

## **A Case for Green Development – An Untraditional Approach to Generating Traditional Economic Returns**

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*Editor's Note: This article was first published in Expansion Solutions Magazine on Tuesday, February 2, 2021*

### **Abstract**

Since its primary emergence in the United States in the early 1970's, public opinion and subsequent policy at the local, state, and federal level has slowly evolved to recognize the importance and benefits of green development. As a result, more and more focus is being put on building and developing our communities in a way that is in harmony with our natural environment, social and cultural preferences, and in a way that recognizes and respects the limitations of our natural environment.

The following article looks at key aspects and pillars of green development, in addition to focusing on a broad range of economic considerations relevant to the practice. Topics include a general overview of green certification programs, green development's impact on the sustainable building material manufacturing industry, adoption and real estate growth in green certified multi-family and office real estate, and real estate market investment in sustainable building portfolios. Together, these topic areas tell the story of how green development can promote economic growth and resiliency while also promoting environmental stewardship and sustainability.

### **Green Development – A Brief Overview**

Green development is a concept that focuses on and includes a variety of different sustainable approaches to real estate and economic development. It incorporates and focuses on various issues including the efficient and appropriate use of land, energy, water, and other resources; the protection and stewardship of natural habitats and ecosystems; and a focus on community identity and resources. Additionally, green development provides a practical and flexible approach for achieving measurable progress across its guiding economic, social, and environmental pillars. Examples of common components and focus areas of pertaining to green development include:

- The integration of sustainable energy technologies to power buildings, which may include solar, wind, waste-to-energy recycling systems, and/or district energy.
- The integration of fixtures and equipment that focus on the efficient use of water and energy (i.e. showerheads, smart thermostats, toilets, light bulbs, etc.).
- The integration of green space which may include parks, green roofs, and other areas where plants and wildlife are encouraged to thrive.
- The use of eco-friendly building materials that help minimize air moisture intrusion, air pollution, and noise pollution in a building or home.

### **The Link Between Green Building Certification and Sustainable Building Material Manufacturing**

In parallel with an increased focus on green development from both the public and private sectors in recent decades, the Sustainable Building Material Manufacturing industry has continued to grow while producing the

materials that have fueled the advancement of green development. The Sustainable Building Material Manufacturing industry, which had revenues of nearly \$80 billion dollars in the United States in 2019 and saw total employment grow by over 50% over the last decade, produces building materials used during the construction and renovation of residential and commercial buildings, including Leadership in Energy and Environmental Design (LEED) and other green certified buildings which have largely fueled demand for the products and materials manufactured by the industry<sup>[1]</sup>.

The Sustainable Building Material Manufacturing industry produces a variety of different structural building materials, interior and exterior building materials (which make up 50% of the industry's total market segment), and other various fixtures and products that are incorporated into green certified buildings. Specific examples include:

- Energy-efficient doors and windows
- Energy-efficient sealing and insulation materials
- Wood-plastic composite and engineered lumber
- Sustainable structural materials such as recycled metals and composites
- Sustainable interior materials such as linoleums
- Sustainable exterior materials made from paper flakes and compressed earth block
- Plumbing components and fixtures made of recycled materials
- Building materials made of recycled or renewable plant materials

Additionally, other advancements in sustainable material technologies and an increasing number of homes being built across the United States have helped drive demand for industry products. For example, synthetic products used to mimic wood, stone or other natural resources have decreased in cost and are easier to install and maintain than traditional materials. These products also likely come with a lower price tag and have higher durability relative to their traditional counterparts. As a result, overall demand for sustainable building materials has increased in recent decades.

### **An Application of Sustainable Building Materials at Home and Abroad**

While there are numerous great examples both in the United States and across the globe of specific materials and/or buildings that have championed the pillars of green development, one interesting example is the use of mass timber in building construction. Mass timber construction utilizes various types of engineered wood, with cross-laminated timber (CLT) being the most common panel material. The material is cost-effective and requires little energy to manufacture. Mass timber structures are touted for their long lifespans, and their unique ability to remove carbon from the atmosphere can support cities hoping to add another tool to their toolkit aimed at addressing the reduction of greenhouse gas (GHG) emissions to help combat climate change. In fact, a piece of land with no building on it has a higher carbon footprint than land with a CLT building, according to The Climate Trust. With this in mind, mass timber does present some challenges for developers. Timber supply, building codes and investments have been obstacles for the mass timber industry, and in some cases local leaders have faced backlash from the concrete and steel industry for the use of the material<sup>[4]</sup>.

