THE FIFTH PLATEAU
DEFINING THE TRESHOLD FOR A THIRD INDUSTRIAL REVOLUTION IN LUXEMBOURG VILLE
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The Fifth Plateau: an empty plateau within the system of plateaus in Luxembourg Ville
This empty plateau in Luxembourg on a central location with both the airport and the train station in close proximity seems to be interesting. We could consider this deserted island as an opportunity for Luxembourg to start the next chapter in their long history of occupying plateaus with as main driver new economic ambitions and urban desires.
“The Ministry of the Economy, the Chamber of Commerce and IMS Luxembourg officially launched in September 2015 the Third Industrial Revolution project for the Grand-Duchy. This project, inspired by Jeremy Rifkin’s theory, aims at defining a new long term economic model in which three technologies converge: new information and communication technologies, new sources of energy, and new modes of transportation.”

http://imslux.lu/eng/nos-activites/pole-de-specialites/8_the-third-industrial-revolution-in-luxembourg
What we learned from the development of Kirchberg is that planning for uncertainty is never an easy task. Therefore I propose an architecture of specificity on the fifth plateau as an element of programmatic and infrastructural certainty, that might guide future developments in a more elaborate manner.
DEFINING SPECIFICITY
SIGNIFYING ELEMENTS

Theoretical framework
Luxembourg’s specifics
Impact on eye level
Reduction of Berlin to the most essential architectural elements
Reduction of Rome to the signifying elements
A manifesto for the specificity of the ground, the thing underneath the urban
Signifying elements of Luxembourg
Communicators, stoppers and connectors of Luxembourg
View on Ville Haute and Kirchberg from the Cents plateau
View on Ville Haute from the Garer plateau
View on Kirchberg from Ville Haute
View on Kirchberg from the Fifth Plateau
What about the specifics on the fifth plateau.
Sloping down towards the valley
Long views towards the Cents plateau
The edge of the fifth plateau
The unpaved pedestrian paths along the contour
View from the fifth plateau over the edge
View from the fifth plateau over the edge
THE STRAIGHT LINE IN THE LANDSCAPE
“Y a-t-il rien de plus élégant que la ligne pure d’un viaduc dans un site mouvementé et de plus varié que ses substructures s’enfonçant dans les vallonnements à la rencontre du sol?”

- Le Corbusier -
The line in the landscape
The Facade and the landscape
BUILDING WITH THE GROUND
Building with the mountain

Hengshan Hanging Temple in Xuankong si, China
Lightweight steel building
The Load bearing principle

Mountain goat balancing on a cliff
Load bearing principle
Structural plans: the interface
Structural plans: the columns and the cables
Load bearing structure in perspective
Structural detailing
Rock to building
- Stabilizing rod pinned in rock
- Gutter
- 200mm insulation in drilled cavity
- Mullion 60x180mm with triple glazing

Corridor
- Metal Grid
- Rigid stabilizing cross
- Mullion 60x180mm with triple glazing

Facade to ground
- Vertical mullion anodized black aluminum various depths, end depth 180mm.
- Metal finishing plate
- Triple glazing

Facade detail
- Operable window, full level height. Push mechanism.
- Metal finishing plate
- Triple glazing

Roof finish
- Anodized aluminum black horizontal mullion 60x180mm
- Anodized aluminum black horizontal mullion 60x180mm, varying depending on span.
- Roof: Accessible wearing concrete tiles 600x900mm i.c.w. Onyx walkable PV-tiles 600x600mm
- Waterproof layer.
- Thermal Insulation 200mm.
- Vapour barrier.
- Layer for leveling and falls.
- Concrete composite slab 350mm.
- HE400B beams every 2.5m
- Vierendeel truss 400mm
- Anhydrite polished layer 70mm
- Floor heating and cooling system (probably dry system for quicker reaction time)
- Pressure proof insulation 30mm
- Composite steel slab floor 250 mm
- Steel cable diameter 16mm

Hinge detail
- Two directional hinge within a 30mm steel shoe on 45°
The rigid interface

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The multi directional hinge
The cable and the carrier

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Stabilizers

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- Stabilizers
Ground detailing
Encounter with the ground

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The retaining wall and interior water collection system.
The column touching the rocks
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The curtain wall
Facade detailing
Saving material costs, and the dynamic facade

Hinge detail
- Two directional hinge within a 30mm steel shoe on 45°
The horizontal corner

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- Hinge detail
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Operable windows

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End of the curtain
INTERIOR CLIMATE
Natural ventilation, rock as buffer and night flushing
PROGRAM AND LANDSCAPE

Marot
Parts
Interface
Surface
Machine
“(…) site as the matrix of design, and programme as a tool to explore, read, reveal, invent and ultimately represent the site.”

(Sebastien Marot, 2003, Sub-urbanism and the art of Memory)
Diverse topography
The slope typologies
Five slope typologies, five programs
THIRD INDUSTRIAL REVOLUTION
THE CONTEMPORARY FACTORY
Underground data center
Underground data center
The data center as engine of the building
The data center as engine of the building

**DATACENTER:**
With Liquid emerged cooling system (Carno Jet).

- Liquid of 40-50 °C mixed with warmer liquid towards a stable temperature.
- Is fed back to the server basins with a low Delta T.
- Liquid of 40-50 °C to heat exchanger to cool water.
- Liquid of 40-50 °C to reversed heat exchanger to cool water.
- Mixed with chilled liquid towards a stable temperature.
- Chilled liquid.
- Heated water from floor chilling system.
- Chilled water to floor cooling system.
- Liquid of 40-50 °C to heat exchanger to cool water.
- Heated water from floor heating system.
- Low temperature water from floor heating system.
Bridging restaurant, conference hall and hotel
Bridging restaurant, conference hall and hotel
Concave robotics lab
Concave slope robotics lab
Soft slope maker space
The Treshold
THE SURFACE AND THE INTERFACE
Site plan
Entrance at the head, public maker space
Side access point to restaurant and the surface
Side access point to the datacenter and the surface
The surface disappears in the pedestrian system
The surface as access point, public space and power plant.
The Surface