Superpositions

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LET THE RIVER RUN

Translated from French

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Afterword

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Reprises et Retouches publishers

For Kenneth Franpton

" I wish to conclude by calling for the establishment of a psychology of research.
For what matters, in the end, is to discover how researchers find what they are looking for.
To have a meaning, it goes without saying that this psychology should not be positivist.
What are its raw materials? Those that the researcher should henceforth be producing.
All research leads to a report where processes and results are documented; this report is generally so condensed that only specialists from the same field are able to understand it.

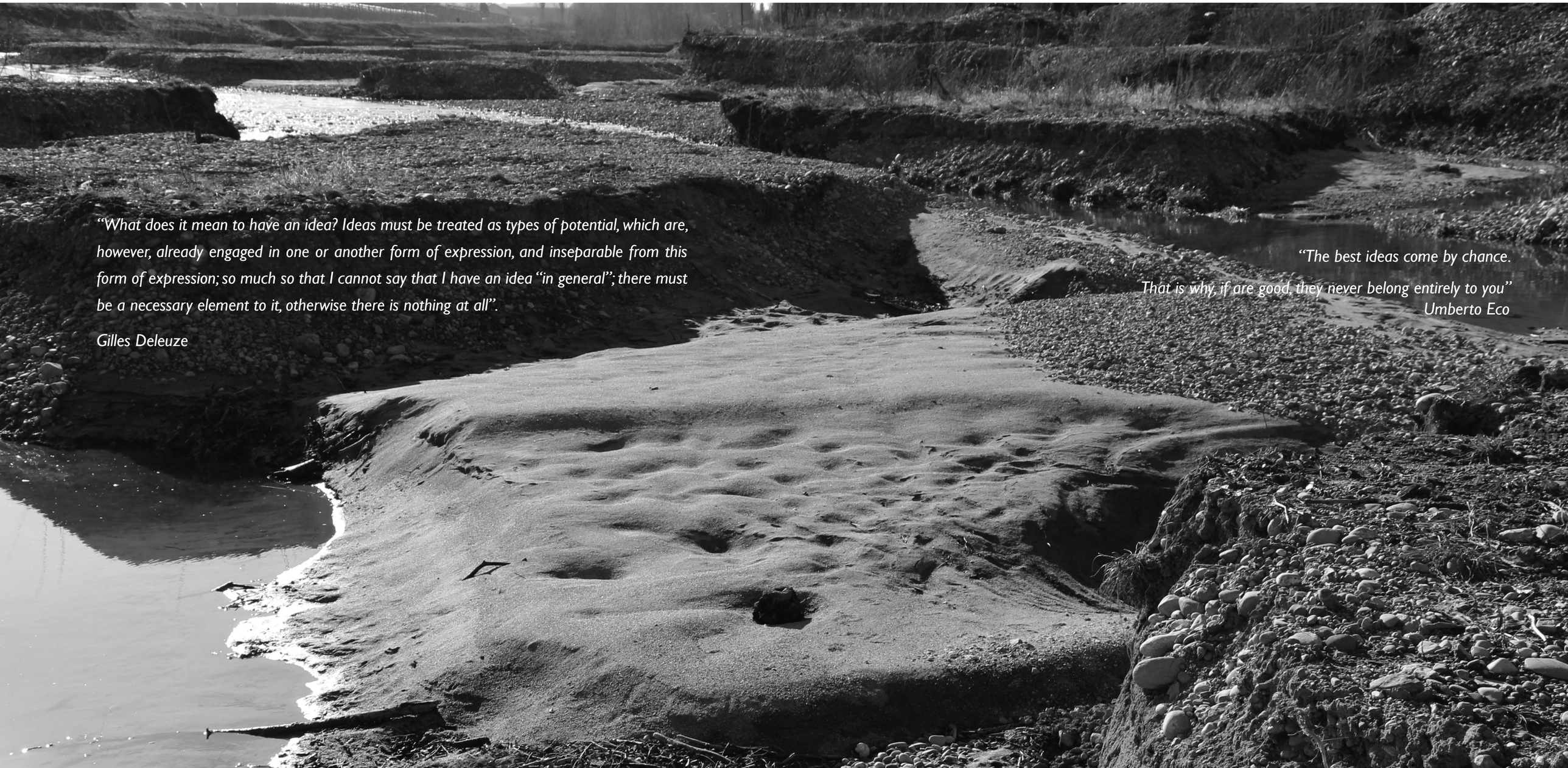
It would be worth pairing the report with a research journal, where operators would document not their feelings (or at least, not only that), but rather an earnest and detailed summary of their intellectual conduct during research, without omitting any failed attempt or, especially, the reasons for failure, so that the chain of hypotheses, observations, processes, attempts, wrong turns, breakthroughs, and so forth, is as comprehensive as possible."

André Corboz, La recherche, trois apologues (Three Arguments for Research)

“To act and not to act”

Marielle Macé

Whilst the project to revitalise the Aire in Geneva has, of course, acknowledged that expanding the space given to the watercourse is crucial to any genuine regeneration of the river, this project also embodies a new relationship between the existing site and its transformation, between the old canal and the new river. This was the subject of the book *Aire, the River and Its Double,* published in 2018 by Park-Books, in Zurich.
The present work seeks to present an original way of giving shape to the new riverbed, *letting the river run*, which was tested during the third stage of the project (2012-2016).
The creation of a system of trenches, resembling the distinctive ravines formed by hydraulic soil erosion, proved an effective way of accelerating the auto morphogenesis of the new riverbed.
What lessons can we learn from the evolution of the processes triggered by this choice?
Could this unprecedented approach be applicable in other contexts?
To write the history of this experiment, of the reactions it elicited and the questions that remain unanswered, is also to call for further exchanges with the authors of analogous projects that the present publication proposes.
For to explain oneself, to explain, *“is to seek greater closeness with others, and to share an understanding of the world”*
Isabelle Stengers, Réactiver le sens commun (Reactivating Common Sense)
The speed at which the river created its new bed, its very varied morphology enabled by the diamond-shaped pattern, the surprising resistance of the diamonds’ points in contrast with their lateral erosion, these water movements, these eddies: at first, we sought to give them scientific formality, until Gaston Bachelard convinced us that *“in the face of nature, the time for comprehensive and definitive generalisation never comes”*, and that *“the act of knowing must be captured at its inception”*, wherein *“inventive and tentative knowledge must maintain an element of freedom, and cannot be forced to make all of its steps systematic”*
Did we allow ourselves this freedom too quickly?
In the end, we became convinced that it was more important to show the strength of the system we were proposing, its power to generate complex systems of shapes, than to insist on searching for a problem “in equations.”
Whilst we did not truly achieve the *“research journal”* André Corboz wished for, this essay, which explains our project retrospectively, seeks to detail the sources, the currents, the detours and sediments, the entire *catchment basin* basin of the research project, whilst simultaneously leaving some space for a more compelling future interpretation.



“What does it mean to have an idea? Ideas must be treated as types of potential, which are, however, already engaged in one or another form of expression, and inseparable from this form of expression; so much so that I cannot say that I have an idea “in general”; there must be a necessary element to it, otherwise there is nothing at all”.

Gilles Deleuze

“The best ideas come by chance.
That is why, if are good, they never belong entirely to you”
Umberto Eco

Frictions and eddies

«I have consulted eminent specialists in hydrodynamics on the way these forces act on one another in a turbulent river: they only nodded or shrugged. There are too many variables: the forces in play are quite impossible to calculate, even with modern tools. However, Leonardo hoped to explain the genesis of each eddy, despite him needing to consider further complications from the interaction between water and other elements. The soil from the riverbed and the bank produced friction, which slowed the movement of water at the edges, as he had understood by closely examining the variation in the height of eddies which had been produced by wooden sticks placed at various distances from the edge of the water.»

Ernst Gombrich.

The apparent contradiction between, on one hand, Leonardo da Vinci's incessant quest, his obsession with observing, describing, and seeking to understand the movement of water, its turbulences and eddies, and on the other hand, Ernst Gombrich's seeming admission of powerlessness in arriving at a logical formal scientific explanation, is striking. This irreducible gap between practical experience of the world and reality, on one hand, and scientific knowledge on the other hand, is well studied by *Gaston Bachelard* in his work , "*Essai sur la connaissance approchée ("An Essay on Approximate Knowledge".)* In this rich and fascinating text, a number of considerations, over several passages and developments seem to apply directly to the experience of the Aire. Might we not find a possible clue here to better understanding the phenomenon of erosion generated by the *"diamond-shaped pattern"*? In contrast to Gombrich's resignation, another way of edging closer to an understanding of reality might well be *"approximate knowledge"*.

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In *A Thousand Plateaus*, Gilles Deleuze and Félix Guattari argue that *"epistemology suggests the existence of a minor or nomadic science, which distinguishes itself from science in its regal or legal sense. Nevertheless, this would not simply be an applied science or an assemblage of techniques. This science would be characterised by hydraulic models, rather than being founded on the theory of solids. It would be a science of becoming and of heterogeneity, which defines itself in opposition to stability, to eternity, to replicability, and to consistency. No more laminar flows, but eddies in their place.*
The science examining these developments would in itself be vague, in a wandering sense: it would be neither inexact, like objects pertaining to the senses, nor exact like ideal essences, but would instead be anexact, and yet rigorous."
In two different interviews, Edgar Morrin touches on the problem of *'self-organisation'*, and Prigogine speaks of *"these new structures which occur at bifurcation points, where the old structure becomes unstable and where new structures are born. This is the birth of complexity. The concepts of bifurcation and self-organisation are percolating more and more into all sciences, and we are shifting from a world of certainties toward a world of probabilities, a world under construction".*

How could we remain indifferent to models of explanation of reality that posit the non-fixity of elements, and account for a generalised flux of materials? Does this not correspond to the practical experience of construction during our project, which renounced any definitive drawing for the course of the Aire, in a search for elements that would trigger autonomous processes?
"To Act, then, for something to happen. But to act without doing everything. For this is not about building a river, or drawing it before the fact, planning its movements and bends as if they should come out of a mould. One must certainly act, but in such a way that a river makes itself, without determining a priori, with any exactitude, what its movements and course will be. This project, then, is about instituting an art of indirect action, setting up clever devices that will provide the event with the conditions for its occurrence, and which will enable this "something", the river, to form so to speak "by itself".

