

“ Ecotrons allow studying a range of small to medium size biological systems from model terrestrial and aquatic ecosystems ”

Location and access

The infrastructure is located at the CEREEP research center (UMS 3194) in Saint-Pierre-lès-Nemours, approximately 70 km south-east of Paris. Access to equipments of the Ecotron IleDeFrance is available year round through calls for projects opened to public and private institutions around the world.

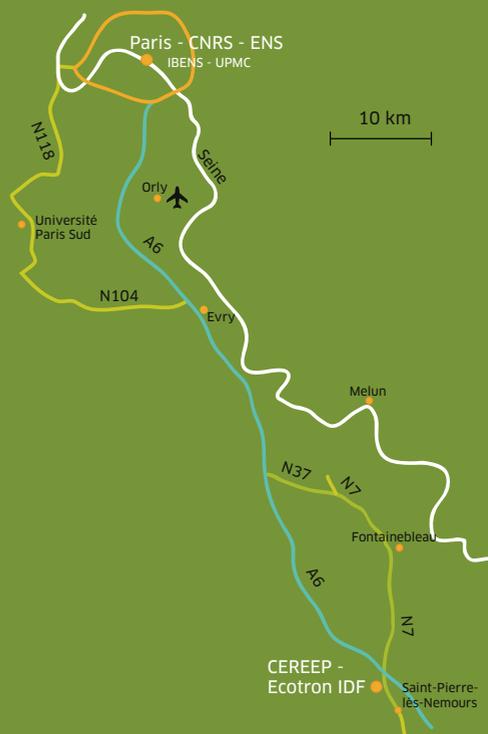
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Call for projects

Online applications to use the Ecotron IleDeFrance are continuously available on our website. Please, do not hesitate to contact us for further information.

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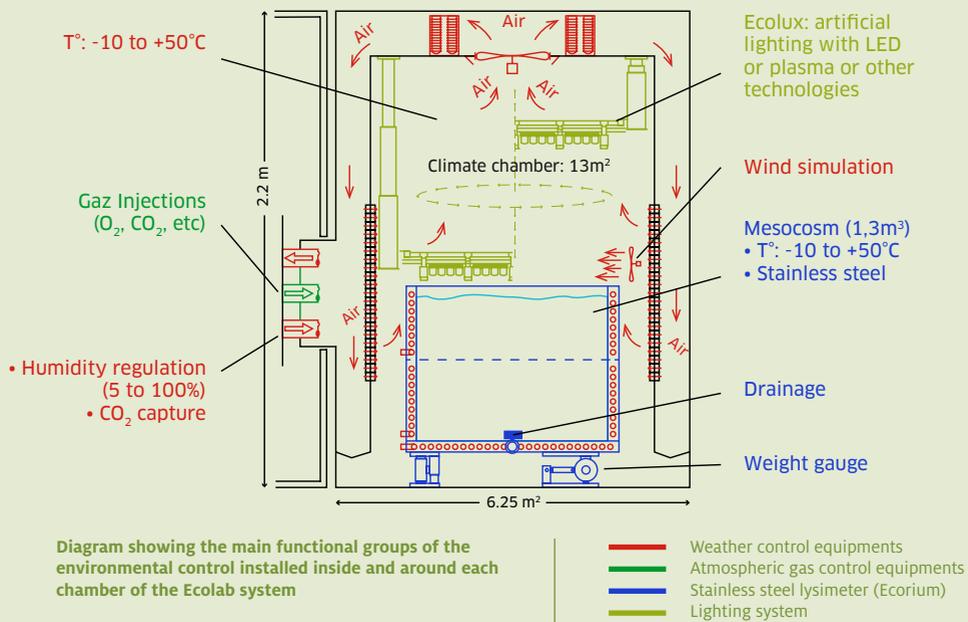


Ecotron IleDeFrance

Meeting the challenges of **ecological sciences**
and **engineering**



Together with the Ecotron de Montpellier, the Ecotron IleDeFrance is part of the distributed “Infrastructure de Recherche” (IR) managed and supported by CNRS and Ecole normale supérieure since 2010

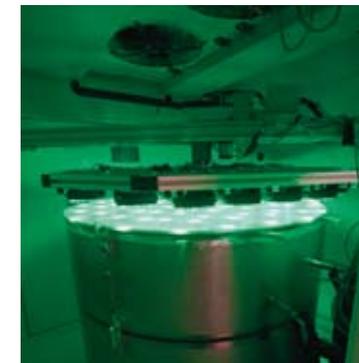


Technological principles

The Ecotron IleDeFrance is based on technologies implemented in the Ecolab equipment and developed primarily in collaboration with the French private company Cesbron. The Ecolab is a modular structure coupling together three environmental chambers and one laboratory room. Each environmental chamber can be independently controlled accurately for realistic climate and atmospheric conditions (temperature, humidity, CO₂ and O₂ content, lighting) with unprecedented power and accuracy. A stainless steel lysimeter with temperature-control on three independent levels makes it possible to incubate both terrestrial and aquatic systems and simulate thermal gradients. Artificial light can be provided with several technologies to adapt to the needs and constraints of each project. The Ecotron IleDeFrance combines several Ecolabs into a network making it possible to run powerful, replicated experiments.

Patents

Four European patents protect the idea or design of the inventions implemented jointly with industrial partners since the start of the Ecotron IleDeFrance.



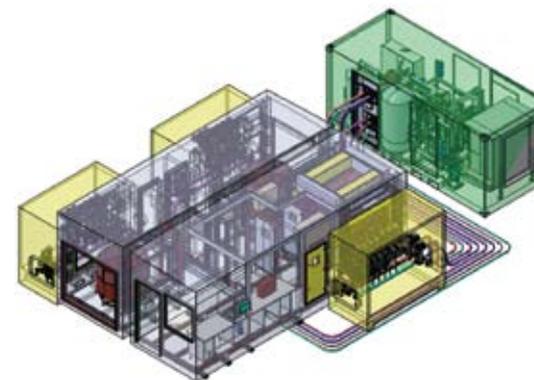
Terrestrial and aquatic ecosystems can be maintained in a temperature-controlled lysimeter

What's an ecotron?

Ecotrons enable highly controlled manipulation and measurement of terrestrial and aquatic organisms, communities and ecosystems with unprecedented power and quality. On a technological side, an Ecotron is defined as a device allowing the precise conditioning of the environment and the detailed monitoring of states and activities of organisms and ecosystems. Ecotrons allow studying a range of small to medium sized biological systems from relatively complex ecosystems (e.g., intact samples of grasslands) to model plant and animal species up to reconstructed ecosystems (e.g., artificial life support models). Ecotrons can thus be used to confine ecosystems from in natura sites and therefore conduct detailed, controlled experiments on natural ecosystems.



The Ecolab chamber allows direct access to ecosystem during experimentation



Each Ecolab has three climate chambers controlled independently from each other by technical units (yellow boxes) and connected to a powerful heat pump (green box)



Artificial lighting provided by LED panel allows detailed manipulation of light quantity and quality