The Digest of BREEAM New Construction and Refurbishment Statistics 2013 to 2017
Volume 2, 2019

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Foreword

Data helps us to understand the world around us and with 2.5 quintillion bytes1 of the stuff generated every day, there can be little doubt we are living through a data ‘gold rush’ to an era where we are blessed with an abundance of data. In the built environment, data telling us what and how we’re building, where we’re building and how we’re interacting with it, can provide real-time insight on a scale and in a detail that previously only existed in the realm of science-fiction.

However, a wealth of data does not equal a wealth of information. The value of data, much like it’s 20th century equivalent oil, is not inherent – but it is much easier to mine. Data needs to be refined, it needs to be given a voice before it can tell a story, before it can be put to meaningful use through other vehicles. And, much like oil, it has the potential to accelerate human development and quality of life in positive ways, and potentially in many negative ways too.

Since its launch in 1990, BREEAM has provided a framework to gather and interpret built environment data. But data has, to all intents and purposes, been a by-product of the BREEAM process. Only now, in this age of ‘big data’, are we starting to use data to tell a story with increasing clarity and purposefulness beyond the one-off calculation of a rating.

This publication tells a small, but important part of that story, including for example, that industry is increasingly seeing the value in verifying sustainability. In the five years studied for this publication, the number of BREEAM certificates issued has grown by over 50%, when compared to the 22 years prior; and the global market for sustainability assessment and certification is growing, with 14 new countries achieving their first certified buildings since 2013.

Every building and project that undergoes a BREEAM assessment provides data on the sustainability credentials of the asset; that data in turn provides insight to the investors, clients and teams of professionals who design, procure, own and operate them. BREEAM, at its simplest, is therefore a standard for the translation of data, through verifiable assessment and industry expertise, into useful insights. Insights that are increasingly being used in an on-going and collective way to benchmark performance against peers, demonstrate a verifiable level of quality and performance, and better inform the evaluation of specification, management, risk and investment decisions.

In an increasingly data rich world, the role of standards is arguably more important than ever in collecting that data and helping turn it into useful insights - practical, cost-effective and actionable - that have a positive influence on our built environment. BREEAM will continue to adapt, at pace, to help our industry and the built environment meet the challenges it faces, and I hope tell the story of how we did it together.

Shamir Ghumra
BREEAM Director

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25/26 St James Street & 7 Floral Street, London, UK
BREEAM 2014 Domestic Refurbishment 'Very Good'
Certified in 2017
Introduction

This publication is the second in a planned series whose purpose is to describe the uptake of BREEAM in a broad UK and international market during the five calendar years 2013 to 2017. It follows the publication in 2014 of 'The Digest of BREEAM Assessment Statistics Volume 1', which covered the period 1990 to 2012.

Launched in 1990, BREEAM is the world’s first and leading sustainability assessment and certification scheme for the built environment. It is an international standard that is locally adapted, operated and applied through a network of scheme operators, assessors and industry professionals, and has now been applied in over 80 countries. BREEAM assesses, encourages and rewards environmental, social and economic sustainability throughout the built environment. The BREEAM schemes:

- Encourage continuous performance improvement and innovation by setting and assessing against a broad range of scientifically rigorous requirements that go beyond current regulations and practice.
- Empower those who own, commission, deliver, manage or use buildings, infrastructure or communities to achieve their sustainability aspirations.
- Build confidence and value by providing independent certification that demonstrates the wider benefits to individuals, business, society and the environment.

The digest is intended for anyone with an interest in the built environment regardless of background or experience. The information should prove particularly useful to anyone specifying or interested in specifying BREEAM to measure and validate the sustainability performance of buildings, for BREEAM Assessors and Accredited Professionals requiring facts for marketing material and to share with clients, and for academics and students studying sustainability issues.

The 2013 to 2017 dataset consists of over 10,800 certified BREEAM assessments covering both Design Stage and Post-construction Stage certificates. This digest concentrates on the project types covered by the UK and International versions of the BREEAM New Construction and BREEAM Refurbishment schemes. The information presented in the digest is split into four main sections:

1. The number, type and distribution of certified assessments in the UK and internationally.
2. The distribution of certified projects by BREEAM rating.
3. A comparison of ratings between Design Stage and Post-construction Stage assessments.
4. The time taken to achieve certification.

The 2013 to 2017 dataset covers certificates issued against various BREEAM scheme versions (Table 1).