Jean-Marc Besse in "*Le paradigme du losange*"

Gaston Bachelard argues for *"the essential incompleteness of all conceptualisation"*. It is in this reflexion on the birth of a project, in search of a rare moment where an idea appears, that we can hope to find the decisive moments of this process, and compare them with Bachelard's considerations, when he states that *"the act of knowing must be grasped in its inception", where "inventive and tentative knowledge must preserve an element of freedom, and cannot be forced to make all of its steps systematic".*

"Of course, one should not imagine that a project is the slow crystallisation of an idea, that an idea emerges without obstacles, like a reward once all the data points have been adequately linked. In a creative process, what matters is this "moment of realisation". It does not occur simply because we have done all our homework. No! The process is not so mechanistic, nor is it functional in a naturalistic way. You may be able to start from there, but you will not find what you are looking for along that path. Sooner or later, you will have to leap, to take a risk. This is "the moment of realisation, the leap into the unknown."

Aldo Van Eyck, *Congress of Architecture*, Otterlo, 1959.

The delicate balance to be struck, when a project is conceived and, especially, when implementing it onsite, between a necessary conceptual overview and allowing for the resistance of reality, is something Bachelard seems to understand perfectly, when he states his belief *"that people learn all their lessons from the outside world and understand themselves in accordance with the pure kinematics of nature around them".*

Deleuze and Guattari, citing the works of Anne Querrien on the construction of Gothic cathedrals, show that one can find, in their long building process, an entire *"operative logic"*, which enabled mason-monks to trace and cut stone blocks in order to position them in the general space of construction: *"one does not represent; one makes and moves"*. This left a greater autonomy to guilds, which travelled from site to site throughout Europe.
This relative autonomy in actual work, which left a space for creativity to those artisans, can still be found nowadays on building sites. This is especially true of landscaping works, where an absolute metric mastery is impossible, as there are too many unknowns in local conditions (topography, nature of soils, presence of waterways and flora), which makes the task of formalising and giving am exact embodiment of the project far more difficult than in the construction of a building.
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During the realisation of the Aire project, one could find this scope for creativity in a number of situations, where an existing conceptual scheme was interpreted by those who were putting it into practice. This often came as a result of needing an invention in situ, to make up for the impossibility of including in a pre-existing blueprint all the factors and unknowns of the problem at hand. In many cases, *"the accidents arising from the problem lead to its solution"*. During the continual back and forth between the site and the drawing, the site resists, and this is a good thing, as the surprises of a site are often grounds for decisive changes in a project, when one realises that indications on the plans no longer sufficiently take into account the features of the intended location.
Each site has its own *atmosphere*. This is difficult to describe, but one must learn to grasp it, and to intensify it through the project. Or we might say, like Deleuze, that there is a movement to a site. Territories, landscapes and sites are bundles of relationships. One must grasp their slow and continuous movements, make them perceptible and present through the transformations that the project operates on them. The project then becomes *an encounter with what is already there.*

In this quest for a way of embedding the start of a process of self-organisation of the riverbed, the concept of *project of the soil* developed by the Italian urbanist Bernardo Secchi, who taught for many years in Geneva, was at the forefront of our decision to take into account the slow historical stratification of the territory, which had been so masterfully described and theorised by André Corboz.

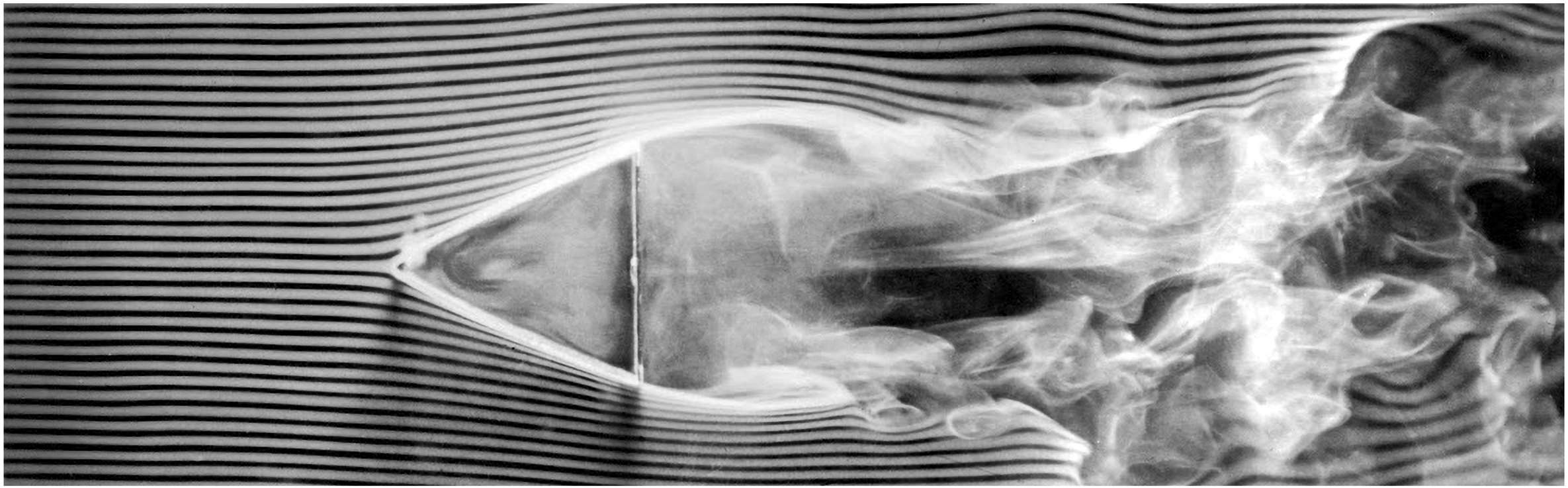
Of equal importance was our attention to experimental procedures by artistic movements of the 1960s and 1970s, and especially those of *Land Art*. Robert Smithson remains the principal theorist of what was to be named *"Earthworks"*, a movement which strongly influenced the architectural field where an interest in territories was emerging around the same time. Smithson's obsession with entropy, the *stratified composition of sites*, geological forces, crystalline organisation, the way his gaze was drawn to sites devastated by industrial processes, urban developments or deserts, all of this shows a very powerful example of alternative ways to perceive the possible transformations of landscape.

"Much like Smithson's works, the Aire project is a narrative that works on multiple scales and offers unique moments for the visitor, like temporal capsules that isolate [them], integrate [them] into a new space-time continuum, without cutting them out from the world. They can still perceive its duration through the river's flow, the sound of the water, the pulsing of light, all of which makes for a cosmic reverie".

Gilles Tiberghien in *"Inventer le paysage de l'Aire"*

The evaluation of a project, of the idea of a project, that we attempt here, is perhaps even more necessary now that the project seems to have been recognised as a success. What truly justifies this affirmation, and eventually the replicable use of a new approach, as experimented in the Aire project? To quote Bachelard once again, *"an idea leading to success has not yet been validated"*. One should still examine the specific conditions that *"in a way, single out"* this success. *"It is practical trial and error that leads to correction through reflection on reality. The initial detailed awareness is an approximation that has been verified in particularly auspicious conditions, as by a stroke of luck. Success seems both relative and piecemeal. It can justify a process of knowledge acquisition only insofar as it is part of a more general success, which in turn, involves a wider system of knowledge."*

The extraordinary fecundity of Bachelard's approach, as recalled by Deleuze and Guattari, is essential for a better understanding of the mechanisms whereby the project was elaborated, and of the evaluation of its results, for it enables us to escape two traps: on one hand, thinking that we cannot understand, and must not even try to, and on the other hand, taking a simplistic view of the relationship between *reality* and its formal representation in science. A *Thousand Plateaus* and the *Essay on Approximate Knowledge*, undoubtedly encourage a more conscious and adventurous approach to the project.



Dynamic and deterioration of waterways

The dynamic of waterways is essential to their ecological vigour, with its frequent disturbances (such as fluctuations in water levels), which generate great biological diversity, and sustain complex backwaters.
The active erosion of banks and the formation of sands and gravel produce diversified habitats, on which indigenous species depend. All this spontaneous activity requires a big enough playground for water currents and sediments to create a dynamic and constantly evolving river.

In the twentieth century, waterways underwent major changes for a number of reasons: ease of navigation, flood control, soil drainage, urban development, and, of course, climate change. The resulting loss of ecological diversity sparked increasing interest, in the more urbanised areas of the planet, in the regeneration of these waterways.

Regeneration and wrong turns

The resulting loss of ecological diversity sparked increasing interest, in the more urbanised areas of the planet, in the regeneration of these waterways. Ironically, many of these projects have too often sought to stabilise rivers by creating fixed banks, with idealised shapes, following two different approaches.

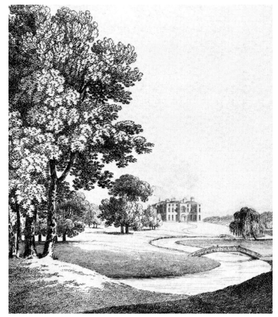
The first, a *"technical-scientific"* approach, often associated with engineers, is based on quantitative data (water volume, speed of current, etc.), calculable outputs (wavelength and amplitude of curves traced by the waterway), and uses rigid, heavy tools (riprapping, concrete, etc.).

The other, a *"cultural"* approach is mostly associated with landscape architects, who plan picturesque new rivers, often citing English models, and using *"vegetation engineering"* techniques.

In effect, both these approaches to waterway restoration replace one rectilinear channel with a new sinuous one, and thus create an artificial river.

One thing they have in common is that the sinuosity of waterways thus restored, is far more symmetrical and homogeneous than in natural waterways. In many cases, and especially where the gradient is steep, the current powerful, and the sediment copious, the first unusual flooding causes the waterways to erode the structures that confine them, and to seek to carve out new courses for themselves. Conversely, in areas where the water dwindles, the waterway becomes incapable of modifying its imposed course, which remains fixed without the slightest prospect of development.

