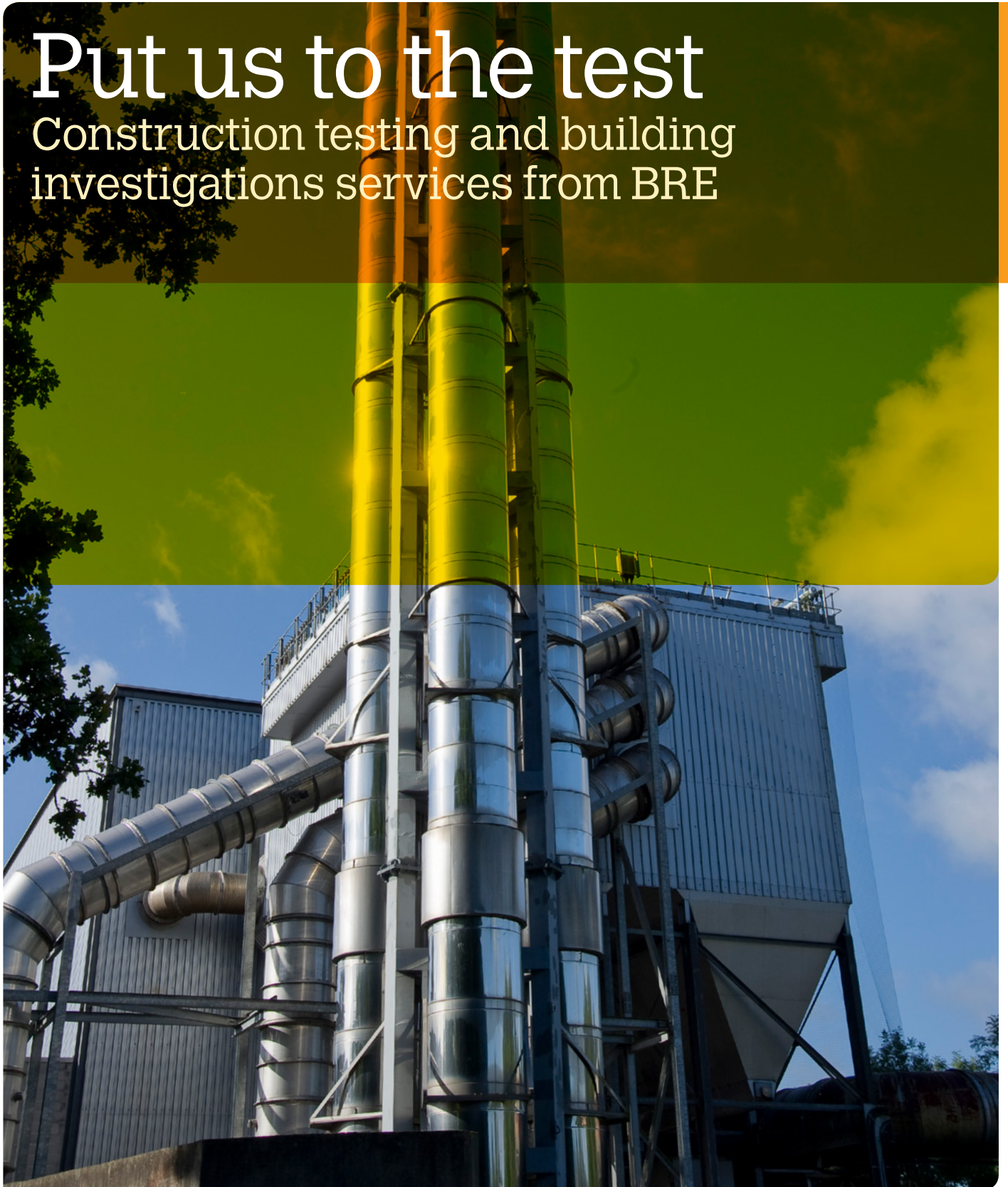


# Put us to the test

Construction testing and building investigations services from BRE



Backed by an extraordinary range of facilities BRE prides itself on being able to answer virtually any construction-related testing question. Created in 1921, we were the world's first dedicated testing and research organisation for the built environment and remain one of the world's leading, independent centres of knowledge in this field. Our experts test individual materials and products, building systems, engineering structures and whole buildings using both well established methods and bespoke research tests and simulations. Several of the international performance standards for the built environment were developed by BRE, giving us a unique insight into the testing requirements.

