CUSHMAN & WAKEFIELD

GOING GREEN

Towards a More Sustainable Future

Tbilisi, Georgia

MAY, 2021

Environmental issues are some of the most pressing matters at the forefront of global activism. Since the industrial revolution, technological advancement has endangered the world ecosystems while also outpacing their ability to cope, adapt and survive. The ideology of environmentalism has evolved to build resilience towards the effects of global climate change and to protect the Earth's resources needed for humanity's development on a global, regional and local level. With the risk of a global environmental collapse increasing at an annual rate, it is imperative that we take steps to address these issues, advocate for ecological accountability and conservation and restrict what could be detrimental to the planet as much as possible. What is needed, is better environmental policies, transformation of consumer habits and comprehensive changes in our lifestyle.

In line with ongoing sustainability activism and the leading role that real estate can play in contributing to environmental conservation, we are offering a series of articles, in which we will be reviewing the importance of greener orientation and sustainability in Real Estate. We will be touching upon what makes a building "green", the sustainable methods, materials and practices, financial benefits of developing eco-friendly buildings and the local and global contexts in which these practices play out. We will gradually narrow the focus onto our country, and assess where Georgian real estate stands on the road to sustainability.

This publication, introduces the concept of green buildings and brings LEED certification on stage reviewing the primary assessment criteria; it details sustainable materials used in construction, presents two cases of LEED-certified buildings, and lastly discusses COVID-19 and the changes it brought in terms of the importance of taking prodigious steps towards sustainability.

The series is published every Monday

and can be found at our website at www.cushwake.ge

Environmental Impact of Real Estate

The Economist reported in February 2020, that the built environment accounts for 39% of global carbon emissions while consuming 40% of the world's energy. In Europe, the real estate sector is responsible for 10% of global greenhouse gas emissions. Moreover, the sector is underperforming compared to other industries in changing their CO_2 targets, and strongly contributing to the climate change crisis.

The necessity for cleaner and more ecologically sound buildings had been shaping for years, but as today the impacts of climate change are more apparent and devastating, individuals and corporations become more environmentally conscious and attempt to reconsider their real estate preferences, expectations and valuations, and restrict their use of natural resources and energy. A need is emerging to deploy more sustainable material choices and construction methods, energy efficient solutions, and ecologically conscious designs and technologies. Generally, the need and demand for **sustainable** real estate becomes even more apparent.

Sustainability in Real Estate

Sustainability is a holistic approach to designing and building. Sustainable design aims to reduce depletion of energy, water, and raw materials, while also focusing on minimizing environmental damage caused by buildings. Sustainable practices are likely to promote energy efficiency and the use of safer and renewable products, cutting harmful waste in their production. The local geography, climate and socio-economic factors need to be taken into account when designing a sustainable building.

Environmental damage, is caused by exhaust of harmful gases, vehicular pollution, mismanagement of waste, deforestation, unplanned land-use policies and unprecedented construction activities, to mention only a few. With this regard, concrete and cement trap solar radiation, while construction processes result into a removal of vegetative cover which usually allows for better exchange of heat. This creates urban heat island – trapping pollutants, inhibiting air circulation, and worsening air quality. Therefore, we should recognise that built environment and buildings contribute to climate change and affect our health through the materials utilized or decisions about sites.

Green Building

A green building is a building which in its design, construction and operation partially cuts or fully eliminates negative impacts on our climate and natural environment. With efficient use of renewable energy sources, adapted design to a changing environment and reduced pollution green buildings can preserve depleting natural resources and improve our quality of life. Moreover, materials and resources are the foundation of the buildings in which we live and work. So, rethinking the selection of materials for buildings is needed. The materials and resources used for green buildings bring less harm to nature and social environment. For that, "*reduce, reuse, recycle*" are critical components of the work. During construction or renovation, materials should be recycled or reused as much as possible, to restrain the amount of waste going to landfills; with this regard reusing existing building structures and materials is recommended.