Of course, this dichotomy between cultural and technical approaches is not so sharp, since in many cases, landscapists incorporate scientific touches in their projects, and engineers adapt their sites with more subtlety.



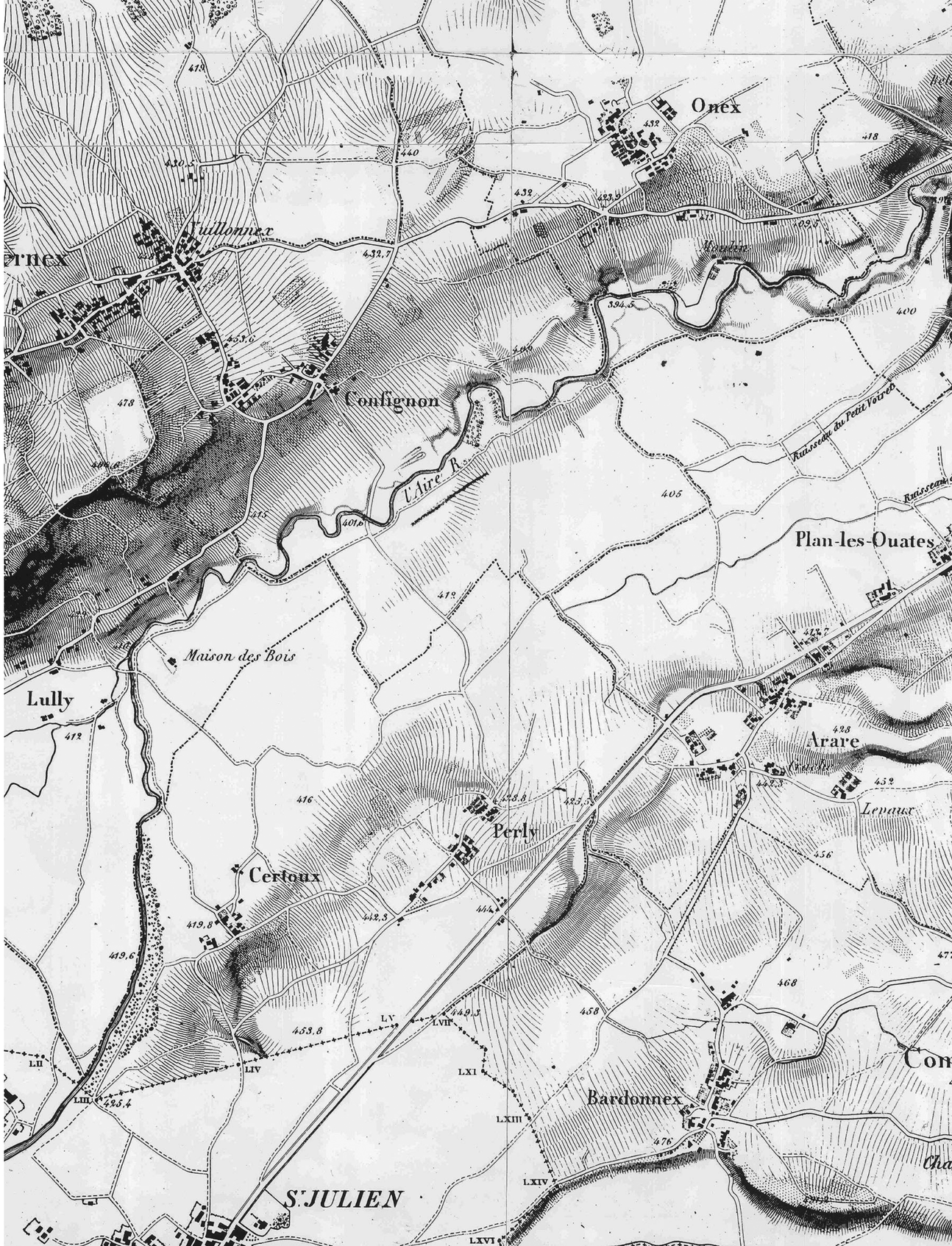
Free spaces for waterways

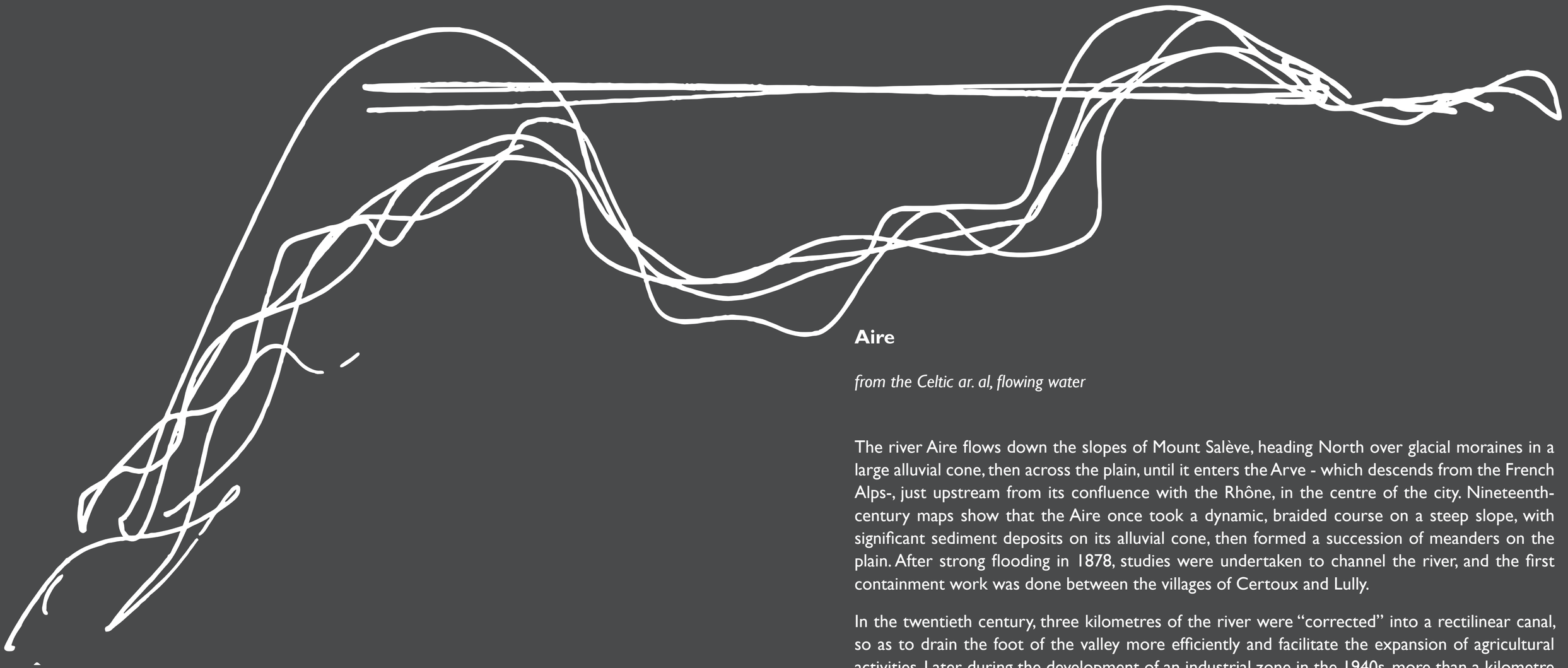
In May 2006, the *"Spatial Recall"* conference at the Landscape Architecture Department of the University of Berkeley, where we presented the project to revitalise the Aire, was to influence the conception of our project in a decisive way. Mathias Kondolf, a fluvial geomorphologist who taught at the University, presented a paper exposing the inanity of these two ways of developing a new riverbed, and proposed a different approach, which consisted in *"giving the new rive the possibility of making its own bed, by opening up a sufficiently wide playground where it can move, vary its area with changing water levels, and erode and deposit sediments"*. This space, which was in turn named *free space, erodible corridor, or meandering space*, is where the water way, this time shaped by autonomous morphogenic processes, rapidly reaches the form that both landscapists and engineers fail to achieve. These spaces are most often created outside urbanised areas, on land that does not have a prohibitive value; and yet, in the case of the river Aire, this system was tested in an already built-up area, in the outskirts of Geneva. A stroke of luck for the Aire? Could it have been expected that this approach, this creation of a *"free space"*, would be crowned with success for the Aire? In order to regenerate through autonomous processes, waterways require a sufficient volume of sediments in their catchment basins, and enough energy to erode, displace and deposit those sediments. Most of the Aire's basin is well inclined, so that its hydrography and sediment load favour such a process. As the river has a torrential flow pattern, it can carry a high average volume of sediments which, during major (centennial) floods, can see a tenfold increase. The Aire, therefore, seemed a good candidate for a project that would enable it to restore its own course.

Aire

The river Aire flows down the slopes of Mount Salève, heading North over glacial moraines in a large alluvial cone, then across the plain, until it enters the Arve - which descends from the French Alps-, just upstream from its confluence with the Rhône, in the centre of the city. Nineteenth-century maps show that the Aire once took a dynamic, braided course on a steep slope, with significant sediment deposits on its alluvial cone, then formed a succession of meanders on the plain. After strong flooding in 1878, studies were undertaken to channel the river, and the first containment work was done between the villages of Certoux and Lully.

In the twentieth century, three kilometres of the river were "corrected" into a rectilinear canal, so as to drain the foot of the valley more efficiently and facilitate the expansion of agricultural activities. Later, during the development of an industrial zone in the 1940s, more than a kilometre of the waterway was channelled underground to the point where it flows into the Arve. Finally, around 1980, in order to avert the consequences of flooding on residential zones, which had been imprudently built in close proximity to the river, a tunnel was built to divert the waters of the Aire towards the Rhône.





