

# CERN : Potentials of an invisible infrastructure for addressing landscape evolution at the Franco-Swiss border



territorial model in brass, scale 1:265'000



visible world CERN area

Country / City Italy - Ferrara

University / School University of Ferrara - Department of Architecture

Academic year 2016/2017

Title of the project CERN. Potentials of an invisible infrastructure for addressing landscape evolution at the Franco-Swiss border

Authors Francesco Lupia





# PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 **Barcelona**

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC

ETSAB- Escola Tècnica Superior

d'Arquitectura de Barcelona

Avenida Diagonal, 649 piso 5

08028 Barcelona-Spain

## TECHNICAL DOSSIER

Title of the project	CERN: Potentials of an invisible infrastructure for addressing landscape evolution at the Franco-Swiss border.
Authors	Francesco Lupia
Title of the course	Landscape architecture and infrastructures
Academic year	2016/2017
Teaching Staff	Luca Emanuelli, Gianni Lobosco
Department/Section/Program of belonging	Architecture Department - Sealine research centre
University/School	University of Ferrara

### Written statement, short description of the project in English, no more than 250 words

The thesis focuses on the relationship between hidden infrastructures and landscape by considering how, although they are designed to perform specific tasks, large infrastructures have always had a huge impact on cities and metropolitan regions which host them.

In such perspective, the CERN, which is the largest physics laboratory in the world located in the countryside on the Franco-Swiss border, represents an interesting case-study in order to understand how dynamics may vary depending on the nature of the infrastructure itself, the context, its impact on the economy, on the over/under development of the urbanization and population.

The striking feature of the CERN is the way in which this infrastructure has deeply characterized the surrounding area despite being almost invisible to the eye. In fact, the physical infrastructure is hidden in the 59 km of underground tunnels where particle accelerators are located. Nevertheless, urban settlements, land proprieties and energy networks featuring the territory are actually shaped around this almost indiscernible presence.

The thesis proposes a methodology to take advantage of the relationship potentialities between infrastructure and landscape reasoning through alternative scenarios developed on the area where the first collider has been built: such scenarios explores the chance of exploiting the infrastructure as a generator of urban and tourism development, of energy production or as an habitat preservation device.

Such hypothesis are functional to dictate some guidelines for addressing the planning around the control points of the Future Circular Collider, the accelerator of more than 80 km of circumference expected for 2035.