Benefits of Green Buildings

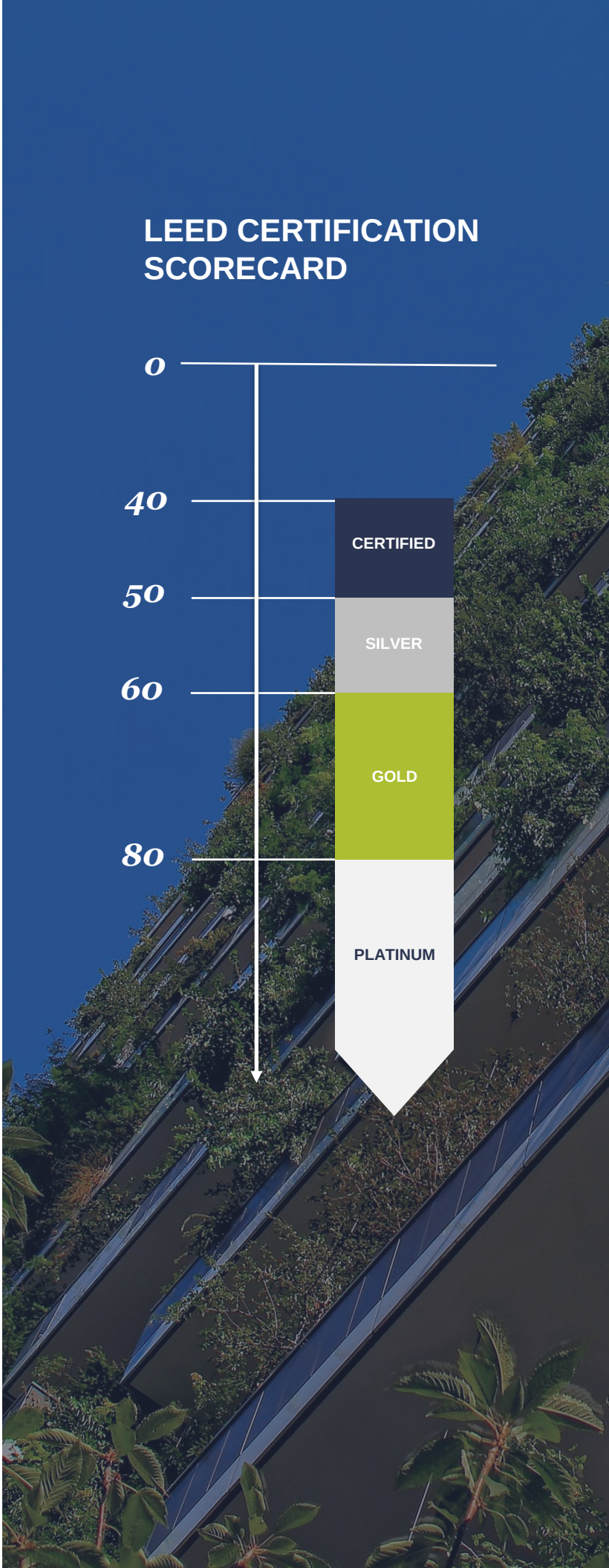
Operation & Maintenance	Work, Life & Community	Assets
Water savings	Health benefits	Developer's reputation
Energy savings	Increased productivity	Higher lease rates and occupancy
Waste cost savings	Lower emissions / overall environmental impact	Higher sales chances and prices
Other maintenance savings		