Aire

from the Celtic ar. al, flowing water

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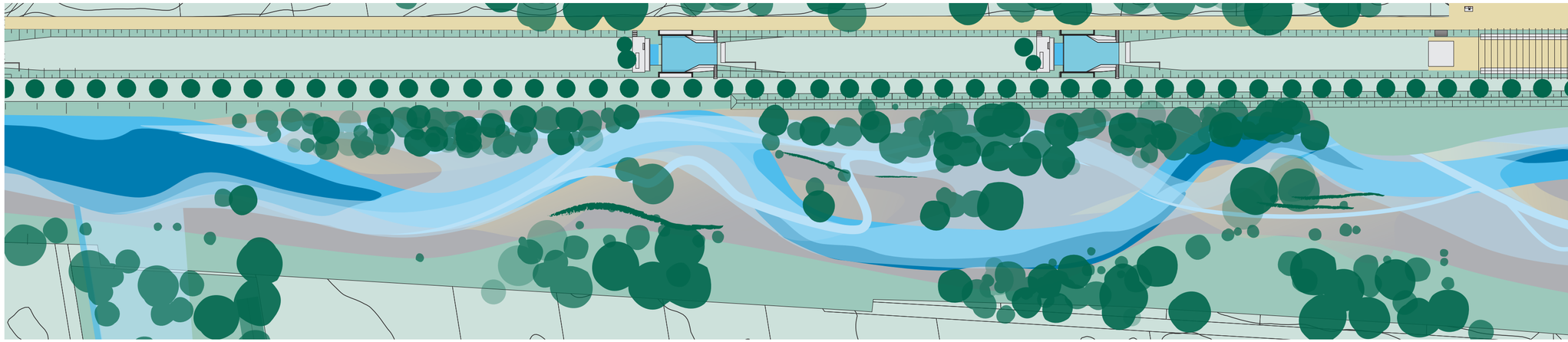
At the end of the twentieth century, following a change in Genevan cantonal water legislation, a new law enshrined the principle of river restoration through seven articles which, among other things, provided for the creation of a special waterway fund to finance the relevant works. A competition, the first of its kind in Switzerland to revitalise a waterway, was organised in 2000. The winning team, SUPERPOSITIONS, envisaged the development of a large "meandering space" for the waterway, which it would take from farmland and forest areas, whilst conserving and transforming the rectilinear canal into a series of public gardens. The realisation of the project was planned in four stages and in 2022, it was completed.

Searching for an autonomous morphogenesis

From the initial studies for the project to restore the Aire, and the first drawings expressing the way in which the new riverbed would be developed, a cluster of coloured lines evoked a yet indeterminate shape to come, clearly manifesting the impossibility of fixing this shape before the facts.
In further studies, this question remained open and without any satisfactory answer.



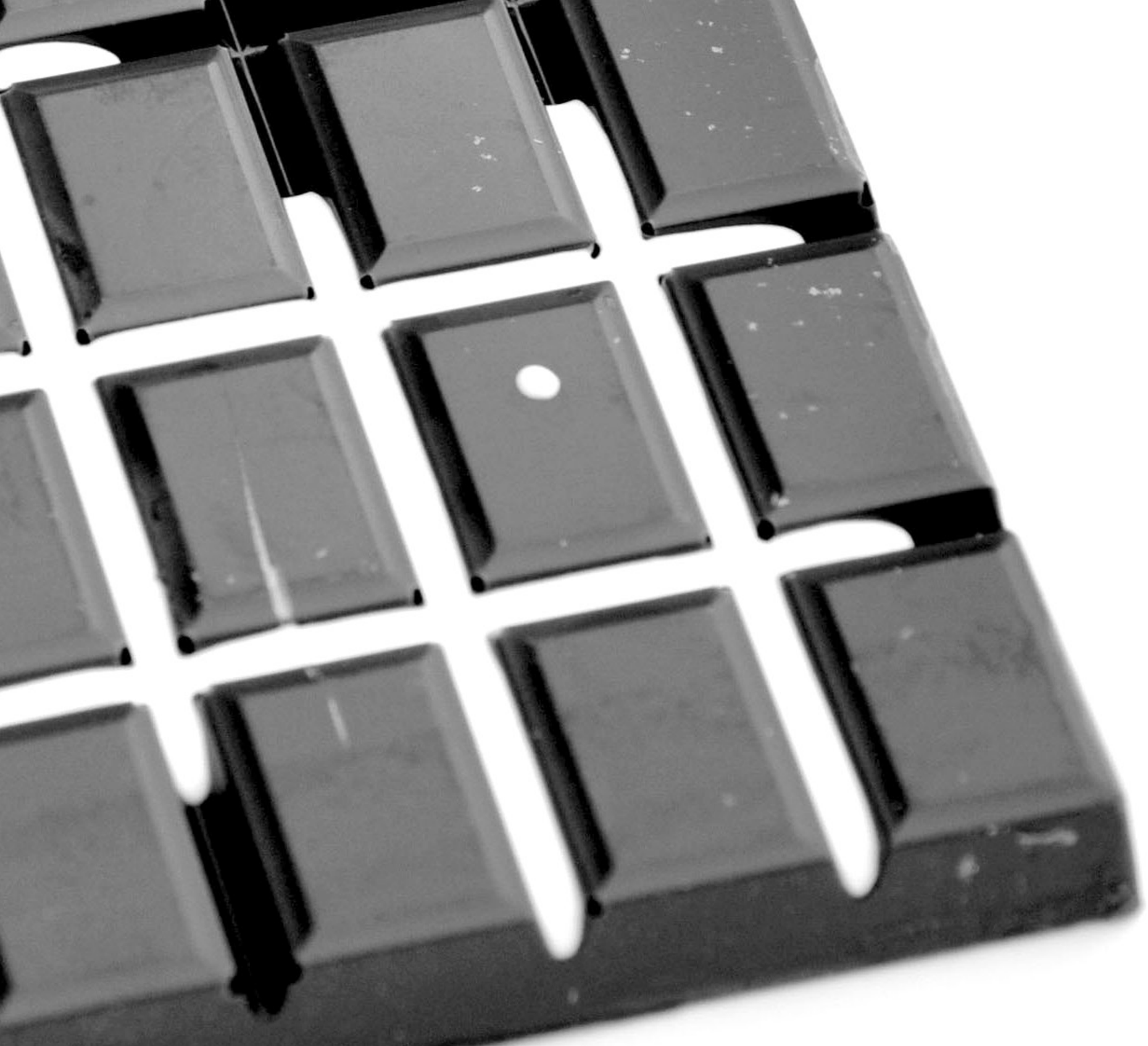
A first attempt

During the second implementation phase of the project, simple earthworks created a large and uniform area, an erodible corridor, sufficient to hold the requisite volume of water.

No other intervention was planned, in order to allow an autonomous morphogenesis of the new bed to develop, and the river progressively carved its new bed in the meandering space thus freed up.

Slow progress and limitations

In contrast to a project where a new minor riverbed is immediately created, the successful autonomous morphogenesis of a waterway depends heavily on high-flow periods for the energy to activate this process. Moreover, paradoxically, the width of the meandering space, which the river needs to carve out its new course, retards that very process: water volumes spread out over a larger surface, and as a result, they lose much of their erosive force.



Black squares

A first test of the model was improvised on a readily available “matrix”: a slightly inclined chocolate bar, over which milk was poured.

Shapes to come

This is why, during the following stage of implementation, in order to respond to concerns over the excessive predicted duration of the process, we re-examined the behaviour of fluids and materials, the decisive elements at the heart of our projects. An alternative approach was sought, a preparatory layout that would be able to both start and accelerate an auto-morphogenesis of the new riverbed, whilst simultaneously preventing a precocious or hasty production of a shape for the river.

In the works of Pierre-Gille de Gennes, we found a description of percolation, which can roughly be defined as the passage of a liquid through a porous body; the scientific diagrams representing this phenomenon inspired us to search for an analogous diagram, adapted to our own problem. These scientific diagrams reflect an approximate division into polygons, through which the liquid spreads at random.