For further information

**Máster d'Arquitectura del Paisatge -DUOT - UPC**

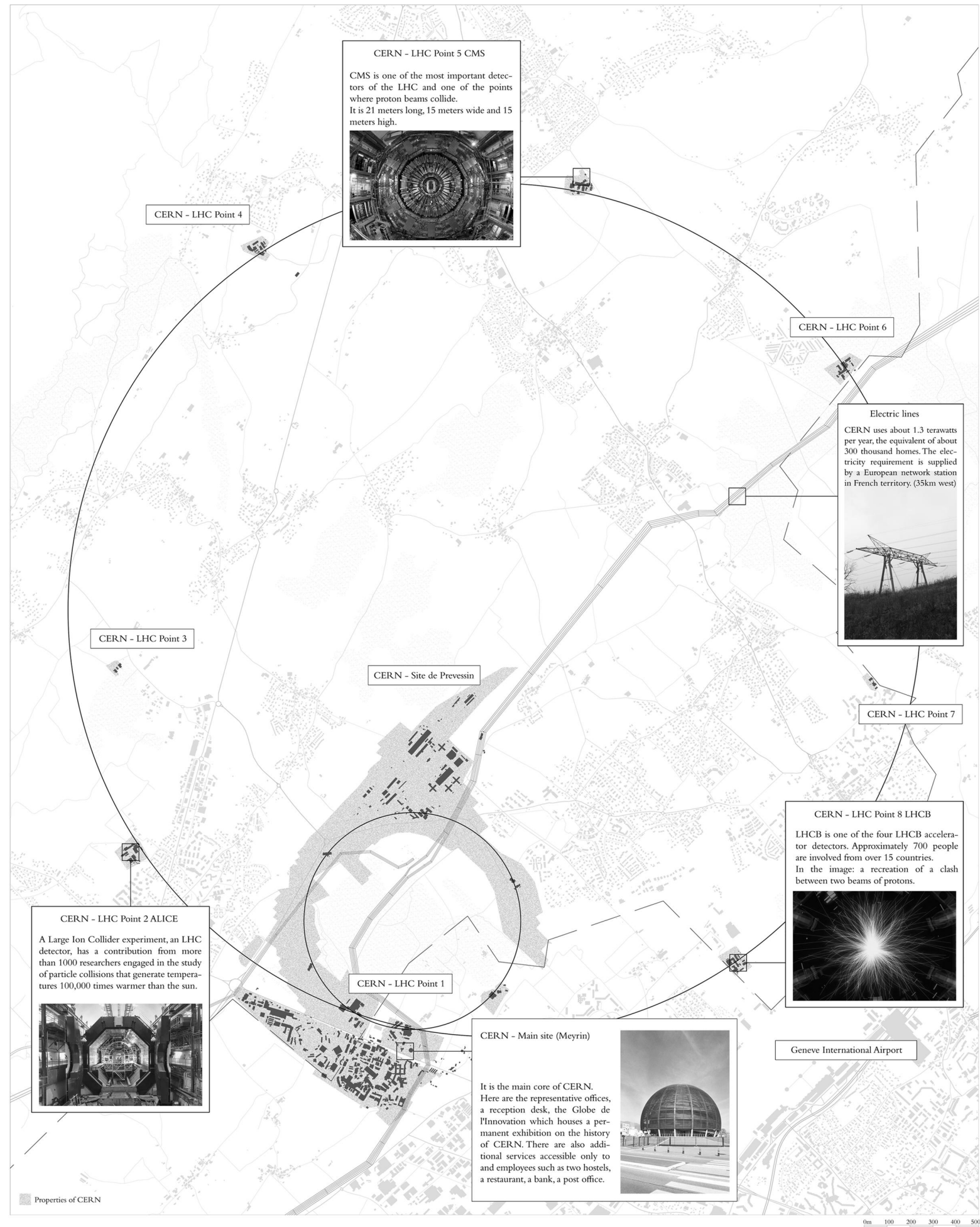
T: + 34 93 401 64 11 / +34 93 552 0842

Contact via email at: [biennial.paisatge@upc.edu](mailto:biennial.paisatge@upc.edu)

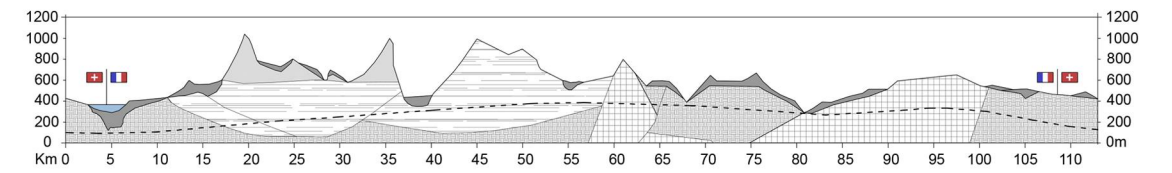
Consult the web page <http://landscape.coac.net/>



