BEYOND ENERGY

02
BREEAM NEW CONSTRUCTION

A sustainable building is far more than an energy-efficient property.

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What makes a new building sustainable?

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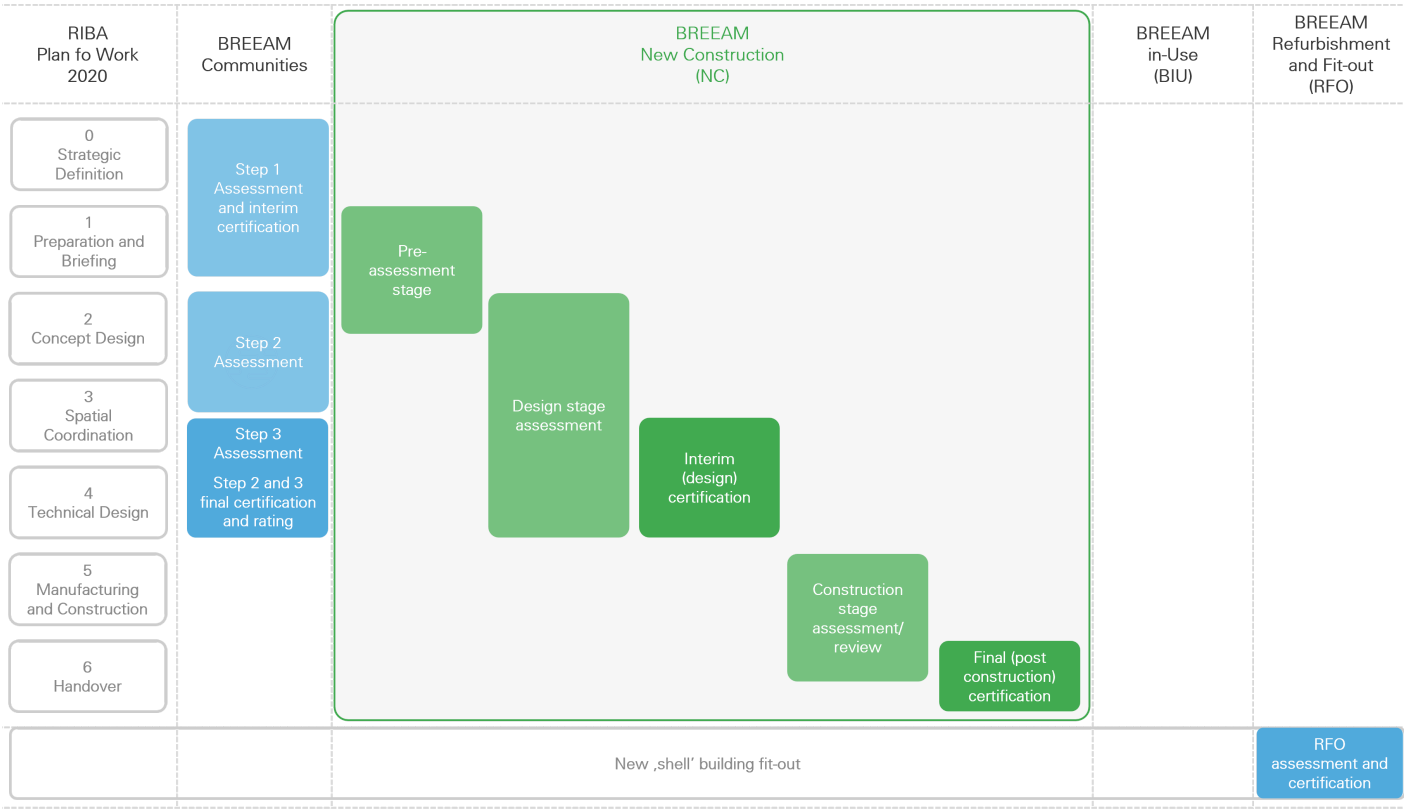
Sustainability is no longer merely an optional consideration in real estate development; it is increasingly becoming a fundamental market and societal expectation. In this article, we focus on sustainability aspects at the building level.

For new developments, it is particularly important that **developers define their sustainability objectives at the earliest stage of the project and consistently integrate them into the design, construction and commissioning processes**. The BREEAM International New Construction certification system provides a structured and internationally recognised framework for this, assessing the environmental and user performance of buildings in a comprehensive way.



Sustainability mindset throughout the entire project lifecycle

In our previous article, we demonstrated in the context of a district-scale development's preparation stage how sustainability principles can already be integrated at such an early phase through the BREEAM Communities certification. At the building level, this approach can naturally be refined and quantified even further. For new buildings, **early commitment to sustainability objectives is equally crucial**. It is worthwhile to define at least general sustainability goals as early as the strategy formulation stage. An international building certification scheme can also provide a suitable framework for this purpose. For new buildings, the British BREEAM International New Construction system is commonly used.

The BREEAM New Construction framework spans the entire lifecycle of a development – from the initial project brief, through design and construction phases, to handover and commissioning. These are all key project stages, with some requirements applying across the entire process and others tailored to specific phases, such as construction.

We are often asked by clients approaching Realiscon whether a high energy performance rating alone guarantees the achievement of a green building certification. It is important to emphasise that **sustainability means far more than low energy consumption.** Across the building's full lifecycle, factors such as material use, pollutant emissions, water consumption, and waste management should also be considered.