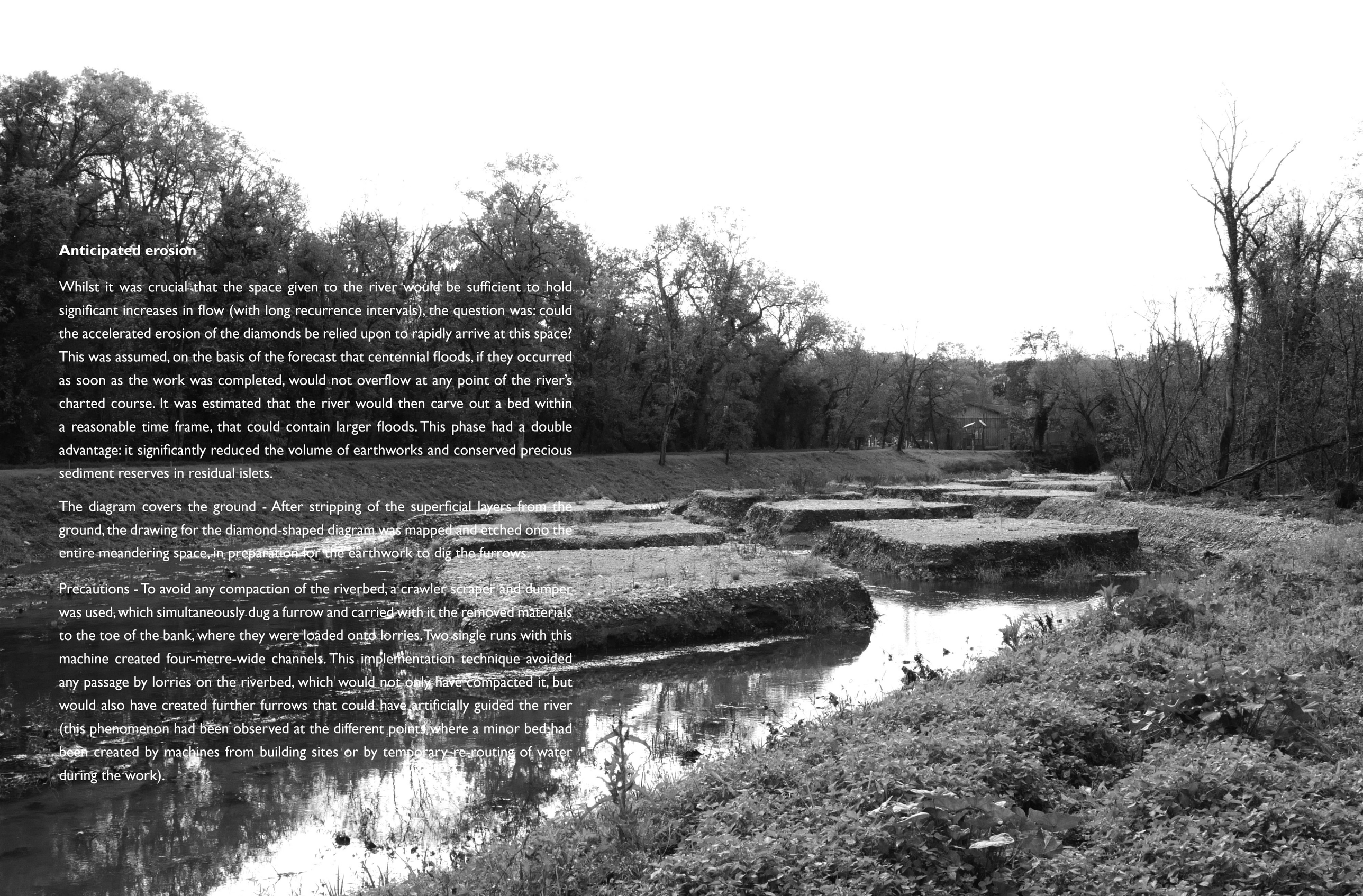
Diamonds

This first test confirmed an approximation of the phenomenon, but the “square” shapes of the bar were not satisfactory, unlike the diamond shapes that can be found on islands of alluvial plains, where they cut water flows in two. These bifurcations can be observed both in Leonardo da Vinci’s drawings of eddies, and in the photographic study of aerodynamic phenomena, on the model of fluids with wisps of smoke by Etienne-Jules Marey. Opening new lines of possibility - This diagram of diamond shapes shows a matrix that acts as a trigger for the process of morphogenesis, without predetermining the shapes of the new bed: the diagonal configuration of the furrows favours the bifurcation of water currents and rapidly generates the complexity in the new bed which we sought to achieve. Gilles Deleuze revisits the term diagram in his essay on the paintings of Francis Bacon. He reports that at given moments Bacon threw onto the canvas what he himself called a diagram, “something, a trace, a stain that counters the constant threat of a cliché, of a shape that emerges too quickly”. This arbitrary gesture opened up a line of possibility.

Sizing and cutting the grid

Hydraulics and construction - The search for a balance between the resistance of riverbanks and the intensity of water flow determined elements such as the dimensions of the diamonds on the grid, the thickness of strata for stripping, the width and depth of the channels. To these determinant elements was added the correlation between the dimensions of the curves in the old river meanders and those of the diagram.

The materials - The dimensions of the diamonds and the width of the channels were not influenced by the nature of materials present on site, even though it was anticipated that the large quantities of gravel, present in some segments, would be rapidly carried off by the river and would thus increase the space to accommodate higher water levels. Under a layer of vegetal earth, which varies between twenty and fifty centimetres in thickness, there is a layer of sandy silt, whose thickness ranges from a meter at some points, to two meters at others, over a lightly sandy layer of gravel. Upstream in the new bed, the first diamonds were dug out in a highly silty environment, whilst downstream, their side walls showed layers containing large amounts of gravel.



Anticipated erosion

Whilst it was crucial that the space given to the river would be sufficient to hold significant increases in flow (with long recurrence intervals), the question was: could the accelerated erosion of the diamonds be relied upon to rapidly arrive at this space? This was assumed, on the basis of the forecast that centennial floods, if they occurred as soon as the work was completed, would not overflow at any point of the river's charted course. It was estimated that the river would then carve out a bed within a reasonable time frame, that could contain larger floods. This phase had a double advantage: it significantly reduced the volume of earthworks and conserved precious sediment reserves in residual islets.

The diagram covers the ground - After stripping of the superficial layers from the ground, the drawing for the diamond-shaped diagram was mapped and etched ono the entire meandering space, in preparation for the earthwork to dig the furrows.

Precautions - To avoid any compaction of the riverbed, a crawler scraper and dumper was used, which simultaneously dug a furrow and carried with it the removed materials to the toe of the bank, where they were loaded onto lorries. Two single runs with this machine created four-metre-wide channels. This implementation technique avoided any passage by lorries on the riverbed, which would not only have compacted it, but would also have created further furrows that could have artificially guided the river (this phenomenon had been observed at the different points where a minor bed had been created by machines from building sites or by temporary re-routing of water during the work).

Water tumbles down

13 June 2014

The water spread out and invaded the diamond-shaped furrows, and processes of erosion came into action with surprising speed, triggering the sought-after auto-morphogenesis.

Floodplain – This triggering diagram not only opens up a corridor where water constantly forms and modifies structures of its own minor bed, but also sets off the formation of a vast floodplain, where small increases in flow bring about the same transformations. The river's playground is thus significantly widened, all the while remaining within the limits imposed to the project's meandering space.

Differential erosion - As had been predicted it, the diamonds where gravel predominated were eroded more rapidly, as their materials created banks over the river's whole width, achieving a kind of overall levelling out of the bed. The diamonds cut out from more compact or loamy soil, were more resistant, and the river, rather than eroding them, deepened its bed by creating small canyons. The general declivity of the bed, along with its longitudinal profile, had been taken into account by providing for breaks in slope, to modify the speed of water as a function of the width given to the river. Nowadays, according to various topographical surveys, the profile of the thalweg (the lowest part of the riverbed that is always under water), tends towards a more regular slope along its whole length, as the river seems to seek a balanced slope.

Observations and measurements, acceleration of the process

The open-air laboratory of this experimental project entails regular monitoring of ongoing processes, such as the bed's morphology, the nature and movement of sediments, the fauna and flora observed in natural environments reconstituting themselves, and the volumes and quality of water. This continuous observation involves aerial photographic surveys as well as on-site measurements.

The surprising speed of this phenomenon of auto-morphogenesis can be explained by the fact that water currents simultaneously encounter lateral resistance, which maintains their power and pressure on the riverbanks. This pressure weakens the banks, so that the process of destruction/construction takes place rapidly. As a result, the site undergoes an overall loosening, which creates a series of gullies. This is one of the most feared phenomena in soil conservation, as it causes accelerated soil erosion. This gullying is one of the most common forms of terrain loss in soils that are insufficiently protected by vegetation. One could then say that, from the initial stripping of the site to the excavation of diamond-shaped channels, the project did all it could to cause this hydraulic erosion, in a kind of reverse application of all the principles of soil conservation.

Metamorphoses

The diamond-shaped pattern sets off continual upheavals, which make for greater biodiversity. At this stage one can observe phenomena of erosion and deposition similar to those on alluvial plains. Very different environments form everywhere in the space given to the new river: sand or gravel banks, temporary ponds, high or low and wet or dry terraces. During successive high-flow periods, these arrangements disassemble, disappear and reform elsewhere, and the whole structure of the riverbed undergoes significant modifications with series of floors and large water holes where fish species stay when the river is low. The width of the bed varies significantly, causing variations in flow speed, and as a result, a highly differentiated granulometry of riverbed sediments. The more varied the sediments – sand, gravel, pebbles - with different degrees of humidity, the greater is the diversity of vegetation, and of the animal species it attracts: butterflies, dragonflies, amphibians, reptiles, birds, small mammals. These complex habitats benefit also from all the "accidents" that occur during flooding or very strong winds: trees falling into the river, or logjams formed by dead wood. In order to stimulate the growth of vegetation and to limit the presence of invasive plants, the banks and diamonds were quickly sowed with prairie flowers and riverbank species; moreover, the high number of trees and bushes planted re-established a continuum of vegetal structures that threw shade over the waterway and were crucial to the subsistence and movement of fauna.

Upside down

In the summer of 2019, the river seems to have evaporated. Yet water remains very close by: it flows underground, in the water table.

Even if this buried reality is not easily perceptible, on the surface, the flowers, insects and birds, the life still thriving on the parched site, bears witness to its continuing presence.

What is the true nature of these water tables? In Living with Aquifers, Andrea Ballestero enjoins us to stop thinking of them as simple reservoirs to be pumped from, but rather to see them as sponges, without defined forms, always in motion, and facilitating exchanges between surface and underground water, through continuous movements of pressure and suction. These saturated substrates, which blur the boundary between rock, water, and air, are certainly not "fixed stratigraphies, sedentary architectures, settled configurations". This hydro-lithic choreography, as she calls it, this all-embracing movement, is it not, in depth, what we sought to achieve on the surface with the diamond-shaped diagram, by establishing the conditions for ever-changing shapes to come?

Imprint

The river is present in the double imprint of its successive courses: the long, straight, and narrow shape of the canal, and the wide, diffuse diamond-shaped diagram, where the river is now carving out its new course.

These two distinct imprints bear witness to very different flow regimes. On one hand, in the canal, water is directed, constrained between two banks which preclude all turbulence. On the other hand, in the diamond grid, the flow spreads out and eddies in free space.

Georges Didi-Huberman, in his essay on Resemblance through contact (La Ressemblance par contact), analyses the evocative power of imprints: collision of there and not-there, of contact and absence.

This double imprint shows the gap between different times: the canal's imprint looks to a source-origin, whilst the diagram's looks to the river's evolving shapes.

This is the plural origin of the diagram which sets off the auto-morphogenesis of the river: what takes place is at once the restoration of biotopes and a projection, an opening towards a reality that is always unfinished.

A cultural landscape

This power of the imprintvokes the distant presences of the men and women who lived, worked, and gave shape to this landscape anda establishes a tension between what has disappeared and what remains.

Herons

always on site
never in the same place

there are two of them
are they a couple?
Calm
and alert
They let you come near
A brief croak
They take their powerful and heavy flight
One large circle and they alight further away
Always on site
Never in the same place.

