

# breTRUST

The Built Environment and the Future of Sustainability

The Role of BRE Trust in Supporting the Sustainable Development Goals



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### The Role of BRE Trust in Supporting the Sustainable Development Goals

#### Introduction

The UN Sustainable Development Goals (SDGs) are the measurables within the 2030 Agenda for Sustainable Development. This agenda has been adopted by all United Nations' member States. The 17 SDGs are broken down into 169 targets and are measured through 231 unique indicators (247 in total with 12 repeating across different targets). The SDGs are in place to address the key challenges that the world faces with regards to climate change, human health and wellbeing, inequality and justice, environmental degradation, resource overuse and scarcity, and socio-economic issues, visioning and aiming for a better, more sustainable world for all<sup>1</sup>. The SDGs are country level goals, meaning the indicators and KPIs reported against are more relevant on a large scale rather than on a company or organisation level. This can make measurement difficult to track. Measurement can be assessed both quantitatively and qualitatively with organisations having different methods of work or varying impacts on their industry. This diversity leads to many degrees of influence over the SDGs, meaning that particular organisations facilitate the goals in different ways.

If we take the construction industry as an example, the impacts it has on the social and environmental factors of the world will differ from project to project, building to building. Incorporating themes like social value, environmental social governance (ESG), sustainable construction, energy efficiency, net zero carbon<sup>2</sup> etc. into the industry's common practice can have benefits in the local context but also impact the global achievement of the SDGs. Organisations of any kind within or neighbouring the industry can have an effect over any of these key themes that are becoming prevalent. Understanding the interaction of the construction and real estate industries and sustainability helps identify the key areas that relate to the SDGs. The themes mentioned above are key drivers within the SDG targets and indicators and can act as a good starting point for evidence based measurement of SDG facilitation. Different organisations will have varying impacts over the SDGs, due to differing operational methods, outputs, and roles within the industry. Interactions between the industry and organisations and the SDGs can be classified as both direct and indirect. Direct impacts are more obvious or clear cut, whereas indirect impacts require some degree of extrapolation from the indicators and targets within the SDGs. Understanding the project level impact shown in Figure 1 is a good example of where organisations can facilitate from and show how they support the SDGs. Measurement against the SDGs and how they are supported will differ depending on the type of organisation.

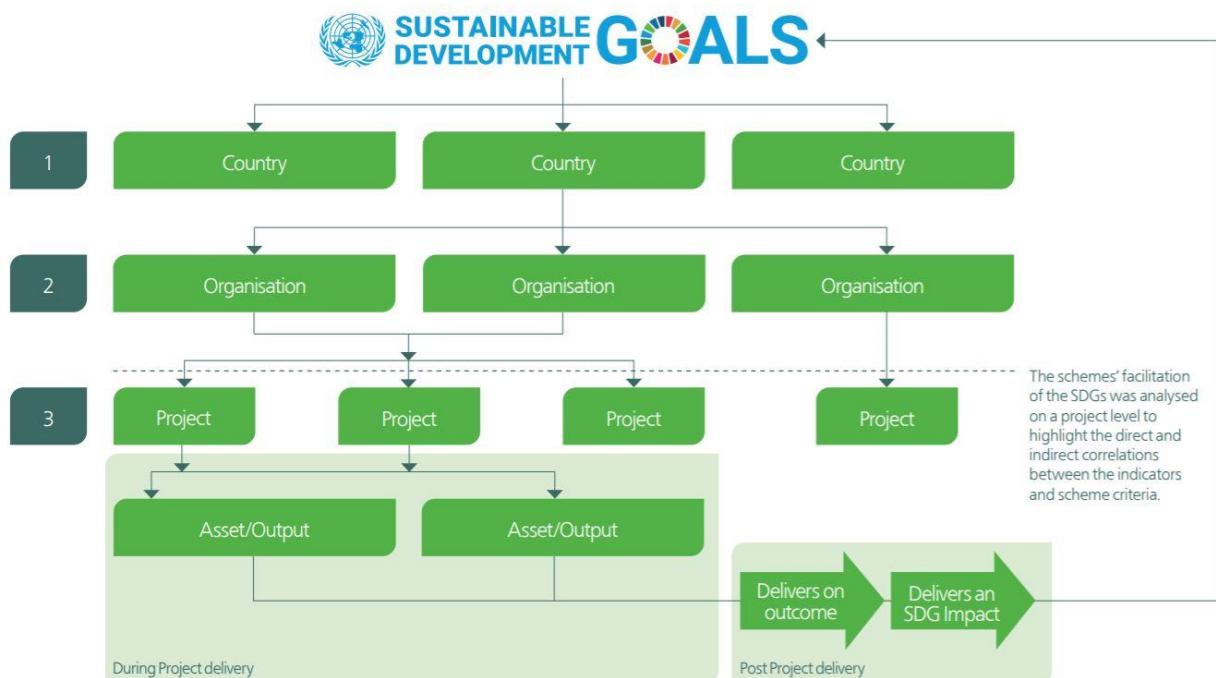
BREEAM, and the suite of sustainability assessment schemes have a distinct role within the construction industry, measuring sustainability across the lifecycle of construction projects from buildings to infrastructure projects. A BRE Trust Part funded PhD carried out by Paul Mansell, mapped the SDGs to CEEQUAL, the infrastructure specific sustainability assessment scheme. Mansell *et al.* (2020) identified links between best practice sustainability-reporting frameworks at the project level and organisational level. The work was published by the Institute of Civil Engineers<sup>3</sup> and allowed for the alignment of frameworks like this to the SDG targets and embedding them into the design and construction of projects. This published work led on to a similar mapping piece carried out by BREEAM, aligning the measurable criteria within the assessment schemes across the lifecycle of buildings to the SDG indicators. The criteria within schemes such as these allow for a clear, measurable way of comparison against the indicators within the SDGs. However, this method of comparison is not always readily available or as easy to portray. Understanding how a business or organisation operates and how it interacts with, or their role within an industry is key to understanding how it can facilitate the SDGs. This is not always as clear cut as using measurable criteria within an

