BREEAM® | USA

BREEAM International Refurbishment & Fit Out

Technical Standard Summary for US projects

WWW.BREGROUP.COM/BREEAMUSA

Introduction to BREEAM International Refurbishment & Fit-Out

Founded in 1990, BREEAM is the world's first sustainability assessment method for buildings. BREEAM International Refurbishment and Fit Out (RFO) is used to assess the **design, construction, and future-proofing of major renovation and tenant improvement projects**.

BREEAM delivers sustainable solutions, encouraging a holistic approach to sustainability that is based on sound science. In measuring what is essential, assets can improve their performance and achieve sustainable value.

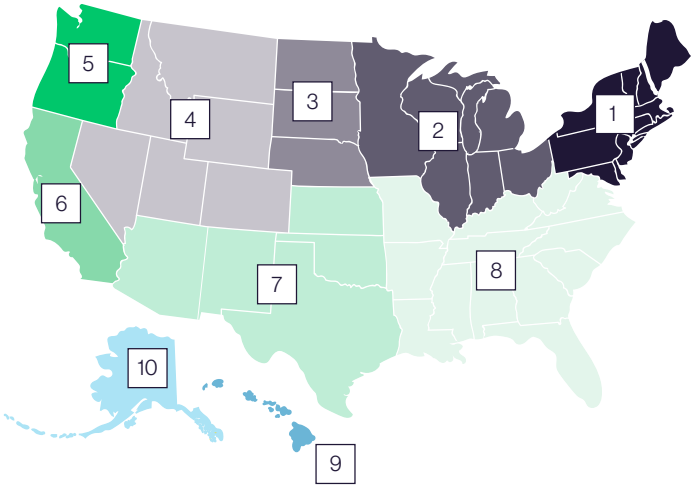
BREEAM encourages the retention of as much of the asset and its systems as possible. The assessment criteria and process focus on four building structure elements from concept stage right through to a fully completed project: **building envelope, core services, local services, and interior design**. Each assessment requires evidence to support the design and construction decisions agreed upon during the project's development and ensures they have been fully implemented.

Certificates can be issued at the Design Stage (noted as interim BREEAM rating based on the design) and Post-Construction phase, confirming the final BREEAM rating for the project's as-built performance of the building after construction is complete.

Adaptations for US projects

The US has been divided into 10 regions. The regions have been set after considering climate, energy use, transport availability, population density, ecology and other factors.

Each of these regions have their own environmental category weightings and approved standards which will account for the variations in standards adopted (such as the multiple versions of ASHRAE 90.1) and the regulatory baseline in place. Adopting this regional approach ensures that any BREEAM certified project exceeds regulations while still meeting international best practice.



BREEAM Ratings

BREEAM standards are set using building science and research. The five ratings available, ranging from Pass to Outstanding, reflect how much better a building is improved beyond standard practice. The higher the rating, the more aspirational the performance – only 1% of buildings in the world would be expected to achieve Outstanding, 10% of buildings for the Excellent rating and 25% of buildings for Very Good.

Rating	Star Rating
Outstanding	★★★★★
Excellent	★★★★☆
Very Good	★★★☆☆
Good	★★☆☆☆
Pass	★☆☆☆☆

Scope

Commercial

Office
- General office buildings
- Offices with research & development areas (category 1 laboratories only)

Education
- Preschools
- K-12 schools
- Community colleges
- Universities
- Other higher education

Industrial
- Warehouse storage or distribution
- Process, manufacturing or automobile repair shops

Residential long stay
- Senior/assisted living
- Supportive housing
- On campus student housing
- Military barracks

Retail
- Shop or shopping center
- Retail park or warehouse
- Over the counter service providers, e.g. financial institutions
- Showrooms
- Restaurant, café and drinking establishments
- Hot food take-out establishments

Residential short stay
- Hotel, hostel, boarding and guest house
- Work training centers

Scope of work

BREEAM RFO can be applied in any number of ways to the following scopes: **Building Envelope and Structure** (the building fabric/envelope including the façade, roofs, and glazing), **Core systems** (central building systems like cooling, heating, and building management systems) and **Local services** (e.g., zone controls for ventilation, heating, and cooling) and **Interior Design** (e.g., furniture, fixtures, wallpaper, flooring).