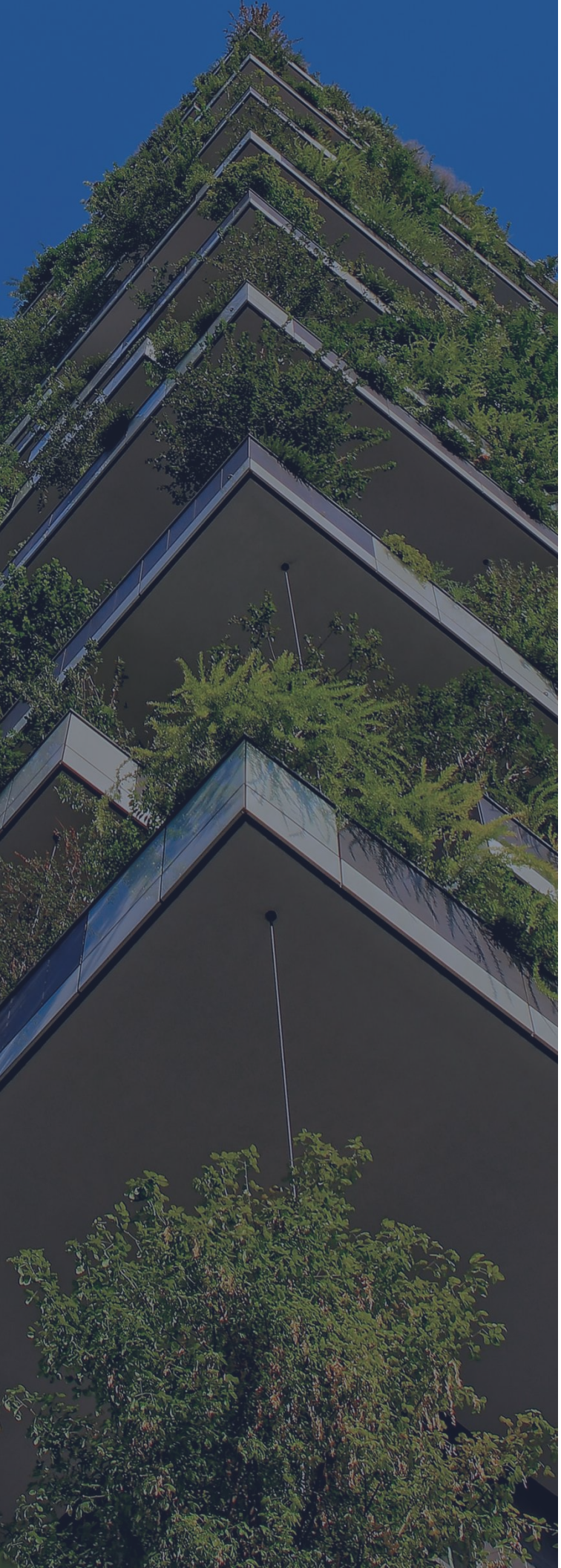
A green building is an opportunity to amplify positive impacts on the natural environment as well as on inhabitants of the building. Subsequently, building sector is witnessing a dramatic shift towards greening and sustainability, and organizations are getting motivated to innovate and have their exemplary building projects recognized.

LEED CERTIFICATION

Ideas about green buildings have been circulated and since mid to late 90's, but at the time there was no central mechanism for codifying them or ensuring their effective implementation. At the end of the 20th century, LEED: Leadership in Energy and Environmental Design certification was created, which acts as a decision-making framework for project teams during planning, design, construction and operations processes, and then rewards best practices. LEED signifies that the particular building is a healthy, high-performing and resource efficient structure.

Nowadays LEED is an internationally recognized green building certification system sponsored by the U.S. Green Building Council (USGBC). LEED, a third-party designation, verifies that a building or community was strategically designed with improved performance across all crucial metrics: energy and water efficiency, CO_2 emissions reduction, improved indoor air quality, and conscious use of resources.





The first version of LEED Green Building Rating System was released in 1999, which was a pilot program assessing building practices through creation of universally understood and accepted performance criteria. For each criterion LEED defines requirements to achieve the credit. Each credit is intended to address a specific environmental impact of a building. Within each credit there are one or more points available, and these points are achieved by meeting specified requirements.

Over time LEED rating system has undergone some changes, amending number of possible points to be collected for each criterion. Currently LEED version 4 is used, which was developed in November 2013. Steps to certification include registration, application, review, and then for various tiers of credits earned, different level of certification is awarded, usually on four level: LEED certified (40-49 points), LEED Silver (50-59 points), LEED Gold (60-79 points), and LEED Platinum (80 points or more). At present the total number of possible points to be earned is 110.