<sup>1</sup> Referenced from the UNSDG website: <https://sdgs.un.org/goals>

<sup>2</sup> Links on topics mentioned: Social Value: <https://www.ukgbc.org/wp-content/uploads/2018/03/Social-Value.pdf>, Net zero carbon: <https://www.leti.london/one-pager>, ESG: <https://esg.org/>,

<sup>3</sup> Mansell, P., Philbin, S., Broyd, T. & Nicholson I. (2020). Assessing the impact of infrastructure projects on global sustainable development goals, *Institute of Civil Engineers- Engineering Sustainability*, 173:4, 196-212: <https://doi.org/10.1680/jensu.19.00044>

assessment scheme for example and may have stronger indirect linkages to the main themes that run throughout the goals and their targets.



**Figure 1.** SDG hierarchy and reporting level for the Goals, highlighting the project level interaction (adapted and redrawn from Mansell *et al.* 2020)

### The Role of an Organisation and the SDGs – BRE Trust

Particular organisations will impact the SDGs in different ways and from various approaches. Universities are research organisations that contribute to the achievement of the goals in different ways to business related operations and products like BREEAM. The main areas that Universities can contribute are through<sup>4</sup>:

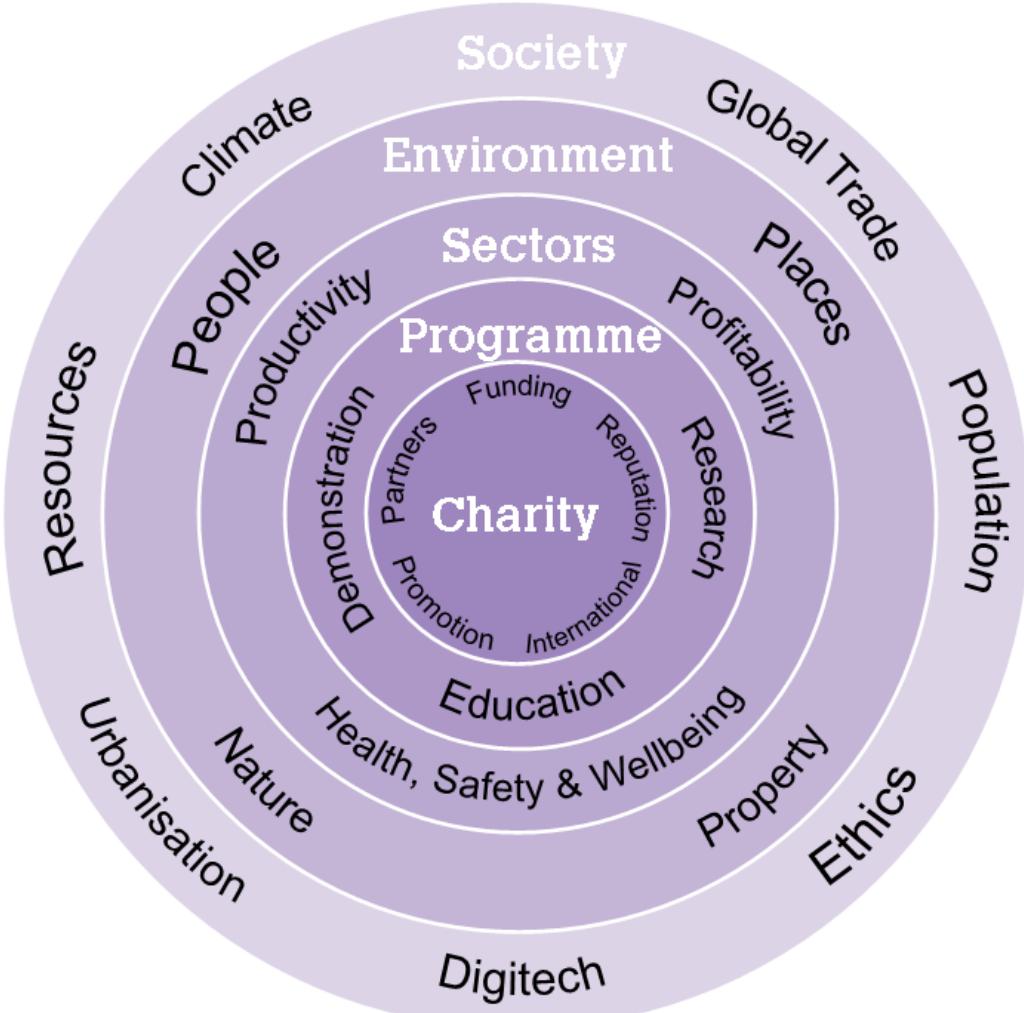
1. Teaching and learning: Mainly through the provision of accessible, affordable, and inclusive education to all. The provision of knowledge, skills, and motivation to understand and address issues such as the SDGs.
2. Research: Evidence based solutions, technologies, pathways, and innovations to underpin and support the implementation of the SDGs. Using research in a transdisciplinary and interdisciplinary way, is an effective approach to training for sustainable development
3. Organisational governance, culture, and operations – having the SDGs embedded in the internal governance of the Universities can accentuate linkages between the Universities, their work and efforts related to supporting the SDGs.
4. External leadership – The strengthening of public engagement and participation in addressing the SDGs and creating dialogue between partners and other stakeholders is key to generating widespread involvement in the support of the SDGs.