# Unrivalled testing facilities for the construction industry



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## Our unique range of test facilities on our site in Watford, Hertfordshire, include

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- large scale structural test facilities, including a structural test hall capable of accommodating a four storey building and applying loads of up to 2,500 tonnes
- a wide range of testing facilities related to performance of timber and timber engineering, concrete, stone and other traditional and innovative construction materials and components
- unique facilities for testing performance of renewable energy systems, and compliance to standards
- two atmospheric boundary layer wind tunnels in which natural wind can be simulated for a vast range of environments
- one of the largest anechoic chambers in Europe and well equipped acoustics laboratories
- HVAC laboratories, including heat pump test facilities and environmental test chambers for full scale mock up testing of internal environments and HVAC systems
- the largest Burn Hall in Europe used for fire detection and suppression research and testing
- bespoke test facilities can also be constructed as required.

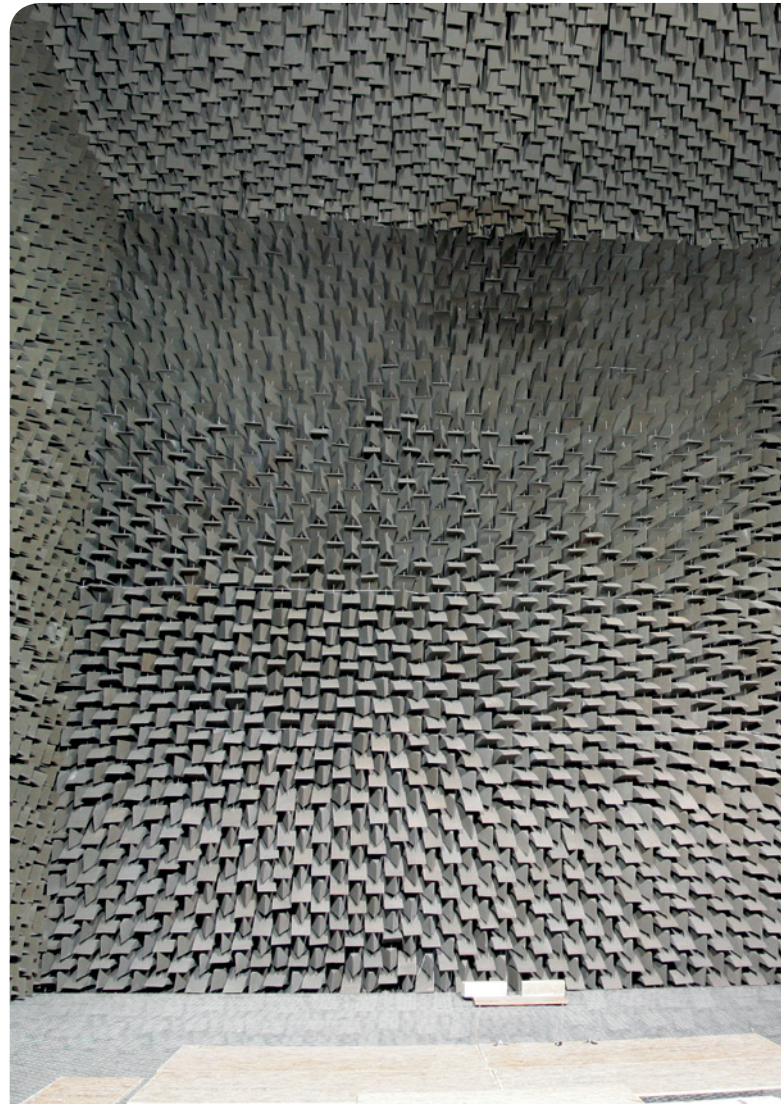
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## Building investigations and expert witness service

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With expertise in every aspect of buildings and their construction, we can help you to prevent and solve problems wherever they arise – from corrosion in concrete bridges to crumbling façades in office buildings.

