

Structural Health Monitoring

Structural Health Monitoring (SHM) is a method in which sensing instruments are used to collect data that will be processed and interpreted to create a monitoring system through the life-cycle of an asset. SHM is a stepped process that promotes the more efficient management of assets by allowing the asset owner to understand operational conditions, implement appropriate maintenance schedules, reduce costs, promote safety and ensure long-term operation. SHM systems are used to measure current parameters of building performance and compare these to engineering-design specifications as well as past building performance.



The Applus+ solution

Applus+ RTD provides SHM services based on the early consideration of key factors including:

- Identification: what are the parameters to be measured and what are the considered metrics for measurements and health assessments?
- Sensing and communication equipment: what types of sensing instruments are needed to collect the required data and what data-logging and communication systems should be used?
- Data management: how should the data be processed, interpreted, reported and communicated and how can anomalies be identified?
- Integration: how can the data be drawn together in the best way to make informed decisions about structural health?
- Applus+ RTD has the experience and expertise to guide asset owners through this process in order to successfully monitor the health of their assets.

With our unique ability to perform SHM, as well as conventional and advanced non-destructive testing, Applus+ RTD provides a one-stop shop for all of a client's testing

and monitoring needs. In addition, our extensive global network of offices means that we can provide services to clients at short notice, wherever they are in the world.

Target customers

Structural health monitoring is of relevance to a wide variety of sectors and typically starts during the design stage of an asset. In this way, plans to acquire and interpret data on the health and functioning of the asset are built-in at an early stage. SHM services can also be provided post-construction and as part of an ongoing maintenance plan.

Key customer benefits

The benefits of partnering with Applus+ to establish an SHM system to monitor an asset include:

- The ability to optimise certain structural features based on real-time data
- Early detection of damage or potential damage, enabling proactive corrective measures to be taken
- Reduced operational and maintenance costs
- Long-term structural sustainability through monitoring
- Increased public confidence