When established, the BRE Trust had the overarching goal to provide research and education for the public good in the built environment with a focus on embracing new knowledge and enhancing skills. The primary objectives were to deliver world class research, generate relevant skills and enhance the capabilities of those who design, build, and operate physical assets. This was carried out year on year through the provision of funds for effective dissemination of research outputs via a publications

<sup>4</sup> How Universities fit into the SDGs: <https://www.unsdn-ne.org/our-actions/sdgs-in-universities/>

programme, providing relevant data and knowledge needed by the wider industry and those who implement change in the built environment. Through the years, the Trust has become a globally significant supporter of the research needed to meet the complex challenges of climate change, urbanisation, environmental damage, and resource depletion. By emphasising the growth of world class capabilities and overseas knowledge exchange, the impact from Trust related outputs, be it through the wider BRE Group or external research and work partnerships, can have significant influence over the sustainability themes within the built environment and construction industry. A scoping carried out by the Trust in 2019 on internal and external activities showed 9 broad categories under which products, tools and methods that promote accessible sustainability fit: UK Government, Guidance, standards and policies, certification, Research and advisory services, Products and product listings, Financing initiatives, Design and build models, and Education and knowledge sharing. The benefits from sustainable development within the built environment is of critical importance when we take into account the issues of increasing housing shortage, rapid urbanisation, and mass migration and displacement. Adding associated issues like health and poor housing, the need for research, innovation and progression in the industry is crucial to furthering improvements in the built environment.

The Trust's impact is illustrated within the sphere below in figure 2. Through partnerships with multiple Universities and other organisations, the Trust has reach across the industry through a variety of avenues, from education through to product development.



**Figure 2.** The BRE Trust's sphere of influence displaying the different areas of focus and contact the Trust has in different sectors, environments, and societal themes.

The diversity in work packages and work partnerships that the Trust is involved with in one way or another increases the complexity when trying to associate Trust related activities with the SDGs.

There are aspects of Trust operations that can potentially be measured directly against the SDGs, however, the Trust's role within the industry as a research and knowledge sharing based built environment charity means its impact may be more indirect and span over a longer timeframe, as opposed to having fixed tangible outputs and indicators that are produced regularly. Another aspect of the Trust's operations that is somewhat distinctive is the reliance on delivery partners to achieve much of its intended impacts, as the Trust is often not involved directly in the work. The Trust is in a unique position, whereby it does link to the SDGs in a similar way that Universities do, and that it has organisational and business or product related links to the goals too. A hybrid of approaches taken allows for the identification, acknowledgement, measurement, and potential monitoring of the impact the Trust is having on the wider sustainability of the industry as well as the SDGs themselves.

### The Trust and the Sustainable Development Goals

The construction and property sector have a significant role to play in the 2030 Agenda for Sustainable Development. Buildings and the broader built environment have a significant impact on the natural and human environment. This makes the built environment and associated sectors a critical influence in the move towards a more sustainable world. The World Green Building Council believe that a green building<sup>5</sup> can contribute towards the achievement of the SDGs. The goals that they have selected specifically relating to green buildings are displayed in figure 3 below<sup>6</sup>.