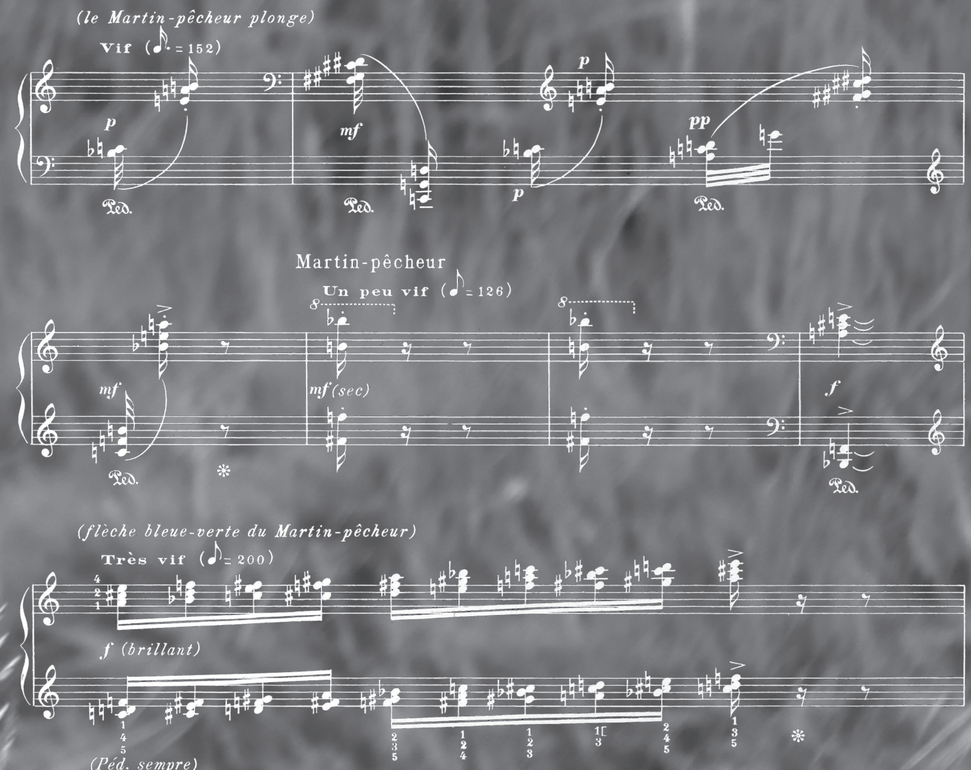
The kingfisher

Tuesday, 9h 15

A blue flash
The kingfisher
By the water
Flies over the new meander
From East to West

9h30 blue flash
From West to East
The blue bird flies back,

Tracing exactly
The same curves



The fawn

the meadows were still white with frost yesterday morning,
when this beautiful animal came close
out of the nearby woods towards us
with the lightest of movement,

this curious and worried glance, alert

how could we not think of other worlds
other beings who these days approach our shores, fragile and full of hope

all, human and animal, seem to say:

“what are you doing with this world”?

Play and reality

For the English paediatrician and psychanalyst Donald Winnicott, "play is an experience, always a creative experience, a fundamental form of life", and for him, "playing must be a spontaneous act, and not the expression of submission or acquiescence."

This is why he distinguishes playing strictly defined by rules (game) from freely deployed "play". He even uses the term "playing" "to designate a process taking place and not a finished product".

A child creates novelty always starting from existing objects or situations. One must accept "this paradox whereby a child creates an object that would not have been created if it had not already been there." A stray piece of wood will become a horse of a rifle.

Winnicott speaks of the decisive importance of play in the search for a life "that is worth living", and of the possibility, in the cultural sphere, of letting play what is given and transformed.

The canal will become a garden.

A rivergarden.

Grey matter

yesterday children
discovered
the smooth clay
slippery
matter
a slide

The Aire, an open-air laboratory

The transdisciplinary composition of the research group, which the very nature of this river
regeneration project demanded, led to a measure of experimentation from the outset of our studies. Biologists, environmental scientists, hydraulic engineers, and landscape architects who gathered in SUPERPOSITIONS to study the project, contributed a considerable wealth of experiences and past achievements.
During this long process of research and implementation (almost twenty years), a new communal know-how slowly developed to respond to increasingly ambitious demands.
From their specialist knowledge and beyond their habitual limits, members from each discipline collaborated in elaborating hypotheses for the project and ways of validating them.
This practice was stimulated by relationships nurtured at the time between SUPERPOSITIONS and the *"architecture and landscape"* research group of the University of Geneva.
How could we not then evoke the figure of André Corboz, the Genevan historian of architecture and urbanism. By so knowledgeably and strongly advocating for the need to consider the historical thickness of territories, the reasons and conditions for their continuous renewal, he profoundly marked and altered the practices in projects of numerous individuals researching territories.
The exploratory character of the project, which constantly probed the laws and regulations in force, was consistently supported by the Department for the lake, the renaturing of waterways and fisheries (Service du lac, de la renaturation des cours d'eau et de la pêche) of the State of Geneva, in its programme to revitalise the canton's rivers. This attitude, which went with the innovative political vision for Geneva in this area, was crucial to the project's success; its experimental aspect and the exceptional conditions granted for the endeavour, explain the project's wide recognition. Legal reform is a complicated and drawn-out process; there is therefore an urgent need for derogations, such as those advocated by Dominique Bourg, to open up fields for experimentation: only with such derogations can new proposals for the organisation of our territories be tested.

An ongoing experiment

It is too early to speak of the long-term impact of this experiment. The decision to limit earthworks for the new bed, letting the waterway form its own bed, has been vindicated.
One need only stroll down the Aire to notice that the river has rapidly and markedly carved out its bed, with no major morphogenetic flooding to date. However, the risks taken in initiating this process without setting strong and definitive limits to the river's meanders must be taken into account, since it is now clear that, in certain segments, the Aire is seeking to reclaim the entire area of its old meanders.
It will, therefore, be necessary to rethink the current limits of the space of the river, in consultation with all stakeholders affected by this development, particularly agricultural workers, and to plan the short- or medium-term work that will be needed in order to consolidate the current banks or to grant the river a wider space.

The lesson of the river, order and disorder

The technique involved in excavating a grid of channels to set off and accelerate processes of automorphogenesis in a waterway, is without a doubt potentially applicable to other rivers, so long as they have a good sediment charge and the energy needed to move them, which means a sufficient volume of water. There is no denying this paradox: the greater the definition of the starting grid, the freer the river feels to carve out its new bed.
All of this inevitably brings to mind the urban grid, a prime example of the potential for evolution and diversification of urban forms catalysed by initial regularity. Dynamic forms, collections of spatial constructions reworked and rebuilt over time, crumbling and expanding through periods of growth, eradication and incorporation.
"Chaos where order and disorder combine, the city is an auto-eco organiser"

Edgar Morin

One could not, then, fail to be struck by the parallel between two forms of culpable impatience, those of shapes defined too quickly, fixed in a kind of grimace, for a city or a river. Or two closures, which oppose any interpretation and transformation, in contrast to an open city, of which Bernard Stiegler recalled the principles in his latest work, Bifurcate: *"According to [Richard] Sennett, the design of an open city must make use of incomplete or unfinished architectural forms, capable of being modified over time, according to the needs of its inhabitants and by these very inhabitants themselves: these forms must be able to change together with the functions of the buildings, thus becoming evolving, living structures".*

Catchment basins

"The ecological tragedy which our human planet is playing out has been the object of systematic ignorance. This period is now at an end. Through the media, which have become hyper-sensitive to the recurrence of ecological "accidents", international opinion is increasingly mobilised. The whole world is now speaking of ecology: politicians, technocrats, industrialists.(…) However, ecological perturbations in the environment are only the visible part of a deeper and greater evil, that relates to ways of living and being within society on this planet. Environmental ecology should be thought as part of a single unit together with social and mental ecology, through an eco-political ecosophy (…) (This is about) ensuring that innovative practices that reconstitute individual and collective subjectivities support each other, within new techno-scientific contexts and new political coordinates."

Felix Guattari, The *Three Ecologies (Les trois écologies),* 1989

In reflecting on the meaning of our project, it becomes necessary to take into account the entire catchment basin of the Aire, in order to truly improve its ecosystem, the management of its waters, their volume and quality. This will not be achievable without questioning the currently inadequate options for preserving this ecosystem, and imagining more concrete, effective, and legitimate ones. The necessary conditions for these attempts will need to be specified, taking into account the legal framework, potential stakeholders, and also the results of analogous experiments undertaken on other sites.
Thus, as Philippe Descola states, the question arises of political and juridical organisation guaranteeing the concrete and effective defence of human and non-human collective entities, such as catchment basins. There are well known precedents for this, but Descola highlights the difficulty in achieving the recognition of legal personality to such entities, when this symbolic sharing with a larger non-human constituency is lacking in our Western societies.

Rediscovering the river

One can, nevertheless, wonder what is happening nowadays on the site of the Aire, in this public rural space, this freely accessible rivergarden.
Are we not witnessing the constitution of a new community, which little by little reclaims the place, and enriches it with a series of symbolic relationships? The site fills up with stories, desires, a sort of rapture, springing from the joy of rediscovering the river and all its beauty. An emotional shock can give birth to, and accelerate, the need to find, once more, a sensitive relationship with a wonderfully complex world. Human beings would then become, according to Descola, the agents of this preservation of human and non-human collective entities.

A rivergarden

"a place is always the sum of all the movements that took place in in"

Andrei Tarkovsky

The development of the site and the dual purpose of the project – new free space for the river and transformation of the old canal into a series of public spaces – aimed to facilitate the conditions for these exchanges that were sought with inhabitants; this is the meaning of the name for the project as a whole, a rivergarden. The garden was understood as a place for pleasure, knowledge, and enquiry.

Phase four: erasing a dam

The diamond-shaped diagram remains the founding principle for the new bed, with one added complexity: the river's increasing slope on this new sector, and the higher volume of sediments thrust through as a result of the removal of the current holding basin in Certoux, which will make the fish migrations possible again.

At the same place a new pedestrian footbridege, designed by the Swiss engineer Jürg Conzett, doubles the existing old bridge and secures the walkers flows.