Over the next five years, the two largest buildings ever built with mass timber will come to fruition in very different parts of the globe. Milwaukee, WI is set to erect a 25-story mass timber apartment building in the summer of 2022, marking the world's tallest building of its kind until it is eclipsed by a 40-story mass timber office building expected

to tower over Sydney, Australia by 2025. Overall, the race to build the world's tallest mass timber building illustrates the enthusiasm among many architects and developers to use eco-friendly building material in driving a sustainable recovery[5].

### Measuring Growth – The Green Building Adoption Index (GBAI)

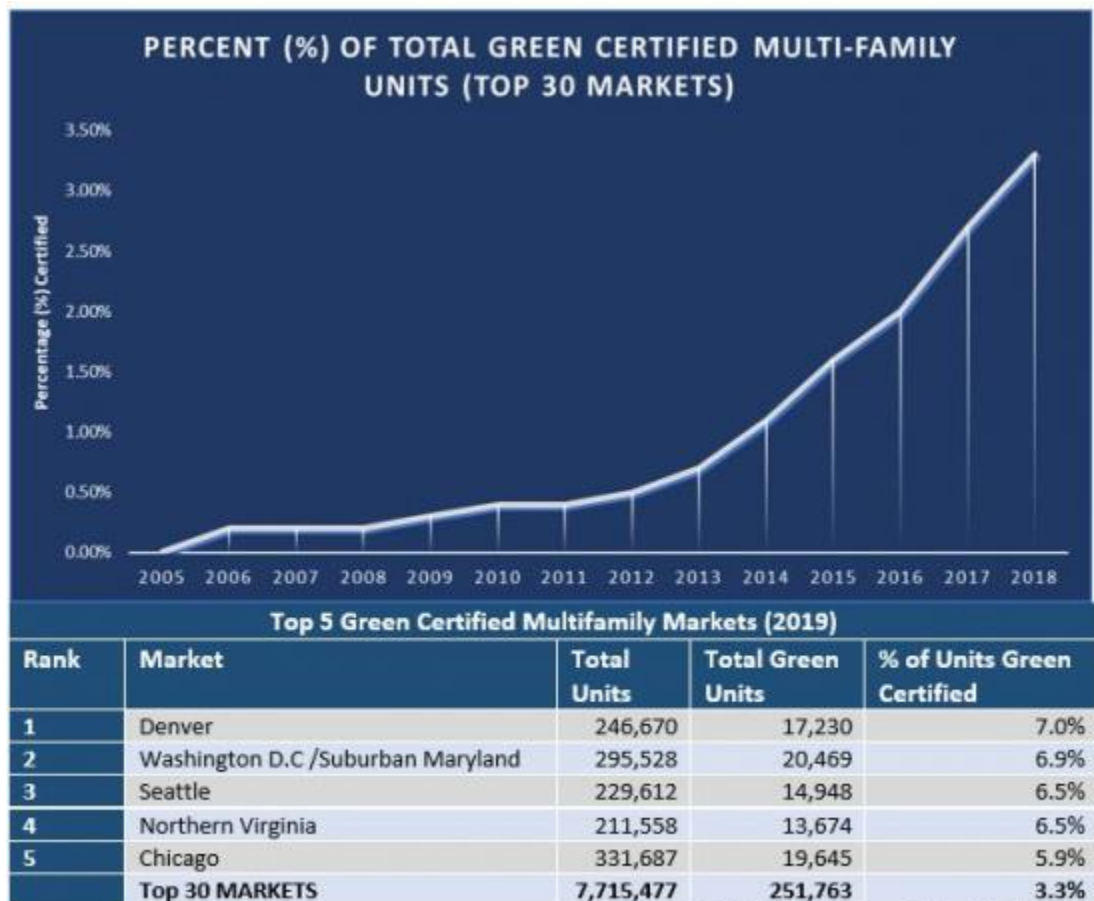
To measure a growing demand for more efficient “green” buildings over the past decade and track the real estate industry’s adoption of green building initiatives, CBRE Research along with its academic partners created the Green Building Adoption Index. Published annually, it uses a rigorous methodology to track the growth of green certified buildings (Energy Star, LEED, etc.) since 2005 for the 30 largest markets for multifamily and office real estate in the United States[6].