**Figure 3.** The Goals outlined by the WGBC that are supported by “green buildings”.

The selected SDGs in this figure by the WGBC are a good summary of how the wider construction industry can contribute to the goals. Trust activities can be mapped to these 9 goals and they would be considered the 9 goals that are associated with the most significant areas of impact (Figure 4). By looking at the individual indicators and assessing the relevance of the themes within, against the themes related to Trust projects and workflows, correlations between past, present and future Trust led/funded projects and the SDGs can be drawn. The Trust's position as a charity and as a research based organisation, means understanding the position of influence is important to extracting out all

<sup>5</sup> “A ‘green building’ is a building that, in its design, construction or operation, reduces or eliminates negative impacts, and can create positive impacts, on our climate and natural environment. Green buildings preserve precious natural resources and improve our quality of life.” WGBC definition: <https://www.worldgbc.org/what-green-building>

<sup>6</sup> Infographics in relation to the WGBC and SDGs are taken from their website: <https://worldgbc.org/green-building-sustainable-development-goals>

the possible connections between the Trust and the Goals. This interaction isn't just about the individual activity of the Trust but about utilising these partnerships the Trust has created and what can be achieved through such partnerships. It is not just about the individual outputs but also the wider effects that develop and improve the capacity within the supply chain. Putting an emphasis on accessibility to knowledge and tools, not just for elite projects, but for all relative industries is a key aspect of the Trust's operations and their connection to the SDGs. Research disseminated to industry, generation of educational content that is fed into University programmes, application of built environment technologies and skills to other sectors (e.g. the humanitarian sector), and accentuating the importance of sustainability themes like resilience, human health and wellbeing, and social value, are some of the areas in which the Trust has an impact. Through partnerships with various Universities and other organisations, spanning across different countries and sectors, the Trust can impact themes within SDG targets and indicators across all the goals. Naturally, some themes are less directly related to the Trust than others however, there are aspects in past, present as well as prospective work and partnerships that are arising allowing for correlations to be drawn. The high level descriptions of each SDG can allow for good, solid comparisons, but looking at individual indicators and working up through to the target level and goal level, can highlight relationships that may go unnoticed and advanced in future plans.



Figure 4. Degree of influence circle showing the different levels of impact the Trust has over certain Goals. The primary Impact zone displaying direct correlations with the more indirect and “trickle down” effects occurring as you move through the zones. (Icons from <https://www.un.org/sustainabledevelopment/news/communications-material/>)

## Core related SDG Examples<sup>7</sup>:

Good health is a key factor in sustainable development, with a complex relationship between the two. Some of the issues and connections stem from widening economic and social inequalities, increased urbanisation rates, and exacerbating climate change and threats to the environment.

Evidence for the indoor environment and its impact on Health and wellbeing is mounting. The Trust has funded and supported the development and validation of improved test and data analysis methods. Further support has been provided to ensure the successful dissemination of the outputs via 25 publications which have fed into many other public, academic and charitable organisations, informing their own research and interventions, helping to underpin new standards, products and services.



The estimation by 2050, is that 6.5 billion people will be urban. Changing the way in which we build and manage urban spaces will allow for the upgrading and progression of cities and sprawling urban areas in a sustainable manner.

The building of resilient societies and economies will be key to ensuring sustainable development. Through University partnerships and research consultations, resilience has become a core theme within the Trust. Sustainable development and resilience building are key parts in past projects and will continue to be a core theme within future work.



Worldwide consumption and production is in excess and has been a significant contributor to ecological footprints globally. Changes need to be made in the use of the natural environment and the resources extracted so that we can lessen the current rate of destruction.

In short, it's about doing more with less, and about the decoupling of economic growth and environmental degradation and increasing resource efficiency. Through research partnerships and sponsorships, and assessment frameworks and tools, the Trust has a wide repertoire of related works that encourage the sustainable procurement and use of construction materials that are recycled or reused, including sustainable use of energy and reduction in embodied carbon emissions.



Climate change is the single biggest challenge the world faces right now and is one that will be experienced collectively across the globe. It will affect every country, every continent, causing disruptions to economies and disrupting lives, and causing death in the worst cases. The causes and effects felt from climate change are multifaceted and stretch across environmental, social and economic factors.

To combat climate change, there needs to be a mass reduction in greenhouse gas emissions through various mitigation approaches. However, while mitigation is important, the effects of climate change are already being felt across the world, meaning the need for adaptation and resilience building is just as important. Collaborative and sponsored works surrounding resilience in the built environment, past and present, link the Trust to this goal. From flood and energy resilience research to the sustainable retrofitting of buildings, the Trust has a wide variety of projects that assist in the battle against climate change as well as a strong focus on resilience and sustainability moving forward.



<sup>7</sup> Goal Summaries and background facts: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

## BRE Trust Case Studies<sup>8</sup>

### Third Party Certification:

BRE Group are experts in third party certification, with a broad range of standards, assessment schemes and scientific research related to the topic. Group certification schemes are reinforced and supported by Trust-funded research and training development to provide further rigour to the standards and certifications.

The [RedBook](#) and [GreenBook](#) are two examples of listings that provide certification from a range of BRE products. Certification is a tool that allows customers to know that products and services reliably and effectively do the jobs that they are intended to do, to a quality defined against scientifically backed baselines. The provision of third party assurance, through impartial experts, ensures that products and services are created and carried out at a level that meets international safety, quality, and performance standards. Generating standards and certification methods and pushing them into related sectors allows for the opening up of markets and assurance for both producers and consumers that what they are doing is at a level of quality they can Trust. Introducing these standards to industry provides users with the capacity to improve and promote their products while also potentially raising the benchmark for product quality among consumers.

