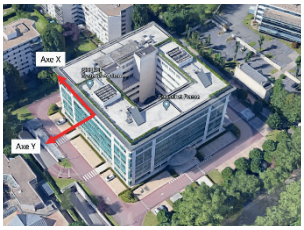
› GLOBAL STRUCTURAL MONITORING

Build'Health

Follow-up of structures state of health by vibration monitoring

YOUR CHALLENGES

- **Monitor the structural health of your building** throughout its **entire lifecycle.**
- **Quickly estimate the level of damage** sustained by the buildings after an event or incident (construction works, accident, earthquake).
- **Optimise risk management** during urban construction projects.

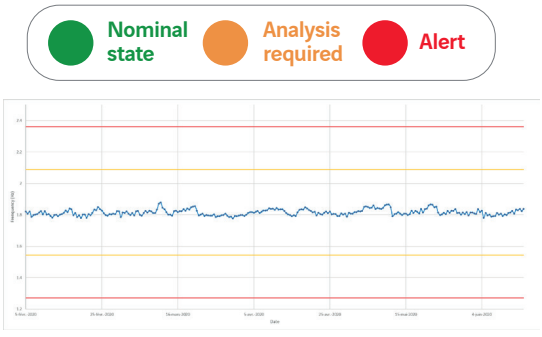


OUR SOLUTION

- The technology is based on **worldwide expert research** in building damage.
- Build'Health uses a global indicator of structural health: the **dynamic signature.**
- Similar to a medical examination, Build'Health takes t**he pulse of your structure** and immediately detects any structural degradation.
- Build'Health can be applied manually and occasionally, for example once a year.
- For sensitive structures, Build'Health can operate in **automatic** and continuous mode, transmitting alarms in case of degradation.
- Each building's Build'Health **measurement process takes less than an hour**. The comparison of successive measurements permits the detection of any damage.
- In geographical areas of **seismic activity**, we can configurate Build'Health **in real-time / autonomous mode** with a local display. After a tremor occurs, Build'Health **immediately defines the level of building degradation** and either authorises or prohibits its ongoing use.

THE BENEFITS

- **Simple, global, non destructive and non-intrusive** method.
- **Reliable** mathematical indicator, providing the global health status of the structure, independently from visual analysis.
- Establishes **strategic information for the management** of a property portfolio, building insurance or real estate investments.
- Helps to analyse the **conditions of safe access** to buildings after an accident, fire or earthquake.
- Helps **preventive measures** and the analysis of the **impact of works.**



Sixense's

- Worldwide specialist of correct and useful measurements.
- Possibility to connect Build'Health with engineering services and additional measurements.
- Measurement expertise + structural expertise + control of site interventions: Our teams understand and can answer your needs.

CONTACTEZ-NOUS

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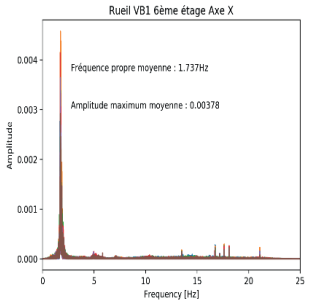
TECHNICAL PRINCIPLES

- The structures' natural vibrations are measured to a very high precision and to very high resolution.
- The signals are analysed with an algorithm that has been developed in collaboration with a high level French government laboratory (UGE CNRS).
- The evolution of the resonant frequency is monitored with a precision of 0.01 Hz.
- Any detected change in the structural integrity is automatically ranked with a risk level and a report is provided.
- In the event of a ranking in risk class 2 or higher, further measurements are possible (at each floor for example) and a structural engineer's intervention can be recommended.



Risk Class		Damage State EMS98 (starting from nominal state)
	5	3 to 5
	4	2
	3	1
	2	0
	1	0

APPLICATIONS

- Monitoring of a property portfolio by periodic measurements, as part of an asset management strategy.
- Monitoring of ageing or damage of sensitive structures, periodic or continuous measurements.
- Structural integrity check before/after an event (passage of a convoy or works nearby for example).

Specific applications in geographical areas of seismic activity:

- High visibility (beacon) and digital warning signals to authorise or prohibit the return to a structure after a seismic event
- Continuous monitoring.
- Autonomous system capable of operating off-line (Telephone, 4G, etc.) and without power supply (12 hours battery life).
- Display of accessibility in real time and 10 minutes after any detected tremor.

SPECIFICATIONS & LIMITATIONS

- Measurements can be performed in severe environmental conditions.
- Report possible the same day.
- Ranking in classes of damage, including invisible damages (micro cracking, increase of stain level, etc.).
- Difficult measurements on low-rise structures, for example buildings of less than 4 floors.
- In it's current evolution, Build'Health provides a solution to measure the ongoing health of structures through successive measurements. It is not possible to detect any pre-existing conditions.

ASSOCIATED TOOLS AND SERVICES

- 4DVib for Build'Health measurements remotely.
- Structural monitoring solutions suitable for potential disorders.
- Engineering services for structural condition assessment and the definition of maintenance or reinforcement solutions.

EXPERT PARTNER

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