

SERVICES FOR CONSTRUCTION CONSULTANCY COMPANIES



**ENVIRONMENTAL
CHARACTERIZATION**

STRESS ANALYSIS

CHANGE OF USE

**VALIDATION BY
TESTING**

**CHARACTERIZATION
OF MATERIALS**

**INSTALLATION
& FABRICATION
TRIALS**

**SAMPLING &
LABORATORY
TESTING**

**SITE
INVESTIGATIONS**

**REPAIRS -
VALIDATION**

**FAILURE
INVESTIGATION**

CHANGE OF USE

We provide structurally intrusive and non-intrusive investigations of existing buildings which are undergoing refurbishment for change of use. This can include a structural stock-take, assessment of redundant capacity and of useable life left in the structure.

STRESS ANALYSIS

Digital Imaging Correlation (DIC) provides real time stress analysis of loaded elements within the laboratory or on-site. This technique traces the load distribution within a product or building to produce a visual image of the performance, enabling any areas of weakness or future problems to be predicted.

SAMPLING & LABORATORY TESTING

All materials can be sampled on-site; these can be structural elements or facing materials. Different materials require different sampling techniques, and care must be taken not to affect the structural integrity of any element. We test the samples for physical, material and structural properties which establishes their suitability for use in their current environment.

FAILURE INVESTIGATION

A material, structure or structural element can fail on-site, either during the construction phase or during its design life. Work programs can be developed to generate information to discover the cause of a material or structural failure and to develop a method to mitigate or correct it.

INSTALLATION & FABRICATION TRIALS

At Lucideon, we can verify installation and fabrication processes, and develop alternative techniques to optimize the use of energy, time or materials. These can be carried out at the manufacturing point, in a controlled laboratory environment mock-up facility, or at a real site installation.

ENVIRONMENTAL CHARACTERIZATION

All aspects of environmental impacts need to be considered. Of major importance is the suitability of materials with respect to their design life. Samples can be subjected to accelerated weathering and assessments made as to their structural integrity as well as their aesthetics.

CHARACTERIZATION OF MATERIALS

Our experts carry out on-site sampling to establish physical properties such as compressive strength, water absorption, modulus of rupture and durability properties. The materials are analyzed to give elemental content and characterization, or mineralogical phases.

REPAIRS - VALIDATION

We can assess the suitability of materials for repairs to historic buildings or structural elements. The durability aspects and structural performance-enhancing capacity can be verified on-site or in our laboratories.

VALIDATION BY TESTING

Performance can be calculated from codes; however the answers given are often conservative. Testing generally gives a higher value or proves that the system is inadequate, protecting against future liabilities. We can build and test mock-ups in our laboratories or carry out testing on-site.

SITE INVESTIGATIONS

We undertake on-site investigations to establish material properties or the structural adequacy of the building superstructure. Sampling can be carried out on-site and analyzed in our laboratories to evaluate material properties or chemical composition. We are also able to assess the suitability of materials or adequacy of installation.