The standards and certification schemes that are linked to BRE reach across a broad spectrum of sectors within the industry, including the security, sustainability, resilience, and quality of assets, products, and practices within the built environment. These standards have an impact on all types of buildings including and not limited to:

- Offices
- Educational buildings
- Healthcare buildings
- Residential buildings
- Mixed use buildings
- Data centres
- Industrial buildings
- Retail buildings

The quality of the stock within the built environment is a crucial factor that can influence the success of sustainability efforts and social empowerment schemes. Without significant, collaborative, and coordinated efforts across the sector, the success of such movements can be turbulent and patchy. Standard setting along with the widespread acceptance and implementation of said standards is a powerful tool in raising the benchmarks within an industry and improving the quality of work within, across the board. By using standards, the baseline of sustainability efforts is raised in an industry and can lead to innovation within as stakeholders go beyond the baselines in order to promote their particular work and products.

This improvement can have a wide range of impacts on the SDGs, depending on which sector is being looked at. Using the degree of influence and direct and indirect impact thought processes, correlations between improved standards and benchmarks can be seen across a number of goals. For example, raising the benchmark for energy efficiency in homes can reach across social and environmental benefits through the reduction in carbon emissions and the lowering of billing costs for occupiers. Certification is a useful tool, but multiple standards can create confusion and competition. However, multiple standards, assessing topics to varying degrees of detail can be useful, particularly when comparisons to broader schemes can be drawn. The Trust has funded equivalency mapping between BREEAM International New Construction 2016 and BREEAM International In-Use 2015 to

<sup>8</sup> Links for materials mentioned in relation to certification:

SDG Targets and indicators:

[https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review\\_Eng.pdf](https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review_Eng.pdf)

SABRE: <https://www.bregroup.com/sabre/>



two standards in China and USA: Chinese Assessment Standard for Green Building (Three Star) and the WELL Building Standard respectively.

### Third Party Certification

The Trust funded mapping between BREEAM and China Three Star aimed to show the areas within the two schemes that could be used as equivalents to one another. This provision of research can help to identify gaps in either scheme, areas for improvement and areas for increased correlation between the two to help promote both the schemes, and the technical improvements in buildings.

Further work is needed to better understand where technical equivalents can and cannot be drawn but this type of work helps to increase the standard for certification schemes, through knowledge sharing and collaboration.



The WELL mapping showed fewer areas where cross compliance could be shown due to the method of measurement within the schemes being different.

However, due to WELL's focus on occupant health and wellbeing it has shown correlations between BREEAM's criteria and WELL's and provided confirmation of how both schemes can impact the health of those that interact with buildings accredited with a rating from either of the schemes.



### SABRE

SABRE is security risk management standard for new and existing buildings, infrastructure assets and managed space. SABRE provides industry and industry stakeholders with the capacity to communicate their ability to manage security risks.

This is the result of fundamental research that was funded by the BRE Trust. Moving from individual product certification to a holistic security assessment scheme across a variety of sectors.



Individual connections can be drawn to a number of the SDGs, depending on the themes within each individual product analysed related to certification. From BREEAM and CEEQUAL through to Responsible Sourcing, ethical labour sourcing and other BRE Group delivered certifications and standards, many of the key themes within the SDGs are impacted through the support of the wider industry to perform at a certain level.

Certification can be linked directly to specific targets and indicators within Goal 11, e.g. target 11.3 and 11.B. While these are two good examples of where certification can fit, the effects of increased quality across the industry is wide reaching and would have influence across the SDGs. Different certification schemes and standards will influence different goals depending on the core elements of the schemes and standards themselves.



## BRE Trust Case Studies

### Accessibility

Opening up and providing accessible, applicable information is a key part of Trust related activities. Being a built environment charity brings obvious connections to the built environment sectors, like construction and real estate. However, the Trust's research and associated funded work also reaches across several other sectors, including the retail, humanitarian, and health sector. The Trust has sponsored, promoted and worked on various projects that have taken built environment related research in collaboration with relevant professionals and experts, into different sectors to provide them with the rigour and access to tools, training, and science that is not as widely available or potentially overlooked.

The mission of the Trust is “to enable transformational change within the built environment through research, demonstration and education”, and by branching beyond the direct stakeholders, the Trust has managed to reach areas less supported by the knowledge related to the built environment and its effects. Research is important in order to understand how to move forward, however, without proper dissemination and mobilisation, it can go to waste. Mobilisation may involve the adaptation of research or knowledge in order to be applicable in sectors that may not have access to solutions that are available in other sectors. The sustainability theme within the Trust’s ethos aims to provide accessible solutions for all. Many have identified the potential for improvement within our built assets, and the efficiency of their construction and operation, while simultaneously creating a more sustainable and stable environment and economy. Supporting affordable solutions for those that may currently find it difficult to make sustainability a priority can open up access to tools and skills that allow for more widespread impact on the SDGs. This can improve areas to do with material sourcing, energy use in construction and operation, lower impact construction methods, waste management, and efficient management of resources to reduce carbon footprint. The focus on sustainability, as well as resilience and wellbeing has opened up connections between the built environment, the health, and humanitarian sectors.

