Architecture revalued.

Baukultur and the culture of Transition

Valentin Bourdon, Anna Livia Friel, Paola Viganò (eds.)
Pierre Caye, Franz Graf, Giulia Marino, Célia Küpfer, Maxence Grangeot, Barbara Lambec, Corentin Fivet, Eugen Brühwiler, Ludovic Pépion, Paola Viganò, Anja Fröhlich, Martin Fröhlich, Jo Taillieu, Valentin Bourdon

Habitat Research Center (HRC) is an interdisciplinary research platform affiliated with the School of Architecture, Civil and Environmental Engineering (ENAC) at the École Polytechnique Fédérale de Lausanne (EPFL). Allying basic research and research by design, Habitat Research Center is a unique aggregation of architects, engineers, urban ecologists, and social scientists. Such a center aims at reinforcing synergies around a major topic: Urbanization in transition. In its multiple and transversal dimensions, the contemporary urban space reflects a wide range of research, design, and cultural challenges which are crucial in tackling the ecological and social transition. Beyond sectorial approaches and as a place for interdisciplinary and transdisciplinary reflection, HRC sustains EPFL's service missions to connect academia and society, to experiment and debate about the urban environment, its present and future challenges.

Architecture revalued.

Baukultur and the culture of Transition

EPFL PRESS

Architecture revalued.

Baukultur and the culture of Transition

Valentin Bourdon, Anna Livia Friel, Paola Viganò (eds.)
Pierre Caye, Franz Graf, Giulia Marino, Célia Küpfer, Maxence Grangeot, Barbara Lambec, Corentin Fivet, Eugen Brühwiler, Ludovic Pépion, Paola Viganò, Anja Fröhlich, Martin Fröhlich, Jo Taillieu, Valentin Bourdon

Index

Baukulturen: When Transition challenges the cultures of the built environment

Valentin Bourdon, Anna Livia Friel, Paola Viganò

Building is useful. Its fundamental purpose responds to individual and collective primary needs, to common decency, to the minimal conditions of living together; it organizes societies in their political and cultural aspirations and defines the relationship between the same society and its territory. This is not neutral. Building generates profit. It serves powers, transcribes inequalities, and prolongs spatial injustices in many ways. Building is also violent. Building even the most virtuous artifact means that resources are ripped away from their natural cycles and diverted from their ecosystemic functions. These elementary materials are often charged – by the effects of their transformation, transportation, or even their promise of demolition – with an environmental impact that was foreign until then. Building entails disrupting natural habitats, encouraging the growth of anthropic lifestyles, and worsening a critical climate balance.

If we understand Transition as the set of socio-ecological pressures to adapt an inherited state of the world towards environmental sustainability, and Baukultur as the expression of a traditional and consolidated culture as well as of shared social expectations on the built environment, then Baukultur is not yet a culture of Transition. While this may be a harsh assertion, it has the advantage of immediately setting the framework of this book.

Acknowledging this non-equivalence certainly does not require rejecting the ambitions of their rapprochement, stated as an objective by several recent political agendas. On the contrary. Going beyond such a non-alignment would only be possible by looking at

the tensions and frictions remaining between the two cultures, on either side of a line whose course could perhaps, the following will tell, be redrawn by architecture.

Baukulturen

Baukultur spans architecture, infrastructural systems, and productive landscapes. Rigid systems of power clash – to a certain extent – with the idea of Transition as a socio-ecological agreement, established to adapt an inherited state of the world. The culture of Transition questions and compares Baukultur to its essential idea of transforming the world. At the same time, a consolidated culture of a "transitioning" era does not exist; neither experimentally, nor culturally and politically. One of the main problems with Transition and its associated cultures is that they are alternatives to the principal contemporary systems.

The equally diverse expressions of Baukultur benefit from a great historical and geographical depth. The first cultural expressions related to the identification of built environments are those that define themselves, pragmatically, and in their plurality, as the sum or average of certain practices and values giving forms to houses, infrastructures, icons, streets, parks, or rivers. Being representative of given periods or changing geographical areas, they can be interpreted as concomitant or successive in time and overlapping in space, in the shape of a territorial palimpsest; playgrounds for anthropologists, as resources for reading facts, habits, as well as distinctive landscapes.

From such a cultural mosaic, however, certain constants emerge that specific times – especially ours – have tended to generalize. In Europe in particular, the convergence of ambitions, methods, tools, and techniques in the field of urban and territorial planning and design has led to the emergence of a shared culture of the built environment, which does not substitute for local specificities, nor for their sedimentation over time. In its singular form, the notion of culture goes beyond the neutral postulate of given units being representative of several states of practice. It already implies a qualitative aspect, assuming an appreciative and judgmental character. What takes shape under the singular notion of Baukultur is first of all the recognition of a shared framework for identifying certain qualities of the built environment. In such a perspective, it is also defined according to its opposites, as the contrary of carelessness, overkill excess, compulsive planning or automatic design, as well as the absence of any sense of subtlety. Before being a political project with forward-looking objectives, it is a reading grid, drawing up a portrait of good practices and the extent to which others may be moving away from them. It thus provides a qualitative overview of a given state of common practices and concrete results, with regard to culturally established criteria. Technical stability, hydraulic system control, land artificialization, construction rates of buildings, or their thermal efficiency, are just a few examples. On its own scale,

the European culture of the built environment could then reflect a certain level of development set and reached by the community that identifies with it. It simultaneously embodies its weaknesses and shortcomings, which are still widely shared. Such an assessing culture of the built assumes significant inertia in the evolution of its ambitions and the criteria that define them. The notion of "good" practices nevertheless remains relative to the level of expectation with which the protagonists of a given culture identify themselves, and to the rate at which they are inclined to question it. Among the mass of practices that it embodies, a large part is inherited from previous customs and engages, with its sets of embarrassing manias, a structural delay in any aspirations of transitory evolution.

This prospective aspect brings us to the last of the three definitions we could formulate here, as an introduction to the main concept addressed in this book. In line with its most recent manifestations, Baukultur finally focuses on political expectations on the built environment. It does not simply reflect an implicit state of being, nor determine a level of value, but plans a condition to be reached. It embodies a promising set of principles and values engaging a societal awareness related to the quality of places, of buildings, of the environment, at large and as a whole. The cultural aspect is much more focused here. It goes beyond anthropological expressions or heritage dimensions by assuming an aspiration for control, shaping, and new types of architectural, urban, and territorial "good manners." According to this third orientation, Baukultur approaches the political agenda as a collective goal to be achieved, if not as a common good to be recognized, considered, and secured. It becomes highly demonstrative of a stated requirement, exhorted in the urgency of environmental issues.

At the crossroads of these three definitions, a starting postulate might attenuate the initial antithesis by identifying the emergence of a series of new virtuous territorial practices and results that are relatively convincing in ecological terms. Their convergence could be seen as representing the foundations of a certain culture of the built environment (among others), or as capable of significantly orienting the qualitative compass that Baukultur is starting to represent earnestly on political agendas, towards a fully reformative transitory perspective.

Nevertheless, the emerging more techno-green culture of the built environment may not be aligned with a demanding culture of the Transition, as it drives former inherent principles that do not take into account low material use, renewable resources, wellness improvement, socio-spatial equity, local empowerment, coexistence of indigenous species, or "innovations" that do not evaluate the overall consequences of their use and remote side effects. Not only does energy consumption matter, or even the overall carbon footprint of the transformation, but so do the cultural, qualitative, and transversal positioning that motivate change. As a culture, the Transition implies certain characteristics, balances, and priorities. It focuses especially on ecosystemic functions, resource preservation, water cycle, air qua-

lity, and biodiversity development, but also includes a socio-ecological dimension including health, spatial justice, and solidarity-based economics. As a paradigm shift, it includes several vectors: relocating the anthropocentric perspective towards the common ground of the living, renewing the approach through impact studies in favor of a "making do" logic, and broadening thinking by sectoral functions into cross-disciplinary dynamics. Its culture is one of hybridity, transposition, and decompartmentalization. It's a culture of systems, of complementarity, and horizontal relationships.

The clash of cultures, no matter how conflictual, can be a source of fruitful frictions for locating critical points of unrest, dissatisfaction, or rejection, but also for imagining points of attachment, curiosity, and even wonder. Both cultures being confronted here are full of sensitive levers, creative retrenchments, and forces of commitment. The fact that the culture of Transition can challenge the culture of the built environment may even be encouraging. Perhaps it represents the opportunity for a long-awaited repositioning of the resources of architecture on the renewed terrain of their most recent legitimacies.

Political concern and cultural awareness

Pointing out that Baukultur is a German word is a truism not worth mentioning, except to recall its relationship with the geographical, political, and cultural context in which it is particularly discussed. The history of continental Europe is based on interconnection and overlap, which have more than once challenged the idea of physical and political borders in favor of wider cultural understandings. In such a perspective, Baukultur aims to operate in a borderless territory defined by ambitions and shared considerations. In its shift from a generic term used to describe any intervention on the built environment (from urban and landscape design to architectural preservation), Baukultur has been adapted to describe both the involvement of the broader public in architectural matters and a sustainable attitude towards the same built environment. If Transition (social, ecological, and political) requires radical technical and technological change, on the other hand, we can count on a building culture inclined to absorb transformation, changes, modifications, and selections by its very definition. In this context, the usually slippery and rather controversial operation of making a distinction between one culture and another, one identity and another, would come as a theoretical relief: not only are we not starting from scratch, but the prospect remains geographically open. Baukultur can be carried wherever transformation is not only an embedded project in a given territorial condition but also the living or revived cultural habit that defines this very territory.

Among other things, the framework of a collective *kultur* in Europe has historically been characterized by notable relationships with the use of material goods (as in Sombart's "Technology and Culture"), making the spatial manifestation through architecture, design, and territorial control a fundamental part of its inherited

ethos. The call for a culture of Transition challenges more than a recent technical trajectory in building culture, but something as deeply rooted as the original principles that have long governed the relationship between culture and technology, with consequences affecting many aspects of social life.

In his essay "Identity and Crisis of European Architecture" published in 1999, Vittorio Gregotti seems to catch a glimpse of this upcoming, yet constant, crisis. The "ability to build upon the dialogue (and conflict) with places, conditions, with others and to propose, from time to time starting from them, the emergence of a truth: limited, provisional and specific as well as universal in its intentionality" is not only a handy solution for overcoming any critical state of change but the very essence of what he calls, in a perhaps unavoidable simplification, European Architecture. Gregotti's identification of some possible invariants within an articulated and extensive tradition in time and space might suggest a potential path for further reflection on the features of a situated culture of the built environment.

While the profoundly political nature of design decisions concerning the built environment is strongly confirmed in the international literature (See Carmona, Bento, Gabrieli, 2023), the rise of Baukultur at the political level represents the involvement of supranational dynamics in defining the cultural features of this evolving process. The traits of a possible internationalism of science (as in Gregotti) are recognizable in the current discourse on Transition applied to the built environment: "Their internationalism and that of technical and productive rationality at the service of the society as a whole, of the expression of the essence of the problem, and the foundation of a language without classes or nations." (Gregotti, 1999) From the shared observation of the "usure du monde,"[1] the search for new positions is taking shape across regions and disciplines. They fully invoke architecture and its techniques of transformation to regain margins for action successively canceled out by: the need to reduce greenhouse gases, the obsolescence of inherited heritage and the carbon cost of its renovation, the weakening of public action, or the expectation of new economic and social balances. Still challenged by the question of how to distribute the efforts required by any ambition for Transition, architecture could find a way out in the injunction to "re," which the German pavilion at the Venice Biennale courageously opened in 2012. That same year, the RE-CYCLE exhibition at Rome's Maxxi Museum called for a fresh look at the territory, inspired by the re-cycle, re-use perspective.

Far from revolutionary illusions or nostalgia for reformist precedents, a new set of processes, values and, experiences calling for reparation has emerged across territories.[2] By bringing the general

1 Title of the symposium organized by the *Société française d'architecture* on May 20–21, 2022. See also *Le Visiteur* no. 28 (2023).

2 In their collective book entitled *Positions on Emancipation. Architecture between Aesthetics and Politics*, Florian Hertweck and Nikos Katsikis (2018) also look for the revival of architectural autonomy, by exploring the possibility and topicality of a renewed emancipatory paradigm in the "Re-use" formula. See also *The Great Repair – Politics of the Repair Society*, ARCH+, No. 1, May 2023, Berlin.

ambition of the architectural project towards a culture of care for the built environment, this new generation of positions abandons the vision of generating qualities for their own sake, as renewed and undifferentiated ideals. On the contrary, it redefines a new conception of context as an unequaled heritage, as precious as it is obtrusive. The relationship to a precise environmental condition is an unavoidable theme when dealing with the subject of transformation. While new construction can also operate in abstract spatial terms, when it comes to transformation there is no blank canvas. If the notion of context is not limited to the definition of spatial spheres, and if its most political manifestations are more and more often to be found in territorial relations, according to new logics (Interreg) or theoretical experiments (New Bauhaus), then Baukultur and the culture of Transition define a contemporary and up-to-date context that more than ever deserves to be described in greater detail.

Generative process and complementary perspectives

What the book presents as "Architecture revalued: Baukultur and the culture of Transition" is a collective project.[3] It gathers, introduces, and questions the positions of six architectural and urban practices whose research and academic work took place within the École Polytechnique Fédérale de Lausanne in recent years. The six research laboratories present different approaches toward the notion of Baukultur, elaborating on the methodological aspects that deliver a critical reading of the existing built environment. Additional essays from – or inspired by – the corresponding seminar held at EPFL on March 28, 2022, provide a broader theoretical framework to the six illustrated contributions.

The publication edited by the Habitat Research Center is not only the sum of different experiences. The methodological aspect that underpins the progress of the editorial project plays a key role in shaping the book's content. A longstanding debate between different approaches, strengthened by the outcomes of a recent series of internal workshops organized by the HRC,[4] provides a strong, shared conceptual base between the contributors. The following contributions thus outline as a whole what could be considered a common declaration and articulate a theoretical and methodological framework for an updated culture of the built environment in the wake of a socio-ecological transformation.

Three essays frame the theoretical reflections of Baukultur on the renewed relevance of the architectural work. Ludovic Pépion revives the topicality of the notion of the project, which is no stran-

3 This collective project has been promoted and curated by the Habitat Research Center, under the lead of Professor Paola Viganò.

4 A series of internal workshops, PhD seminars, and public seminars called "Baukultur and the Culture of Transition" was held at EPFL in March 2022.

ger to the drivers and modalities of Transition,[5] while Pierre Caye and Valentin Bourdon, respectively, confront the architectural discipline with the demands of duration and appropriation by and for the greatest number. Between these more general considerations, the six illustrated positions follow one another, complementing and responding to each other. Each assumes the specificity of its entry. Even the most emancipated vision of Baukultur, freed from the constraining grip of categories, could still refuse to renounce the complementarity of the different viewpoints that compose it. These are recognizable by the orientation of their readings, or by the specificity of the tools they use to read. These are six readings of the concrete elements that characterize the same world, seen in the light of so many spotlights with intertwined shadows.

Following Pierre Caye's essay, Franz Graf and Giulia Marino open these positions with an attentive look at the pre-existing qualities of things as they are, where they are, and for what they can still propagate of meaning and identity in their given configuration. In particular, the qualities and values of modern and recent architectural realizations which are not always, or not yet, considered as heritage to be valorized. With them, the culture of the built environment emerges through an architectural gaze, sharpened as much by time as it is informed by history. Célia Küpfer, Maxence Grangeot, Barbara Lambec, and Corentin Fivet complete this approach by unveiling the built environment. Their contribution takes an uncompromising and mischievous look at the structural potential underlying any transformed entity. This ability to read is more than just technical, it involves an engineering of misappropriation that reverses a series of reflexes inherited from modernity, from reading to making. In a line of thought similar to Franz Graf and Giulia Marino on heritage, Eugen Brühwiler extends Baukultur from the field of building to that of infrastructure and engineering, in a broader acceptance of what the built environment embodies. He presents the condition of structural resistance and the need for maintenance as a critical emphasis of a finite relationship with existing resources, not only natural ones but also modern capital. In another way, and following Ludovic Pépion's essay, Paola Viganò's contribution telescopes the cultural ambitions of the Transition to the wider scale of the territory, its reading and reframing, without abandoning the architectural gaze: multi-scalar, multi-factorial, and fundamentally inclusive. In a different light, Anja and Martin Fröhlich place building culture in both a constructive and phenomenological perspective. They support a typological reading of the possible manipulations of forms and the extension of their own rationalities into committed practice. The other "tinkerer" is also someone who, like Jo Taillieu, develops the art of assemblage, not by successive additions, but by selected retrenchments and promising concatenations. As the last position before Valentin Bourdon's essay, he brings to the polychrome view

5 See Bernardo Secchi Days 2022, Fondation Braillard - Habitat Research Center.

on Baukultur the poetic layers of an assumed fragility of and for the meticulously constructed environment.

At its very end, the book presents a series of points that may serve as fertile grounds for new topologies between a moving Baukultur and the emerging culture of Transition, which experimentation, research, and dedication can still aspire to build and shape.

A collective manifesto

The tension between Baukultur and the emerging culture of the Transition is a fertile one. It raises questions about the legitimization of architecture as a transformative action. A technical shift, an epistemological one and an ethical one are all inevitable. On every scale: from architecture to urban and territorial design. No more extension, but a careful reading of the possibilities contained in the existing fabric and urbanized land. Such a shift requires a reform of construction and design practices.

Reuse and reconditioning call for new ways of reading the existing. Our capacity to see, look, analyze, and consider close reading as the first and founding act of the project implies surveying, drawing, immersion, description, discovery, rediscovery, re-cognition, a new description of architecture and its materiality in multiple forms, another history of architecture, urbanism, environment, made with the cognitive tools of architects. In this ecological and social transition, the exploration of the material conditions of space production is just as crucial. Our inadequate understanding of the material production of space requires “deep” and “close” readings, idiographies at different scales.

Structural engineering education must be fundamentally changed, assigning the highest priority to disciplines related to engineering of existing structures. Those disciplines must be showcased and treated as fundamental ones, dealing with history to study the past of structural engineering and its achievements, linked to the memory and discovery of structural

engineering methods and technology, according to the leitmotif “Learning from the past to design the future of existing structures.”

The process of making does its own work. Design is a tool for injecting glimpses of sense, developing common frames to contemporary nonsensical urban collisions. It makes possible connections visible by analyzing, reappraising, and giving new meaning to everyday things. It is therefore necessary to re-found, to reconstruct the process of reading and designing architecture, landscapes, and infrastructures without jeopardizing their chances at evolving towards a new form of practice.

Design brings out possibilities and anchors choices in the material concreteness of a territory, valorizing the unavoidable coexistence of a plurality of world visions and agents.

An effort of imagination.

Future is a time element, from the outset.