Table 1: BREEAM scheme versions covered in the 2013 to 2017 dataset

<table>
<thead>
<tr>
<th>UK Scheme Version</th>
<th>International Scheme Version</th>
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<tbody>
<tr>
<td>BREEAM Bespoke 2006</td>
<td>BREEAM Multi-residential 2006</td>
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<tr>
<td>BREEAM Bespoke 2008</td>
<td>BREEAM Multi-residential 2008</td>
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<td>BREEAM Courts 2008</td>
<td>BREEAM Offices 2005</td>
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<td>BREEAM Data Centres 2010</td>
<td>BREEAM Offices 2006</td>
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<td>BREEAM Education 2008</td>
<td>BREEAM Offices 2008</td>
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<td>BREEAM Europe Offices 2008</td>
<td>BREEAM Prisons 2006</td>
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<td>BREEAM Europe Retail 2008</td>
<td>BREEAM Prisons 2008</td>
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<tr>
<td>BREEAM Europe Commercial 2009</td>
<td>BREEAM Retail 2006</td>
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<tr>
<td>BREEAM Further Education 2006</td>
<td>BREEAM Retail 2008</td>
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<td>BREEAM Healthcare 2008</td>
<td>BREEAM Schools 2005</td>
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<td>BREEAM Industrial 2006</td>
<td>BREEAM Schools 2006</td>
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<td>BREEAM Industrial 2008</td>
<td>BREEAM UK New Construction Non-Domestic Buildings 2011</td>
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<tr>
<td>BREEAM International Bespoke 2010</td>
<td>BREEAM UK New Construction Non-Domestic Buildings 2014</td>
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<tr>
<td>BREEAM International New Construction 2013</td>
<td>BREEAM UK Refurbishment and Fit-out Non-Domestic Buildings 2014</td>
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The schemes outside the scope of the 2013-2017 dataset include:
- BREEAM Communities
- BREEAM In-Use
- EcoHomes
- Code for Sustainable Homes
- Home Quality Mark
- CEEQUAL
- BREEAM Infrastructure New Construction (Pilot)
- Locally adapted versions licensed to BREEAM National Scheme Operators (NSOs) in the Netherlands, Spain, Sweden, Norway, Germany, Austria and Switzerland.
Distribution of BREEAM New Construction and Refurbishment certificates

Of the approximately 10,800 certificates issued between 2013 and 2017, 83% of the certificates (just over 9,000) were issued to projects in the UK, with the remaining 17% of certificates (just over 1,800) issued to projects internationally. In the 5 calendar years from 2013 to 2017, there were 52% more UK and international Non-Domestic New Construction and Refurbishment certificates issued than in the previous 22 years. Between 1990 and 2012 there were 6,739 Non-Domestic BREEAM certifications, and between 2013 and 2017 there were just over 10,200. The proportion of non-domestic international certificates issued between 2013 and 2017 (16.5%) has also increased significantly from the 1990 to 2012 period (3.6%) and from that for the calendar year 2012 (7.5%). BREEAM certification continued to reach new territories in the 2013 to 2017 period with ‘country first’ certificates issued in 14 countries (Figure 1), so there are now over 50 countries with BREEAM certification.

Figure 1: All global BREEAM registrations & countries with first BREEAM certifications during the 2013-2017 study period

Countries with first BREEAM certifications - Armenia, Azerbaijan, Brazil, Estonia, Iraq, Jersey, Kazakhstan, Latvia, Monaco, Morocco, Saudi Arabia, South Korea, Ukraine, United Arab Emirates

2013 to 2017 saw a 52% increase on the previous 22 years for certificates issued under UK and International Non-Domestic New Construction & Refurbishment schemes
The four countries with the highest number of certificates awarded between 2013 and 2017 were the UK, France, Poland and Belgium. Figure 2 shows the total number of certificates awarded in these four countries (please note the use of a logarithmic scale on the vertical axis of the chart). The overall trend is a gentle increase in certifications over the study period, with a slight downturn in 2017 in the UK and Belgium.

Figure 2: Number of BREEAM certificates by year for UK, France, Poland and Belgium (2013 to 2017)

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Figure 3 shows the distribution of BREEAM certificates issued between 2013 and 2017 across the regions of the UK. 88% of certifications are in England, 6% in Wales, 5% in Scotland and 1% in Northern Ireland. Of the English certificates, over half are concentrated in London and the South East with the remainder relatively evenly spread across the other seven regions.

Figure 3: Distribution and number of certificates by UK region (2013 to 2017)
Figure 4 shows the distribution of UK certificates issued between 2013 and 2017 across the different project types, including actual numbers of certificates and their percentage contribution to the total number of UK certificates. The biggest contributor is education (22%) followed by offices (18%), other building types (14%), retail (12%) and industrial (11%). Projects covered by the other building types classification include bespoke projects, courts, data centres, fire stations and prisons.

Out of all the building types assessed between 2013-2017, Education building types achieved the most certifications.