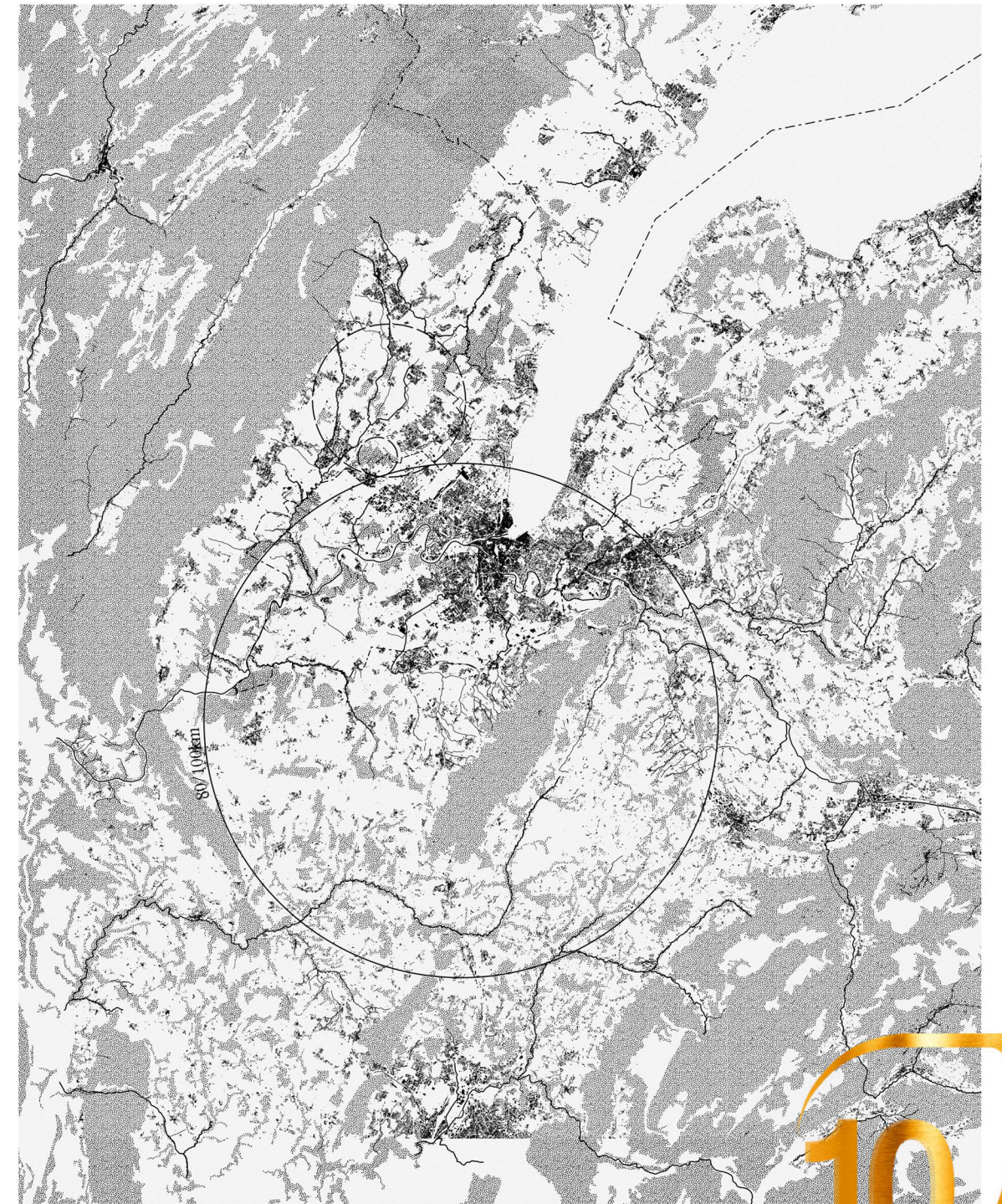
## Current situation



## Future Circular Collider



The Future Circular Collider is the ambitious project of the future accelerator that will have a circumference of 80/100 km and will extend to the south starting from the main core of Meyrin. It will be placed in a tunnel that in some places will be about four hundred meters underground. The design of the accelerator will begin in 2020 and the expected completion of the works is in 2035.