Time, space, and the production system

Essay Pierre Caye

Time, space, and the production system

Pierre Caye

Under the impact of the environmental crisis, contemporary culture is now developing a strong architecturophobia, accusing architecture of all the evils of the earth, because of its proven sizable carbon impact and waste, to the point where architects in Europe are increasingly discouraged from building. Against this backdrop of the de-legitimization of architecture, which paves the way for every kind of facility, it is important to show that architecture is not so much a problem as a solution for re-establishing a peaceful relationship with the world that is an equal match to the challenges of our time, and that this solution cannot be limited to what is trivially referred to as 'green' architecture, which translates into the use of bio-sourced materials, the greening of buildings, or the use of technological equipment supposed to produce energy savings. These changes in the construction paradigm, however useful they may be, are part of a capitalist logic of innovation and therefore obsolescence, demanded by the supposed evolution of societal needs, or the successive re-evaluations of environmental standards. Nor does green architecture escape the process of creative destruction, both the cause of the environmental crisis and an unsustainable paradox that makes the enrichment of human beings dependent on the total mobilization of their resources, and on which the dominant theories of economic growth are based. Today, as in the past, the question of architecture is not just one of construction, technology, industry and business, but also – even more than in many other branches of activity – one that requires

intelligence, the very singular intelligence that is architectural design, singular in relation to the other types of economic and constructive rationality in force.

Architecture and economy

There is undoubtedly something more ambitious in architecture than the evolution of its materials and construction methods: it is not just a question of improving the ecological performance of the building industry, but even more of contributing to the transformation of the entire production system, and changing its logic, with a view to truly sustainable development. Architecture is at the heart of the production system: the point here is to emphasize the considerable role played by architecture and, more generally, by its construction methods in the economic and production system, a role that no other art form, not even cinema, can claim. This is reflected in investments worth thousands of billions of dollars worldwide and in a workforce estimated at tens of millions of people: 1.2 million in France alone. No doubt we need to distinguish between the world of architecture itself and the construction industry: the fact remains that architecture is an integral part of both.

The economic dimension of architecture is obviously accentuated by the acceleration of urbanization in the twenty-first century. The city is the great business of our century. Since 2008, more than half the world's population lives in cities. By 2030, that figure is likely to be close to 60%. By 2050, the urban population will be close to 6.7 billion, compared with 4.2 billion today. One third of the economy of developed countries is currently devoted to the construction and operation of cities. Over the next twenty years, it is estimated that the city market, on an unchanged technical model, will be worth US$350,000 billion ($250,000 billion in infrastructure and $100,000 billion in operations), with world GDP in 2021 estimated at $96,530 billion. If we take into account the investment needed to develop the technologies and tools capable of reducing pollution, improving mobility, and developing energy efficiency, then we need to estimate the city market at $450,000 billion.

In short, it's clear that a transformation of the production system towards truly sustainable development necessarily involves the building industry, and that architecture must now be seen as the vehicle for this transformation.

But the solution is first and foremost the problem: the building industry is far from top of the class in terms of carbon impact or waste. One third of waste in the world comes from the construction industry, and the carbon impact is twofold: in construction and in use, particularly in terms of the heat balance, heating, and air conditioning. It is worth remembering that most urbanization in the coming decades will take place in tropical areas, which will certainly involve extending air conditioning systems. Air conditioning consumes twice as much energy as heating: artificially cooling the atmosphere is a major contributor to global warming. The

result is a vicious circle: the hotter it is, the more we air condition, and the more we air condition, the more we contribute to global warming.

Green architecture therefore includes bio-sourced or recycled materials, neutral or positive-energy buildings, free cooling, dual-flow grey water and drinking water systems, and so on. To this can be added the smart city – digital technology used to optimize the management of flows, mobility, and urban infrastructure. All these factors increase the contribution of construction to the global economy. Green architecture allows us to measure once again the economic impact of the construction system in which the architecture is built. This kind of development is now being encouraged by urban research programs such as, in France, the PEPR (Programme et équipement prioritaires de recherche) VDBI (Ville durable et bâtiment intelligent) and, in a very more interesting and relevant way, the "Future Baukultur. Valuing Built space" proposed by the Swiss National Science Foundation (SNSF). I would like to make two comments on green architecture:

- Green architecture essentially concerns the constructive aspect of architecture, not the design aspect. It's more a question of the engineer than the architect. However, this does not sum up all that architecture can do, and I will try to show to what extent invention in architectural design can also help to transform the architectural system with a view to sustainable development.
- Furthermore, the changes in the construction paradigm, however useful they may be, that the greening of architecture brings about, are part of a capitalist logic of innovation. So green architecture is no exception to the process of creative destruction, of programmed obsolescence, of the wear and tear of the world, which today constitutes the alpha and omega of economic policies and international competition.

Sustainability and durability of the development

Before going into more detail about practical proposals, and perhaps to avoid the ambiguities we have just raised, it may be useful to return to the concept of sustainable development, a concept which is not itself free of ambiguity.

For the ecologist movements, sustainable development boils down to *greenwashing*; in any case, we are entitled to say – in a less polemical way – that sustainable development defines ecology as it is seen by companies and public administrations. Ecologist criticism is not unfounded, given that sustainable development is now essentially identified with environmental economics. For the latter, the reason for pollution and global warming is that the laws of the market and their ability to ensure the optimal allocation of the factors of production are not sufficiently respected. The aim is to integrate negative externalities into production costs in order to achieve

a price level that is conducive to profitable investment in research and development, according to a techno-solutionist logic.

There are two ways of defining sustainable development. The most widespread definition emphasizes the quality of development, of which sustainability is merely the consequence. Sustainable development is reminiscent of the 1950s theory formulated by the great American economic historian and theorist Walt Rostow, of *sustained growth* or *self-sustained growth*, i.e., development based on a path of continuous growth sheltered from crises. Even if the Anglo-Saxon expression *sustainable development* is directly inspired by Rostow's formulae, his theory takes absolutely no account of the ecological crisis. By making duration the effect of development, we fall into a tautology: all development is sustainable and long-lasting, insofar as it necessarily develops over time. This explains why the term is considered ineffective and is increasingly criticized. But sustainable and long-lasting development can also be interpreted in another way, by reversing the order of priority of the terms, and making duration the principle of development. While we can certainly consign 'sustainable development' (understood as environmental economics, eco-modernism, *ecoefficiency*, etc.) to the dustbin of history, we still need, as Dominique Bourg notes, to "recover durability," (Bourg, 2012) which is undoubtedly the fundamental condition for productive transformation. Making durability the principle of development implies placing the main factors of economic production – capital, labor, and technology – under the umbrella of time, in the service of the construction of sustainability. Architecture can make a major contribution to this, as it has done throughout its history.

The question of technique

What does it mean to put technique at the service of time and its construction? This is undoubtedly the easiest way to understand the role of architecture in transforming the productive system into truly sustainable development. First of all, it is important to point out that technique is not just technology, i.e., the means of transforming matter and intensifying energy. This is the first bias that prevents us from fully addressing the question of technique: reducing technique solely to its demiurgic and productive aspect. We need a much broader conception of technique. When we read and write – to take simple, fundamental techniques from our lives – we realize that the skills we apply in the process go far beyond the simple framework of production to concern a much deeper, immanent relationship with our way of life in the world. Without reading and writing, we would have remained hunter-gatherer societies.

To put it simply, there are three categories of techniques:

- Productive technique, which transforms matter and intensifies energy. This is what we can legitimately call technology.
- But techniques also include knowledge about the organization of society, whose two main players are law and the economy.

Judges and lawyers for example do not produce anything in the strict sense of the term, but they do help lay down rules and decisions designed to stabilize the system, to make it safe, predictable, and therefore viable.

- I mentioned reading and writing, but there are also the techniques of the body and all the techniques of cognitive development. What we might call the techniques of hominization.

An effective technical system succeeds in reconciling these different types of technique and organizing their collaboration. We shall see how architecture has this power of conciliation and synthesis. On the other hand, techno-solutionism, which is content to intervene only at the level of production, is insufficient and unsatisfactory. It is not enough to make technical changes to production methods to solve environmental problems. Or if the expression techno-solutionism has any meaning, it can only be through the interaction of the three categories of techniques.

This extension of the domain of the technique is not without consequences for the very meaning of technique. What brings together these three categories of technique – productive, organizational, and personal – and what makes them converge? If we take the measure of this diversity of techniques, then the function of technique changes in meaning: the aim of technique is not the transformation of matter, which in reality is only a means, but, more profoundly, the aim of all these techniques is the management and control of space and time. This is the essential purpose of technique: to manage space and time, in other words, the very conditions of our life in the world, of our way of inhabiting the world. I have two comments to make on this subject:

- The Kantian notion of transcendental aesthetics, which underlines the importance of our relationship to space and time for our mode of existence, both intelligible and sensible, is an important one. The expression "transcendental aesthetics" is a little misleading and confusing, because there is nothing concerned with beauty and the arts in this expression of aesthetics in the usual sense of the term, nor anything transcendent. "Transcendental aesthetics" means that all sensitive perception and all intellective conception depend originally on our relationship to time and space, that human beings are endowed with a specific sense of time and space (aesthetic), and that our relationship to the world is conditioned by this sense (transcendental). The question of technique fits into this framework, but modifies it: it is less a question of aesthetics, i.e., a sense that is naturally given to us, than of poietics, i.e., a sense that is constructed and determined by techniques as much as it conditions it. The meaning of time and space is constructed.
- Our relationship with the environment and its elements is determined by this transcendental niche, for better or for worse. For worse, it is the environmentally destructive transformations produced by the current economic system; for better, it

is the transformation of our economic, political, and social practices towards a more peaceful inhabitation of space and time. The negative side of the spatio-temporal mediation of our action on the world and on ourselves is due precisely to the impoverishment of our sense of space and time, I would even say of our culture of time and space.

As the shaper of our spatio-temporal niche, techniques constitute, in the words of André Leroi-Gourhan, the "protective envelope" that man forms around himself (1945). A famous paleontologist interested in the relationship that prehistoric man had with his tools, Leroi-Gourhan conceived of this envelope as a kind of membrane that filters man's relationship between his interiority and his exteriority, between his power to be and the world. For a long time, the purpose of this technical envelope was to protect human beings from the power of nature. Today, the relationship is reversed: the aim is to protect the environment from human power, and in so doing to protect human beings from the very effects of their power on the environment.

That this envelope now takes the form of the race for production, that man feels the need to multiply his technical prostheses to protect himself, shows that ultimately his fear of the outside world and the uncertainty of being in the world have not diminished since the Feral Ages and the invention of fire.

There is a very old definition of technique, the relevance of which is underlined by today's ecological crisis: the definition put forward by one of the last great philosophers of Antiquity, Proclus, a Neoplatonist philosopher from the fifth century AD. Proclus defines the task of technique in a way that we find surprising and paradoxical. Technique (*to tekhnikon*) is what limits the self-procession of being: we are talking here about a limit, not transformation or intensification. But it is also important to specify, for a proper understanding of this singular definition, that limiting here does not mean constraining or freezing the movement of being, but arranging, measuring, ordering, regulating intervals, setting a rhythm with a view to structuring the deployment of being so that it does not turn into chaos at the risk of exhaustion. How can such a definition of technique be so alien to our own technical regimes? Meanwhile there is nothing utopian about this definition: it is the definition that has governed the cultivation of land, the building of cities, and the development of the world for centuries. It is the very meaning of technique as expressed, for example, in architecture, which for a long time was a major paradigm of technique, and which corresponds perfectly to this definition of technique as the art of drawing boundaries to order the world and to accommodate us within it.

Technique as a limitation of being, and today, since being is man, as a self-limitation of production (in the sense at least that we have just given to the limit), here is a definition which, paradoxical as it may be, says something essential about what technique is, its deep and original meaning, the "protective envelope" that Leroi-Gourhan spoke of, which applies to all technology, but which today has

been partly forgotten. In fact, technology, seen today primarily as a productive process for transforming matter, calls into question the conditions under which we inhabit the world, and consequently the very conditions under which the conditions of life are protected.

Defined in this way, technique is original: it has been present since the birth of man. It contributes to our hominization even through its protective envelope, which allows us to expand space and time. Man's access to his humanity and his openness to space and time, through his tools, are closely linked. As such, the current quarrel between technophobes and technophiles is a false opposition that has no place. In fact, how is it possible to be technophobic when technique conditions our being in the world, but also how is it possible to be technophile, i.e., how can we think that our being in the world can only depend on the transformation of matter or the intensification of energy? The transformation of the technical system can only be operative if it concerns the triple dimension of technique: not only productive, but also organizational and personal. This is what architecture can do.

What architecture and urban planning can do

The essence of technique is therefore the expanding of time and space to provide us with a home in the world, and this is why architecture, urban planning, and landscape occupy a considerable place in the field of technique at the service of the creation of our protective envelope. We have also noted that the transformation of the technical system can only be effective if it concerns the three dimensions of technique: productive, organizational, and personal. If architecture has played such an important role in the constitution of societies since the dawn of history, it is precisely because it is an art capable of synthesizing these three fundamental dimensions of technique. Architecture is inherently productive because of its ability to organize and mobilize the building site; it is also institutional because it has a powerful impact on the way societies are organized. In Books IV and V of *The Art of Building*, Alberti interprets all Roman institutions from the ruins of Rome. This seminal treatise on Renaissance architecture is also the first manual on the constitutional history of ancient Rome. Lastly, architecture, particularly through its ornamental contribution and its function of creating atmosphere, shapes the living environment, which in turn sets the pace for the course of our lives and influences our behavior: "This is where you will spend your days between leisure and business, where the purpose of your whole life will be fulfilled."[1] In a way, only the new information and communication technologies (NICTs) are also in a position to make this kind of synthesis, to appear as a total technique, but obviously in a very different form, and above all in a

1 Leon Battista Alberti, *L'Architettura* [De re aedificatoria], I, 6, a cura di G. Orlandi e P. Porthoghesi (Milano: Il Polifilo, 1966), 51.

completely different relationship to time and space: in the service of their acceleration, even their dissolution, and not as the architecture of their dilation and stabilization.

In this respect, it is fair to say that architecture and urban planning are less about production than about meta-production; in other words, they are less about making objects than about creating the conditions under which people engage in the process of transforming matter.

It has been said that the city today is a production machine, the heart of the production system, and therefore the key to its transformation. The contemporary city appears first and foremost as a technical megasystem, the system of systems, the infrastructure that brings together both superstructures and other infrastructures or, better still, the machine of machines that interconnects the various networks that structure urban life – water, energy, waste, transport, trade, major facilities, communications, etc. – and organizes the synergies on which the city's productive capacity depends.

However, it would be a mistake to think that the machine of machines is anything other than a super-machine operating on the same model, albeit on a larger scale, as the sub-systems it interconnects, a mistake made by the designers of the digital city, of *smart cities*, who consider the city – as well as the rest of digital products – like a playground for new technologies, and who therefore use the same techniques to build the city as they do for other productive activities. We shouldn't be talking about smart cities, but rather *urban smartness*, with the digital city serving above all as a demo for NICTs, as if it were a mere technical showcase.

But the difference between the urban system and its technical sub-systems is not simply one of scale; it is a difference between its own functioning and that of the activities it connects. The machine of machines is not a means of production like any other, of the same order as the machines it mobilizes, but a "meta-medium of production" that acts at the very level of the conditions of possibility of all production, that is, of the conditions of our being in the world, insofar as it influences our relationship to space and time.

The task of the city is to make human activities sustainable, long-lasting, and negentropic. Through their ability to expand space and time, and to enrich our relationship with them, architecture, urbanism, landscape, and land-use planning disengage and disarm the total mobilization of the productive system: they create islands, asylums, and shelters, not just against bad weather, but against the exhaustion of the earth and the wear and tear of the world.

Conclusion

I return to the three categories of technique: productive, organizational, and personal. There can be no strong technical paradigm unless it succeeds in bringing these three dimensions of technique together. NICTs, like architecture, are able to act simultaneously on all three dimensions. In this respect, NICT and architecture constitute two global paradigms of technology. But what distinguishes one paradigm from the other? NICT and architecture undoubtedly have a relationship with time and space, but this relationship is radically opposed in both cases.

Throughout history, architecture has been one of the favored technology of low-energy, no-growth societies. It is important to note that the efflorescence of the arts in the humanist and classical eras actually corresponded to a period of economic scarcity and demographic stagnation. This type of society can be recognized by its patrimonial logic, i.e., the management of capital based on the allocation, protection, and transmission of assets. What is patrimonialization? It means hoarding, accumulating treasure. But what is a treasure? You don't build up treasure by collecting gold coins and putting them in a chest or burying them at the bottom of the garden, as La Fontaine teaches us in the fable of *The Ploughman and his Children*. Building up a treasure means transforming the slightest occasional monetary gain into lasting statutory, legal, or artistic assets. The contemporary model of growth based on creative destruction is just the opposite, since we see that monetary enrichment is increasingly based on the sacrifice of statutory and legal assets, as well as public services, which ensure the protection of societies. Heritage is therefore about transforming the short term into the long term. In this respect, architecture is the heritage asset par excellence, the one that serves not only to protect us from the weather and the power of nature, but also to contribute to the development of the territory, in other words, to the expansion of space, and to the construction of duration.