The following is a summary of highlights from the 2019 office and multi-family Green Building Adoption Index report:

#### Multifamily Market

In 2019, Denver led all markets in its percentage of multifamily units that were green certified, but the Multifamily Green Building Adoption Index showed that green building certification is on the rise significantly compared to just a decade ago.

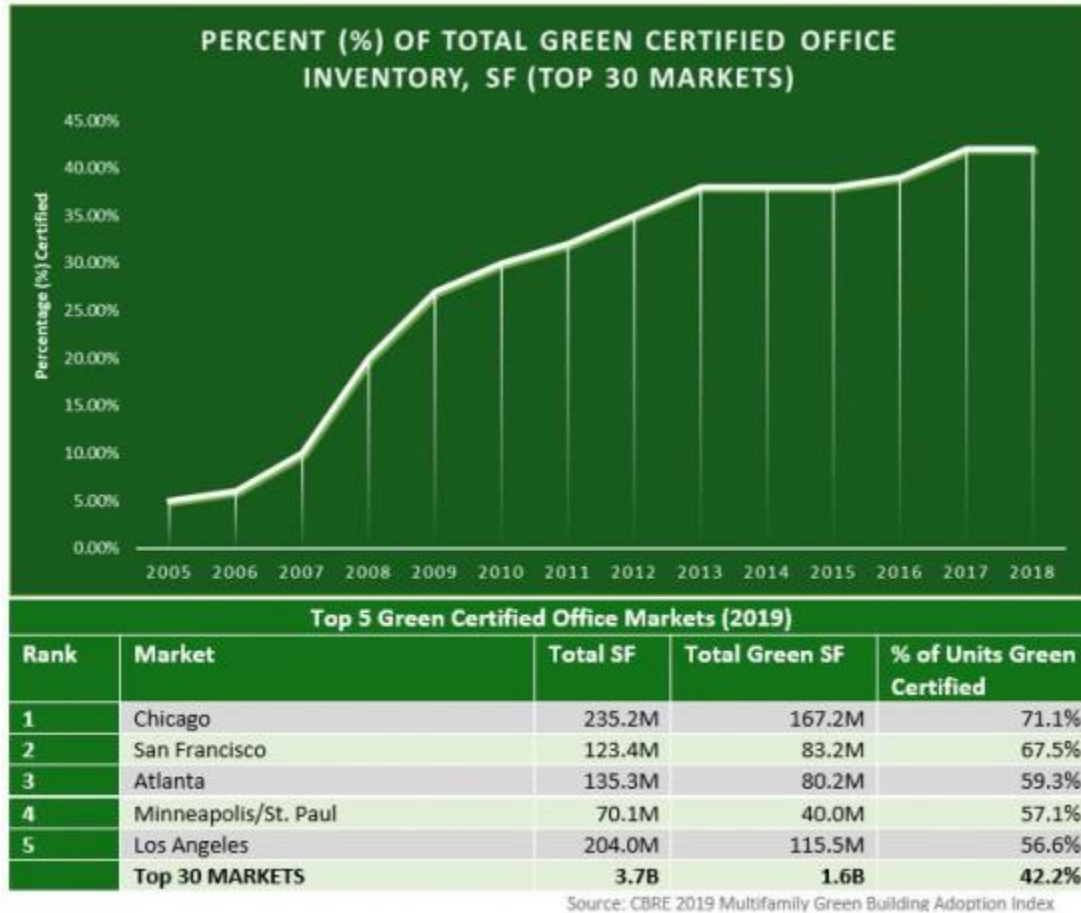
A total of 251,763 units, representing 3.3% of the 7.7 million multifamily units across almost 40,000 investment grade properties within the top 30 markets have been certified as “green”.



