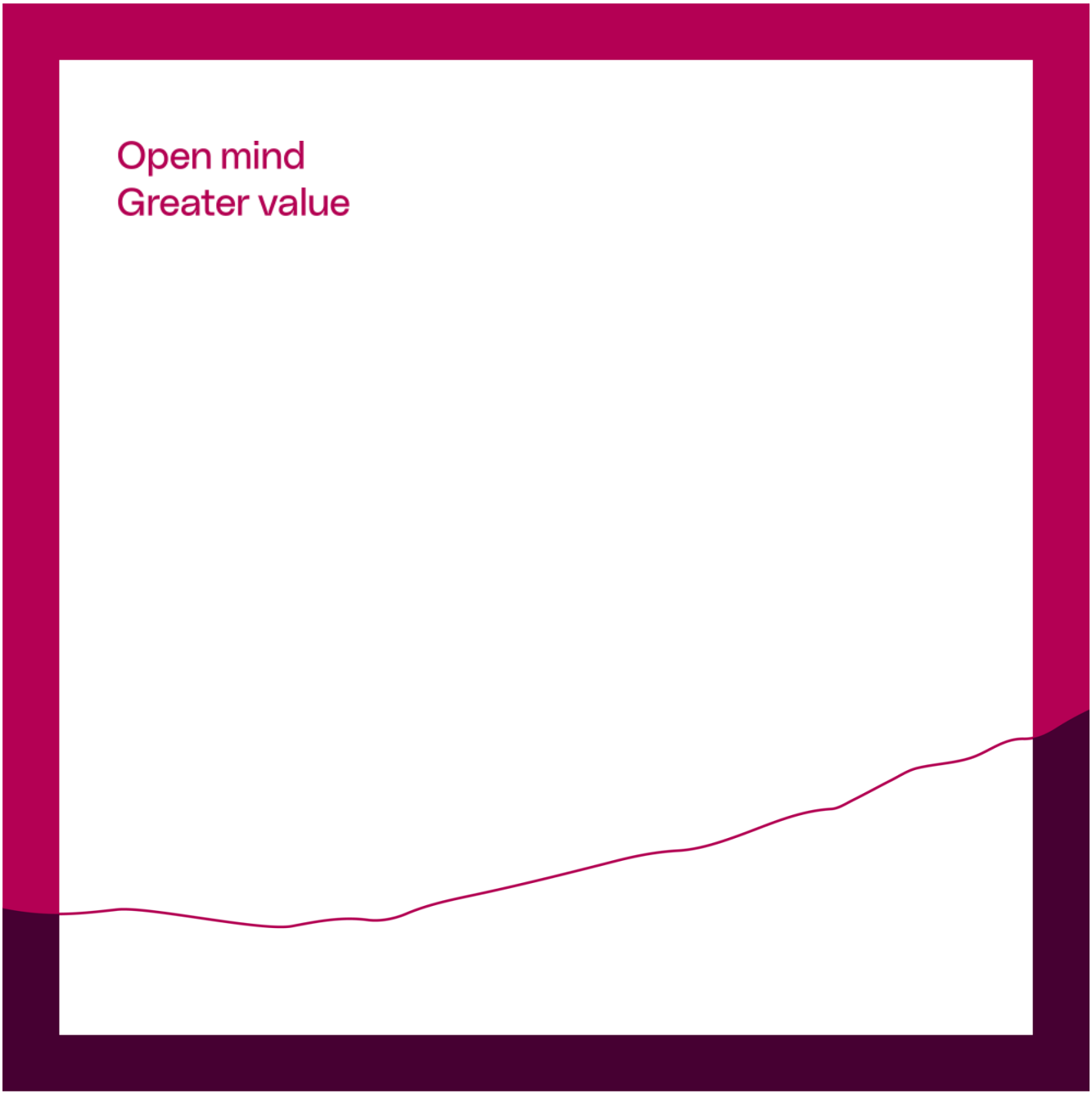
# SUSTAINABLE BUILDING CERTIFICATION

November 2020

Open mind
Greater value



# INDEX

## 1.WHY THE SUSTAINABLE BUILDINGS TREND?

Today, buildings are responsible for more than 40 percent of global energy usage, and one third of greenhouse gas emissions. Europe as a whole and its governments are legislating to promote and deliver the reduction of carbon emissions to limit global temperature rise.

