

The Seismograph de Quervain-Piccard at Neuchâtel Observatory

When the earth made trembling high precision timekeepers...

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In 1858, the Neuchâtel Observatory was built with the mission to determine, preserve and transmit the exact time to boost the Swiss watch industry. Over the years, the precision required for the determination of the exact time continue to increase. Small temperature variations, humidity or ground vibrations disturbed the constant running of the fundamental timekeepers of the Observatory. If the variations of the first two factors were determined by using clocks under glass cases and operating under constant pressure in the climatic stable basement, it was impossible to avoid the vibration of the Earth. The registration of these seismic movement allow the Neuchâtel Observatory to study the impact of earth movements on fundamental timekeepers, correct errors and transmit the time with great accuracy to railway stations, watch manufactories and watchmaking schools. After a first attempt in 1911 with the installation of a small seismograph "Mainka," the Neuchâtel Observatory installed in 1926 a seismograph developed by de Quervain and Piccard. It is equipped with a static mass of 14 tons with spring suspension. Relative movements in between Earth and static mass are amplified by an ingenious system of levers and then written on a band of blackened paper. The seismograph is one of three similar instruments used by the Swiss Seismological Service. A triangle of seismographs situated in Neuchâtel, Zürich and Chur allowed to determine the intensity, magnitude and origin of earthquakes in Switzerland.

Situated in the basement of the Neuchâtel Observatory and fixed in an impressively frame of concrete, this object is a monster among scientific instruments. Today, the Neuchâtel Observatory has no scientific mission and the seismograph de Quervain-Piccard is abandoned. The mass has unfortunately been "grounded" by dismantling its spring suspension which caused irreparable damages to the mechanism. With two research projects (OBS & SCHEMA-TEC), the University of Applied Science Arc Conservation-restauration in Neuchâtel (Switzerland), studies the mechanisms and the traces of time of the seismograph what allows to understand the historical context and use of the scientific installation. . By a method of innovative documentation applied by conservators and engineers, the de Quervain-Piccard seismograph could then be presented in a heritage project.