It is also noteworthy that LEED is flexible enough to apply to all building types – commercial as well as residential. The USGBC now operates ten LEED Green Building Rating Programs for specific project types. Some of the most common are: New Construction (LEED-NC); Existing Buildings (LEED-EB); Commercial Interiors (LEED-CI); Core & Shell (LEED-CS); Schools; and Retail-New Construction. However, LEED-NC for New Construction is the most widely used standard. It should also be highlighted that as the studies show, mostly it is office buildings that have the highest percentage of LEED certifications, followed by retail buildings and then - multifamily or industrial buildings.

LEED ASSESSMENT AREAS

The Newest And Current Version Of LEED Rating System Assesses The Performance Of A Building In 9 Key Areas:

Location & Transportation: avoid development on inappropriate sites; reduce vehicle distance travelled; enhance liveability and improve human health by encouraging daily physical activity.

Sustainable Sites: minimize site development footprint, restore site biodiversity, reduce water run-off, incorporate local micro-climate for heating, cooling, ventilation and daylighting.

Water Efficiency: balance water quality and quantity demand within a building; reduce water usage and wastewater discharges.

Energy & Atmosphere: healthy indoor environment; reduce energy demand and energy bills; increase reliance on renewable energy sources; reduce carbon emissions.

Material & Resources: reuse existing building structures, building materials; avoid disposal; choose recycling or reuse; use local materials, rapidly renewable materials, and certified wood products.

Indoor Environmental Quality: energy efficient and non-toxic indoor environment; air quality, effectively ventilating the indoor space; thermal comfort, controlled temperature; day light access; outdoor views.

Innovation: every property is a unique blend of site, program, people, budget, associated to set of challenges and opportunities; creative problem solving and 'thinking out of the box'; innovative and integrative design practices.

Regional Priority: necessary for new constructions, schools, retail, healthcare and hospitality sectors; prioritize the achievement of environmental and social equity, and access to public health.

Integrative Process: human health as a fundamental criterion for building design and operational strategies; designers utilize integrated and cost-effective green design and construction.

LEED Case Studies

***Name:* Poleczki Business Park B3**
***Location:* Warsaw, Poland**

Poleczki Business Park, located near the Okęcie Airport in Warsaw, includes offices, a restaurant, post office, shops, and a kindergarten. Within the park there is Poleczki Business Park B3 building which is a modern office complex. The total size of the project is 107,882 sq. ft. (10,022.5m^2). The building is one of the recent examples of LEED-certified properties. It showed 75% diversion of construction and demolition debris, 20% recycled content building materials, 50% FSC-certified wood products, 20% regionally extracted, harvested, recovered, or manufactured materials. Also 40% reduction in baseline indoor water use, 50% reduction in wastewater generation, 20% improvement in building performance and 35% green power purchase. Meanwhile 90% of occupied space had quality views. During LEED assessment this green building gained 81 points out of 110, and got rewarded with LEED Core & Shell Platinum certificate in 2017.

Name: Rönesans/Allianz Tower
Location: Istanbul, Turkey

Turkey makes significant strides in sustainable building design, construction and transformation and recently takes a position in the list of top 10 countries for LEED. One of the significant examples of LEED building design is Rönesans Tower in Istanbul, lately renamed as Allianz Tower. It was built in 2012 – 2014 with 45,000m^2 leasable area and 186m height. The structure is appealing for the sophisticated technology employed in its infrastructure, social facilities and A+ class office offers. The project is regarded as a sustainable site. Also, it uses sustainable technologies resulting into reduced consumption of energy and water; improved mechanical system performance and indoor air quality, bringing lower operating costs and increased energy savings by 26%. The complex offered structural innovations by reducing the amount of the concrete and steel. Over 20% of the construction was built with recycled materials. The office improved productivity of the workers with its unique architecture and eco-conscious engineering approach, and gained LEED Platinum Core & Shell high-rise building Certificate with 81 points out of 110.