> **"This is not just our vision for a climate neutral continent, it is a road map for action. With fifty practical steps on Europe's path towards 2050." "…. And therefore, a building block, a crucial building block of our European green Deal will be in 2020 the proposal of the very first European Climate law."**
>
> (Debate on the European Green Deal: opening statement by Ursula VON DER LEYEN, President of the EC, 2019)

On top of this, most of our lives are spent indoors. We live and work in buildings, and therefore buildings and its surroundings have influence in people productivity and well-being. In conclusion, buildings can have a positive impact on the environment and on people's lives and that is why the need to analyse and rethink the way buildings are built has emerged. This is where the Sustainable Building concept steps in.

Since the 21st century, the construction of green buildings has become synonymous with the acquisition of certificates and the use of rating schemes. In the last decade of the 20th century and the beginning of the 21st century, various systems to rate and certify the environmental impact of building operations and healthy indoors environments have emerged in great abundance and all over the world. In fact, the definition of a sustainable building has evolved.

Today a building is not only seen for its good performance in energy consumption rather its seen as a integrant part of the world system some entity that has to accommodate, environmental factors that directly relate to its financial performance and its life cycle aspects but also other characteristics that respond to users demands and concerns in social and well-being issues. The Green Building concept has evolved to the Sustainable Building one.

> **"Life cycle thinking and management' is still the biggest trend with 71%, and 'carbon neutrality' has increased from 35% in 2017 to 53% in 2019."**
>
> (Ramboll, Sustainable Building Market Study, 2019).

And, if some of these sustainable building aspects are legislated or beginning to be legislated in some countries (like life cycle, carbon neutrality) other more related to health and well-being few countries legislate upon. So, Building Certifications such as DGNB, LEED, BREEAM or WELL address this kind of issues.

## 2. SOME OF THE EXISTING SUSTAINABLE BUILDING CERTIFICATIONS

| CREATION DATE | CERTIFICATION | COUNTRY |
|---|---|---|
| **1990** | **BREEAM** | United Kingdom |
| **1992** | ENERGY STAR | USA |
| **1996** | HQE<br>BEAM PLUS | France<br>Hong Kong |
| **1998** | **LEED**<br>MINERGIE<br>NABERS | USA<br>Switzerland<br>Australia |
| **1999** | EEWH | Taiwan |
| **2001** | CASBEE | Japan |
| **2002** | GREEN STAR | Australia |
| **2005** | GREEN MARK | Singapore |
| **2007** | DGNB<br>GREEN STAR SA | Germany<br>South Africa |
| **2014** | **WELL** | USA |

These schemes have appeared in different countries and times, so the focus on different sustainable features reflect that. Some have a more holistic approach and suffer periodic changes and adjustments that make them more demanding and adapted to current time's needs.

## 3. WHAT DOES IT INVOLVE?

Following a specific scheme involves the practice of building or altering buildings and structures in an environmental responsible way, as well as pursuing a sustainable and efficient management of natural resources and guaranteeing occupant well-being. The Sustainable Building certification schemes have set some of the following categories as priorities:

- **Management:** building operations and quality of service.
- **Site:** land use and ecology; surrounding environment.
- **Internal environment:** health and safety.
- **Resource rationing:** water, energy materials and waste.
- **Open innovative system:** innovation in design and eco-education.
- **Environmental footprint:** environmental impact, pollution.
- **Socioeconomic aspects:** the social and economic dimension of building a project.

The schemes clearly explain for each of these areas, which project standards should be followed, as well as the products and materials to be included in the construction specifications.

## 4. THE BUSINESS CASE - THE IMPORTANCE OF CERTIFICATION

Rating and certification systems are changing and have evolved significantly, standards and targets are continuously created, making it possible to achieve ever higher levels of sustainability.

The very concept of "sustainability" has been expanding, and as a result, concern for the adoption of sustainable behaviours has spread, for this reason, it is clear that building certifications aim to respond to multiple and different needs and applications.

Top drivers to pursue a sustainable building certification are namely Environmental legislation demand increase, client demands as part of their strategies and more and more the healthier building concept that tends to attract more occupants and possible higher rents.

> **"50% of the tenants surveyed across the countries associate sustainable buildings with healthy and more comfortable spaces."**
>
> (Ramboll, Sustainable Building Market Study, 2019)

So, the development of sustainable buildings has become an important focus for owners, investors and governments, as buildings are a source of substantial environmental impact and this is a way to demonstrate a public commitment to the sustainability of the planet coupled with efficient operation systems. Although, there is still in the market some players that have little insights on if sustainable buildings cost more to build, if they may be traded or rented at higher prices or if they have lower operational costs.