BRE also provides a seamless, multi-disciplinary approach to technical arbitration, dispute resolution and bespoke expert witness services.

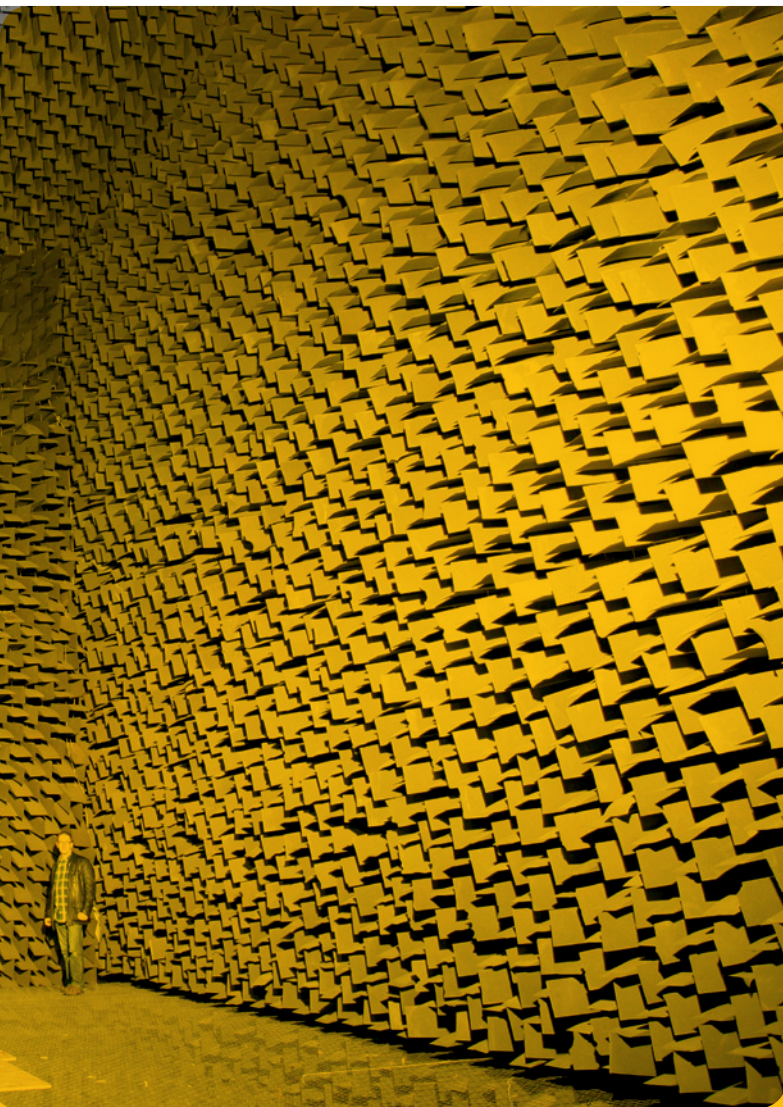


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**Julie Bregulla is Director of Construction at BRE and leads our team of structural, civil and geotechnical engineers as well as overseeing and developing work in BRE's large scale bespoke testing facilities.**

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“BRE has been involved in testing for the construction industry for over 90 years. We offer a unique selection of tests and an integrated suite of facilities which, combined with our range of knowledge and expertise means that we are continuously at the forefront of our field.”

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## Specialist engineering support

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BRE can undertake any specialist testing and investigations into the real behaviour of structures, systems and products. Our impressive structures laboratory is big enough to test at full scale, taking loads from 1kN to 10,000kN in its testing machines and across its floor.

We offer a wide range of tests, from model-scale to large-scale load tests on structural elements right through to complete systems. We can also test steel, concrete and timber construction testing plus dynamic loading. Our test capability is complemented by expertise in the analysis and design of structures using all materials, including non-linear finite element analysis.

