developed in this particular family of compliance programs. LEED covers a range of product types including existing buildings (EB), new construction (NC), core and shell (CS), commercial interiors (CI), neighborhood developments (ND), and residential homes (H). Each of these focused disciplines addresses six major categories of concern: 1) sustainable sites; 2) water efficiency; 3) energy and atmosphere; 4) materials and resources; 5) indoor environmental quality; and 6) innovation and design process. Furthermore, within these six disciplines, there exist ranges of *greenness* determined by various

factors that drive credit scores and measure the level of achievement for buildings so constructed.

LEED-H includes both affordable single-family and low-rise (three stories or less) multifamily projects. Currently, multifamily housing structures that are more than three stories high are eligible to participate in LEED for new construction (LEED-NC). LEED-H standards involve four levels of building sustainability: LEED Certified, LEED Silver, LEED Gold, and LEED Platinum. LEED-H was designed to assess and label newly constructed homes. It cannot be used to assess or label a portion of a home or a portion of a multifamily complex.

Having established standards, LEED provides for a third-party verification system to ensure compliance with the guidelines. This is implemented through a commissioning process that begins with project registration, follows through the construction phase, and results in

a project evaluation and ranking at the end. Finally, the need to manage expectations of building users flows directly from these green building compliance guidelines.

Regardless of the program selected by the project owner, decisions are made by different players at different scales that affect implementation as well as outcome. Developers engaged in large-scale, master-planned communities can influence several thousand homes over a long period of time and directly affect environmental issues through sustainable site selection, integrated design, and construction of regional infrastructure (water, sewer, drainage systems, and common recreational amenities); through land planning designs creating a variety of housing density opportunities; and through layout of transportation networks, which affect circulation, traffic flow, and trip generation.

On a local scale, individual contractors developing an isolated

infill site for attached housing or merchant builders purchasing finished lots from MPC developers are directly responsible for selection of environmentally friendly building products and construction processes that drive home energy efficiency, water conservation, indoor air quality, and even construction waste recycling.

The lifestyle choices of end users (homebuyers and renters) will also determine how sustainable a home or community can be. For example, as construction is driven to produce tighter building envelopes in order to achieve higher energy efficiency, the “breathability” of the conditioned residential space and the indoor air quality can be impaired depending on the heating, ventilation, and air conditioning (HVAC) design. Occupants generate much of the moisture within buildings by cooking, cleaning, showering, bathing, perspiring, breathing, etc. One must therefore be cognizant of building science principles sur-

rounding moisture, temperature, and pressure differentials across all elements of the building envelope (including wall and roofing assemblies)—particularly since climatic conditions and construction practices vary enormously across regions of the country.

Chandra Krout, of CTG Energetics, Inc., a green building consulting firm in Irvine, California, advises that properly designed mechanical ventilation must include adequate exhaust for both the bathroom and kitchen. Before LEED existed, many multifamily builders were not accustomed to providing ventilation to the outside from the kitchen. Understanding that minimum indoor air quality performance is a prerequisite for LEED. Project owners are developing innovative solutions through technology and design team coordination, and therefore are providing a healthier home for residents and lowering the risk for future litigation.

Litigation Risk of Going Green

Several potential problem areas for litigation may become manifest when considering green building. As consumers become more sophisticated and knowledgeable about green elements and their possible cost savings, they will come to expect results. The concept of overpromising and underdelivering suggests that project sponsors fail by misrepresenting the expected or forecast building performance. The failures can then result in higher than expected energy costs, higher water consumption, and/or higher off-gassing of volatile organic compounds (VOCs) resulting from the various building materials selected, including millwork, insulation, paints, and finishes. These particular products and their specifications can be selected to influence indoor air quality favorably, creating buildings that are healthy to occupy. **MFT**

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