	Part 1 Fabric & Structure	Part 2 Core Services	Part 3 Local Services	Part 4 Internal Design
Whole building renovation	✓	✓	✓	✓
First fit-out after asset construction		✓	✓	✓
Interior refresh after asset occupation		✓	✓	✓
Shell only	✓			
Shell and core	✓	✓		
Upgrade of central mechanical room		✓		
Change of use	✓	✓	✓	✓
Historic building renovation	✓	✓	✓	✓
Tenant space remodel				✓

Issues Addressed

		Applicable Parts			
		Fabric & Structure	**Core Services**	**Local Services**	**Internal Design**
MANAGEMENT	Owner Project Requirements/Basis of Design	✓	✓	✓	✓
	Life Cycle Cost Analysis	✓	✓	✓	✓
	Responsible Construction Management*	✓	✓	✓	✓
	Enhanced Commissioning	✓	✓	✓	✓
	Post-Occupancy Commissioning and Monitoring*	✓	✓	✓	✓
HEALTH & WELL-BEING	Visual Comfort	✓		✓	✓
	Indoor Air Quality Management*	✓	✓	✓	✓
	Safe Lab Spaces (Laboratories only)		✓	✓	✓
	Thermal Comfort	✓	✓	✓	✓
	Acoustic Performance	✓	✓	✓	✓
	Risk Assessment and Implementation	✓	✓	✓	✓
ENERGY	Carbon Emissions Reductions*	✓	✓	✓	
	Energy Monitoring		✓	✓	✓
	Efficient External Lighting		✓	✓	
	Low Carbon Design	✓	✓	✓	
	Energy Efficient Refrigeration		✓	✓	✓
	Energy Efficient Conveyance Systems		✓	✓	
	Energy Efficient Lab Systems (for Laboratories only)		✓	✓	✓
	Unregulated Energy Efficient Equipment			✓	✓
	Drying Area for Laundry (For Residential and Residential Long Stay only)	✓			✓

 TRANSPORT	Alternative Transportation	✓			✓
	Nearby Amenities	✓			✓
	Maximum Car Parking	Change of use projects only			
	Alternative Transportation Management	✓			✓
 WATER	Water Consumption*		✓	✓	✓
	Water Monitoring		✓	✓	✓
	Water Leak Detection		✓	✓	✓
	Water Efficient Equipment	✓	✓	✓	✓
 MATERIALS	Life Cycle Analysis*	✓	✓	✓	✓
	Sustainable Building Material Procurement*	✓	✓	✓	✓
	Resilient Design	✓			✓
	Material Reuse	✓	✓	✓	✓
 WASTE	Construction Waste Management*	✓	✓	✓	✓
	Recycled Aggregates*	✓			
	Post-Occupancy Waste Management	✓			✓
	Tentative Tenant Finishes		✓	✓	
	Climate Change Adaptation*	✓	Major RFO only***		
	Adaptive Reuse	✓	✓	✓	✓
 LAND USE & ECOLOGY	Local Ecology Protection**	✓	✓	✓	✓
	Local Ecology Enhancement**	✓	✓	✓	✓
	Biodiversity Impact**	✓	✓	✓	✓
 POLLUTION	Refrigerant Management		✓	✓	✓
	NOx Management		✓	✓	✓
	Flood Risk and Surface Water Runoff Management*		✓	✓	
	Light Pollution Reduction		✓	✓	
	Noise Pollution Reduction	✓	✓	✓	

* Eligible for an Innovation Credit
** Varies in eligibility. Consult with Technical Standard.
*** Only considered if all four scopes are assessed.