NICTs have a completely opposite relationship with space and time. They help to dissolve space in a logic of ubiquity, as if we were everywhere and nowhere at the same time, nowhere no doubt because we are everywhere; they help to speed up time to the point where we can no longer experience it in the present. NICTs are at the service of the total mobilization of production, which reduces the mediation of space and time to better intensify the flows of being: in the contemporary productive system, man is placed in direct contact with the energy of being. And in this respect, NICTs do indeed belong to high-energy societies, which no longer consider it necessary to regulate and temper the dispensation of power through the mediation of space and time. The problem is that high energies are subject to a double constraint: the physical constraint of the depletion of fossil energy resources and the ecological constraint of global warming. The whole issue of NICTs therefore boils down to asking how they can be dissociated from the mobilization of the pro-

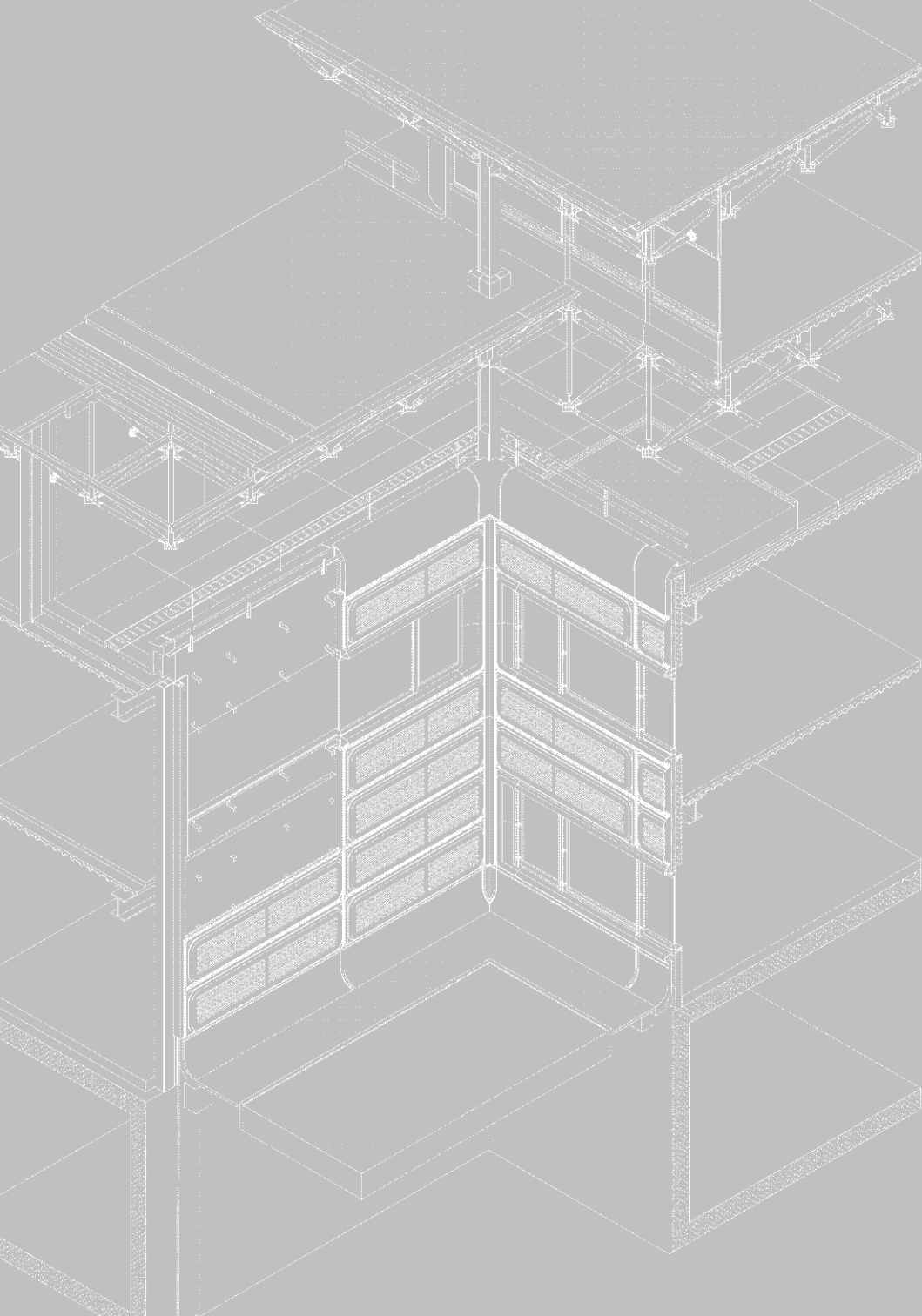
duction system, how they can be put at the service of energy descent, and finally, how they could contribute to the dilation of our relationship with space and time rather than their reduction, through an entirely new dialogue with architecture and urban planning, on a completely different basis to that posed by the companies in charge of the *smart city*.

The contribution of *sauvegarde* to the culture of socio-ecological transition

Our capacity to see, to look, to analyze, to consider detailed reading as the first and founding act of the project involves surveying, drawing, close immersion, description, discovery, rediscovery, re-cognition, a new description of architecture and its materiality, another history of architecture, made with the cognitive tools of architects.

Position

Franz Graf, Giulia Marino



The contribution of *sauvegarde* to the culture of socio-ecological transition

Franz Graf, Giulia Marino

The contribution of what we call in French the *sauvegarde* to the culture of socio-ecological transition can be informed through eleven short topical considerations. Taken together, they point to a possible and promising direction for the enhancement of the inherited built environment.

Sauvegarde

Our first consideration deals with the question put to us, according to which "the landscape, the historical architectural heritage, and the existing built environment could converge to depict the richness and complexity of our future habitat" and thus build a project of emerging culture provoked by the socio-ecological transition. It is therefore necessary to re-found, to make an effort of imagination, to reconstruct the process of designing architecture without jeopardizing its potential for evolving towards a new form of practice.

We must therefore not drown in a "mainstream" that has been taking hold for some years on the reuse of architecture – the terms reuse, adaptive reuse, revitalization, now become ubiquitous and meaningless. *Sauvegarde* (preservation) is – and has been for a long time – a structured and living practice. We need to be precise and demanding, like the position held by the ENAC Institute of Architecture in recent years on this subject. We clearly refer to the term *sauvegarde*, which identifies a reflection encompassing the theory and the cultivated and responsible practice of working in the exis-

ting built environment, as it was constituted at the beginning of the twentieth century, and which the activity of an association such as Docomomo, occupied with the documentation and preservation of modern and contemporary architecture, and some pioneering work sites have well represented. Preservation is in fact and in its own right part of the emerging culture of the socio-ecological transition, which bases its project on heritage – qualitative architecture in the broad sense – as a cultural and economic resource. Let us return to the writings of the historian-theorists who founded conservation and "preservation," such as Alois Riegl (1903) or Cesare Brandi (1963), but also to architectural works such as those of Smithson, Alison and Peter, who claim the "as found" or the "already there" as the subject of their projects. While it is important to use the right terms and to make them explicit, it is also important to avoid systematically falling back into a pseudo-Esperanto that simplifies notions that are nonetheless complex, and levels everything downwards.

Charles-François Thévenaz, Olympic Stadium at la Pontaise, Lausanne, 1949–1954 © Claudio Merlini

A second consideration is the close and attentive look that preservation demands of us. "We all work in the existing built environment," a colleague recently told us, as he systematically demolished everything that existed before thinking about the project. So, there is nothing very new under the sun in the practice of the project? There is no destructive inversion or *tabula rasa*, no embalming or therapeutic relentlessness of what exists, nothing new, except the view we take, very closely, at the materiality and what it constructs and represents. This view is the awareness of the double project, of conservation and new design, implacable and paradigmatic, and which must be built on its necessarily oxymoronic character, but a subtle and intelligent oxymoron, like those composed by Gunnar Asplund or Hans Döllgast in their architectural work, but also those of Angelo Mangiarotti or Jean Prouvé in some of their creations. Today, they continue in certain singular contemporary practices, whether it be the *Weiterbauen* or the *Plus+* strategy.

This double project-oxymoron must be readable by the viewer, with respect for both the theoretical and practical construction. Architecture, while drawing on its own physical structure, makes use of music, where one is both a composer and a performer (Luigi Payreson, 1988), of literature, where one is both a writer and a translator (Umberto Eco, 2003), but also a detector and a provocateur of archi-texts (Genette, 1979).

Jean Prouvé, Maurice Novarina, Serve Ketoff, Nouvelle buvette de la Source Cachat, Évian, 1953–1957 © Claudio Merlini

Method

A third consideration is our capacity to see, look, analyze, consider a detailed reading as the first and founding act of the project, which involves surveying, drawing, close immersion, description, discovery, re-discovery, re-cognition, a new description of architecture and its materiality, another history of architecture, made with the cognitive tools of architects.

This consideration must focus both on the recognition of the built environment as a primary text and unique document and on the misuse of the marvelous tools at our disposal, digitalization as a tool to replace the existing buildings, a kind of window dressing, a manipulation to avoid materiality when it can so well deepen it and make it resonate, sometimes a pretext to demolish it by arguing for a digital conservation that is so precarious.

Paul Waltenspühl, Gymnastics halls at rue du Stand, Geneva, 1951–1953 © Claudio Merlini.

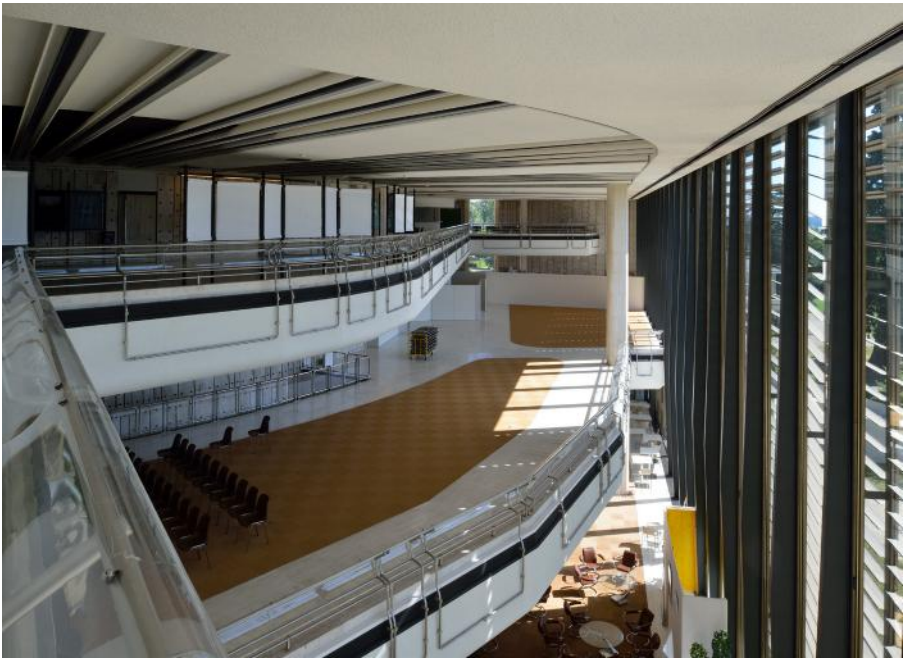
The pedagogical potential of *sauvegarde* in teaching and research has been put to use for more than twenty years now. It calls upon multiple social and scientific disciplines, the history of architecture, of architects, the construction of architecture and its materiality, the theory of architecture and of the project, the questioning, both abstract and very concrete, of what surrounds us in the broadest sense, from the little spoon to the entire territory, in short, what cultivated and responsible architecture has always been concerned with.

Let us note the complexity of profiling the figures of these new architects who juggle history, project, construction, drawing, the physical aspects of the building, and ecology. We have already encountered this complexity, where the architect-historian, intellectual and practitioner that we proposed to train some twenty years ago, is in fact and by his very constitution an off-screen character, a figure at the margins, non-existent in the constituted academic and professional categories. While it is unlikely that the transition will spring from disciplines that are too rigid, it is just as difficult for it to be imposed by positions that are too far removed.

Zweifel+ Strickler+Associés, École Polytechnique fédérale de Lausanne, Ecublens, 1969–1983 © Giulia Marino

This fifth consideration is also about the importance of the qualitative evaluation of all architecture, not only of the "sacred monsters" like Le Corbusier's Unités d'habitation or the Ronchamp Chapel, Pier Luigi and Antonio Nervi's Palazzo del Lavoro, Marcel Breuer's Flaine resort, but also the architectural works of Heidi and Peter Wenger, Jean-Paul Darbellay, François Maurice, Otto Senn, Georges Brera, Otto Glaus, Paul Waltenspühl, Eduardo Vittoria, Rudolf and Peter Steiger, Jacob Zweifel, Heinrich Strickler, and others. We need to reread these diffuse architectural works in order to give them the value they deserve and to avoid their destruction, to accompany the adaptations, to base ourselves on the richness of the existing built environment and not on the normative performance to be achieved.

If we are to understand the distance between monumental heritage and commonplace buildings, or even diffuse architecture, we must not radicalize this difference, we must put it into perspective, while identifying the qualities of the buildings.



Eugène Beaudouin, Basil Spence, with François Bouvier, André Gaillard, Arthur Lozeron, United Nations Headquarters, Palais des Nations, Building E, Geneva, 1966–1973 © Claudio Merlini

We need to definitively reconsider the structuring character of the palimpsest of the building. Stratigraphy is inseparable from the building and its life, and we have even sketched out a way of considering the history of architecture on the basis of its stratification, additions, and modifications, on its nature as a *palimpsest*, a notion so well defined by André Corboz, the "stainless" Corboz palimpsest to whom everyone refers – and he deserves it – and to whom we still look for some intellectual inspiration such as the so-called "revitalization," vague and ineffective as this principle may be today.

Since the late 1960s, especially in academic circles, the mental and practical inertia of demolition-reconstruction has taken hold in the world of construction – surely in a misunderstanding acceptance of the term *sustainable*. Instead, we need to reactivate a focused and correct intervention, to return to the question of perpetual, systematic maintenance, which many people, from the humblest professionals to the most respected scientists, celebrate and whose benefits are being rediscovered.

Jean Tschumi, Mutuelle Vaudoise Accidents Headquarters ("Le Cèdre"), Lausanne, 1951–1956 © Claudio Merlini

The absurdity of any blind destruction prior to the project can be treated as a sixth consideration. How can it seem original to keep what exists when this strategy is simply right, correct, thoughtful? Pierre Caye's recently published book entitled *Durer* ("to last") proposes "elements for the transformation of the productive system" (2020).

It is essential, before acting, to introduce a critical value judgment on the architectural quality after the intervention. Will the architecture be better? But let's define this "better" or at least redefine it systematically: urban and architectural, environmental and ecological, social and economic qualities? If not, it is better to abstain, to not degrade the existing buildings, but rather to re-project with awareness and perseverance. It is also essential to be clear-sighted when faced with alterations due to a so-called improvement, in energy improvement, for example. Let us question the benefit of the accumulation of layers of expanded polystyrene that drip down during the second or third renovation of buildings, such as those of Georges Candilis, which we have studied closely, when the rather rudimentary supporting structure no longer supports them. How can it be said that the European-scale energy renovation of the architecture in which we live, although unavoidable and demanded by an overwhelming majority, is a systematic and naive programmed destruction of the existing buildings, if there is no qualitative project to accompany what is today only a technical and calamitous gesture. As Sergio Los said in the 1960s, it is absurd to oppose – and separate – the materiality of architecture, the techno-scientific question, and the immateriality of the project, the cultural question (1967).

Atelier des Architectes Associés (AAA), Jean Prouvé, Chauderon Administrative Complex, Lausanne, 1970–1974 © Giulia Marino

In this eighth consideration, it is considered that the values of antiquity and novelty of the building, which exist as such, are to be relativized, and in no way confronted, and that their historicity is rather difficult to face. At a time when preserving, conserving, or restoring a mineral plaster, a medieval stone wall, stained glass windows, or Catalan arches, is common practice in the doctrine of preservation and does not represent any difficulty in execution, we are at the same time allowing ourselves to simply *replace* materials such as twentieth century windows and frames. They would be fragile and difficult to reproduce, and, as they are not labelled "ancient," they must meet the standards that have become even more and more stringent in recent years. Ancient is easier to restore, new is easier to replace.

We live with absurdities on a daily basis. A superb neon light from the 1950s can be sacrificed to a banal LED reproduction for a question of energy efficiency, without any real energy calculation and above all without any real culture to judge both its quality and the loss that its disappearance would mean. Why should something that was considered a masterpiece by international architectural critics seventy years ago become intolerable today? Why should aluminum window frames, that have allowed thousands of pupils to enjoy the park and its tree-lined grounds in which their classrooms are immersed, be unthinkable for today's school comfort? At a time when we will most likely and reasonably have to get used to living indoors with much lower temperatures, can we really stigmatize them as unacceptable? Will artistic value be replaced without cultural loss by the use value? And who will be the arbiter?

Jacques Perrin-Fayolle, Jean Prouvé, Doua scientific campus, Lyon, 1957–1961 © Giulia Marino

Lassitude

The ninth consideration will deal with the disinterest and weariness that has set in among architects when it comes to practicing *sauvegarde*, which is a rather demanding discipline both intellectually and in practice. "Recycling" in the broadest sense of the word allows for more freedom, and we discover with delight a little-known tradition: the Ronchamp Chapel is built with the stones of the pre-existing church, Giampiero Mina's Cinema-Teatro in Blenio reproduces the architecture of Alvar Aalto with wood salvaged from the construction of the Olivone dam, Gustav Peichl reused the windows of his own house when he extended it several times. In short, we need to broaden and soften the meaning of the terms *preservation*, *rehabilitation*, *refurbishment*, *renovation*, *restoration*, *conservation*, *restitution*, *transformation*, etc. We need to bring them up to date, simplify them, like the buildings themselves... It must be said that the trivialization of the exercise is well suited to the lowering of standards by heritage authorities everywhere, probably caused by the lack of interest on the part of the public authorities, and that recently almost led to the definitive disfigurement of that absolute masterpiece, the Maison du Peuple de Clichy in Paris, recently avoided by a ministerial intervention at the last minute, or the application of the 110% bonus rules in Italy, which is dangerous for sensitive heritage such as Piero Bottoni's Palazzo Ina in Corso Sempione 33 in Milan if it is not listed as a matter of urgency.