Figure 5 shows the distribution of international certificates issued between 2013 and 2017 across the different project types, including actual numbers of certificates and their percentage contribution to the total number of international certificates. The classification of different project types is recorded in less detail for international projects than in the UK. Commercial buildings (offices, retail and industrial) amount to 82% of the total, other project types (bespoke) make up the next 10%, followed by residential projects (7%) and non-domestic refurbishment projects (1%).
Prior to the launch of the BREEAM UK Domestic Refurbishment scheme in 2012 and the respective UK and International versions of the BREEAM Non-Domestic Refurbishment schemes in 2014 and 2015, refurbishment and fit-out assessments of domestic and non-domestic buildings could be carried out using the relevant BREEAM New Construction scheme (EcoHomes in the case of domestic dwelling refurbishments). The numbers presented in Figure 4 and Figure 5 for refurbishment projects are those certified to the specific UK and International BREEAM Refurbishment schemes since their launches. Consequently, refurbishment projects certified under earlier New Construction schemes are included within the wider project type classifications. Separate analysis of these New Construction certified refurbishment projects has shown that these make up approximately 10% of all New Construction certified projects.
Distribution of BREEAM ratings

From 2013 to 2017 the most common BREEAM rating achieved in the UK, France, Poland and Belgium was a ‘Very Good’ rating.
Figure 7: Distribution of BREEAM ratings for certificates in France (2013 to 2017)

Figure 8: Distribution of BREEAM ratings for certificates in Poland (2013 to 2017)
Figure 9: Distribution of BREEAM ratings for certificates in Belgium (2013 to 2017)

Figure 10 shows the average BREEAM assessment scores for each country that has at least 10 certifications between 2013 and 2017 plotted against the horizontal rating boundaries (Pass 30%; Good 45%; Very Good 55%; Excellent 70% and Outstanding 85%). 21 of the 25 countries represented have average scores between Very Good and Excellent. Of the remaining four countries, three have average scores between Good and Very Good. Only one country (Kazakhstan) has an average score between Pass and Good.

Figure 10: Average BREEAM assessment score by country with more than 10 certificates (2013 to 2017)
Comparison between Design Stage ratings and Post-construction Stage ratings

Figure 11 shows the distribution of Design Stage and Post-construction Stage certificates for each year across the 2013 to 2017 study period for certificates awarded in England, Scotland, Wales, Northern Ireland and internationally. Typically, Design Stage certificates represent just under 70% of the total number of certificates regardless of country or year.

Of the approximate 10,800 total number of BREEAM certificates issued between 2013 and 2017, 5,700 of these are matched pairs of Design Stage and Post-construction Stage certificates (i.e. 2,850 Design Stage and 2,850 Post-construction Stage certificates). These have been compared with each other to determine the nature and scale of any differences found between the Design Stage score and the final Post-construction Stage score for a given assessment. Figure 11 shows that over half (53%) of all the pairs show a reduction in the Post-construction Stage score of between 0 and -5% compared to the Design Stage score, and around one third (33%) of the pairs show an improvement on the Design Stage score of 0 to 5%. The next 10% of pairs show a further drop in score from Design Stage to Post-construction Stage, from -5% or less. The next 3% of pairs show a rise in score from Design Stage to Post-construction Stage of 6% to 10%. The remaining 1% of pairs show an increase in score from Design Stage to Post-construction Stage of 11% to 15%.

One third of projects demonstrated a 0-5% improvement in their score from Design Stage to Post-construction Stage certification.
Approximately 4,500 (42%) of the total number of certificates are Design Stage certificates with no associated Post-construction Stage certificate. Many of these are likely to be Design Stage assessments that have not yet had their related Post-construction Stage assessments submitted for certification. As outlined above, 2,850 certificates (26%) are Post-construction Stage certificates matched to 2,850 Design Stage certificates (26%). The remaining 600 certificates (6%) are Post-construction Stage certificates from assessments which do not have an associated Design Stage certificate. In some of these cases the Design Stage certificate will have been issued before 2013 (the start of the study period for this digest); in others, the project may only have targeted a Post-construction Stage certificate.
Figure 13 shows the distribution in elapsed time (in years) between project registration and certification of Design Stage assessments in the approximately 7,400 Design Stage certificates issued between 2013 and 2017. For Design Stage assessments, certification was achieved within 1 year by 31% of assessments, 29% took between 1 and 2 years, and 21% took between 2 and 3 years. In other words, 81% of Design Stage certificates were achieved within 3 years of registration. A further 10% were achieved between 3 and 4 years and another 5% between 4 and 5 years. Consequently 96% of all Design Stage certificates were achieved within 5 years of registration.
Figure 13: Time elapsed between project registration and certification of Design Stage assessment (2013 to 2017)

Figure 14: Time elapsed between Design Stage certification and Post-construction Stage certification (2013 to 2017)

Figure 14 shows the distribution in elapsed time (in years) between the Design Stage certification and Post-construction Stage certification in the 5,700 matched pairs of Design Stage and Post-construction Stage certificates issued between 2013 and 2017. 58% of Post-construction Stage certificates were issued within the first year after Design Stage certification, with 31% issued between the first and second years. 9% of projects ran took between two and three years, with a small number of projects going into a fourth and fifth year.
The Capitol, Aberdeen, Scotland
BREEAM 2011 New Construction, Very Good
Certified in 2016

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