BREEAM drives success by:

- Focusing on improving building performance rather than recognizing ideal building design.
- Setting benchmarks that exceed regulations and local practices.
- A dopting a flexible approach that encourages and rewards positive outcomes, avoiding prescribed solutions.
- Using robust science and best practice as the basis for quantifying and calibrating a cost effective and rigorous performance standard for defining environmental quality.
- Reflecting the social and economic benefits of meeting the environmental objectives covered.
- Ensuring environmental quality through an accessible, holistic and balanced measure of environmental impacts.
- Using quantified measures for determining environmental quality.
- Providing a common international framework of assessment that is tailored to meet the 'local' context including regulation, climate and sector.
- Providing third party certification to ensure independence, credibility and consistency of the label.
- Engaging with a representative range of stakeholders to ensure its continuing relevance to the market.
- Promoting high levels of performance and best practice through published case studies and the BREEAM annual awards event.
- Monitoring and carrying out research to further knowledge, strengthen industry tools and improve guidance.

Value of BREEAM

BREEAM is the world's leading science-based suite of validation and certification systems for sustainable built environment. Since 1990, its third party certified standards have helped improve asset performance at every stage, from design through construction, to use and refurbishment. Millions of buildings across the world are registered to work towards BREEAM's holistic approach to achieve ESG, health and Net Zero goals.

BREEAM aims to deliver sustainable solutions, encourage a holistic approach to sustainability that is based on sound science and measures what is important, in terms of reducing building environmental impacts.

Why BREEAM

Clients choose BREEAM certification because it helps them deliver and validate the sustainability value of their assets cost effectively and to an internationally recognized and robust standard, tried and tested since it was first launched in 1990.

Investors, developers, owners and occupiers benefit using BREEAM by:
- Considering impacts and costs from a lifecycle perspective
- Minimizing the environmental impact of their construction and operations
- Supporting and protecting the health and wellbeing of building users and their communities
- Providing a credible, internationally recognized and comparable certification awarded by an independent third-party.

BREEAM principles

BREEAM is developed and operated to meet the following underlying principles:

- Focus on improving building performance rather than recognizing ideal building design.

- Ensure environmental quality through an accessible, holistic and balanced measure of environmental impacts.

- Use quantified measures for determining environmental quality.

- Adopt a flexible approach that encourages and rewards positive outcomes, avoiding prescribed solutions.

- Use robust science and best practice as the basis for quantifying and calibrating a cost effective and rigorous performance standard for defining environmental quality.

- Reflect the social and economic benefits of meeting the environmental objectives covered.

- Provide a common international framework of assessment that is tailored to meet the 'local' context including regulation, climate and sector.
- Integrate building professionals in the development and operational processes to ensure wide understanding and accessibility.

- Adopt third party certification to ensure independence, credibility and consistency of the label.

- Adopt existing industry tools, practices and other standards wherever possible to support developments in policy and technology, build on existing skills and understanding and minimize costs.

- Align technically and operationally with relevant international standards.

- Engage with a representative range of stakeholders to inform ongoing development in accordance with the underlying principles and the pace of change in performance standards (accounting for policy, regulation and market capability).

Getting started

Visit our website **www.bregroup.com/breeamusa** to learn more about the processes and fees involved.

If you have any further questions, give us a call use on: **+1 (888) 834-8680** or send us an email at: **BREEAMUSA@bregroup.com**.

About BREEAM

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About BRE

BRE delivers innovative and rigorous products, services, standards and qualifications which are used around the globe to make buildings better for people and for the environment.

For a century we have provided government and industry with cutting edge research and testing to make buildings safer and more sustainable. BRE is a profit-for-purpose organization. Any profits from BRE's work go to the BRE Trust, which invests in research projects for the public benefit, or are invested in upgrading our research facilities at the BRE Science Park.

Influential but independent and with a heritage of scientific rigor for 100 years, we will play a key role over the next 100 years, as the world adapts to meet the challenges of climate change.

For more information go to:

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