Bernard Vouga, Marx Lévy, Bergières school complex, CROCS System, Lausanne, 1968–1975
© Cedric Widmer

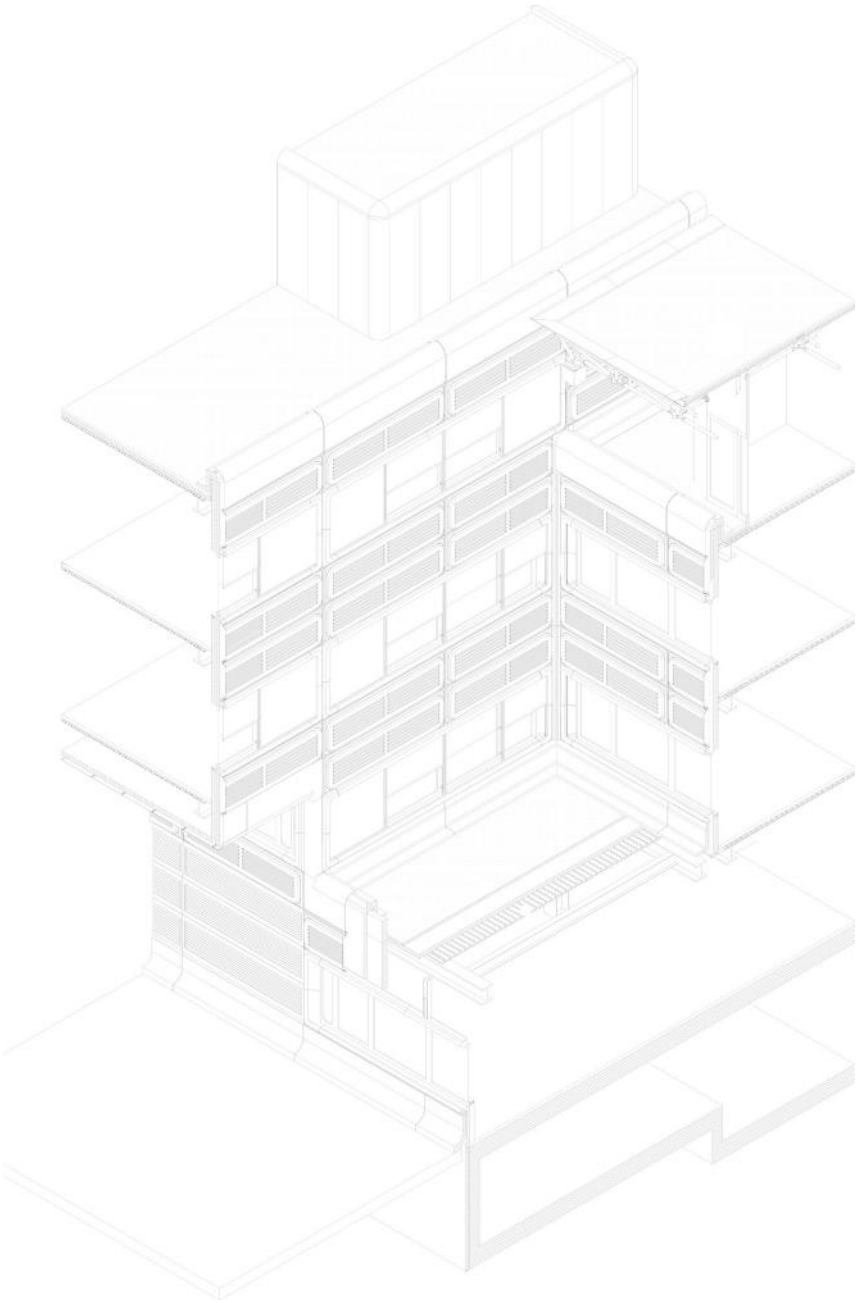
Silence

Our tenth consideration will be the benefits of silence and invisibility in the preservation project, which, after four years of study and ten years of work, has allowed the 125,000 square meters of the facade of the Cité du Lignon to preserve its original architectural qualities by cutting in half the consumption of the "energy black hole,", apart from the construction site, without anyone noticing. This applied research that we carried out at TSAM is considered paradigmatic for the energy preservation of post-war buildings on a European scale and beyond, a vast project that was supposed to remain silent and invisible, thus allowing operation architects and monument and site officials to take credit for it... It is built on a simple and effective methodology, based on a balance between energy, economy, and heritage, but which is nevertheless opposed by the managers and the owners of large housing complexes who could benefit from it, wishing to keep a free hand over what they consider to be their sole property without any external control. The economic question will be fundamental in the global energy transition, as the large scale imposes contained costs, even in a country like Switzerland where well-off cities and companies buy zero-carbon certificates at incredible prices.

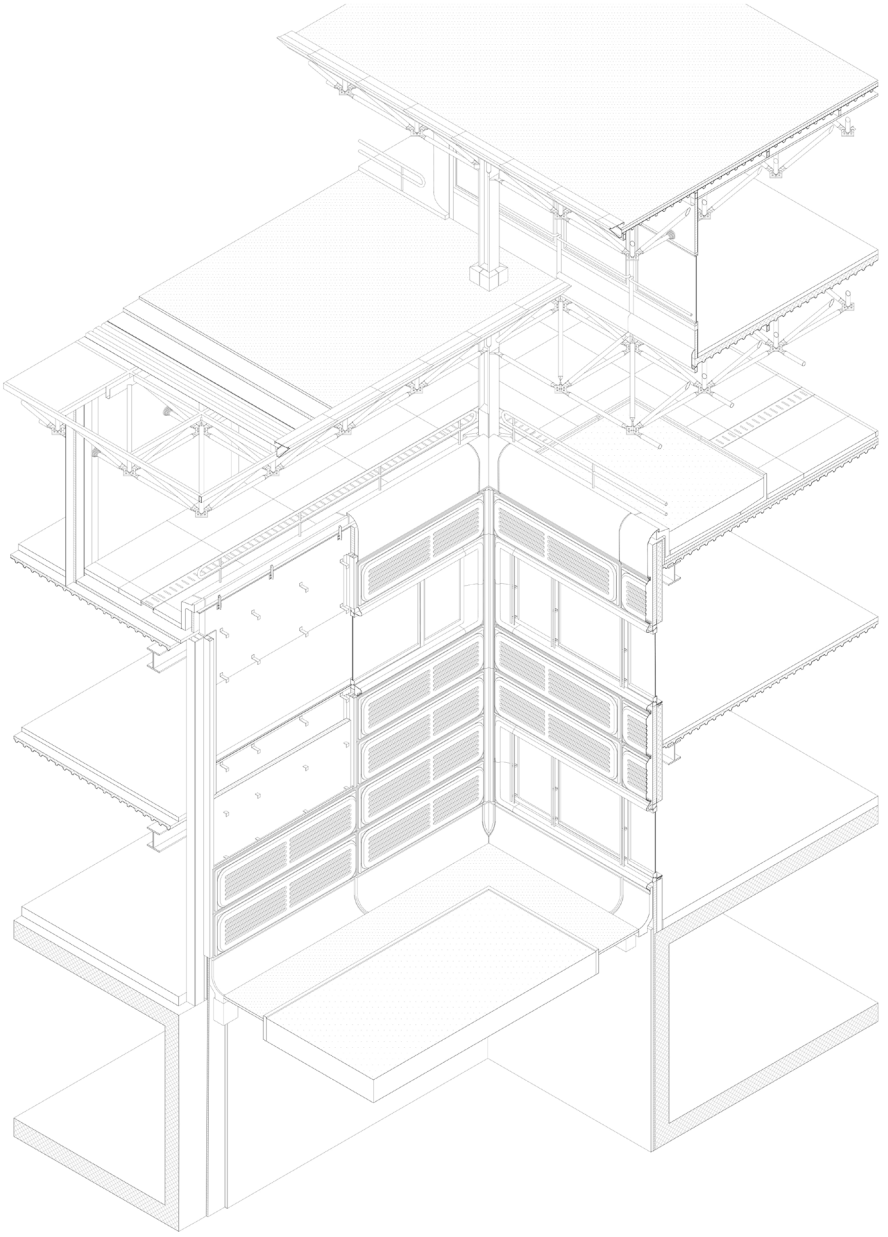
Georges Addor, Jacques Bolliger, Dominique Julliard, Louis Payot, Cité du Lignon, Geneva, 1963–1971
© Claudio Merlini

A final consideration: we must also be aware of the risk that the admittedly legitimate concerns contained in the energy transition, sustainable development, and the materials that allow it, may once again lead to a certain erasure of the fundamentals of architecture, from its spatial composition to its materiality, as was seen in the 1960s, when sociology or political concerns pilloried Le Corbusier, guilty of all possible architectural blunders, while Carlo Scarpa was simply banished from the practice. This was followed by pastiche postmodernists, digital deconstructivists, and now advocates of the exclusive use of bio-based materials, still outside the scope of the discipline, even though these concerns would durably modify the form and materiality of architecture, and with it, the entire Baukultur.

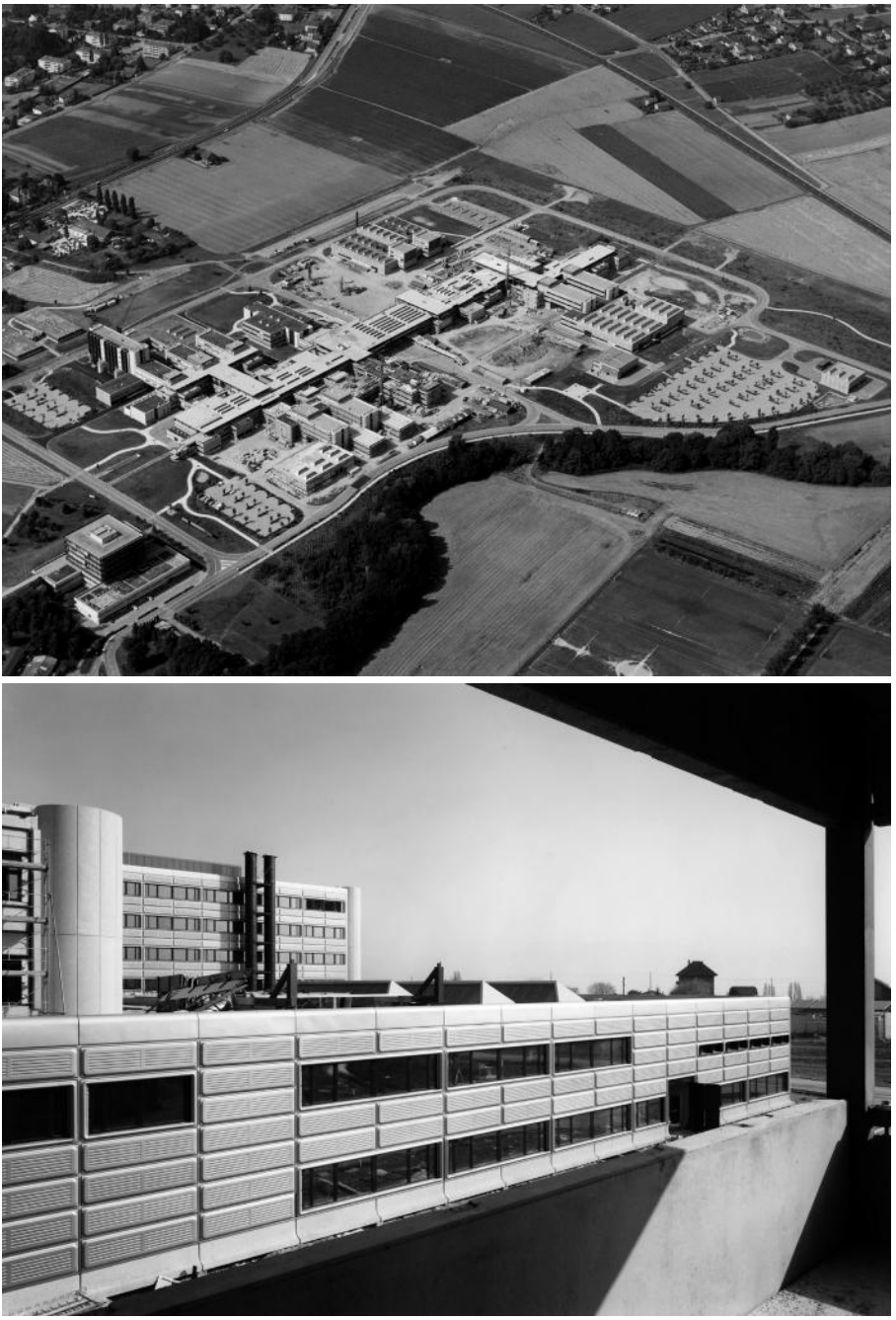
Le Corbusier & Pierre Jeanneret, Immeuble Clarté, Geneva, 1930–1932 © Claudio Merlini



EPFL–TSAM, Studio Graf, Bachelor 3, Spring semester 2011–2012, EPFL Campus, Zweifel+Strickler architects, 1970–1972. Students (in order of occurrence): Camille Mansuelle, Jade Oriet, Adrien Lhoste, Sevan Spiess



EPFL–TSAM, Studio Graf, Bachelor 3, Spring semester 2011–2012, EPFL Campus, Zweifel+Strickler architects, 1970–1972. Students (in order of occurrence): Camille Mansuelle, Jade Oriet, Adrien Lhoste, Sevan Spiess



EPFL's Archives, Ecublens (Germond photo)

EPFL–TSAM, Studio Graf, Bachelor 3, Spring semester 2011–2012, EPFL Campus, Zweifel+Strickler architects, 1970–1972. Students (in order of occurrence): Camille Mansuelle, Jade Oriet, Adrien Lhoste, Sevan Spiess

Reading the existing: What discarded materials bring to the project

Reuse calls for new ways of reading the existing built environment. It repositions material properties and production dynamics at the core of the architectural and structural design processes.

Position

Célia Küpfer, Maxence Grangeot, Barbara Lambec, Corentin Fivet






Reading the existing: What discarded materials bring to the project

Célia Küpfer, Maxence Grangeot, Barbara Lambec, Corentin Fivet

Buildings are being demolished sooner and sooner after their construction. Regrettably this trend shows no signs of being reversed anytime soon. Demolition activities are driven today by real estate developments fueled by investment logics and rapidly changing lifestyles, demographics, and new standards. To a large extent, building demolitions are mostly unrelated to loss of structural capacity or material degradation. When demolition is deemed unavoidable, reclaiming discarded building materials for new uses elsewhere lowers environmental damage while providing local economic alternatives to the global market, and the growth of a new social fabric.

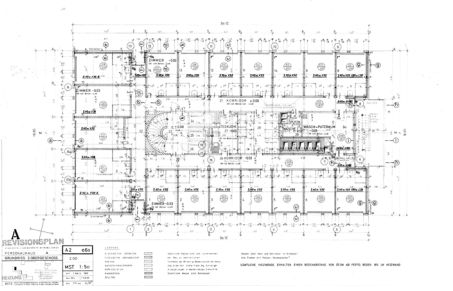
Reclaiming building materials for their reuse in new architectural projects calls for new ways of reading:

I. Demolition sites as mines of good quality construction materials;
II. Discarded materials as providers of unique technological, formal, and cultural features;
III. Existing features as inputs to the design process;
IV. The design process as the framework for ensuring high-quality reuse;
V. Reuse as a catalyst for discussing paradoxes of sustainable design with students.

These five points contribute to a strategic reorientation of design practices.

Demolition sites are mines of good quality construction materials

Crushed, shredded, melted, burnt, landfilled: such is the fate of materials once demolition starts, regardless of cultural, technological, or physical qualities. These qualities are suddenly downgraded or lost forever, despite the fact that these same qualities are likely to be required in other construction projects. Generally regarded as the very last stage in a building's life cycle, demolition sites are potential mines of high-quality building materials for renovation, conversion, and construction projects. Reading the qualities of materials in soon-to-be-demolished buildings is a crucial first step to preserving existing resources and prospecting their reuse. Only a careful analysis of the existing resources can unveil the multiple qualities embedded in building components. Research and initiatives are multiplying to develop methods, techniques, tools, and adapt them to local practices and markets. Called "resource diagnoses" or "salvage assessments," these pre-demolition analyses also estimate the feasibility and costs of disassembly. Assessment protocols are popping up a bit everywhere in both Europe and the USA, showcasing a diversity of goals and a similarity of methods.



Resource assessment of an abandoned reinforced concrete structure in Zürich, Switzerland. The technical reusability of the components is determined based on the review of existing data, on-site visits, and materials investigations. https://doi.org/10.1016/j.jobe.2024.108584. © SXL, EPFL

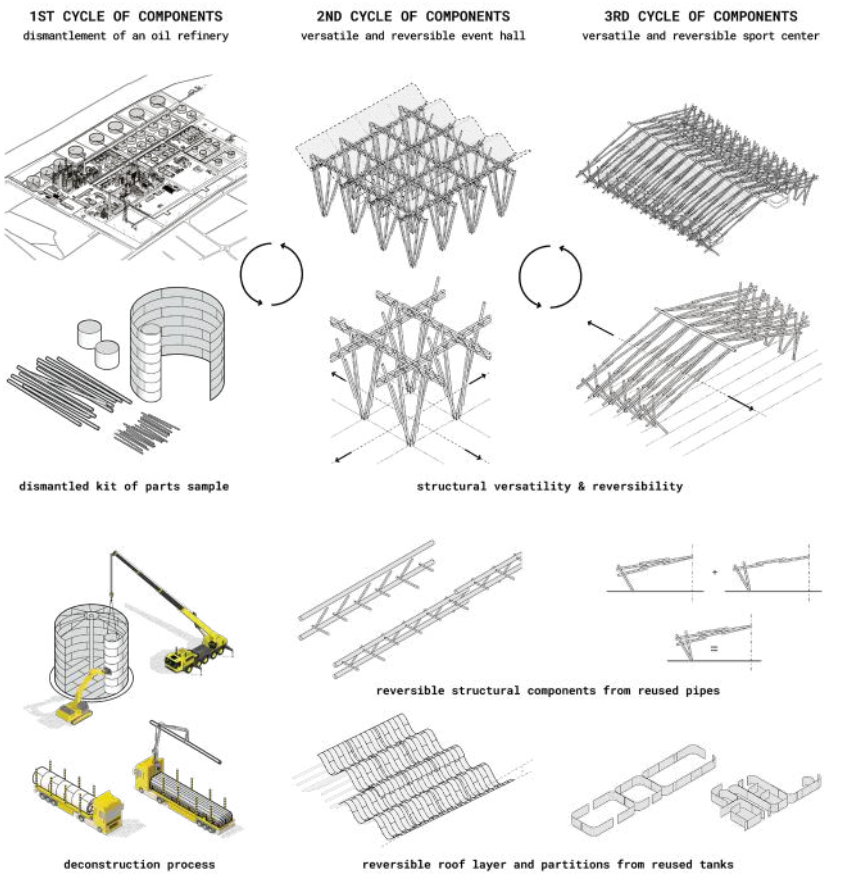
The mining and resale of good-quality construction materials on demolition sites as a path toward preservation and social and professional integration: the goal of Syphon AG. https://dx.doi.org/10.5281/zenodo.4314325 © SXL, EPFL

Some of the photographs taken during forty-three interviews with North American stakeholders in the reuse, deconstruction, and materials valorization sectors, to determine the key parameters of reuse potential. Here at (top to bottom): Greenwaste / Zanker recycling's landfill (San José, CA); the Balch Hall at Cornell University during its transformation (Ithaca, NY); a deconstruction site led by Re:purpose Savannah's (Savannah, GA); Chief Bricks' yard (New York City, NY); Earthwise's shop (Seattle, WA). © SXL, EPFL

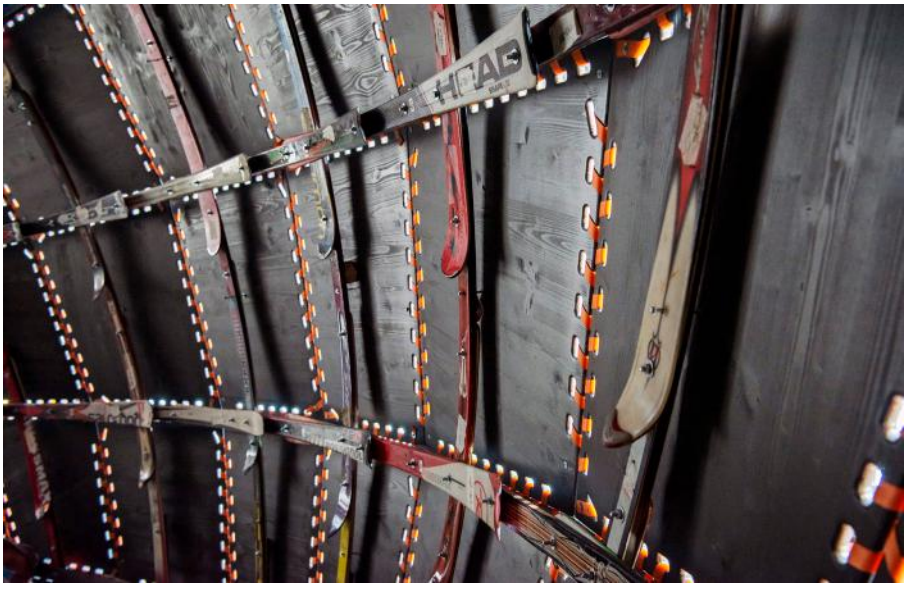
Discarded materials are providers of unique technological, formal, and cultural features

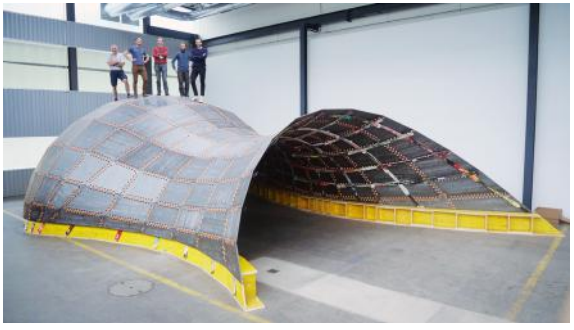
Salvaged materials tell a story: about their production, their aging and wearing, the techniques and know-how used to assemble or repair them, their previous uses. The variety of technological, formal, and cultural values embedded in recovered components – be it a beam, a wash basin, or a window frame – is greater than from new construction products ordered from catalogs.

