

# Green Building Leasing Issues

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**Commercial leases aren't very green yet. But they will be, so be ready for the change.**

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**THE PAST FEW YEARS** have witnessed an exponential growth in green buildings. According to recent studies, total green building space has been growing at a 50 percent compound rate since 2000. At the end of 2008, there were 1750 “certified” green buildings and another 13,500 projects underway that were committed to achieve green building status.

The momentum toward green buildings is a result of local government mandates, aspirational goals of corporate tenants, and the growing number of institutional investors looking to invest in green buildings.

In many ways, green buildings may become as important to the real estate industry as elevators and air conditioning were in the 20th century. Green buildings are slowly redefining what constitutes a “Class A” office space. As a result, owners and investors of conventional buildings have become concerned that they may soon be perceived as holding obsolete or inefficient buildings that will be at a competitive disadvantage as green buildings become the preferred choice of tenants.

Environmental benefit is not the only reason why building owners and tenants are turning to green buildings. Because of greater efficiencies, green buildings have lower operating and maintenance costs over the life of the building. At the same time, studies have shown that

Leadership in Energy and Environmental Design (LEED)-certified buildings were able to command rent premiums of \$11.24 per square foot over conventional buildings and had a 3.8 percent higher occupancy rate. Moreover, LEED-certified buildings sold for an average of \$171 more a square foot than comparable conventional buildings.

Most of the earlier green buildings were owner-occupied. The past few years have seen a trend toward investor-owned buildings. This trend toward non-owned occupied green buildings brings with it a host of novel legal contractual issues that are not customarily addressed in commercial leases. This article will review some of the more common issues that need to be covered in leases for green buildings.

**WHY GREEN BUILDINGS?** • Since the advent of environmental regulation in the 1970s, the focus of federal and state environmental programs has been primarily on industrial and manufacturing facilities that emit significant quantities of pollutants. To the extent that commercial and residential buildings came under the regulatory microscope, it was usually due to the presence of damaged asbestos, lead-based paint, or leaking underground storage tanks.

### **Buildings Consume Most Of The Energy**

Buildings, though, have a significant impact on the environment. The building sector is the largest source of carbon emissions when direct emissions and energy-related emissions are taken into account. Buildings also consume the most energy in the United States of any sector with residential and commercial buildings responsible for 39.4 percent

of the total energy consumed in the United States. Residential buildings account for 54.6 percent of the energy consumed by the building sector. Annual Energy Review 2005. DOE/EIA-0384 (2005). Energy Information Administration, U.S. Department of Energy, July 2006, available at <http://tonto.eia.doe.gov/FTP/ROOT/multifuel/038405.pdf>. Most of the energy used for residential buildings is for space heating (30 percent), followed by water heating (12 percent), lighting (12 percent) and air conditioning (11 percent). Energy Information Administration 2004, 2001 Residential Energy Consumption Survey: Housing Characteristics Tables, available at [www.eia.doe.gov/emeu/recs/](http://www.eia.doe.gov/emeu/recs/recs2001/detail_tables.html)

[recs2001/detail\\_tables.html](http://www.eia.doe.gov/emeu/recs/recs2001/detail_tables.html). In the commercial sector, most of the energy is used for lighting (21 percent), followed by space heating (12 percent), air conditioning (9 percent) and office equipment (8 percent). Energy Information Administration 2002, 1999 Commercial Buildings Energy Consumption Survey: Consumption and Expenditures Tables, p. 124, table C1, available at [www.eia.doe.gov/emeu/cbecs/pdf/C1.pdf](http://www.eia.doe.gov/emeu/cbecs/pdf/C1.pdf).

### **Buildings Use Most Of The Electricity**

Buildings also account for 67.9 percent of the electricity consumed in the country with residential structures responsible for 48.8 percent of the total electrical demand. 2003 U.S. DOE Buildings Energy Data Book, available at [http://buildingsdata-book.eren.doe.gov/docs/DataBooks/2003\\_BEDB.pdf](http://buildingsdata-book.eren.doe.gov/docs/DataBooks/2003_BEDB.pdf). The energy used to heat and power buildings leads to the consumption of large amounts of energy, primarily from burning fossil fuels with 58 percent of the building end-use energy coming from fuel that is burned on-site.

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## **Buildings Responsible For Much Of The CO2**

The large amount of energy required by buildings generates significant amounts of carbon dioxide (CO<sub>2</sub>). Nationwide, commercial and residential buildings account for 38.1 percent of the nation's CO<sub>2</sub> emissions (approximately 2,521 metric tonnes). EIA Annual Energy Review 2005, U.S. Energy Information Administration, U.S. Department of Energy. Residential buildings are responsible for 20.6 percent of the total CO<sub>2</sub> emissions. U.S. Environmental Protection Agency, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006. It is estimated that CO<sub>2</sub> emissions from buildings will grow at a rate of 1.8 percent annually until 2030, faster than any other sector. *Emissions of Greenhouse Gases in the United States*, U.S. Energy Information Administration, U.S. Department of Energy, November 2007, available at [www.eia.doe.gov/oiaf/1605/archive/gg07rpt/pdf/057306.pdf](http://www.eia.doe.gov/oiaf/1605/archive/gg07rpt/pdf/057306.pdf).

In densely populated cities, buildings can be responsible for close to 80 percent of total GHG emissions. Indeed, a 2007 study by the New York City Office of Long-Term Planning and Sustainability calculated that the city's 950,000 buildings are responsible for 79 percent of the city's total greenhouse gas emissions.

