

Construction audit of the heating and cooling plant and the data centre in Ecublens

Swiss Federal Institute of Technology Lausanne

Key facts

The Swiss Federal Institute of Technology Lausanne (EPFL) is renewing the heating and cooling plant on its site in Ecublens (VD) and building a new data centre on its roof. This major, technically ambitious project is financed by two guarantee credits totalling CHF 73 million. The project is based on heat pumps that are fed exclusively with lake water. The combination of a heating and cooling plant together with a data centre will enable energy synergies to be exploited in the future.

In its audit, the Swiss Federal Audit Office (SFAO) found that the challenging project is generally on track. However, subsequent changes in user needs mean that the data centre project has to be readjusted and an additional credit of CHF 1 million is required for this. The lack of important monitoring and control mechanisms also increases the financial risks.

The EPFL is examining whether part of the data centre can be leased to third parties.

Project already requires additional financing

In the case of the heating and cooling plant, the guarantee credit of CHF 59 million will be sufficient according to the final cost forecast. An additional user requirement for the data centre resulted in an addendum that had already exhausted the financial reserves before construction began. The EPFL will therefore apply for an additional credit of CHF 1 million as part of the 2021 construction programme.

The fact that the strategic planning of the heating/cooling plant was not coordinated with that of the data centre in terms of schedules meant that two full-service general contractors were commissioned. The double set of planners, craftsmen and suppliers created duplications. In some cases, these eliminated the advantages of the full-service general contractor model. As the EPFL did not contractually define the individual responsibilities of each full-service general contractor, an additional coordination body had to be created under the project owner's leadership. These EPFL activities have increased the risk of additional costs when it comes to ensuring performance in the event of deficiencies.

The project is on schedule.

Deficiencies in monitoring and management increase financial risks of project

The EPFL does not have a standardised set of instruments for managing construction projects, which is what good practice requires of federal construction bodies. For effective project monitoring, the gaps in the definition of responsibilities, the systematic review of user needs and risk management must be addressed swiftly.

The SFAO also proposes that controls be improved. The financial implications of project changes were recorded in terms of costs, but were not comprehensibly documented in the cost overview. In addition, the EPFL, as the project owner, must check the required quality by conducting transparent and documented spot checks.

From the SFAO's point of view, the environmental measures that accompany the construction work have been well implemented as a part of the drive for sustainability. Nevertheless, environmental risks such as quagga mussels must also be systematically managed already during the planning and construction phase so that maintenance costs can be kept to a minimum.

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