Ingenious reuse projects recognize and use these embedded features in the best possible way. But to do so, each salvaged set of components requires an investigation into its original features, what they have become, and what they can offer to the whole project, for instance, axially-differentiated bending stiffness in the case of reclaimed skis, compressive strength in the case of saw-cut concrete blocks or crushed, irregular, and disparate demolition concrete, and bending strength in the case of saw-cut reinforced concrete slabs.

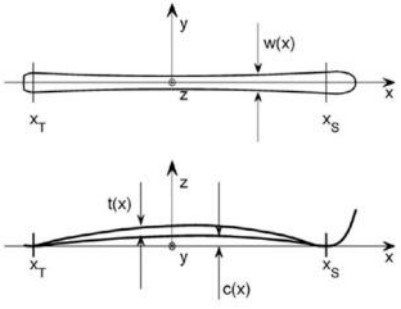


Architectural designs based on the available stock of pipes and tanks from a disused oil refinery in Wallis, Switzerland. © M. Grangeot (EPFL Master Thesis)





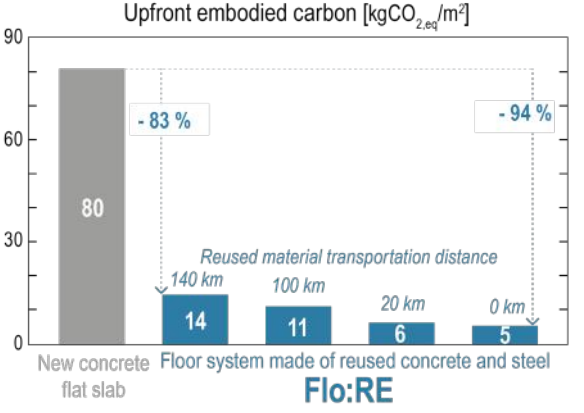
A geodesic gridshell made of reused skis and timber panels: the specificities of both materials are inputs for the design, which combines straight members into a freeform elastic gridshell. https://sxl.epfl.ch/waste-upcycling © SXL, EPFL and Ecole Des Ponts, Paris



Drawings taken from Dieter Heinrich et al, A Parameter Optimization Method to Determine Ski Stiffness Properties, 2009

Re:crete, an arch made of reused concrete blocks. https://doi.org/10.1016/j.istruc.2022.07.012 © SXL, EPFL

Rearranging discarded safety belts to create a new bench, work by second-year bachelor students, Design Together week in Fribourg, Switzerland. https://sxl.epfl.ch/pens212 © SXL, EPFL



The Flo:RE system is a load-bearing floor system made with 99% reused components. Flo:RE reuses at best the structural properties of saw-cut reinforced concrete slab elements and steel profiles, combined into a low-carbon, waste-negative, adaptable load-bearing building floor. https://infoscience.epfl.ch/record/303492 © SXL, EPFL

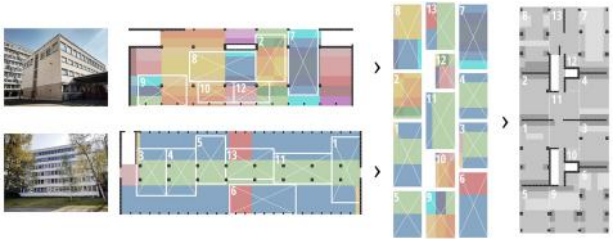
Features of reused materials are inputs to the design process

Making the best use of a stock of components to reuse requires a shift of the design paradigm. A stock-based design approach flips the modern design process by designing from a resource and its particular characteristics and dimensions, rather than designing from a blank canvas and only deciding at the end of the process which components should be manufactured. In this approach, the project is conditioned by the stock to reuse, by the assumptions made about its properties, and by the expected effect of the reuse.

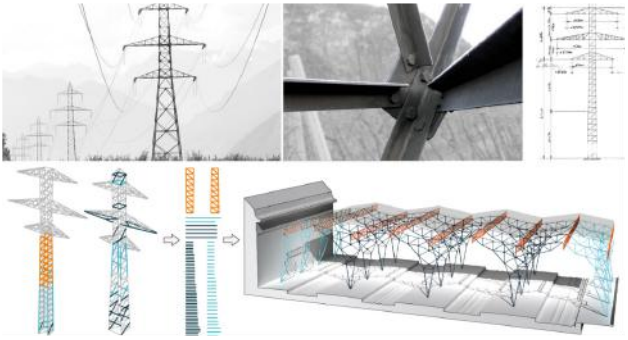
In structural design, this design shift calls for new computational tools to replace optimum sizing with optimum assignment. Whether they are applied to bar elements in timber or steel, or slab elements in reinforced concrete, algorithms can optimize the allocation of reused elements in new structural configurations.

More generally, this shift in the conception phase repositions material properties and production dynamics at the core of the architectural and structural design processes. The shift nourishes creativity and leaves room for original design solutions.

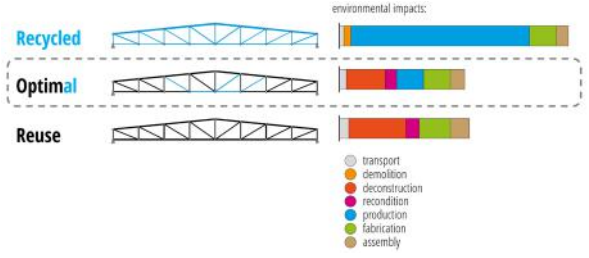
The design of the rebuiLT pavilion was deeply influenced by that of the reused saw-cut concrete assembly donor: an old mushroom-column and slab concrete structure. https://rebuilt.cargo.site © SXL, EPFL



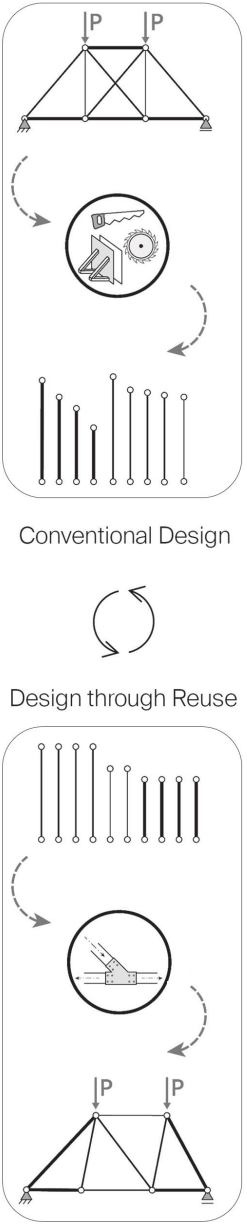
Construction of a new building with reused reinforced concrete slab: based on the donor existing structural capacity analysis, an algorithm optimizes the sawing pattern, rearrangement, and strengthening of the saw-cut slab pieces. https://doi.org/10.1201/9781003323020-18 © N. Widmer (EPFL Master Thesis)



Optimum structural design of a roof structure made of reused steel profiles reclaimed from soon-to-be-demolished electric pylons. © Joseph Desruelle 2018, master thesis, EPFL



Minimum environmental footprint can be achieved by combining new and reuse elements. https://doi.org/10.1016/j.enbuild.2020.109827 © SXL, EPFL



Stock-based design processes call for an inversion of inputs and outputs in conventional methods. https://doi.org/10.1016/j.istruc.2018.11.006 © SXL, EPFL

Design tools support reuse efficiency beyond dogmatism

Options for reusing salvaged components in a new project are endless. Some will exploit the qualities of the given material to the fullest, while others will prematurely downcycle it. Premature downcycling occurs when the new use does not take full advantage of all the qualities offered by the reclaimed component. This is the case, for example, when a structural beam is cut into smaller sections and reused as a bench or a window frame.

Although reusing pre-existing components is generally branded as an environmentally friendly strategy compared to using new or recycled material, dogmatic applications of reuse can be counterproductive. In some cases, a hybrid solution combining new or recycled materials with reuse ones can be the less detrimental solution in terms of environmental, economic, and logistic efficiency.

These walls made of concrete demolition rubble divert construction waste from further downcycling while allowing the construction of slender low-carbon concrete structures of desired dimensions. The difficulty of handling variable and irregular geometries is compensated by the commodity of concrete rubble and the use of digital tools to optimize design and fabrication. https://go.epfl.ch/digital-upcycling © SXL/CRCL, EPFL

Reuse is a new catalyst for discussing paradoxes of sustainable design

Sustainability is a goal with constantly evolving targets. Paths to more sustainability are complex, diverse, and sometimes based on contradicting objectives.

To this end, universities must accept their responsibility and debate current dilemmas, carve new thought directions, and discuss failed and successful precedents with former and future professionals. Construction component reuse can be seen as a relevant topic for fruitful thought developments among architecture and civil engineering students: it appeals to all aspects of their discipline – technical, formal, historical, cultural. Although an emerging unsettled practice, it currently still has a multitude of potential development directions with no shared consensus as to its validity.

On-site visits of waste treatment, extraction, production, and construction sites are part of the teaching process. © SXL, EPFL

Conclusions

The practice of reuse calls for new ways of reading the existing built environment. From the mapping and analysis of demolition activities, to the analysis of the technological, aesthetic, and cultural values embedded in the salvaged materials, while looking at the ways these values are used in design projects. Reuse is a means of calling more broadly for a careful, interscalar, and transdisciplinary reading of the existing which, hopefully, will keep opening new horizons for creative, inclusive, and durable interdisciplinary collaborations.

Engineering existing structures: A pressing pedagogical project

Structural engineers, whether practicing or in training, are not educated to work on existing structures, and are thus not competent to do so. Structural engineering education must be fundamentally changed... giving highest priority to the disciplines related to engineering of existing structures.

Position

Eugen Brühwiler

Engineering existing structures: A pressing pedagogical project

Eugen Brühwiler

Current structural engineering practice is still predominately driven by a spirit of designing and building new structures. Structural engineers have no or only limited education in engineering of existing structures. Therefore, they hardly understand why engineering of existing structures is its own discipline with specific competences, one that is highly topical in the current context of sustainability. "The existing is the new." Modern society is calling for a targeted approach on the built infrastructure to look for value in what already exists.

Today's structural engineers apply their "design and build the new" approach also when working on existing structures. For example, when they "recalculate" existing structures, they use the same approach as they would if the existing structure were to be built. Often, they fail to verify sufficient structural safety, a major challenge in engineering of existing structures, and then conclude on the basis of few solid arguments that the structure needs to be demolished and rebuilt new... without considering the cultural values or environmental impact of this fatal conclusion.

This comes with the prevailing opinion that an existing structure has a finite lifespan of sixty to a hundred years and then has to be demolished and replaced by a new structure. It is incomprehensible where these engineers got this "end of life" idea from, probably from a misinterpretation of standards... valid for new construction.

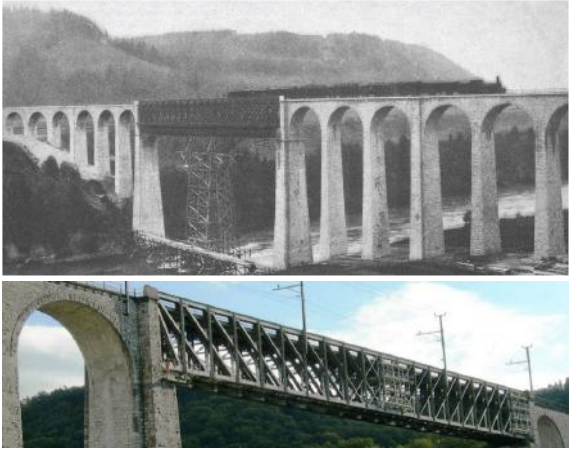
Structural engineers, whether practicing or in training, are not educated to work on existing structures and thus not competent to do so. It is incomprehensible why they feel they have the legiti-

macy to engineer existing structures. In addition, they often have a limited understanding of the broader context of their solutions and insufficient background and skills to effectively collaborate with other professionals such as architects and environmental engineers. Nevertheless, it is commonly assumed in practice that structural engineers – because they know how to build the new – are implicitly competent to engineer the existing, and they accept mandates without hesitation.

This highly problematic reality in the structural engineering community is the most important reason why, in the coming years and decades, structural engineering will make only little, and thus insufficient, progress in reducing the high detrimental impact of structures on the environment. Today's pretty words about sustainability of structures on each engineering firm's website will largely remain a "greenwashing" campaign... for acquiring mandates.

The reason for this unsatisfactory, even disastrous situation is the conservatism inherent with structural engineering, which is also reflected in the curricula of technical universities. Today's structural engineering students are still trained to design and build new. Thereby, the notion of Baukultur is neglected (or delegated to the architects), and "sustainability" is treated superficially, by promoting the use of concrete fabricated with cement of lower carbon emission and preferring timber to steel when building a new structure.

This situation must change immediately both at technical universities and in the profession with continuing education. Structural engineering education must be fundamentally changed... giving highest priority to the disciplines related to engineering existing structures.



SBB Railway Bridge over the Rhine River near Eglisau ZH, Switzerland, was put into service in 1897 after a load test. Railway traffic has evolved significantly since then and the structure is now recognized as a heritage structure of national importance. In order to examine the structural safety, a monitoring campaign over twelve months was conducted ten years ago. The measurement results accompanied by refined structural analysis showed that the safety and functionality of this viaduct were sufficient, both at the time and also for future traffic requirements

Engineering of existing structures: Goals and basic approach

Existing structures are an asset to a society, and today structural engineers are called upon to maintain and enhance existing structures and infrastructure effectively, within the availability of limited (public) funds... instead of replacing them invasively by new construction. Existing structures and their embodied energy and cultural values must be preserved. We must treat built heritage carefully. Sustainability happens now, it is not simply a matter of concern for future generations!

The first goal of "engineering existing structures" is to examine and verify that the performance of an existing structure responds to the requirements of modern use, with no need for construction intervention.[1] Construction interventions are necessary only if engineers fail to achieve this goal, and when existing structures show damage. However, traditional "retrofitting" techniques are often invasive, leading to high intervention costs and loss of cultural values. Modern intervention methods are available, in particular high-performance materials, and lead in most cases to effective solutions implying non-invasive interventions with reasonable cost, according to the principle of "adding value to existing structures."

The existing structure exists! Therefore, the verification of structural safety must first rely on in-situ measurements of structural behavior and action effects, complemented by advanced structural analysis such as refined elastic Finite Element (FE) models for structural behavior under service conditions (and fatigue in the case of bridges), as well as non-linear FE models for the determination of ultimate resistance and deformation capacity of structural members. The approach that needs to be incorporated in the structural engineer's mind may be expressed in the maxim "*getting more out of existing structures*."

When interventions on existing structures are really necessary, the targeted use of advanced high-performance materials is often effective. Fiber-reinforced polymer and cementitious composites as well as high-strength steels and their corresponding technologies offer novel methods of strengthening of existing structures.[2] Their effectiveness has been proven by applications, and the structural engineering community could in principle be aware of it. However, these new technologies are not taught at universities, and thus need to be introduced in curricula.

The ultimate goal of engineering of existing structures is to limit construction intervention to a strict minimum while providing the required structural performance for a long and safe service duration for the improved existing structure. Maintenance will be limited. Embodied energy is preserved, and cultural values are not

1 This affirmation is not understandable and a contradiction for structural engineers who are trained to build new structures.

2 These materials and technologies obviously are not known to engineers who design and build new structures.

altered. This goal is in line with the principles of sustainability of the built environment. However, it represents a fundamental paradigm shift for most structural engineers, irrespective of their age, since they are still animated mainly by the spirit to build new.

Change in structural engineering education

Novel methods and technologies now need to be integrated into the education of structural engineers with the goal of introducing methods of examination of existing structures and technologies to adapt and improve existing structures to extend their service duration, thereby adding value and preserving embodied energy. The design of new structures needs to be relegated in importance in favor of curricula based explicitly on the needs of engineering of existing structures, calling for a fundamentally different approach and thinking by the structural engineer. Education of structural engineers would significantly benefit from such a fundamental change.

Obviously, the basic scientific disciplines including mechanics of structures, strength of materials, probability and reliability theories, and basic natural sciences still have their place, together with disciplines such as basics in systems engineering, urbanism, ecology, economy, and law.

Importantly, examination of existing structures and consequences of intervention decisions related to socio-economic and sustainability criteria are, perhaps, best acquired by means of project work and real case studies which illustrate the principles and highlight the challenges.

In addition, knowledge of history of structures and structural engineering is a must. It needs to be given prominence and treated as a fundamental engineering discipline that:

- deals with history to study the past of structural engineering and its achievements and relates to the memory and discovery of structural engineering methods and technology, according to the leitmotif "Learning from the past to design the future of existing structures;"
- comprises construction in a broad sense, about the fundamental value and importance of understanding the design and construction of existing structures and their related contexts for the examination of their actual performance and with regard to their future use;
- develops an understanding of the past as a rich source of inspiration, providing an indispensable basis for the design of new structures; and
- enhances the general "culture" of structural engineers, thereby creating a better-defined identity for the profession and providing structural engineers the legitimacy to interact on equal grounds with other professionals like architects.

This recognition is a prerequisite for better coordination of the complementary skills and cultures involved in maintaining and improving the built environment.

BLS Railway Viaduct over the Saane River near Gümmenen, Switzerland: modification of a heritage structure, originally built in 1901, from a single-track structure to a double-track structure by placing a wide reinforced concrete slab on top of the masonry structure in 2020

Specific disciplines related to existing structures

Specific university courses focusing on "engineering of existing structures" should be based on recent findings from research and would include, among other topics:

- methods for accurate determination of in-situ structural behavior, with the objective of realistic structural and fatigue safety verification of bridges and other structures;
- non-destructive testing, structural monitoring, and in-situ observation as methods of obtaining precise data on actual structural behavior and actual effects of traffic action; this domain requires basic knowledge in applied informatics related to data processing, analysis, and interpretation including machine learning methods; and
- modern intervention technologies implementing advanced high-performance materials to effectively improve and, if required, modify existing structures, optimized with the aim of making interventions as minimally invasive as possible and having as little impact on the environment as possible.