The research on the relationship between building quality and health and wellbeing of occupants or users has become more and more prevalent within the construction industry. The Trust has funded research highlighting links between buildings and their effect on circadian rhythms, the resilience of aging communities in relation to dementia and independent living, and the related health effects of indoor air quality. The adaptation of built environment tools and assessment methods has led to a working relationship with professionals across the humanitarian sector, helping to provide access to building and material science, tools and certification to an industry that does not have this information widely available. The nature of the humanitarian industry means there is little time to develop or to have sustainability as a priority. BRE’s level of expertise and experience in these areas can help to provide the tools to provide rigour to sustainability based approaches that cater to the humanitarian sector.

The Trust’s work within this theme has many links to specific targets that are easily missed without understanding the impact providing relevant tools to other sectors can have. Provision of research, knowledge and skills surrounding sustainable development, resource use and capabilities across multiple sectors and countries is a common theme in many goals, including targets:

SDG Target Number	Description / BRE Trust Links
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	Through supporting research and education programmes that feed into academic courses and CPD programmes, the Trust is supporting partner organisations to acquire knowledge and skills and use those in a teaching capacity.  E.g. University partnerships, <a href="#">QSAND</a> training materials, support for <a href="#">Long Seng To's RAEng Fellowship</a> and associated research programmes in Nepal and Malawi.
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes	Through the support and creation of tools and work that look to encourage sustainable development, with a focus on development and increased resilience while reducing the impact on the natural environment. Energy efficiency and

<p><i>on sustainable consumption and production, with developed countries taking the lead</i></p>	<p>material consumption are also key factors in some Trust sponsored works.</p> <p>E.g. <a href="#">QSAND</a>, <a href="#">LCA in the Humanitarian Sector</a>, <a href="#">Long Seng To's RAEng Fellowship</a> and associate works, BREEAM mapping, and the <a href="#">Solar Decathlon</a></p>
<p><b>12.2 By 2030, achieve the sustainable management and efficient use of natural resources</b></p>	<p>Similar to target 8.4, as they share the same indicators for measurement, there are aspects within the Trust activities that look to assist other industries and their ability to sustainably manage and efficiently use resources and materials.</p> <p>E.g. <a href="#">LCA in the Humanitarian Sector</a>, <a href="#">Long Seng To's RAEng Fellowship</a> and associate works, and the <a href="#">Solar Decathlon</a></p>
<p><b>9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending</b></p>	<p>As mentioned above, the mission of the Trust is “to enable transformational change within the built environment through research, demonstration and education”, and by branching beyond the direct stakeholders, the Trust has managed to reach areas less supported by the knowledge related to the built environment and its effects.</p> <p>The examples mentioned above, particularly the research that has been utilised in sectors that lack the capacity to carry out their own, apply here.</p>
<p><b>17.6 Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism</b></p>	<p>Increased knowledge sharing is a core part of the Trust, and the provision of expertise through tools like QSAND is a key part of many projects supported by the Trust. Widespread provision of built environment science and knowledge has been a significant part of previous and current projects. Supporting projects and other scientists and researchers with funding and relevant knowledge from BRE research can drive innovation in other sectors.</p> <p>E.g. <a href="#">Global Building Network Partnership</a>, through this partnership, the BRE Trust is keen to connect to other actors working to improve the built environment globally, both in practice and in the academic sphere</p>

These particular targets are examples of some that may be missed when looking at the interaction of the aforementioned themes and the high level goals themselves. Accessibility of information and collaboration across different industries opens the door for wider impacts across the Goals from the research provided by BRE Trust and others within the industry who are providing a similar level of work.

## Accessibility



Central to the thinking behind the QSAND tool is that sustainable approaches to reconstruction can help limit the impact disasters have in the short, medium and long terms and improve the resilience of local communities to future disasters as they occur. This focus on the development of local skills and capabilities through a holistic approach demonstrates QSAND's overarching support for the SDGs.

QSAND primarily focuses on Goal 12, 11, 7 and 6, among others. The consideration of the natural environment alongside the needs of people globally is an important part of QSAND. This provision of a framework offers a potential protective barrier against disasters, and follow up events by supporting the protection of local ecology, balancing this against the maintenance of livelihoods and economic prosperity. QSAND is scoped at the short, medium and long term in terms of disaster recovery to help avoid or mitigate further harm to the natural environment that can occur during reconstruction.

The ongoing work to use and improve QSAND in order to make it more and more applicable in the humanitarian sector is key to improving the benefits that can come from frameworks such as this, and their support of the SDGs. QSAND driven connections have led to an expansion of Trust related activities in the humanitarian sector, with ongoing projects with multiple experts in the sector to apply BRE knowledge in areas like Life Cycle Analysis, and the Built environment and health in relation to shelter and settlements post disaster.

