

Guardian

Purpose

Guardian is a system to measure the temperatures, temperature differences and maturity values during hardening of a structure at critical locations, such as those identified by **Be4Cast** simulations (see page 13).

Guardian allows strength estimation at an early age as well, provided the strength-maturity relationship for the concrete mixture used in the structure has been established and programmed into the software.

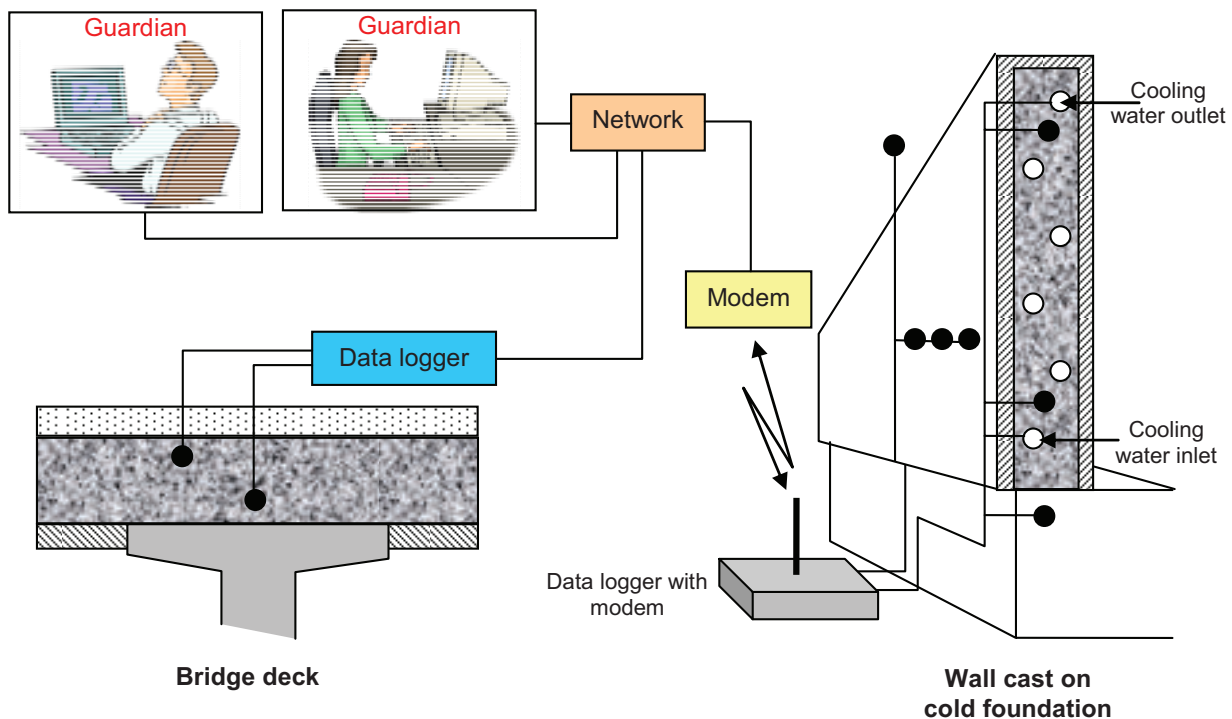
Alarms stored in the **Guardian** software alert the operator if preset temperatures or temperature differences have been exceeded. The **Guardian** also permits automatic control of cooling or heating measures designed by **Be4Cast** simulations.

The **Guardian** can perform other monitoring and surveillance tasks such as recording wind speed, relative humidity, barometric pressure, water levels, strains, corrosion parameters, and crack movement. Any device providing an appropriate electrical output can be monitored.

Principle

Thermocouples are installed at pre-established locations in the structure and connected to the data logger. The **Guardian** software is installed on a PC with a Windows® operating system. Temperatures are recorded by the data logger at desired time intervals from the time of casting. The data are transferred to a PC, either by a cable connection to the logger or by a wireless modem connection, allowing remote monitoring of the temperatures and other measured parameters.

Several users may be working on the same project simultaneously allowing, for example, setting up the measurement scheme at one site while at the same time monitoring *in-situ* measurements at another site.



Data Logger

The data logger is kept on-site in a watertight case, allowing it to operate in all kinds of weather conditions.

Each logger can accommodate up has 48 channels. The amount of data that can be recorded is limited only by the amount of RAM in the computer. The unit has a back-up battery ensuring continuous operation should a power outage occur.



Guardian Ordering Numbers

Item	Order #
Guardian software	G-3000
Thermocouple, 5 m, with protection cap, ready to use	G-3200
Protection cap for thermocouple	G-3250
Thermocouple wiring, 100 m (optional)	G-3300
Data logger for 48 channel operation	G-3500
Modem for wireless transfer of data by mobile phone	G-3600
Antenna for wireless transfer of data	G-3700

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