Technical universities are, in principle, best placed to make such a fundamental change in structural engineering education. However, most civil engineering professors at technical universities have a traditional education in "designing the new," and commonly underestimate or simply don't grasp the importance and scope of "engineering the existing."

Also, the structural engineering community has yet to be "converted" to the modern "engineering of existing structures." Modern engineering of existing structures is still getting little attention and acceptance in the profession despite the obvious needs. This is why the proposed modern structural engineering approach should also be taught to the practicing engineers as continuing professional education.

How to challenge innovation resistance?

This article is actually about change in paradigm and the mindset of structural engineers. However, like many people, structural engineers don't like change. Structural engineering (like other disciplines) has always been rather reluctant and slow to introduce new knowledge and technology in practice. Structural engineers are sometimes even proud to be conservative and traditional. They prefer solutions that are known to lead to disadvantages over the assessable small risk of doing something new that will most likely eliminate these disadvantages.

How can this "innovation resistance" be combated? First of all, innovation requires a state of mind! From the author's twenty-five years of experience with developing and introducing new technologies from the laboratory to practice, three conditions need to be fulfilled:

- High-quality education of both engineers and craftspeople must provide the necessary competence and confidence to follow and implement novel knowledge and developments.
- Current state-of-knowledge, recorded in textbooks and standards, must provide the basis and framework that sets the essence in a concise and easy-to-understand form, while leaving enough room for creativity and further developments.
- Innovation should be rewarding. For this, incentives of personal nature are stimulating and motivating. A strong and resilient personal commitment is required to convince others... to change their mindset!

From this it follows that courses on psychology should be part of the education of engineers, to introduce them into leadership and organizational behavior, and to make them aware of the state of mind necessary for being creative and innovative.

EPFL's professorship in engineering of existing structures

In 1995, at the Ecole Polytechnique Fédérale de Lausanne (EPFL), visionary professors from EPFL's former Civil Engineering Department anticipated the relevance of existing structures for the future of a sustainable built environment. They introduced the professorship in "Maintenance, construction and safety of existing structures." This new professorship was considered to be the first fulltime professorship worldwide devoted exclusively to existing structures. The author had the chance to hold this professorship during almost twenty-nine years until the end of 2023.

Engineering the existing means understanding construction methods and materials from different times, by means of the same arch structure typology: (1) lightweight riveted steel structure from the nineteenth century with a modified wider deck slab to accommodate modern road traffic needs, and (2) massive reinforced concrete structure from the 1970s in continued use to carry today's and tomorrow's trains. Photograph by the author

During this period, in addition to related research, the author taught courses on "Engineering of existing structures," "Aesthetics and history of structures" as well as "Safety, risk, and reliability of structures" and "fracture and fatigue of structures" to structural engineering students. They readily understood the importance of these courses and considered these classes as being profitable for their education. Together with his coworkers, he supervised numerous semester and Master projects related to the engineering of existing structures. As best illustrated in their project work, the students were highly motivated, and learned in a natural way how to engineer existing structures.

The dictum "*Learning from the past to design and build the future*" shall be illustrated in the following by four existing bridges in Switzerland accompanied by the author as designer and consultant.

Engineering the existing means knowing how to respect the existing: focused and precise examination of reinforced concrete, steel roller bearing, and natural stone masonry abutment from 1935 was the key to non-invasive intervention to extend the service duration, thereby avoiding demolition. Photograph by the author

This 2.1-kilometer-long highway viaduct, built in 1969, was rehabilitated and strengthened in 2014–15 by means of the new UHPFRC (Ultra-High Performance Fiber-Reinforced Cementitious composite material) Technology (developed at EPFL). The realized project was cost-effective and did not impair the appearance of the viaduct which is a monument of national value. Photograph by the author

This 800-meter-long railway viaduct from 1896 is improved to accommodate future traffic needs. The rendering shows how the viaduct will look like after the works which are carried out in 2024. Again, the high-performance material UHPFRC turned out to be most effective to meet the project goals. The fatigue safety of the riveted steel bridge was verified by means of measurements, i.e., a monitoring campaign collecting stress data from all train passages over more than a year. © CFF

The Future of the Project

Essay

Ludovic Pépion

The Future of the Project

Ludovic Pépion

While the conquest of time in the architectural and urban project has, from the second half of the twentieth century onwards, largely been presented as a way of redefining the project around the notion and figures of the memory of territories, the contemporary forms of this conquest of time are more akin to reflections on the economic uncertainty of operations and the need to accelerate project production methods.

This conquest of time can be observed, for example, in the forms of project design as they have manifested themselves in recent years in calls for innovative projects. It can also be seen in the emergence of upstream temporary urbanism or in prefiguration of project construction. But we can also see in these measures, as well as in their combined implementation within complex operations, the symptom of a certain discrediting of the project in its role of projection, and particularly in its capacity to project a credible future state.

In this relationship between the project and the projection of the future, there is a problem that is more theoretical than simply contextual, and which profoundly questions the relationship between time and project, of which recent history has been more of a critical sequence than a time of constructive formulations.

We will first take up the theoretical elements of this critique and show how they are nourished by a productive and utilitarian conception of the project that contributes to the discrediting of the capacity for projection. We will then show how the construction of

time by the project is inherent to the project and requires, on the contrary, a reinforcement of the role of the project in the transformation of territories.

The contemporary critique of the relationship between time and project reminds us of the "deconstruction" of the project, not only because Jacques Derrida himself carried out a powerful theoretical critique of the notion of project as projection, but also because the problem of the articulation between project, time and, pathology as formulated by Derrida in his deconstruction of architecture reappears in contemporary theory.

Derrida's conception of architecture is haunted by the figure of Babel. The story of the construction of the Tower of Babel reminds us as much of the most political aspects of the project as of the most theological: by wanting to build a tower that would reach to the sky, and thus "make a name for themselves,"[1] the Semites wanted to put the world to rights. This is how Derrida summarizes the biblical myth.

Derrida's critique of architecture focused first of all on architecture, not directly as construction, nor directly as a discipline, but on the project as the conception of a finality that would impose itself as a completed system on all living beings, what Derrida calls "architectonics." Babel, as gathering and transparency, makes architecture a metaphor of destiny and totality, bringing together previously disparate nomadic tribes. Architecture is thought of as a system, which structures the totality of its members, and defines itself both as its own principle (disciplinary autonomy) and as the completion of reality (transparent construction of the community).

This fortress of metaphysics, Derrida continues, "was already, one could say, the end of architecture, its 'reign of ends' in the figure of death."[2]

Obviously, Derrida sought, in his writings on the architectural project, and well beyond his misunderstanding with the architects of his generation, to pierce this fortress of metaphysics by relying precisely on the role of time in the elaboration of the project. We will not dwell on this question of time in the theory of deconstruction applied to architecture, but on the more general scope of this critique of the project as a fortress, and on the destructive dimension that it potentially contains.

In their eloquently titled synthesis book *Building Must Die,*[3] Stephen Cairns and Jane M. Jacobs propose a reading of contemporary architecture based on this figure of death. We could thus introduce the idea that one of the current problems of the project is that it is haunted in its conception of time by this image of the project as a destiny and mortification against which it must struggle. The thesis presented in this book is that it is precisely through the

1 Jacques Derrida, *Psyché: Inventions de l'autre*, Paris, Galilée, coll. «Collection La Philosophie en effet,» 1987 (translated by Joseph F. Graham).
2 *Ibid.*, p. 466 (translated by Kate Linker).
3 Stephen Cairns, Jane M. Jacobs, *Building Must Die – A Perverse View of Architecture*, MIT Press, 2014.

figures of death – particularly the death of the mythical modern project – that the contemporary architectural project has been constructed. In other words, it is through the cracks of time and time as crack and decay, destruction, entropy, that the contemporary architectural project has been constructed, in contrast to the destiny image of the completion of the project.

Ruins for Arata Isozaki, Drosscape according to Alan Berger, Junkspace by Rem Koolhaas, would be the real space-times, the space-times that would last beyond the completion of the modern project and whose figures we should take up, in reverse of the project.

In order to form the theoretical framework for this synthesis, Cairns and Jacobs refer to a figure who also contributed significantly to Derrida's deconstruction of architecture: that of Georges Bataille. But they do not refer to Bataille simply to remind us that Bataille's critique of "la chiourme architecturale" (Bataille, 1929) is a critique of the mythical dimension of the project, but to suggest that the project presents itself as "the accursed share" of a general economy and of urban production. What is thus suggested is that, within the framework of the capitalist economy, the architectural and urban project– insofar as it exceeds the simple stage of utility and survival, insofar as it is an "expenditure" to use Bataille's term – would necessarily be doomed to be vain, that is to say, in the minds of the authors, doomed to the extreme volatility of values and forms that have no more longevity than any other commodity. For the project to assume its value as an expenditure or surplus product, it must turn against itself, hence the subtitle of the book – *A Perverse View of Architecture* – and present itself through a temporary character, open to the metamorphoses imposed on it by future eras.

The manifest nature of patina, the assumed obsolescence and reversibility of structures, and the recycling of materials would constitute alternative tools to the "consumption" of the architectural and urban project in the context of the contemporary economy.

However, these works, which highlight the temporary nature of architectural formalzation, also highlight an internal division within the project, between perennial infrastructures and ephemeral superstructures. This division can be translated into what it means for the construction of time in the project between a potential infinity of the future that infrastructures, systems and networks are supposed to represent on the one hand, and on the other hand, the transience and relativity of the present of the implementation of these infrastructures and their habitation. It is in this distinction between infrastructure and superstructure that a large part of the reflection on the future of the project is exhausted or condemned to repetition, when this future is conceived as the evolutivity and adaptability of the project to temporal conditions.

On an architectural scale, this distinction is obvious: all the reflection on the structural framework, modularity, and combinatoriality exposes architecture to a very strong instrumentality (which is all the more paradoxical as rehabilitation constantly shows the

diversity of the rehabilitated and reused constructive systems). Moreover, these reflections on the plan have long since found their ultimate expression in the *Typical Plan*, whose temporal value Koolhaas clearly understood when he wrote that the *Typical Plan* consists of "not preempting the future."[4] This means that no here-and-now development should take precedence over the virtual background of the future.

This distinction can also be found on an urban scale, particularly in the notion of project scenarization. An urban scenario would define an open framework and within this framework, depending on the times and actors, the needs and objectives, each scene could be reenchanted and assigned new meanings. This approach could be questioned at greater length, but it should be noted that this incompletion of the project in time is achieved through an extremely generic formation of space, which refers us to the notion of serialism and combinatoriality, and to a pathology of the total project, as evidenced by the reference to the *Continuous Monument* by Superstudio, around which these theories are developed.

The problem of time here seems to be taken in reverse. Because we think of the future as infinitely open, we condemn ourselves to a durationless and purely transitive present that cannot therefore be a moment, or an event, of transformation.

Against this pathology of project time, and against the notion of expenditure, we must take up the question of deconstruction: does removing the project from its mythical dimension lead us back to the "desert of anarchitecture," and to a condition of nomadism and encampment whose imagery is so profound in contemporary architectural culture?

While Bataille was writing about the notion of expenditure, Paul Valéry, whose reflections on architecture are known from his famous *Eupalinos*, was writing his *Principes d'an-archie pure et appliquée,*[5] which proposes an alternative to Bataille's accursed share of the general economy and to the temporary condition of the project.

An-archy is certainly the refusal of any mythical narrative, of any *archi* in the sense of command and predestination, but it is also the refusal of any utilitarianism which would be no less than a subordination of the project to a higher command, even if it were without destiny. This is how we can understand Valéry's own definition of architecture, in a note from his lectures at the Collège de France: "Architecture is the passage from the useful to the useless." Architecture is the passage in the dialectical sense between the two terms of utility and uselessness, so that the uselessness of the project can act in return on the functioning of the city. This is the condition for the useless not to be the accursed share. The useless here does not mean expenditure or luxury, and ultimately destruction and entropy, but on the contrary, duration, the construction of time, and habitation in time.

4 Rem Koolhaas et al., *Small, medium, large, extra-large*, [Première édition., New York, The Monacelli Press, 1995, p. 344.

5 Paul Valéry, *Les Principes d'anarchie pure et appliquée*, Paris, Gallimard, 1984.

Valéry provides a precise definition of this passage from the useful to the useless through his view of the transformation of territories. Following Valéry, this passage is achieved neither through a mythical or heroic figure who would be the expression of a *Zeitgeist*, nor through the discovery of a territorial substratum, but this passage of architecture is achieved in the long term, which has to do with the physiology of territories.

The physiological approach proposed by Valéry involves two lines of thought that are completely opposed to the "accursed project" described above, and respond to it on both the architectural and urban scales. It is these two axes, which Valéry calls "regime" and "function," that we would like to present in broad outline.

The regime is the alignment of all the "organs" that constitute the territory: geographical organs, technical organs, economic organs, historical organs, organs of production, and others, so as to make appear "the maximum of needs, the maximum of labor, the maximum of capital, the maximum of yield, the maximum of ambition, the maximum of power, the maximum of modification of external nature, the maximum of relations and exchanges."[6] The result of this regime is that the territory is as much the site of the exchanges it hosts as it is the product of them. The regime defines this dialectic of the transformation of territories, where the transformation is maximized according to the limits and capacities of a territory to be transformed.

Although a well-known idea in contemporary urban planning, perhaps what the territorial regime means for the future of the project is overlooked elsewhere. In a 1991 project entitled *Eine Stadt im Werden?,*[7] Herzog & de Meuron, using the organs of the territory of the city of Basel, propose a future for the city according to each of its organs, which define both the extensive and the intensive development of the city (the Rhine and the railway system for exchange, the urban development within the valleys which sets the limits for urban deployment, and the magnification of the inner space with the development of a system of parks within the city). Herzog & de Meuron introduce their work with the notion of "crystallization" to describe the urban project. Crystallization means recognizing that there is no idea of the city that would form an image of it, but that there is a process or morphogenesis that ensures the maximum of exchanges between the city and the territory, between the given territory and its artificialization, until this maximum allows us to experience the full depth of the dialectic between the territory and its transformation, which then seems to present us with a state of completeness and completion. This crystalline state of completeness and completion is never fixed. It is not an accomplished image and the transformations continue as long as the organs of the territory are alive, but it is indeed through a series of completed operations of transformation that this morphogenesis, which ensures the accumulation and stratification of the territory, is undertaken.

6 Paul Valéry, *Œuvres...*, Paris, Gallimard, 1957, vol. 2, p. 1014 (translated by the author).
7 Gerhard Mack, *Herzog & de Meuron: The complete works, Volume 2: 1989–1991*, Basel Boston [Mass.] Berlin, Birkhäuser, 1996, pp. 152–171.

The crystal metaphor is nevertheless ambiguous and could lead one to believe that the morphogenesis of the project is similar to a natural history of the development of territories.

The second component of the physiology of territories, which Valéry calls the function of the project, responds to this. The notion of function plays a very different role from the notion of regime. While the regime inscribes development as close to the territory and its site as possible in order to maximize exchanges, the function of the project consists, in a certain way, in extracting itself from it: extracting itself from the dynamics of exchanges and thus opening up the future of the territories to a destiny other than that of its laws of formation. What Valéry calls the function of the project is in fact the "inutilitarian" function of the project, the function of not referring to any necessity and law of development, and therefore of opening up the future of territories. And this is why we can speak of buildings that are superior to others, since they are superior to the laws of functional necessity and elementary existence.

This is the function of the project: to bring out superior, intransitive forms within functional exchanges that borrow the language of the sectorial registers of utilitarian constructions but without being reduced to the univocity of a single language, even if it is that of endless combinations. This is also what Valéry calls the poetics of architecture, its tongue or its song, if we use Eupalinos' terms.

The notion of function, understood through the elaboration of the tongue of architecture, allows us to look very differently at the question of the adaptation of buildings to various functions over time. Rather than thinking from a utilitarian perspective that enslaves the project to the seriality and combinatorial nature of architecture and the city, and that enslaves the present to the virtuality of the future, we can think from the plurivocity offered by the tongue of architecture: plurivocity and richness of perceptions and interpretations through the work of expressing depth, but also plurivocity of functions and uses through the work of rhythm and dimensions. It is the superiority of the architectural tongue that allows us to build places that respond to the gathering and simultaneity of the contemporary city on the one hand, and to the possibility of its free transmission on the other. This tongue also allows us to look at the city in its present state and to question our modes of intervention on the existing and the capacity of the project to take buildings and spaces out of their univocity, both functional and of language, or even out of their situation of isolation in their urban context, without giving up their completion here and now. Far from saturating future space-time, far from preempting the future by assigning it a destiny, on the contrary, project takes cities out of their necessity and thus opens up a future for them.

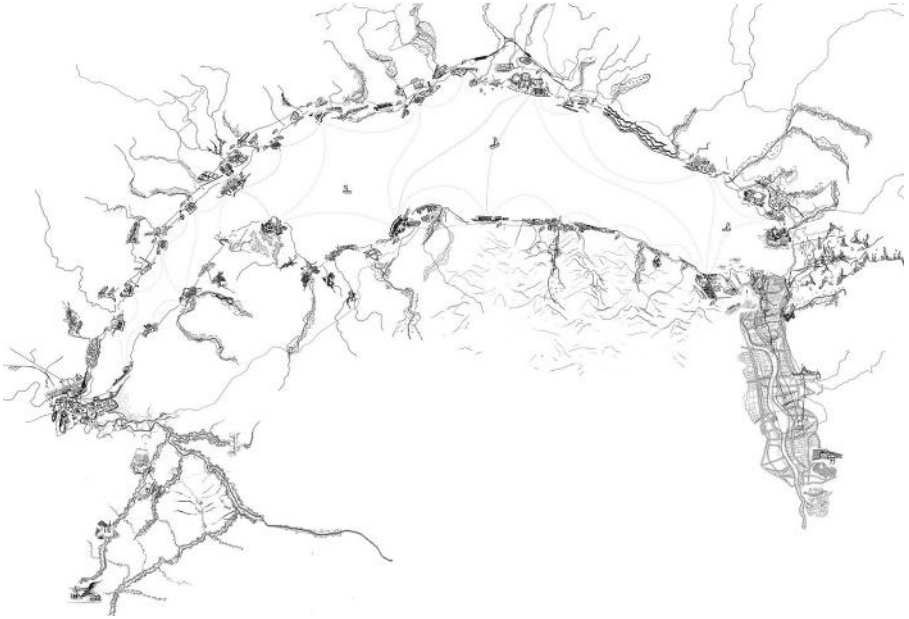
“Are we ready for the transition?”