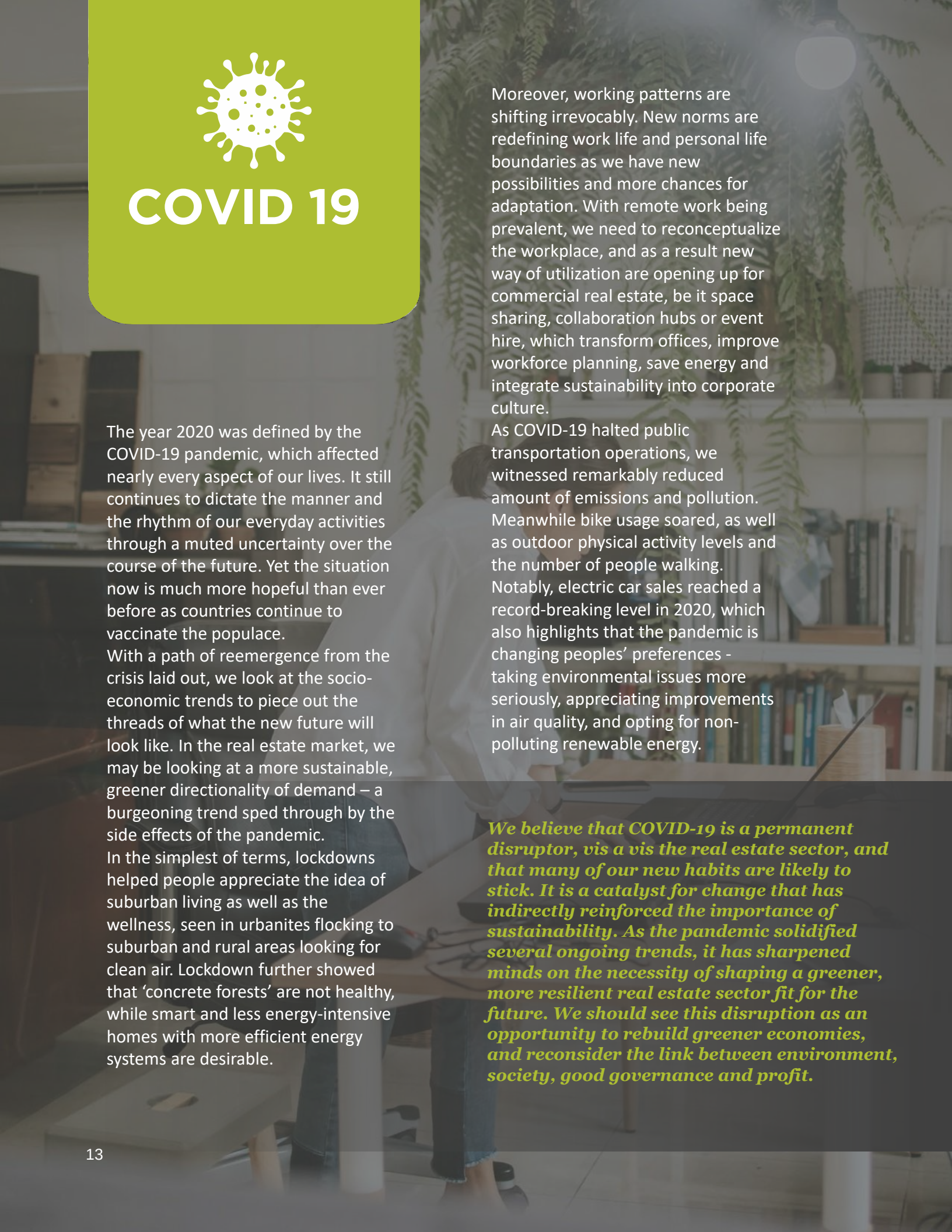
Sustainable Materials and Resources

In LEED assessment system using environmentally friendly supplies and materials is crucial for sustainable green building practices, and we should evaluate more on this aspect.

LEED recommends that green buildings should use environmentally preferable materials - locally harvested, sustainably grown, made from rapidly renewable materials, biodegradable, and free of toxins. For example, in the US, all materials sourced or manufactured within 500 miles of the site receive reward in LEED. With this LEED shows that it specifically rewards the use of materials that are locally and conscientiously produced. Utilizing certified wood products is also a preference. LEED grants the use of responsibly harvested wood from any state or region, which carries the industry-leading certification from the Forest Stewardship Council (FSC) - an independent third-party recognition tool that supports rigorous and responsible forest management.

