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Structural Health Monitoring

Structural Health Monitoring (SHM) is a method in which sensing instruments are used to collect, process and interpret data for a structural integrity monitoring system through the life-cycle of an asset. Structural health monitoring is a stepped process that promotes more effectiveness in asset integrity management by allowing the asset owner to understand operational conditions and implement appropriate maintenance schedules that reduce costs, promote safety and ensure long-term operation. Systems for structural health 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+ provides services in structural health monitoring based on the early consideration of key factors including:

- Identification: what are the parameters to be measured, and what are the considered metrics for structural health measurements and 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+ has the experience and expertise to guide owners through this process to successfully undertake the structure health monitoring of assets.

Applus+ can deliver a wide range of services in structural health monitoring of buildings and civil infrastructure, as well as conventional and advanced non-destructive testing . We provide a one-stop shop in structural monitoring solutions and testing 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

Applus+ deploys services in structural health monitoring in a wide variety of sectors, and typically starts during the design stage of an asset. In this way, the data on the health and functioning of the asset are acquired, interpreted and built-in to the asset integrity management plans at an early stage. Services in structure health monitoring can also be provided post-construction and as part of an ongoing structural monitoring and maintenance plan.

Key customer benefits

The benefits of partnering Applus+ to establish an SHM system and deliver structural monitoring solutions as part of the asset's life-cycle 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
- Improved structural monitoring and maintenance to reduce operational costs
- Long-term structural sustainability through monitoring
- Increased public confidence through infrastructure health monitoring