## **Buildings Responsible For Other Greenhouse Gases**

Buildings may be associated with the release of other GHGs. For example, buildings are estimated to be responsible for seven percent of methane emissions from disposal of construction and demolition debris in landfills and incomplete combustion of wood in fireplaces and stoves. EIA, 2003 Emissions of Greenhouse Gases in the United States 2002, DOE/EIA-0573 (2002), available at [www.eia.doe.gov/oiaf/1605/archive/gg03rpt/pdf/057302.pdf](http://www.eia.doe.gov/oiaf/1605/archive/gg03rpt/pdf/057302.pdf). The extraction and manufacturing of building materials may also generate greenhouse gas emissions. Buildings also require enormous amounts

of raw materials. It is estimated that buildings use 40 percent of raw materials globally (three billion tons annually). Lenssen and Roodman, 1995, *Worldwatch Paper 124: A Building Revolution: How Ecology and Health Concerns are Transforming Construction*, Worldwatch Institute. It is estimated that 49 percent of sulfur dioxide emissions, 25 percent of nitrous oxide, and seven percent methane come from buildings.

## **Water Consumption And Waste**

Building-related environmental impacts are not limited to GHG and energy, though. Moreover, buildings use 12 percent of the potable water, with residences responsible for 74.4 percent of that total. See [www.epa.gov/oaintrnt/projects](http://www.epa.gov/oaintrnt/projects). EPA estimates that 136 million tons waste is generated from the construction, remodeling and, demolition (C & D) of buildings which accounts for approximately 35 percent of all non-industrial waste. Available at [http://www.epa.gov/osw/nonhaz/municipal/pubs/msw07\\_rpt.pdf](http://www.epa.gov/osw/nonhaz/municipal/pubs/msw07_rpt.pdf). See also U.S. EPA Characterization of Construction and Demolition Debris in the United States, 1997 Update Of the three waste streams, 48 percent of C & D comes from demolition, 44 percent from renovation, and only eight percent from new construction. Forty-three percent of the C & D waste is generated from residential sources. The most recent statistics suggest that between 20 and 30 percent of C & D debris is recovered for processing or recycling. The most common building materials that are recovered or recycled are concrete, asphalt, metals, and wood. *Characterization of Building-Related Construction and Demolition Debris in the United States*. EPA Office of Solid Waste, June 1998, available at [www.epa.gov/osw/hazard/generation/sqg/c&d-rpt.pdf](http://www.epa.gov/osw/hazard/generation/sqg/c&d-rpt.pdf).

## **Runoff**

Buildings and the transportation infrastructure that serves them replace natural surfaces with impermeable materials, creating runoff that washes

pollutants and sediments into surface waters. Urban runoff constitutes a major threat to water resources, as it has been identified as the fourth leading source of impairment in rivers, third in lakes, and second on estuaries.

### Indoor Air Pollution

According to EPA, Americans spend approximately 90 percent of their time indoors yet levels of indoor air pollutants typically average two to five times the concentrations found in the ambient or outside air. EPA also estimates that one out of every 15 homes have radon concentrations exceeding the recommended action level. *A Citizen's Guide to Radon* (Jan. 2009), [www.epa.gov/radon/pdfs/citizens-guide.pdf](http://www.epa.gov/radon/pdfs/citizens-guide.pdf).

### LOCAL GREEN BUILDING INITIATIVES •

It is projected that approximately 15 million new buildings will be constructed by 2015 and that if just half of new commercial buildings used 50 percent less energy the reduced CO<sub>2</sub> emissions would be equal to removing 1 million cars from the roads each year. *Landmark Program to Reduce Energy Use in Buildings*, William J. Clinton Foundation. See [www.clintonfoundation.org/news/news-media/051607-nr-cf-fe-cci-extreme-makeover-green-edition](http://www.clintonfoundation.org/news/news-media/051607-nr-cf-fe-cci-extreme-makeover-green-edition). It is not surprising, then, that state and local governments that have announced ambitious goals to reduce their greenhouse gas emissions and mitigate the impacts of climate change have turned their attention to the environmental impacts of buildings. However, these emission reduction initiatives will not achieve their objectives if they simply focus on newly constructed public buildings.

### The Need For Retrofitting

According to the latest census data, there are over 120 million residential buildings and over five million office buildings. Approximately 1.8 million residential buildings and 170,000 commercial structures are constructed annually while 44,000 commercial buildings are demolished each year. The vast majority of buildings in existence today will still be in use in 2015. At the current pace, 85 percent of the existing building stock will still be in existence by

2030. By mid-century, half of the building stock will still be in use. Thus, retrofitting and upgrading the efficiency of building mechanical systems will be necessary to achieve significant improvement. Marilyn A. Brown, Frank Southworth, and Therese

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K. Stovall, *Towards a Climate-Friendly Built Environment*, Pew Center on Global Climate Change 2005, available at [www.pewclimate.org/docUploads/Buildings\\_FINAL.pdf](http://www.pewclimate.org/docUploads/Buildings_FINAL.pdf). The first wave of local green building programs focused on new public buildings. As cities have begun to implement their green building initiatives, they have begun to realize that they will be unable to achieve their greenhouse gas reduction goals by imposing green building standards on new construction projects. As a result, the newer local green building initiatives are starting to require retro-commissioning or retrofitting of existing private buildings. The thresholds and performance standards vary with the jurisdiction.

### Initiative Mechanisms

The local green building initiatives are implemented using a variety of mechanisms including local ordinances or regulations, guidelines, executive orders, resolutions, building codes, energy