By connecting the two themes, Baukultur – the culture of the built environment – and the emerging culture of the Transition – mainly based on adaptation and mitigation strategies –, a technical shift, an epistemological one and an ethical one are inevitable. At all scales: from architecture to urban and territorial design. Such a shift is a construction and design practices reform.

Position

Paola Viganò

“Are we ready for the transition?”
Baukultur and the emerging culture of a social and ecological transition: Gazes, values, projects
Paola Viganò



Towards a Leman-Alpine Metropolis. Urban Design and Urban Theory, Studio BA5&6, Spring semester 2017, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Marine Durand – students: Leslie Faisan, Josefine Wolf, Vianney Huart, Tania Versteegh, Déreck Rauzduel, Roxane Unterberger, Christophe Dindault, Ismaël Camara N’Faly

The passage from the current consolidated, modern, or traditional way to build the city to a different ecological, economic, and cultural context (what we call – operating a strong simplification – the "transition") highlights unprecedented tensions and potential conflicts. They emerge when ecological and socio-political dimensions (resource depletion, energy scarcity, growing social inequalities) are considered to their full extent. This is the hypothesis on which we have worked,[1] taking urbanization, i.e., the process of constructing the urban in the loose and extended forms of present time, as its starting point.

In fact, by connecting the two themes, Baukultur – the culture of the built environment – and the emerging culture of the transition – mainly based on adaptation and mitigation strategies – a *technical shift*, an *epistemological* one and an *ethical* one are inevitable. At all scales: from architecture to urban and territorial design. Such a shift is a construction and design practice reform (Material Cultures, 2022) and cannot be faced from a technical perspective solely; it engenders value shifts contained in the "ecological and social transition" idea itself. As Edgar Morin stated, such a transition is not "from a non-ecologized society to the same ecologized society," but "in fact, it is the complex metamorphosis from one type of society to another."[2]

The city as a renewable resource: antefact. There was a theoretical vacuum when I started to reflect about the relation among architecture, urban and territorial design, the rarefaction of resources, and CO2 emission reduction. This vacuum is today much less imposing thanks to a generous literature and design experiences that has meanwhile emerged. However, a theory acting as a provisional frame for unknown trajectories has still to be refined.

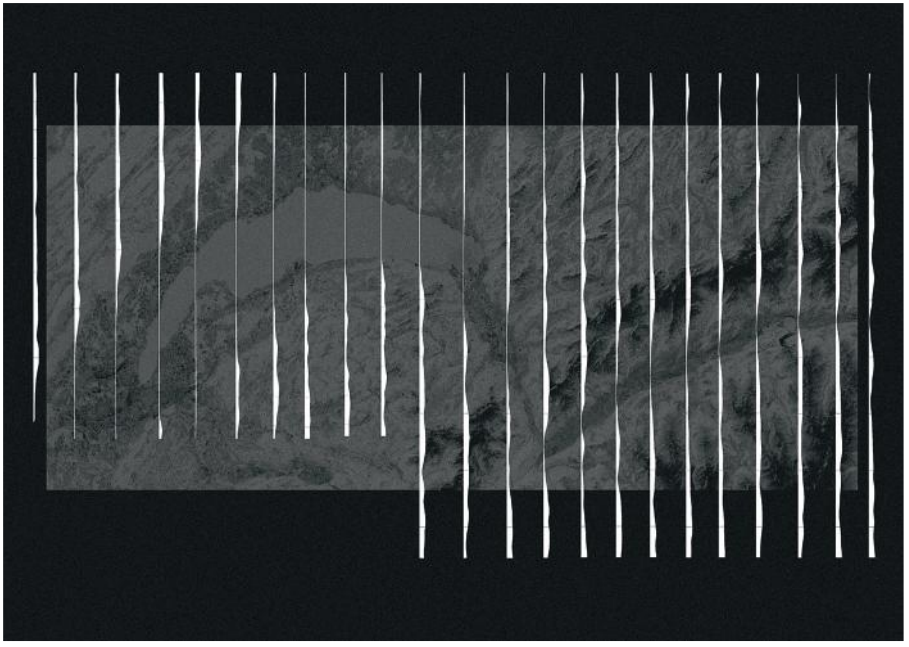
An initial conceptual triad for *the city as a renewable resource* hypothesis connects a dense set of themes: life cycle, embodied energy, and inclusion. We recycle what has a *life cycle*, parts of cities, objects, and urban materials. Re-cycling is the opening of new social, material, ecological, and programmatic *cycles*. The *embodied energy* is part of any transformation; the concept has its roots in the 1970s energy crisis and has today grown into an influential research perspective. *Inclusion* refers to the social and power dynamics at work when life cycles conclude and renewal takes place often engendering the opposite, i.e., expulsion and gentrification dynamics. (Jacobs, 1961) New "geographies of exclusion" are the negative output of many regeneration projects, which leave out populations and operate not only a spatial restructuring, but social displacement. Architecture and urbanism of *inclusion* consider any regeneration process as an occasion to redistribute resources, accessibility, reinforce social mix and isotropic conditions at all scales. These concepts were formed through research

1 The path crosses several academic (Laboratory of Urbanism, Habitat Research Center at EPFL) and professional contexts.

2 Jean-François Dortier and Louisa Yousfi. *Edgar Morin, L'aventure d'une pensée*. Auxerre, Éditions Sciences Humaines, 2020 (translated by the author).

and professional projects, as the investigation of "urban porosity"[3] in Antwerp, or merging soil regeneration and city re-foundation in the Courrouze urban project.[4]

"Life cycles," "embodied energy," and "inclusion" was the triad at the basis of "the city as a renewable resource" research (Viganò, 2012), influencing and supporting design and teaching experiences, while absorbing and developing the larger debate established since then. This two-decades-long itinerary includes in the text the work carried out with students along alpine valleys and lakeshores in a variety of urban configurations. The conceptual triad is expanded to deepen the initial hypothesis.



Territorial sections. Towards a Leman-Alpine Metropolis. Urban Design and Urban Theory, Studio BA5&6, Spring semester 2017, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Marine Durand – students: Leslie Faisan, Josefine Wolf, Vianney Huart, Tania Versteegh, Déreck Rauzduel, Roxane Unterberger, Christophe Dindault, Ismaël Camara N'Faly

3 On the occasion of the Antwerp Structuur Plan, 2003-2006, see Secchi & Viganò, 2009.
4 La Courrouze is a large urban project (a Zac, *zone d'amenagement concerté*) on former industrial and military land in Rennes (Secchi & Viganò, Dard, AMCO, 2003-2014; StudioPaolaViganò, Dard, ORA, 2015–ongoing).

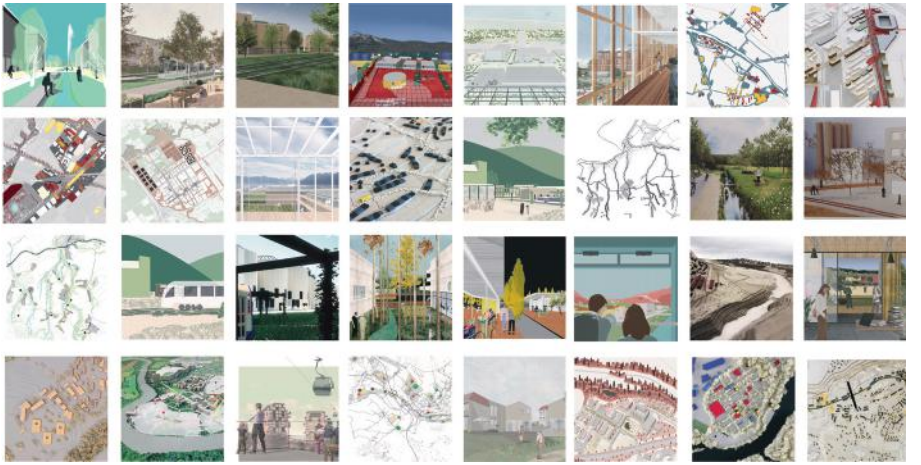
Cities and industrial systems are material and stratified conglomerations with embedded socio-political and technological constructions. The valorization of embodied energy together with the traditional energy goals and strategies (reducing consumption, integrating renewable energy production, recycling energy) was the clue to imagining an extensive and diffuse regeneration project at the metropolitan scale. The *100% Recycle* scenario and vision we developed for Greater Paris in 2009 relied on the hypothesis that reuse, reconditioning, and recycling could be the main transformative operations of cities and territories for future needs without further urbanization. (Secchi, Viganò, 2011) No more extension, but a careful reading of the possibilities contained in the existing fabric and urbanized land. This is why our inadequate understanding of the material production of space requires "deep" and "close" readings, *ideographies* at different scales. Such an approach resonates with the later EU "No net land take by 2050" strategy" (2011), a series of recommendations reinforced by the "Soil Strategy for 2030," as part of the Road Map for Resource-Efficient Europe that confirmed this vision.

In the aftermath of the 2007–2009 economic crisis, extended field work in the central Veneto region revealed the amount of underused space left behind. Describing what had changed – recording, offering crucial insight about the adaptation of the family based small-medium enterprises to globalization[5] – was the first research step. A few years later, in the construction of a vision for Great Geneva (Habitat Research Center, EPFL, 2018–2020), we investigated the transformation of the region's economy through the modification of its productive space and the possibility of its evolution towards a part of city. The scenario developed for Great Geneva was inspired by the idea of "longer-life products" and the shift towards repair and reconditioning developed by Walter Stahel in the 1970s, with the consequential need of maintaining decentralized workshops and the valorization of manpower. (Stahel, 1976) This scenario informs a design research on new hybrid landscapes for work, agriculture, energy production, and living based on reading and reinterpreting the existing potential. Again, reuse and reconditioning guide the process.

5 Cecilia Furlan, *Worn Out Landscapes: Mapping wasteland in the Charleroi and Veneto Central territories*, PhD Thesis, IUAV-KU Leuven, 2017.

Cross-border Transition atlas for the Great Geneva. Transition as idiography (details). From food self-sufficiency, matter and energy metabolism, soil quality and spatial living conditions, transformation of production sites, to synergy between economic activities and the city. In "Du sol et du travail : la transition, un nouveau projet biopolitique", 2018-2021 ; Habitat Research Center – EPFL: P. Viganò (director of research); L. Pattaroni, V. Kaufmann, C. Fivet; R. Sega, M. Barcelloni Corte, Q. Zhang, T. Pietropolli; with P. Boivin (HEPIA), W. Stahel (Product Life Institute), J. Normand (B-Lab), O. Crevoisier (Université de Neuchâtel)

An original map of the Canton of Geneva shows that the highest carbon footprint coincides with the modern periphery of the city,[6] already altering the traditional appreciation of old and recent urban fabrics in favor, in this case, of the latter and its "capable buildings" and flexible spaces to rethink the city.



Eco-socio-spatial prototypes for the Great Geneva: starting the process. In "Du sol et du travail : la transition, un nouveau projet biopolitique", 2018-2021 ; Habitat Research Center – EPFL: P. Viganò (director of research); L. Pattaroni, V. Kaufmann, C. Fivet; R. Sega, M. Barcelloni Corte, Q. Zhang, T. Pietropolli; with P. Boivin (HEPIA), W. Stahel (Product Life Institute), J. Normand (B-Lab), O. Crevoisier (Université de Neuchâtel)

Material conditions. An important tradition developed in Italy since the 1950s already proposed a complex reading of space, connecting material production and social imbrications.[7] In the analysis of the urban consistency of the old center of Pesaro, Carlo Aymonino and the Gruppo di Architettura worked on the structural evolution of old centers where symbol, collective, and material values coexisted with demographic, societal, economic transformation.[8] Following a Marxist approach, the focus was on the "material conditions of production," which questions *how an object is*, *in what state it reaches us*, in order to understand its gradual alteration. (Caniggia, Maffei, 1979) The reading of stratification distinguishes what can last, what might be adapted, or what can guide the transformation.

The strong interest in socio-political and economic aspects moves parallelly to the understanding of how an object materially is, through which social, economic and technological cycles it went through. Alteration can make the built space unrecognizable, make it lose its role, up to and including making it disappear and freeing up space for new uses and possibilities. The city map created on that occasion was a sum of cadaster properties including the

6 The map was created by Corentin Fivet and his Structural Exploration Lab, EPFL, 2019.
7 The fundamental one being, of course, the reading of the Venetian tissue created by Saverio Muratori (1960) and his students. See also: Viganò 2021.
8 Carlo Aymonino, Costantino Dardi, Gianni Fabbri, Raffaele Panella, Gianugo Polesello, Luciano Semerani, *Piano Particolareggiato per il centro storico di Pesaro*, *Relazione illustrativa*, Pesaro, 1974.

ground floor of the buildings at the 1:500 scale for the whole center of Pesaro. It is one of the few existing efforts to connect an overall plan and vision to the built structure, including public and private spaces, inside and outside the building walls, developing a "critical survey" (Doglioni, 1980) of the entire tissue.

Contemporary extended urbanization is today the testing ground for developing such a critical survey and deep reading: the reuse and reconditioning of the city territory, intersecting opening and closing economic cycles, dismantling and recycling existing materials in creative activities of urban mining, redefining the urban and landscape aesthetic and the codes ruling it.

In the ecological and social transition, the exploration of the material conditions of space production is as crucial as ever to give consistency to the hypothesis of the "city as a renewable resource." The richness of these operations invests energy consumption, embodied energy, energy recycle issues, and potential renewable energy production.[9]

The beginning of the end. Secondary valleys, Val Ferret. Urban Design and Urban Theory, Studio ALPS MA2, Spring semester 2014, SAR-EPFL. Prof. Paola Viganò, Marine Durand, Roberto Sega – students: Anne-Charlotte Astrup Chavaux, Timoté Benjamin Mopty, Chen Zhao

9 Through comparative research carried out for the French Ministry of Culture in the two cases of Paris and the central Veneto region and in a series of international workshops (*Energie et recyclage*, Ignis Mutat Res, P. Viganò coord., 2013).

Palimpsest and Unintentional Monument. With a focus on material conditions and stratification, the palimpsest metaphor resurfaces. It reveals the "repetitive" and "immobile" history of the *longue durée*, which continues to operate even in the middle of destructive events. It is the slow, diffuse process of taking care (of animals, soils, water, agriculture, risks, inhabitability).

If the territorial palimpsest reports a *structure* of signs, it is that defined by the *longue durée*. *Durer* is lasting, "constructing the long-term starting from the present," because the passage between the two takes place in the present. (Caye, 2020) This view reads territorial rationalities, logics and behaviors, natural and artificial; their role in accompanying and guiding events, or representing the total crises of an era, culture, or economy, when their almost-permanent presence begins to fragment and risks disappearing.

The attention to rationalities and rationalizations, to human and non-human logics, reveals both dimensions of time: the history of events and the *longue durée*. Casual relations and confused remains of histories form the surface of the palimpsest. Here design can take on an important role producing relational and connective actions on the existing landscape, unveiling levels of memories, eventually conflictual, about recent and older pasts. Design is a tool to inject glimpses of sense, developing common frames to actual nonsensical urban collision, valorizing Riegl's *Unintentional Monument.* (Riegl, 1903)

The palimpsest metaphor denies the foundation of design solely as an activity that produces novelties and originality. Its project always works with previous structures and traces, whatever their substance; it reorganizes them as an expression of common languages and techniques, which requires refined reading and sophisticated knowledge, mastering the Baukultur of different ages. Literary critic Jean Genette used the palimpsest metaphor to interpret Proust's *La Recherche*, merging high and low literature. (Genette, 1966, 1982) Like Proust's work, design increasingly acts as a *second-degree* interpretative and imaginative construction starting with the pervasive, often invisible, *stratum* of what is already there.

An urban fabric to be developed: the mixed-use areas of the Chablais. Urban Design and Urban Theory, Studio BA5&6, Spring semester 2016, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Marine Durand – students: Lorenzini Sébastien, Beuret Timothé, Rapit Basile, Kieffer Coline, Eugenia Galvan, Wendy Tokuoka

Embodied energy has only recently grown into an influential perspective, although this concept is rooted in the 1970s debate on the aggressive renewal imposed on the American City and the need to develop a protective and conservationist approach to the existing urban structure. The concept of embodied energy expanded parallelly to the emerging awareness of the ecological crisis and "the limits to Growth." (1972) It expresses an understanding of urban and architectural stratification and reinforces heritage definition. Its valorization involves reconditioning instead of dismantling or substituting, reuse instead of erasure, and value redistribution.

Lasting (*durer*) implies a selection procedure, a process that transforms the existing *envelope* (*Umwelt*) described by Jean-Christophe Bailly[10] into a collective *patrimony.* (Caye, 2020) By substituting the economic concept of capital with "collective heritage" and "patrimony," work and labor become noble and fundamental maintenance activities. All societal effort should then be primarily concentrated on them, including the productive system and its possible reorientation. It is a fundamental value shift and a crucial passage in imagining a radical adaptation of the existing urban condition.

The consequences on designers' work are enormous and already generate contradictory and ambiguous approaches. In this situation, design can help establish a field in which the transition project can be negotiated and envisaged as a common path, unfolding the complexity of the relationship between places (ecological and material constructions) and people (bodies and horizons of expectation). Design brings out possibilities and anchors choices in the concreteness of a territory accepting the unavoidable coexistence of a plurality of world visions.

From the perspective of a designer, the evolution of value systems displaces the research focus from the pure epistemological level of knowledge construction to an ontological one where the foundation of our choices are rediscussed: what are we designing and for what purposes.