Nevertheless, if there sometimes exist difficulties in showing and evidence the positive business case for investing in these types of buildings, some data is popping out from appliance of some schemes.

> **"LEED-certified buildings cost less to operate, on average reducing energy and water bills by as much as 40 percent. Using LEED to increase the efficiency of buildings frees up valuable resources that can be used to create new jobs, attract and retain top talent, or to expand operations."**
>
> USGBC (2015, Why LEED Certification Matters to Your Bottom Line)

This lower maintenance and operating costs are evidence that in some cases, where owners or occupiers have shown little interest in the more broaden sustainable features of a building, keeps promoting the pursue for sustainable buildings.

Certification is, therefore, a mean to add value to assets as well as to measure and compare the sustainable performance of a building, no matter the certification or rating system, they all generally provide confirmation of the sustainable nature of the project. That is to say, the type of certification system to adopt, depends on: the nature, features, uniqueness, needs, requirements, location, budget and overall targets of each project. And, having a third-party recognition for the work done, and ultimately, have a higher score in some reporting schemes and real estate ratings, like GRESB, as one of its criteria is the asset having a building certification.

> **"Analysis of additional costs associated with BREEAM certification at a high standard in terms of energy efficiency and water saving technologies has shown that these costs are relatively modest and that forecast paybacks are quick (typically less than 5 years for energy and less than 2 years for water), with substantial long-term savings."**
>
> Currie and Brown (Delivering Sustainable Buildings: Savings and Payback - Office Case Study for BREEAM UK New Construction 2014: 12)

Thus, no matter which certification system is adopted, the goal remains the same: to build water and energy efficient buildings, use environmentally-friendly resources and materials, reduce and/or eliminate $CO_2$ emissions into the atmosphere, promote a healthy environment and quality of life for its occupants, and further still, as a consequence enhance the asset value of the building in the real estate market.

## 5. THE BUSINESS CASE - WHAT ARE THE BENEFITS?

"Green building certification" provides guidance based on the various options and targets to be achieved. An innovative way that fosters knowledge, ethics, recognition and asset value, by promoting:

### 5.1 OPERATION AND MAINTENANCE

- Sustainable water use;
- Sustainable use of energy;
- Reducing costs related to waste management.

### 5.2 WORK, LIFE AND COMMUNITY

- Health benefits;
- Increased productivity;
- Lower environmental impact.

### 5.3 ASSETS

- Reputation (of the asset and all stakeholders);
- Higher occupancy rates;
- Higher rental rate premiums and sales prices.

> **"Whether their goal is to increase revenue by attracting and retaining employees and tenants, reduce costs and identify efficiencies by applying health and wellness strategies at scale, or demonstrate to investors an increased long-term value of properties, this new pathway encourages owners to treat WELL as a journey with milestones to celebrate along the way."**
>
> President Rachel Gutter
> (2019. Advancing human health through the WELL Portfolio program)

# 6. SOME OF THE MOST USED SCHEMES WORLDWIDE

## 6.1 BREEAM (BUILDING RESEARCH ESTABLISHMENT ENVIRONMENTAL ASSESSMENT METHOD)

BREEAM emerged in 1990, in the United Kingdom, and was developed by BRE (The Building Research Establishment. It corresponds to the first independent assessment and certification method related to a building's operational performance, taking into consideration its environmental impact and its sustainability. Recognised as one of the world leaders, thanks to its sustainability assessment method, it boasts more than 2,280,000 registered assets in 83 countries, with over 569,000 certificates issued.

**It promotes:** the recognition of buildings with a low environmental impact; environmental awareness of all stakeholders (owners, tenants, designers and operators) of the benefits of minimising environmental impacts; the inclusion of the continuous management of all building operations, in accordance with best environmental practices (from the planning stage to when the building is in-use); setting a robust standard of economic performance, and, finally, driving the market to adopt innovative services and effective solutions, which are mainly concerned with environmental responsibility.

BREEAM has several different schemes that adjust to the building phase and work being done: Communities, Infrastructure, New Construction, In-Use and Refurbishment and Fit-out. In general, the schemes may address categories such as: Management; Health and Well-Being; Energy; Transport; Water; Materials; Resources; Waste; Resilience; Ecology and Land Use; and Pollution.