Source: CBRE 2019 Multifamily Green Building Adoption Index

## Office Market

In 2019, Chicago led all markets in its percentage of commercial office space that was green certified at 71.1%. In 2019, the Green Building Adoption Index showed 1.55 billion or 42% of total commercial office space across the top 30 markets as being green certified. This percentage rose significantly from 2000 to 2010, and has continued to increase, although at a slower rate in recent years.



## Real Estate Investment – A Focus on Environmental, Social, and Governance Objectives

Real estate assets around the globe are increasingly exposed to the impacts and risks of climate change, regulatory policy, and the onset of modern high-performance technologies and features in the commercial building stock. Real estate investors more-so than ever are expecting real estate investment providers to focus on environmental, social and governance (ESG) objectives that can be measured, and overall strategies that preserve and enhance risk-adjusted returns. In parallel with this, many real estate investment trusts (REITs) and other institutional investors are realizing that social and environmental factors have an impact on the value of a real estate property, and there is growing interest in the markets for sustainable building portfolios. For many, green buildings are a significant focus and strategic consideration when looking at real estate investment to preserve and enhance risk-adjusted returns.

In 2020, several major real estate companies and space users issued or plan to issue more than \$3 billion in bonds to finance environmental investments and sustainable property improvements. The largest deal is a \$750 million offering from industrial REIT Prologis. According to Prologis, the increasing use of green bonds comes from more certainty that they have become a less expensive source of financing, in addition to an increased focus from investors on ESG initiatives. Climate Bond Initiative, an international investor-focused not-for-profit supports their assumption noting that U.S. green-bond offerings in the second half of last year were oversubscribed by 2.7 times compared to 1.9 times for non-green bonds<sup>[7]</sup>.

## The Future of Green Development

While an increased focus on sustainability and green development is at the forefront of many ongoing discussions in both the public and private sectors, it will take a dedicated multipronged approach to continue to advance the pillars that will continue to guide green development in the future. Overall, it will take the continued efforts and focus by a diverse set of stakeholders including the development community, private industry, community leaders, elected officials, and others.

In addition to the many environmental benefits of green development including emission reduction, water conservation, waste reduction, and air quality improvement; green development has numerous benefits to economies both at the local and national level. For example, benefits include acting as a catalyst for existing and new industries focused on sustainable building and materials manufacturing and construction, increasing the value, lifecycle, and utilization of properties in our communities, and promoting a more productive and healthier workforce just to name a few.

To realize these economic and other benefits, policy and decision makers at all levels will need to continue to prioritize LEED and other measurable development programs that encourage and incentivize the public and private sectors to focus on green development and champion green development's economic, environmental, and social pillars. Additionally, both private developers and municipalities will need to dedicate the time and funding necessary to not only integrate green development practices into new construction projects, but also in the retrofitting of existing buildings and infrastructure. These investments will not only boost both direct and indirect economic activity in communities while continuing to bolster the growth of industries like general construction and sustainable material manufacturing and distribution; but also provide long term returns to investors in the form of energy savings, the reduction of carbon emissions, and the ultimate well-being of our communities. Ultimately, the hope is that these efforts will continue to act as a catalyst in ushering in an era of growth that takes a more holistic and interconnected approach to development while recognizing the needs and limitations of not only our individual neighborhoods, communities, and citizens, but also our planet as a whole.

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[1] IBISWorld

[2] <https://www.usgbc.org/leed>

[3] <https://www.bu.edu/sustainability/what-were-doing/green-buildings/leed/#...>(Leadership%20in%20Energy%20and,matter%20most%3A%20energy%20savings%2C%20water

[4] <https://www.smartcitiesdive.com/news/mass-timber-reaches-for-new-heights...>

[5] <https://www.smartcitiesdive.com/news/mass-timber-reaches-for-new-heights...>

[6] <https://www.cbre.us/research-and-reports/Green-Building-Adoption-Index>

[7] [www.CoStar.com](http://www.CoStar.com)