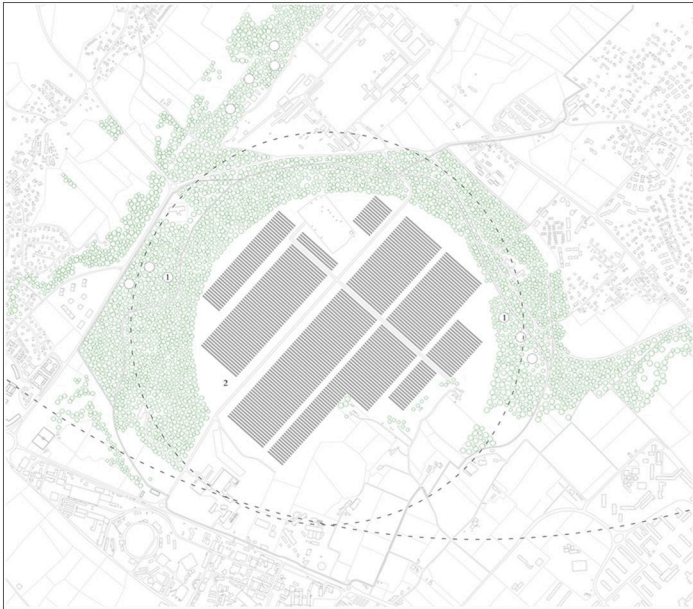
(1) Science Tourism



the first new landscape wants to make evident the vocation and the experimental aspect of the area. Highly experimental elements are introduced with the function of safeguarding the environment, cultivation and energy production, creating an easily recognizable techno-scientific landscape.



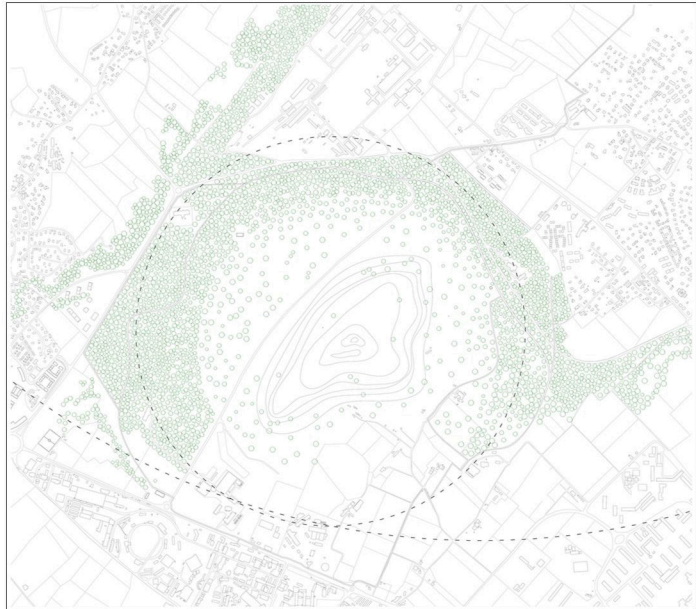
(2) Energy



Here is paid particular attention to the gigantic energy consumption of CERN filling the area with solar panels. In this way an annual production of energy of about 190 GigaWatt/h could be reached, that is the equivalent of 0.2 Terawatt/h corresponding to one fifth of the entire energy requirement of CERN.