## 6.2 LEED (LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN)

LEED emerged in 1998, in the United States, and was developed by the United States Green Building Council, an organisation that promotes environmentally responsible buildings as well as healthy places to live and to work. Created to foster the development of buildings based on sustainable and high-efficiency criteria, today, it remains the most widely used green building rating system in the US. Alongside BREEAM, it is one of the world's most recognised environmental rating and certification systems.

According to the organisation's official website, it is present in 165 countries and territories with more than 90,000 projects and 2.2 million sf is LEED certified.

**It promotes:** the reduction of worsening climate change; individual health and well-being; the importance of biodiversity and the ecosystem; the sustainability and regeneration of material cycles; social equity, environmental justice, quality of life and community health; development of a green economy, and finally water conservation and improved water efficiency.

It is available for virtually all building project types as it has several schemes and is therefore known for its flexibility: Building Design and Construction, Interior Design and Construction, Building Operations and Maintenance, Neighbourhood Development, Homes, Cities and Communities. In general these schemes may address different categories such as: Location and Transport; Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; Indoor Environmental Quality, and, lastly, Innovation.

## 6.3 WELL (INTERNATIONAL WELL BUILDING INSTITUTE)

WELL emerged in October 2014 and was developed by the International Well Building Institute (IWBI), a public benefit company whose goal is to improve the health and well-being of individuals in buildings and communities throughout the world through its WELL Building Standard ™ (WELL ™). It is a responsible certification system that specifically addresses the health, well-being, quality of life and productivity of all staff and visitors.

It is designed to complement the LEED certification; therefore, it is considered to support environmental sustainability and grow on top of it.

In 2019, it was distinguished by Fast Company, after being considered as one of the most innovative companies in the world. It already has 3,897 projects that apply WELL (244 WELL certified projects and 3,653 WELL registered projects across 58 countries, totalling 477 million sq ft).

**It promotes:** Equity, Local concerns and Dynamic buildings and spaces that address the local health and well-being concerns of their occupants.

It aims to provide the greatest benefit to as many people as possible; foster viable and achievable interventions that can be applied throughout the world; use the best strategies and proven best practices; define the requirements of the programme through a dynamic process; respond to advances in knowledge and technology by adapting and transposing the new findings into practice, and base its foundations in strong scientific research validated and accepted by the scientific community, and, finally, transform the built environment into mechanisms and spaces that provide benefits for the health and well-being of all their users.

The fact that we spend 90% of our lives inside buildings, i.e., a built environment, WELL proposes a holistic approach that simultaneously focuses on several important aspects that are part of this approach and integrates them.

According to WELL V2, the main performance requirements are set in the following categories: Air; Water; Nourishment; Light; Movement; Thermal Comfort; Sound; Materials; Mind; Community and Innovation.

Healthy buildings and spaces with a design created and centred on people. Thus, it is a dynamic tool, subject to continuous improvement, focusing on what is most important to the community.

# 7. HOW TO DECIDE AND SELECT THE MOST APPROPRIATE CERTIFICATION SCHEME

Acquiring building certifications like these brings several advantages to a portfolio namely when it comes to financing, promotion, and marketing and when dealing with official entities.

When deciding which sustainable building certification scheme to use, several points should be considered, namely:

- Investor / End user requirements
- Planning requirements
- Marketing potential
- Global portfolio
- Cost of assessment and additional services
- Programming
- Project team knowledge/experience

Private end users of residential apartments or houses tend not to value building certifications. It is different for residential buildings or condominiums when clients are investors. The same differences apply to other types of commercial buildings. Many companies have in their policies environmental/sustainable requirements for the premises they will occupy or invest in.

Considering the certifications schemes detailed above we can say that LEED is dominant in the US market and still strong in all other, as BREEAM is more dominant in the EU and UK, and WELL reputation is growing stronger in all markets. As for the type of building LEED is stronger in corporate /office buildings, for having greater prominence Internationally. BREEAM is stronger in industrial, logistics and retail buildings for being the first to develop specific systems for these typologies. WELL is being increasingly requested by owners and tenants of corporate/office buildings.

Other aspect to take in consideration is the financial model, especially when considering a new development building. Some international financial institutions have specific sustainability requirements to fulfil or give better conditions to sustainable developments. Also, recent initiatives of the European Union regarding sustainable finance seek to reinforce investors and financial institutions roles in allocating capital in activities that contribute to achieving the climate targets.