Material use, comfort, and environmental impacts

In addition to operational carbon emissions from energy use, embodied carbon is receiving increasing attention, as it also accounts for emissions associated with the production of construction materials and the construction process itself. Therefore, **already at the design stage, it is advisable to prioritise - or even specify - materials that are responsibly sourced, made from recycled content, or characterised by low environmental impact.** Conscious material selection can also bring additional benefits, such as longer service life, lower maintenance requirements, and reduced amounts of construction waste.

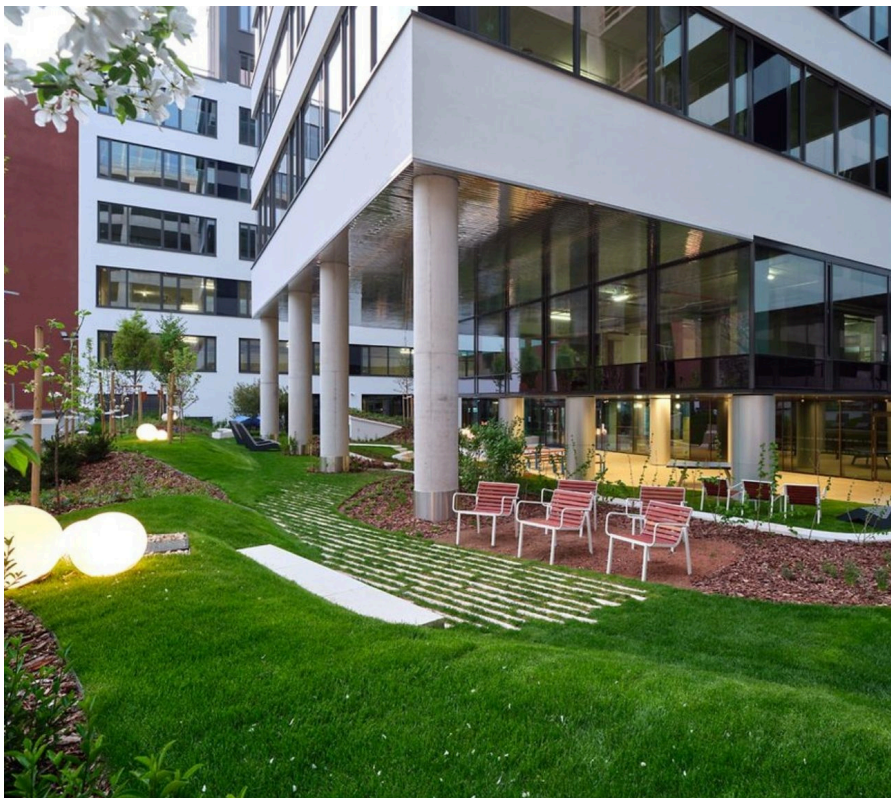
Within BREEAM assessments, another key principle and highly weighted topic is the creation of a healthy and liveable built environment that considers user well-being. This includes several areas: thermal comfort, acoustic comfort, adequate indoor air quality and fresh air supply, as well as daylight and views. **A well-designed building can improve occupants' productivity and well-being and have a positive impact on their health**.

Another key assessment area is the minimisation of harmful emissions. This includes the building's light and noise pollution impacts on its surroundings, as well as waste management. Perhaps even more important is the building's approach to greenhouse gas emissions during operation, and water management, including stormwater retention and discharge strategies. **Each of these aspects offers significant optimisation potential when addressed early in the design process.**

Water use, location, and ecological considerations

From BREEAM perspective, a sustainable building also aims to minimise water consumption through water-efficient fittings and by monitoring water use and potential leaks. This can be further enhanced if **rainwater or greywater reuse systems are also designed and implemented**. In shell & core developments, we often see examples where the developer installs part of the infrastructure required for rainwater harvesting up to a certain point, after which it can be further developed and commissioned based on tenant requirements.

The sustainability performance of a building is also influenced by its location. Sites with good access to public transport and local services can significantly reduce transport-related emissions by limiting reliance on private car use. While such locational characteristics are often fixed, **developers can still play an active role by encouraging sustainable mobility choices**, for instance by supporting cycling infrastructure and alternative transport options.



A sustainable development should not only minimise negative impacts but, where possible, improve the ecological condition of the site through thoughtful planting schemes, wildlife-friendly solutions, and biodiversity enhancement.

Construction, commissioning, and long-term operation

As mentioned earlier, the construction process is also a key factor. **Significant amounts of waste can be generated during this phase, and large quantities of energy and water can be wasted if not properly managed.** Additional credit can be achieved if the construction site is well organised, kept clean, and processes are well managed and documented.

Unfortunately, we often see cases where the design and construction phases deliver a high-quality, energy-efficient building in terms of its mechanical systems, yet fall short during the handover phase. **Insufficient commissioning procedures, inadequate operator training, and incomplete operational documentation can leave facility managers without the necessary information to run the building effectively.** As a result, the intended performance of even advanced building systems may not be fully realised. Addressing this gap is therefore a key requirement within building certification schemes, which emphasise structured commissioning and well-managed handover processes.

A sustainable building is therefore far more than an energy-efficient property. True sustainability is the result of conscious decisions affecting the building's entire lifecycle. Sustainability decisions made at an early stage not only bring environmental benefits, but also deliver long-term economic and operational returns, while creating a healthier and more liveable built environment for users.