For this new phase, the diagram was altered in places to preserve as much of the existing tree cover as possible.. This new situation – and the eventuality of a significant flooding which has been expected since the diamonds were put in place - certainly will bring other interesting elements to bear on the functioning of this novel device.

A place for bright thoughts and dark thoughts

"Over the past four weeks, alone at home, I have been thinking of what I miss, and why. Strangely, and although I almost never go there, I think of the Buttes-Chaumont park, which is in my neighbourhood and which is currently closed to the public.

Why do I miss it, since I never go there, so to speak? I miss it because I feel that it is part of my life, and I do not want to imagine living here, in the nineteenth arrondissement of Paris, without this park. My environment without it would be a kind of open-air prison.

A park is an ideal place to encounter nature, other human beings, and dogs. People are not alone in a park, and yet it is not a place for large gatherings. You stroll, you read a book, you sunbathe, go for a jog or sniff the scent of a flower. You hurry through the park, because it is a shortcut. There are areas for children, where you can watch them play – and you can also get away from them for some peace and quiet. You get irritated when someone is noisy.

It is a place for bright thoughts and dark thoughts. You don't need crowds of people having the same experience of the park as yourself. You can experience the most diverse relationships with nature, and with life itself. You might wonder why someone gave such a shape to nature, and why it does not grow as it wants to. With luck, the park can spark a yearning for the forest and wide spaces and the sea. Visiting the park is free, but its upkeep takes a lot of work and money. And this does not bother anyone, because a park – and this is evident without the slightest cost and benefit calculation – is part of our life, our wealth, and we couldn't imagine doing without it.

Actually, it isn't true that is bothers no one. Refugees who come to our shores fleeing misery and mud, and who are prevented from building shelters in the park, are bothered. Precisely because it is our park, and I am ashamed of this "our park". But all the same, I dream of a theatre that would belong to life as a park does. People who seek refuge in this theatre would be able to chase me away from it if they were offered nothing better"

Matthias Langhoff

Letter of 13 April 2020 to Nicolas Royer, director of the Espace des arts, scène nationale, Chalon-sur-Saône

Afterword

By G Mathias Kondolf, University of California Berkeley

As the sciences of fluvial geomorphology and river ecology have progressed, we now better understand that alluvial river channel form and its complex habitats depend upon fluvial process, including periodic disturbance by floods. In place of traditional notions that *'stability'* was desirable in ecology, we now see that disturbance is not only inevitable in many systems, but essential to their regeneration and maintenance of biodiversity (Naiman et al. 2005). Channel dynamics, bank erosion, deposition, and recruitment of large wood to the channel are essential processes to create the complex and diverse channel habitats (Florsheim et al. 2008, Gurnell et al. 2002) and diverse floodplain habitats (Stanford et al. 2005) needed by many valued species. Thus, there is increasing recognition in the scientific literature that the greatest ecological diversity and richness occur in dynamic river systems, in which the floodplain is frequently inundated, and the channel can migrate, erode, and deposit, allowing for establishment of native riparian vegetation.

More restoration programs now emphasize restoration of dynamic fluvial process. To the extent that a river can be granted its space of freedom, along with an at least partially natural flow and sediment regime, the river can rearrange its bed and banks in a more complex form, supporting native species evolved in adaptation to these conditions. However, in light of the severe constraints imposed by their surroundings, it is often assumed that process cannot be restored in urban rivers, and that only cosmetic *'gardening'* projects are possible. While this constraint holds true for many densely urbanized settings, there are some urban contexts in which semi-natural fluvial processes can be restored to the river corridor, and with time, these processes can restore natural forms to the river. Similarly, restoration for ecological function is often seen as opposed to improving access for humans. However, this need not necessarily be the case, and finding opportunities to restore rivers to improve both ecological function and human use is one of the key challenges in urban river management in this century.

Flood risk is commonly managed by structural measures such as dikes, flood control reservoirs, and engineered channels, measures which usually negatively impact ecological function. However, with increasing interest in *'nature-based solutions'*, managers seek opportunities to manage floods while also improving ecological functions. By granting the river a corridor in which to convey floodwaters and where it can move freely, it may be possible to restore fluvial process while also reducing flood risk.

The book, Laissez Faire la Riviere eloquently presents the underlying concepts behind the restoration of the Aire River, as well as insightful details about its implementation.

Erodible corridor and espace de liberté

River restoration in North America began earlier than in Europe, and adopted a paradigm of designing a stable, single-thread, meandering channel as the idealized goal in river restoration (Kondolf 2006). This approach - the imposition of fixed, idealized forms - reflected an earlier idea of *'restoration'*, rooted in concepts of ecosystem stability rather than dynamism. The fixing of river forms in place also was consistent with the goals of most riparian landowners, who commonly want to avoid erosion of their riverbanks. This paradigm has been adopted by some state and federal agencies, is required for compensatory mitigation projects under the US Clean Water Act in at least one state (North Carolina, USA), and has now spawned a vast mitigation banking industry, which churns out virtually identical symmetrical meandering channels – commodifying river 'restoration' as an industry in which large investment banks now have stakes (Lave et al 2008, Doyle et al. 2015, Lave and Doye 2021).

In contrast, river restoration trend started in Europe in the 1990s, and became widespread in response to requirements of the Water Framework Directive (European Commission 2000), which encouraged integration of more advanced concepts of fluvial process as a basis for ecosystem restoration, in effect leap-frogging over the 'stable-meandering-channel' paradigm still prevalent in much of North American practice. While there are many *'restoration'* projects in Europe that do not restore process, we find many more examples of true process restoration here (Habersack and Piegay 2010).

Given that dynamic fluvial processes create the complex habitats needed by native species, it follows that the most effective ecological strategy is to set aside a zone within which riverine processes can function without conflicting with human uses, termed variously the *'espace de liberté', 'erodible corridor'* (Piégay et al. 2005), *'fluvial territory'* (Ollero 2008), or *'channel migration zone'* (Rapp and Abbe 2003). This approach can be viewed as *'preservation'* of what's already working, and a more effective use of restoration funds than projects involving active intervention and physical changes to restore the channel. Where the river has sufficient stream power (to move sediment) and sufficient sediment load, the most sustainable restoration strategy will likely be to remove structures that constrain the river, and thereby let the river restore itself over subsequent years – to - decades through erosion, deposition, and development of riparian vegetation (Kondolf 2011)..

If it's too late to preserve a functioning river system, the next best is to restore process (Ciotti et al 2021, Beechie et al. 2010, Kondolf et al 2006). Examples include removing dikes that block floodwaters from inundating floodplains, removing hardened bank protection that prevents channel migration, restoring flow dynamics with high flows released from reservoirs, and restoring sediment dynamics by adding gravel to sediment-starved channels downstream of reservoirs. In these cases, by restoring the processes we allow the river to create complex forms (and thereby diverse habitats). By contrast, the least sustainable *'restoration'* approaches - and those least likely to succeed - are those that attempt to directly create, through mechanical action, the complex habitats of the natural river, especially if the restoration goals are based on outdated notions of stability as the desired ecosystem state. Without the processes that naturally create and maintain these geomorphic features and habitats, it is unlikely that the artificially constructed habitats will persist for long.

Process-Based Restoration

While many restoration project today are billed as *"process restoration"* or *"geomorphically-based restoration"*, some of these do not merit the title. As articulated by Ciotti et al. (2021), process restoration can be identified based on four criteria: space, energy, materials, and time.

Space. Removing constraints to overbank flooding and channel migration can allow river processes to operate over a larger area (increasing the process space), in turn creating the channel-floodplain complexity and connectivity that will support the desired ecology. Thus, the first criterion to apply to a restoration project is whether it increases the river's process space. The Aire River restoration increased the channel width from the 15-m width of the canal to the 100-m width of the espace de liberte created to the south. [However, the channel is now migrating into the southern boundary of the espace de liberté at two points, suggesting that the river may need more than the 100-m width given it by the project. Given the success of the project to date, an expansion of the river corridor to the south is now under consideration.] Moreover, the transverse dikes that impound floodwaters across the floodplain during large floods effectively increase the river's footprint across its floodplain, while providing important flood risk management benefits to densely urbanized downstream reaches.

Energy. Another key aspect of process restoration is the source of energy. Conventional channel reconstruction projects (such as those documented by Doyle et al. 2019 as required for compensatory mitigation in North Carolina, USA) use bulldozers, excavators, and other heavy equipment to construct the end product, the idealized channel form. These projects depend primarily on large inputs of fossil fuel energy, and the constructed channels must be fixed in place by large rocks to resist the erosive forces of floods. By contrast, process restoration depends to the extent possible on natural sources of energy, notably the river in flood, which erodes, deposits, and thereby rearranges the architecture of the channel and floodplain. Even frequent natural floods can exert considerable energy on the channel: a 5-year flood on a stream draining XX km2 can exert energy equivalent to about 50 days of bulldozer operation (Ciotti et al 2021). The direct energy of the sun drives plant growth, which contributes to the evolution of channel form, holding riverbanks together, and providing shade to river waters in summer, hydraulic roughness to the floodplain during overbank flows, leaf litter to the stream (an important allochthonous input to the stream's ecology), and large wood, which creates habitat complexity. In some settings, biomorphic power can include the effects of many organisms large and small, such as the mussels who filter fine sediment from the stream waters, and beavers, whose dams raise water tables and trap organic matter (Johnson et al 2019). On the Aire, heavy equipment was used to excavate the multiple channels, but by leaving the lozenges in place (in lieu of presumed lowering of the entire footprint of the restored channel), the fossil energy required to excavate and carry away material was minimized. Most importantly, the energy of the river in flood was harnessed to form the channels. Even a series of small floods, with return intervals less than 2 years were sufficient to initiate erosion of the lozenges and deposition of natural fluvial forms such as gravel bars. With the establishment of riparian vegetation over the past seven years, the evolving channel is now taking on a clear form, as the energy of the river flow interacts with the stabilizing effects of trees and other riparian plants.