Health and wellbeing has an intrinsic relationship with the built environment. Increasing amounts of research is coming to the fore about the interactions users and occupiers have with buildings and the environment around them, and how these impact health and wellbeing. There is mounting evidence that the indoor environment has an effect on our health, wellbeing, performance and productivity and as 65-75% of the population (UK) spending more than 80% of their time indoors, the need for good quality environments is a growing priority.

The Trust has funded >£780k in order to provide support for the development and validation of improved test and data analysis methods, while in addition >£320k of funding has facilitated the wider dissemination of the outputs. The Housing Health Cost Calculator produced by BRE in 2012 provided a valuable resource for Local Authorities to assess the impact of their interventions on NHS cost savings.

The focus of the BRE Trust work on validating test methods and approaches to the evaluation of a combination of factors in real environments has led to assessing the indoor environments of a number of health facilities. This considered the impact of complex controlled and mechanically ventilated environments on staff and patients. This also includes specific considerations of artificial lighting on circadian rhythms, and indoor air quality assessments. Through the funding and facilitation of research and design of a dementia friendly home, BRE Trust and its project partners have managed to provide solutions to increased health care issues and costs related to dementia in aging populations.



## BRE Trust Case Studies

### Research and Funding

Research is a core part of Trust activities. This research is carried out in various ways, but through utilising partnerships with universities the initial benefits of funding can extend beyond specific research or project outputs. Research is beneficial in many ways as the results feed into industry through the direct outputs but it also benefits teachers, professors and new students coming through the system over the years as the material produced during research is fed back into the educational system.

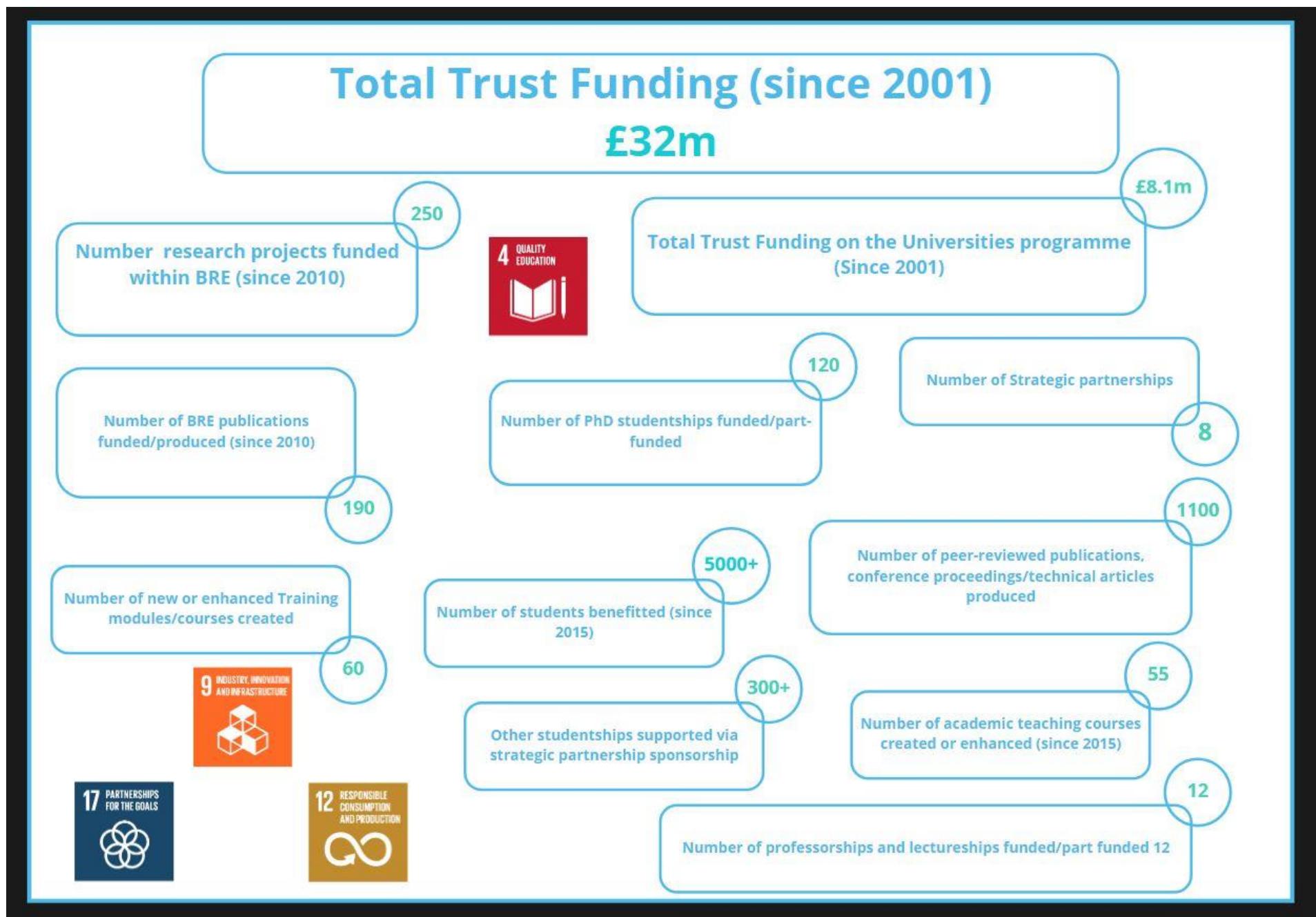
It is not just about the direct output and the impact and benefits this has, but it is also about skill development. Feeding what is gained from this research back into teaching creates benefits over the short, medium, and long term. By growing the research capability in Universities and other areas, then the level of skill within an industry can be influenced through the generation of educational content from previous research. The outputs from research are not just the published results. The teaching elements that are created off the back of this research are also outputs that are generated from this funding.