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## Loading

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Our wind engineering test facilities are among the best in the UK. They include two atmospheric boundary layer wind tunnels in which natural wind can be simulated for environments ranging from open country to city centres. We make a model of your development and surrounding area, typically at a scale of 1:200 to 1:300. We can then predict the:

- structural and cladding loads imposed on the building and its dynamic response to them
- pedestrian environment around the building
- optimal locations of ventilation inlets and exhausts
- dispersal and concentrations of pollutants expelled from the building
- impacts of accidental releases (such as smoke from fires or chemical plant accidents) on populated areas.

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## Fire safety engineering

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BRE operates one of the largest fire research and testing laboratories in Europe. We offer clients a wide range of fire resistance testing for the construction, marine, offshore and other industries. We test to assess fire resistance performance to British, European, marine and international fire standards.

Our facilities include:

- the BRE burn hall used for large scale testing
- standard column, beam and wall furnaces for fire resistance testing
- a portal furnace facility used to conduct tests on a wide range of structural assemblies.

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## Acoustics

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BRE provides high quality consultancy and research in building acoustics, environmental noise surveys and assessments, transportation (traffic, railway and aircraft) noise and noise mapping.

We offer pre-completion testing to demonstrate compliance with performance standards in the Building Regulations, and the Code for Sustainable Homes. We have world class acoustic laboratory facilities for measuring airborne and impact sound insulation including a flanking laboratory. We also have one of the largest anechoic chambers in Europe.

Our projects range from government research projects to advice on commercial and domestic buildings and Environmental Impact Assessments (EIAs).



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## Indoor Environments

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BRE offer a range of testing and monitoring services covering many aspects of indoor environments, be they residential or commercial.

Our services include:

- acoustic testing
- airtightness testing
- energy assessments
- HVAC testing
- indoor quality testing and monitoring
- lighting assessments
- pollution impact testing
- ventilation measurement

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## Testing Innovation

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Our expert teams are among world leaders in built environment research and innovation. Their capacity to generate new knowledge and to support and test new ideas underpin cutting-edge research and innovation services in all areas of the built environment.

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## Certification

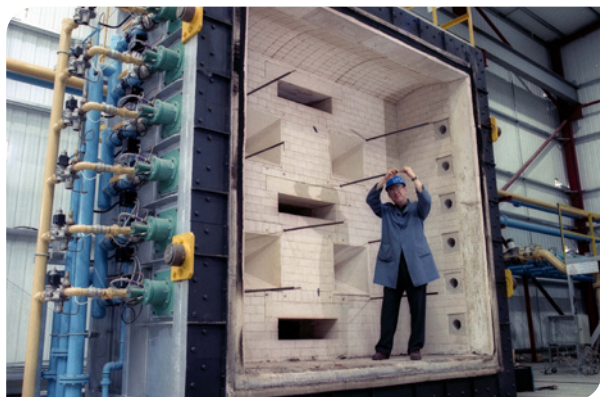
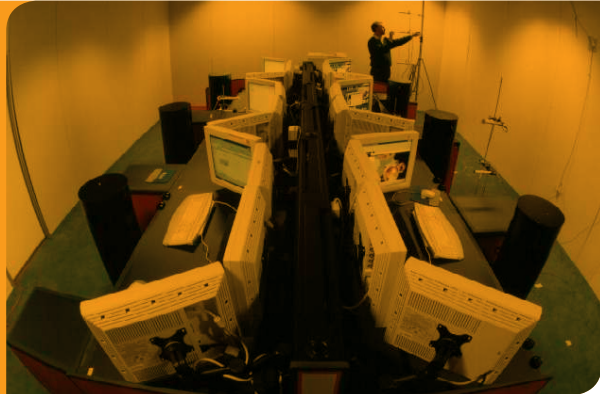
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BRE can also provide independent, third party certification of fire, security and environmental products and services. Our status as a UKAS accredited laboratory reflects our competence and impartiality in this field.

If you would like to know more about the services BRE offer or if you need help with a particular project

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#### **BRE Trust**

The BRE Trust uses profits made by BRE Group to fund new research and education programmes, that will help it meet its goal of 'building a better world together'.

The BRE Trust is a registered charity in England & Wales:  
No. 1092193, and Scotland: No. SC039320.