Materials. Process restoration uses locally sourced materials that are geomorphically appropriate to the site, rather than overwhelming the channel with artificial elements that would not naturally occur at the site, such as importing large boulders into streams with finer-grained bed and banks to create immobile structures that fix a constructed channel in place and prevent channel migration. Instead, process restoration uses structures as short-term tools to accelerate beneficial biogeomorphic processes. The structures are not expected to persist without change through subsequent high flows (Ciotti et al 2021). Except for a few key sites (e.g., at infrastructure crossings), the banks of the Aire were not hardened with boulders or other elements imported from elsewhere. Rather, the banks were encouraged to erode and deposit in response to the river's flow patterns and the growth of riparian vegetation in and along the restored channel. The site naturally had a diversity of sediment sizes, from dense clays to large gravels and cobbles (owing to the legacy of glaciation). The evolution of the individual lozenges was influenced in large measure by their composition, the lozenges cut in clay being more resistant to erosion than those composed of gravel.

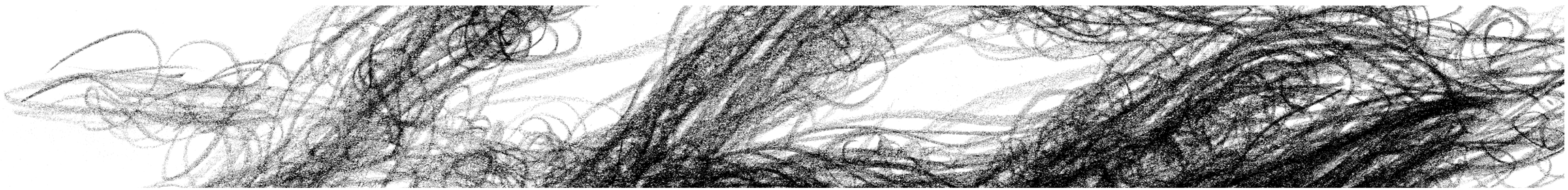
Time. One distinguishing feature of process-based restoration is that the objective is not to create an idealized river form directly, but rather the interventions are intended to induce the interaction of physical and biological processes to create naturally functioning fluvial ecosystems (Ciotti et al. 2021). The idea is to implement incremental, small interventions that subsequently direct the energy of high flows to restore channel complexity, and that allow riparian vegetation to establish. This prompted recovery (Downs and Gregory 2004) uses the natural energy of the river to accomplish the restoration objectives, but this takes time. A key innovation of the Aire project was its starting condition, i.e. the grid of channels cut and the lozenges that remained in between them. The pilot channels offered the Aire alternative paths from which to choose its course, and importantly, an abundant supply of sediment with which to build complex channel forms such as gravel bars and riffles, resulting in an acceleration of the channel evolution process. The accelerated channel evolution and visually interesting pattern of the lozenges were important attributes for creating public buy-in to the project in this very visible urban setting

The espace de liberté approach will not work everywhere. Some rivers are too constrained by encroachment of buildings and infrastructure upon river banks, leaving insufficient room for an active corridor. Some rivers have insufficient energy and sediment load, such that spontaneous recovery from channelization or other such impacts might take centuries, if it were to occur at all. Fortunately, the Aire was well suited to the approach. It was possible to regain some of the river's former corridor width from the agricultural lands to the south, giving the river more room to move. Moreover, it was clear that the Aire still experienced frequent geomorphically-competent flows, and that it had sufficient sediment supply to build complex channel forms, based on observed rates of sediment deposition in a sediment basin on the alluvial fan and in a pool excavated for fish habitat. Thus, the Aire had sufficient space, stream power and sediment load to re-create its channel.

Conclusions

Letting the river restore itself through natural channel dynamics seems an obvious approach, both for the likely ultimate success of the restoration and for cost efficiency in achieving the result. While there are now multiple examples of such projects in Europe since adoption of the Water Framework Directive (European Commission 2000), they have mostly been in rural settings. The Aire illustrates a successful espace de liberté within an urbanized region. In this case, agricultural lands adjacent to the river channel were converted to river corridor, but in other cases parking lots, abandoned industrial parcels, or other land uses may offer opportunities to expand the width of the river's process space.

The Aire project provides a refreshing contrast to the dominant paradigm in North American river restoration of constructing stable, single-thread channels locked in place by boulders and other large elements. The desire to fix channels in place probably reflects popular misconceptions about fluvial geomorphology and aquatic ecology when stream restoration first became popular in North America, as well as underlying and unspoken cultural preferences for such channels (Kondolf 2006). The dynamic nature of the Aire River post-restoration provides an alternative restoration path, one more attuned with real river processes in lieu of idealized forms imposed on the river. As we understand better how fluvial ecosystems function, it is increasingly clear that the natural processes of erosion, sedimentation, and channel migration do a very good job of creating high quality habitat. The most effective approach to restoring rivers will often be for us to stand aside, and give the river its space.



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2019 Landscape Award of the Council of Europe
2018 Distinction Romande d'Architecture– DRA4
2018 Landezine International Landscape Award (LILA)
2017 SIA Regards Distinction (Prize of the Swiss society of engineers and architects (SIA))
2017 Silver medal, Fassa Bortolo sustainable architecture prize (Ferrara)
2016 Public Opinion Prize, Rosa Barba International Landscape Prize (Barcelona)
2016 Distinction, SIA Geneva (Prize of the Genevan section of the SIA)
2015 Hase In Gold "Die Besten 2015" (Hochparterre Prize)
2012 Schulthess Garden Prize
2009 Award, "Die Besten 2009" (Hochparterre Prize, landscape)

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Passe-moi les jumelles, Radio Télévision Suisse, 2018

EXHIBITIONS

2023, Archizoom, EPFL ,Lausanne

2022, Copenhagen Architecture Biennale, Copenhagen

2018 DRA4 exhibition, Pavillon Sicli, Geneva

2017 Arc en rêve, Bordeaux

2017 UMSICHT - REGARDS - SGUARDI 2017, itinerant exhibition

2016 9e BIENNALE INTERNATIONALE DU PAYSAGE, Barcelona

2016 OPEN SPACE CONNECTION, Lausanne – Barcelona

2014 THE NARRATIVE OF LANDSCAPE, Archizoom, EPFL, Lausanne

2009 GRANDS PAYSAGES D'EUROPE, Galerie Lucy Mackintosh, Lausanne

2008 5e BIENNALE INTERNATIONALE DU PAYSAGE, Barcelona

2008 KORREKTES WASSER, Gelbe Haus, Flims

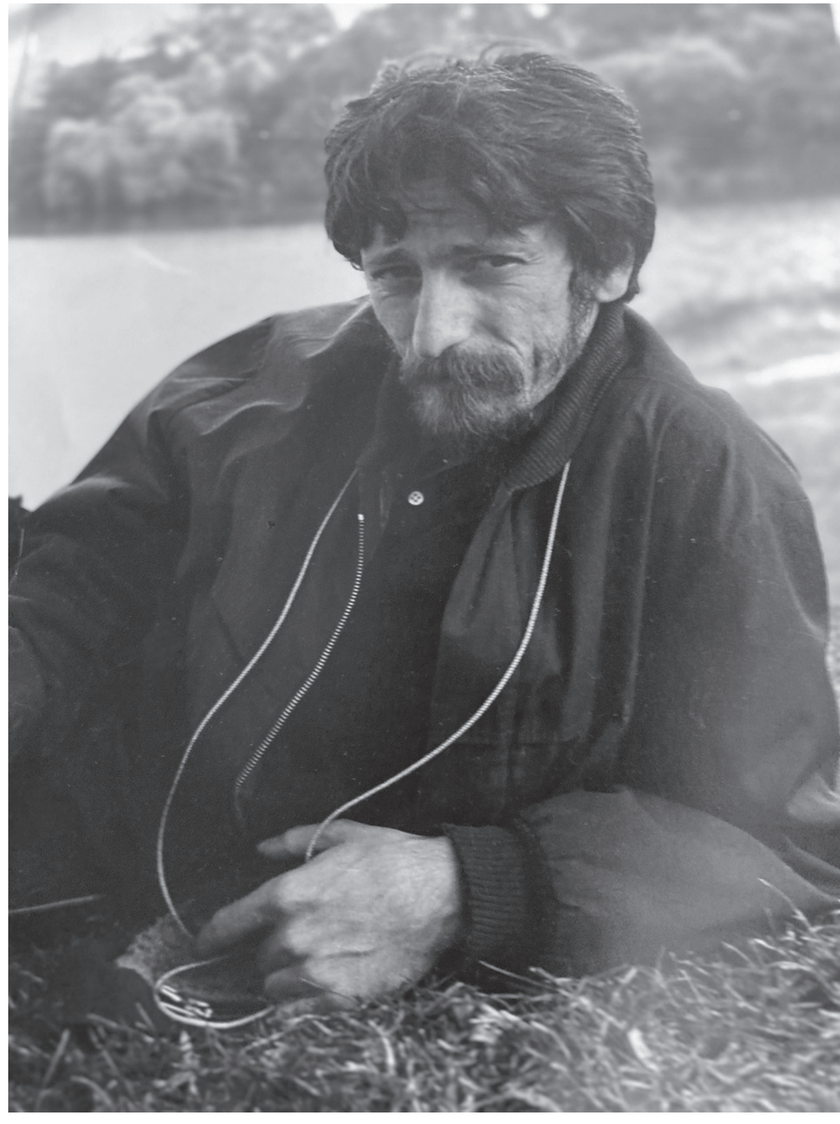
2008 GREAT LANDSCAPES OF EUROPE, Fundación César Manrique, Lanzarote

2007 SPEZIFISCH, SPÉCIFIQUE, SPECIFICO, Architektur Forum Zürich

2001 Project exhibition after competition result, Confignon

In memorium

Alpaslan Ataman



Aire River Rgeneration Project (2000-2023)

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« (...) le flux du devenir crée et recrée des formes, en s'organisant de lui-même. En lui nous ne pouvons rien restaurer: ce sont les dynamiques du vivant qui sont seules capables de se restaurer elles-mêmes, nous pouvons au mieux restituer les conditions minimales pour que le vivant se restaure lui-même»

Baptiste Morizot

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