The Trust's role as a funding charity allows it to reach across many areas, depending on the research topic being investigated. However, this funding case study focusses on the particular goals, targets and indicators linked to development assistance and capacity building with regards to education and skills, access to research and information and learning materials.

BRE Trust has partnerships with several different universities, all focusing on a different particular area for their research. Each partnership will have a different degree of impact on different SDGs, however, all will have benefitted from and generated more outputs from Trust funding. These partnerships are a key part to the Trust's role in the wider industry. While the Trust has provided a lot of funding for research within BRE Group itself, the partnerships with universities allow for external influence and enhancement of industry related research, generation of more and more opportunities for students and increased innovation across the sector, through the generation of research outputs and feeding this back in to teaching materials over time.

University partnerships and the broad areas of focus within each included:

- [University of Bath](#) – Sustainable and responsible construction
- [University of Strathclyde](#) – Energy Systems
- [University of Cardiff](#) – City level systems – Engineering and design
- [University of Edinburgh](#) – Fire safety
- [University of Loughborough](#) – High performing buildings, sustainable construction, and resilience
- Tsinghua University, Beijing - Community resilience



## What next?

Measuring intent when it comes to the SDGs is difficult when looking retrospectively. However, drawing correlations between the SDGs and the impact intentions from the examples mentioned above is possible and is a way of demonstrating a strong relationship between BRE Trust and the overall arc of the goals. Retrospective analysis is good, and important, in order to identify the areas of impact and support in relation to the wider sustainability agenda. In order to be a sustainability driven organisation, it is important to acknowledge areas of strength and potential weakness in order to be a truly effective player in the fight against climate change and enhancing broader sustainability. The point at which these examples are at in terms of maturity is important to note. Standard setting and certification are what the organisation does well, driving what good looks like and setting those benchmarks with regards to buildings and the built environment. Accessibility occurs more so as a consequence of what BRE does. While standard setting and certification are well developed processes within BRE, other outputs and processes may be less so. As other outputs begin to mature, this could leave room for further focus or connection between these activities and recognised external frameworks like the SDGs.

The relationship between the goals and past and present projects is important, but as the SDGs are part of the 2030 Agenda, there is still work to be done, and it is important for them to be incorporated and supported, with intent, in all future projects and outputs. There are potentially a number of ways to create a supporting framework, be it at a product or project level, or organisational level. The benefits could be multiple, as increased depiction of the support towards the SDGs can also demonstrate impact within the industry and provide evidence of this impact. In order to draw correlations between the goals and organisational products and activities in the future, there needs to be a more integrated approach. Integrating a more robust method of capturing impact on the goals, can help to provide a more robust level of evidence towards impact statements with regards to the wider industry in general. Providing evidence and a reporting mechanism against the goals can be incorporated into more general impact measurements, which can help to show the effect of organisational products and outputs on the industry and to the SDGs simultaneously, adding more value to them.

Future steps or approaches that could be beneficial for the Trust and the wider BRE Group:

- Reform evidence capture to encapsulate the longer term measurement of impact against recognised external frameworks like the SDGs.
- Analyse the wider portfolio of products and practices within BRE Group against the SDGs.
- Identify the main impact areas against the SDGs and investigate ways in which these can be accentuated in the future while also highlighting any potential gaps that could be filled with a different focus.
- Develop a framework to utilise the Goals as a reporting tool to advertise the wider benefits of BRE's activities. The incorporation of frameworks like this, and others (e.g. social value measurement frameworks) can help to bolster and add rigour to the impact statements behind certain products and provide support to other themes like ESG reporting.
- Utilising a more holistic view, try to identify any gaps in SDG support that may occur and see where these can be filled through the overlap and interaction of the products and services provided by BRE. Not every target and indicator within the goals is supported by singular products and services, so by identifying areas where these interact and overlap, support for indicators and targets that may otherwise be missing can be identified through this holistic approach.

Authenticity is key to these frameworks and supporting them by intentionally monitoring and measuring the impacts going forward is what is needed in order to help progress the 2030 agenda. Without a focus on the future, then previous facilitation will lose its value, so by building the SDGs and frameworks like them into organisational operations, the value of both past, present, and future impacts will be bolstered.