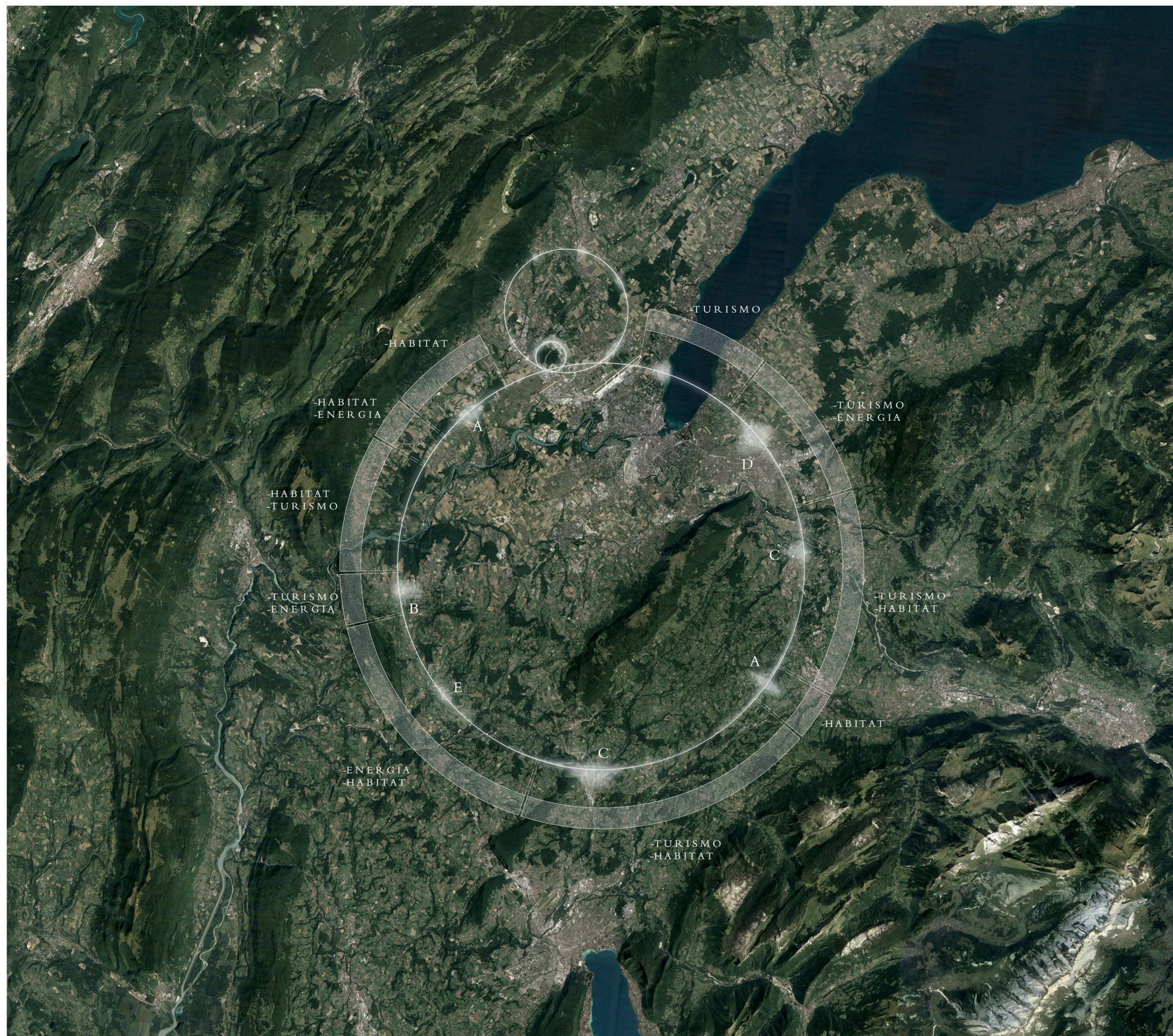
(3) Habitat



The Ginevrine countryside, the Jura Mountains and Mont Saleve are all places of great environmental value with a wealth of biodiversity that must be protected and safeguarded. For this reason, in the third project the buffer zones of CERN are used for the creation of natural areas.







Along the new control points and in the buffer zones of CERN, the new landscapes of the previous tables can be developed, depending on the position. CERN will therefore act as a generator of urban and tourism development, environmental sustainability or the preservation of the natural habitat. This variety will be made possible by the diversity of points that the new accelerator will touch. In fact, with its circumference of over 80 km it will cross different types of landscape scenarios in which the control points will have to be inserted in a specific and opportune way. We will then have control points at the edges of a particular natural habitat, in the agricultural territory or at the limits of a city.