Other materials that will collect LEED points are recognized as environmentally-friendly and efficient, and are approved with third-party certification and programs as ENERGY STAR, Scientific Certification Systems (SCS), Green guard, Green Seal, Eco Options, Cradle to Cradle.

However, countries around the globe are endowed with different resources and different materials are considered to be efficient and green. In general, there are a number of materials that are considered to be green, no matter the local conditions and climate zone: Earthen Materials, Wood, Bamboo, Structural Insulated Panels, Insulated Concrete Forms, Cordwood, Straw Bale, Earth Bags, Slate, Steel, Composites, Natural Fiber, Fiber Glass, Cellulose, Cork, Natural Clay, Fiber Cement, and Stone.



COVID 19

The year 2020 was defined by the COVID-19 pandemic, which affected nearly every aspect of our lives. It still continues to dictate the manner and the rhythm of our everyday activities through a muted uncertainty over the course of the future. Yet the situation now is much more hopeful than ever before as countries continue to vaccinate the populace.

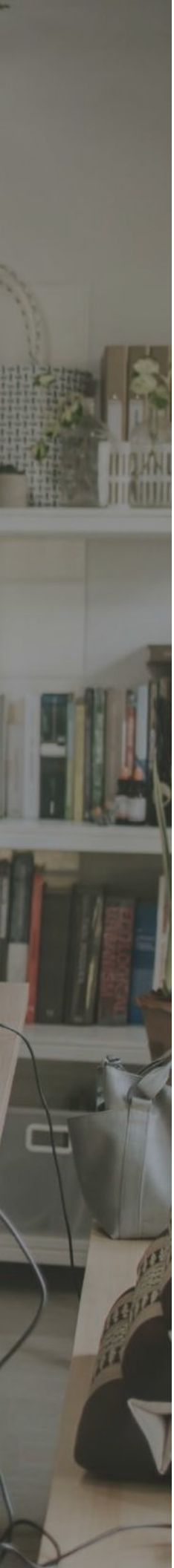
With a path of reemergence from the crisis laid out, we look at the socio-economic trends to piece out the threads of what the new future will look like. In the real estate market, we may be looking at a more sustainable, greener directionality of demand – a burgeoning trend sped through by the side effects of the pandemic.

In the simplest of terms, lockdowns helped people appreciate the idea of suburban living as well as the wellness, seen in urbanites flocking to suburban and rural areas looking for clean air. Lockdown further showed that 'concrete forests' are not healthy, while smart and less energy-intensive homes with more efficient energy systems are desirable.

Moreover, working patterns are shifting irrevocably. New norms are redefining work life and personal life boundaries as we have new possibilities and more chances for adaptation. With remote work being prevalent, we need to reconceptualize the workplace, and as a result new way of utilization are opening up for commercial real estate, be it space sharing, collaboration hubs or event hire, which transform offices, improve workforce planning, save energy and integrate sustainability into corporate culture.

As COVID-19 halted public transportation operations, we witnessed remarkably reduced amount of emissions and pollution. Meanwhile bike usage soared, as well as outdoor physical activity levels and the number of people walking. Notably, electric car sales reached a record-breaking level in 2020, which also highlights that the pandemic is changing peoples' preferences - taking environmental issues more seriously, appreciating improvements in air quality, and opting for non-polluting renewable energy.

We believe that COVID-19 is a permanent disruptor, vis a vis the real estate sector, and that many of our new habits are likely to stick. It is a catalyst for change that has indirectly reinforced the importance of sustainability. As the pandemic solidified several ongoing trends, it has sharpened minds on the necessity of shaping a greener, more resilient real estate sector fit for the future. We should see this disruption as an opportunity to rebuild greener economies, and reconsider the link between environment, society, good governance and profit.



Looking Ahead:

*The next publication reviews **LEED** certification from the investors' perspective and the financial gains that can be reaped from being **LEED**-certified.*

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