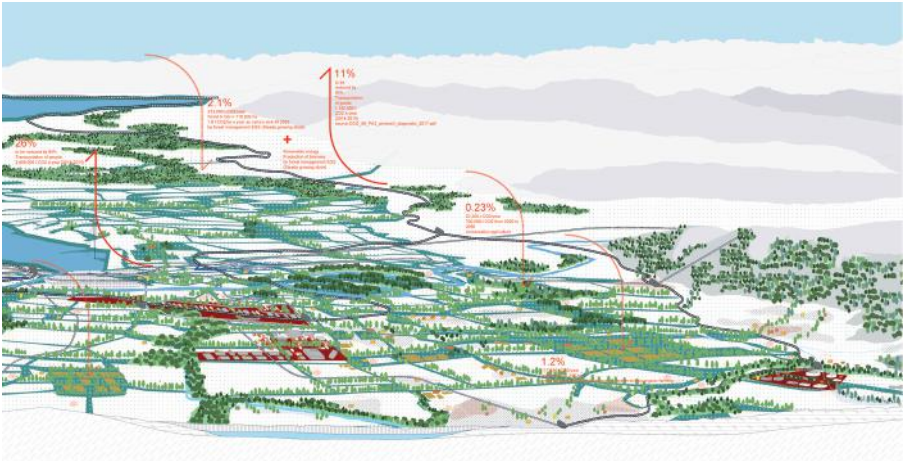
In the case of Great Geneva, for example, the exploration of "territorial inhabitability" tackles dependencies and conflictual visions. The idea of a "Metropolis of villages" considers the value of the pre-existing decentralized settlements traditionally excluded by institutional planning documents, concentrated on the denser part of the metropolis. A "public transport network to reconstitute" highlights the loss of connectivity and the need to conceive a common socio-ecological mesh at the territorial and metropolitan scale. A "potentially self-sustaining region" illustrates the evolution of agri-

10 Bailly (2023) borrows the term introduced by Jakob von Uexküll at the beginning of the twentieth century, representing the environment of an organism, or the "semiotic world of organism. It includes all the meaningful aspects of the world for a particular organism." (Kull, 1998) Jean-Christophe Bailly returns to this topic in his contribution: "L'architecture au-delà du projet", *Le Visiteur*, no. 28, April 2023.

culture towards conservative and ecological models and the hidden role of "urban soil" in adapting the city to the new climates, while "decentralized forms of circular economies" envisage their more robust development to reduce the actual gap between Geneva and the other side of the Swiss border, with the transformation of monofunctional areas in urban space. In this vision, the mechanical expertise of the Arve valley (turn-bar industry) could be enhanced, and production spaces revisited into a node of metropolitan reconditioning, a "territorial workshop." The image of the workshop acts as a lever for the reuse of buildings and existing hybrid rural-industrial plots, with the drastic reduction in current pollution levels, a mix of agriculture and housing and local services. A "No waste city" along the Arve Valley is then imagined as part of a transition to circular

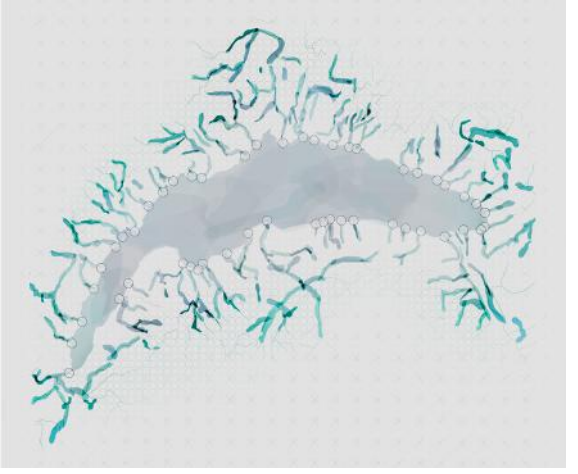
Pays-Paysages of Great Geneva: the Arve Valley. In "Du sol et du travail : la transition, un nouveau projet biopolitique", 2018-2021; Habitat Research Center – EPFL: P. Viganò (director of research); L. Pattaroni, V. Kaufmann, C. Fivet; R. Sega, M. Barcelloni Corte, Q. Zhang, T. Pietropolli; with P. Boivin (HEPIA), W. Stahel (Product Life Institute), J. Normand (B-Lab), O. Crevoisier (Université de Neuchâtel). Model realized by the students of the Design Studio Viganò, BA5-6_2018/2019 (EPFL), Prof. P. Viganò, R. Sega, M. Durand, E. Llevat

Arve Valley: No Waste City. In "Du sol et du travail : la transition, un nouveau projet biopolitique", 2018-2021; Habitat Research Center – EPFL. Projet realized with A. A. Incutti, G. Jeanrenaud, S. Omar, Design studio MA2_2019, EPFL prof. P. Viganò, T. Pietropolli, Q. Zhang



Great Geneva 2050, metabolic section. In "Du sol et du travail : la transition, un nouveau projet biopolitique", 2018-2021; Habitat Research Center – EPFL: P. Viganò (director of research); L. Pattaroni, V. Kaufmann, C. Fivet; R. Sega, M. Barcelloni Corte, Q. Zhang, T. Pietropolli; with P. Boivin (HEPIA), W. Stahel (Product Life Institute), J. Normand (B-Lab), O. Crevoisier (Université de Neuchâtel)

Our vision of a CO2-neutral Great Geneva unfolds over time, placing ambitions, strategies, and actions within a "chronology" of a possible transition that relies on weak social and ecological infrastructures, not only on the traditional development drivers. Projects consistent with the variety of urban forms of Great Geneva are possible; eco-socio-spatial prototypes are an opportunity to rethink its inhabitability; a territorial balance and the reinforcement of horizontal relations beyond centers and peripheries reorient the design.



Leman-Alpine Metropolis: Affluents. Urban Design and Urban Theory, Studio BA5&6, Fall semester 2016, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle, SAR-EPFL – students: Faisan Leslie, Wolf Josefine, Huart Vianney, Versteegh Tania, Rauzduel Déreck, Unterberger Roxane, Dindault Christophe, Camara N'Faly Ismaël

A composite, incremental, and collective project can be the output of these efforts and contribute to a dialogue among actors, institutions, putting strong and weak "subjects" around the same decision table. A concrete case of the Horizontal Metropolis research and vision.[11]

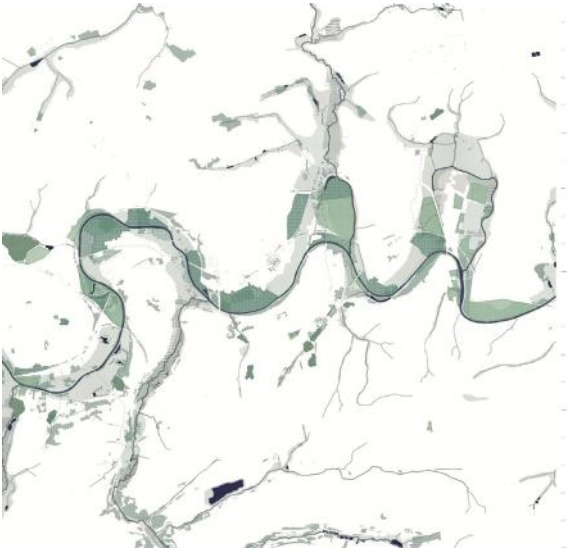
Inclusion

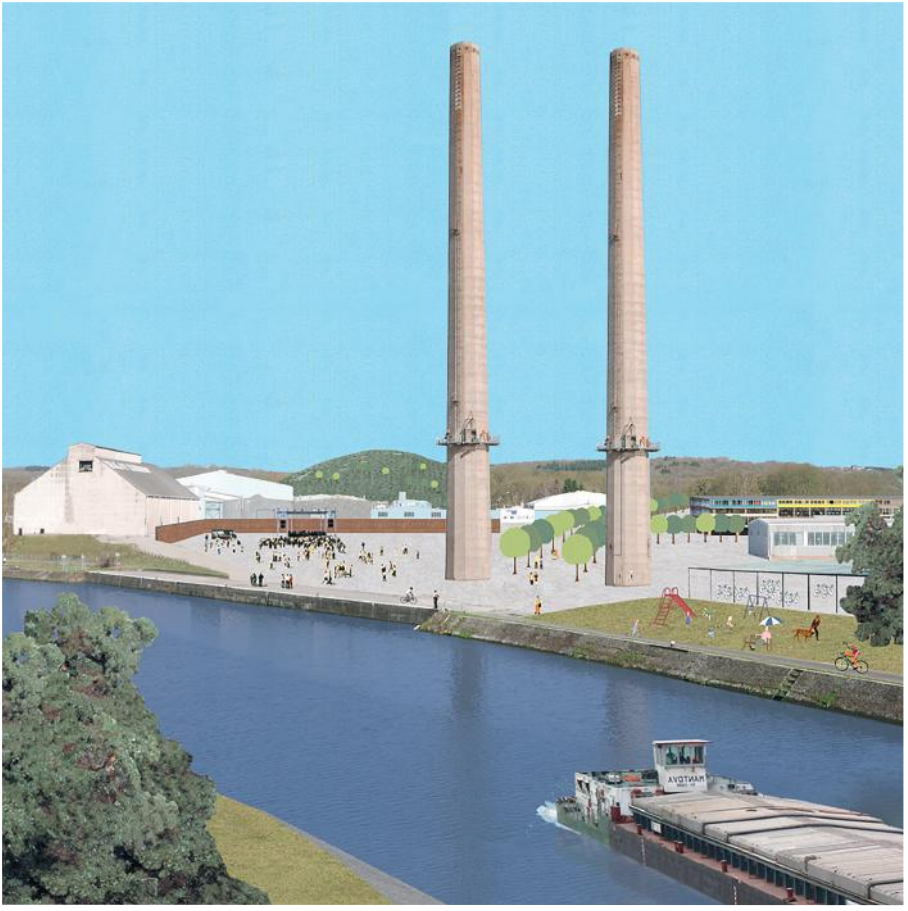
Any opening and closing of economic, biological, or social cycles produces unexpected consequences, including those driven by the ecological/green transition leading to further divarication in society, deepening the social divide, environmental and spatial injustice (Shokry et al. 2022). Inclusivity, in fact, considers socio-economic exclusion and unjust access to urban and environmental qualities and resources as a three-dimensional nexus (Wende, Nijhuis, Mensing-de Jong, Humann, 2020). From the classic social science perspective on urban justice and the right to the city (Lefebvre, Harvey, Feinstein...), to the rise of political ecology (Swyngedouw, Kaika, Gandy...), the debate turns more recently to the old relationship between environmental benefits (new parks and green infrastructure, for example) and gentrification. (Connolly, Anguelovski, Pearsall...) Space contributes to inclusion or exclusion. (Secchi, 2013)

In the Wallonian context, a declined industrial region, the *Pays noir*, the black furrow of Europe, a new "pact" between society and territory is developing into a series of new images for its future. In the case of a vision for La Louvière 2050, "ville parc de Vallonie" (for its landscape richness), a territory of "civic constellations" (diffuse urbanity as an important plinth for community organization), and "a lucid machine" (a space of multiple social and resilient economies) can work in the re-activation of the existing human and spatial "sleeping capital" (Ferragina, 2013). In other close European regions, all marked by the conclusion of the coal extraction cycle, important territorial projects have used the image of the park as an engine for economic development, reinterpreting the traditional industrial areas and infrastructure to counterbalance the still prevalent economic discourse (in the Nord-Pas-de Calais or in Flemish Limburg, for example). Together with the "civic constellations" and the "lucid machine," the "park" image defines a matrix for spatial development based on the recognition of the plurality of on-site actors, patrimony, and heritage. New relationships among the different territorial layers can be envisaged, covering circular, horizontal, and alternative development paths. The "projet de ville" is then the output of an ecological, socio-economic, and spatial development dialogue that deals with the awareness of marginality and weakness of territorial as well as economic and social structures. (Viganò, 2020) Making them "subjects" is an important ethical repositioning of design,

11 Led at the Laboratory of Urbanism, EPFL and at IUAV. See: Viganò, Cavalieri, Barcelloni Corte 2018; Cavalieri, Viganò, 2020; Barcelloni Corte, Viganò, *The Horizontal Metropolis. The Anthology*, 2022.

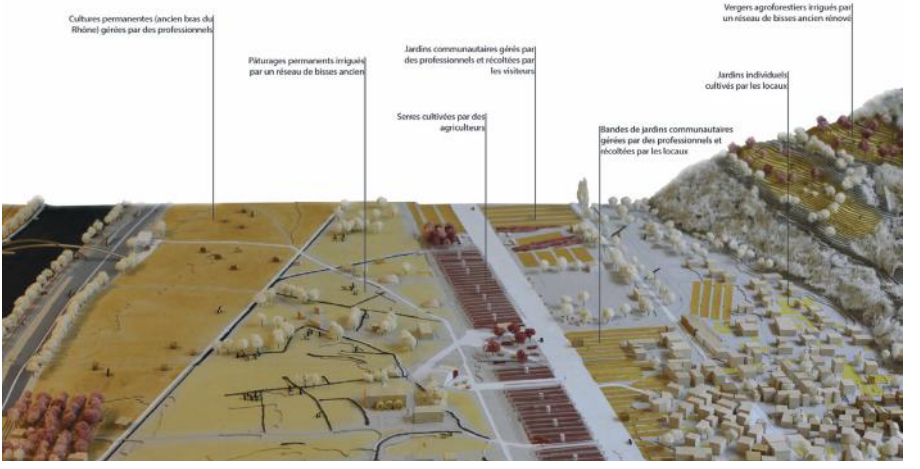
which values every single situation and condition and works to reduce hierarchies and dependence. A project of "inclusion" extends to the territory itself, *included* among the fundamental agents of the transition: a territory *subject*, individual and agent. No peripheries, suburbs, or outskirts, no marginal, dependent, servant territories, but equally livable urban rural situations.



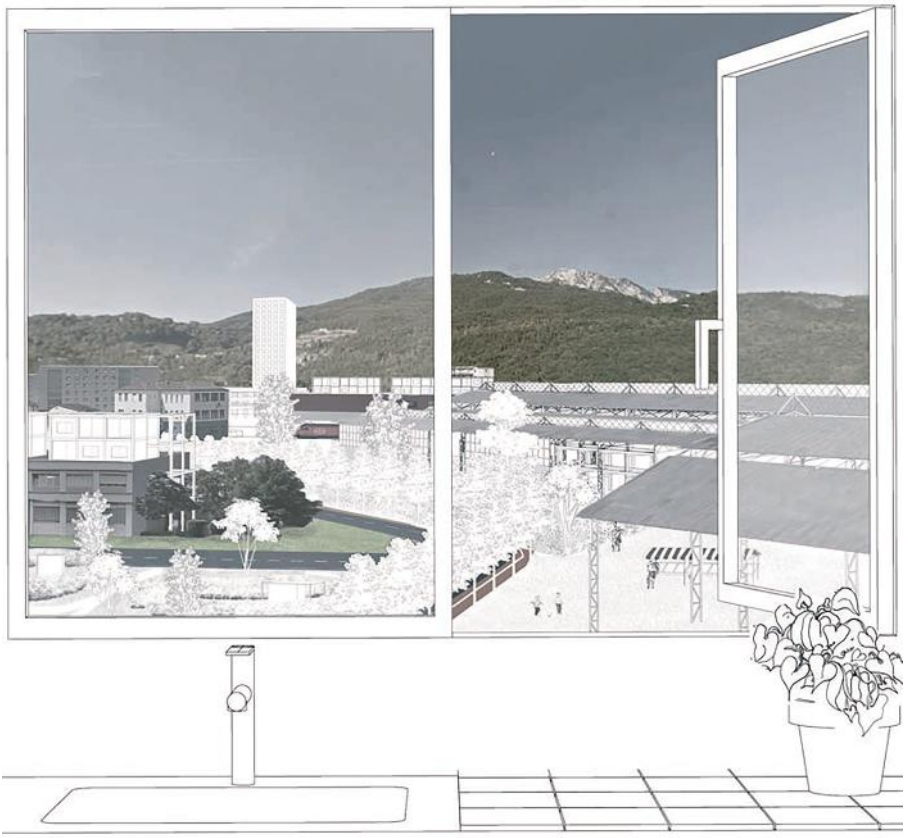


The Sambre park. b. Sambreville, a city of 50,000 inhabitants: extended centralities, diffuse centralities, micro-centralities. c. The city of the Sambre: opening up new life cycles. Val de Sambre, Territorial project in Sambreville and integrated redeployment plan for the Val de Sambre (municipalities of Sambreville and Jemeppe-sur-Sambre), StudioPaolaViganò with Idea Consult (2017-2018)

A city park in Wallonia. b. A city with a civic constellation. c. An agile city with multiple, resilient economies. La Louvière: City project and Vision 2050. StudioPaolaViganò with IDEA Consult and ICEED. Elaboration of the City Project for La Louvière (2018-2021)

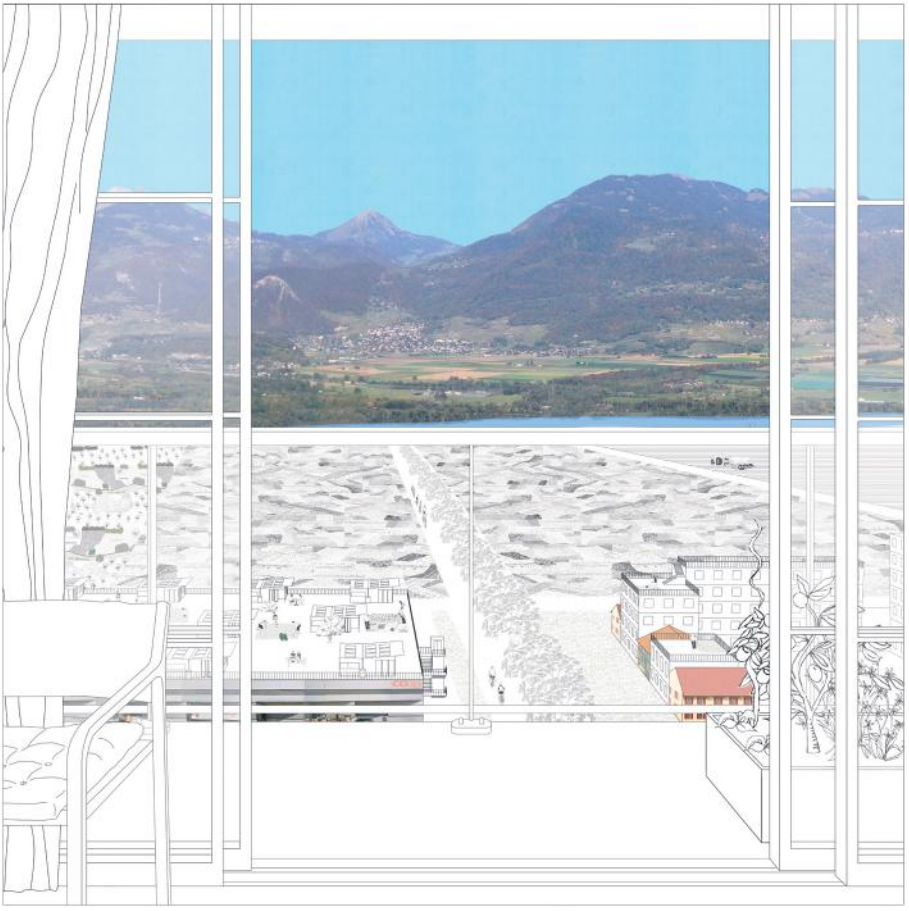


Optimising the type of farming according to the soil. Rethinking the alpine city-territory. Urban Design and Urban Theory, Studio BA5&6 ALPS, 2014-2015, Prof. Paola Viganò – students: M. Boily, C. Cattin, F. Chase, T. Choun, L. Donnet, K. Epiney, C. Frankhauser, E. Julien, J. Salamin, P.A. Terrier, D. Youssef. Now in Cavalieri, C., Viganò, P. (eds) (2020). The Horizontal Metropolis. A Radical Project. Zurich: Park Books



Monthey - Living in the Rhône Park. Agro-urbanity along the Stockalper. Urban Design and Urban Theory, Studio BA5&6, Fall semester 2017, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle – students: Broggini Federico, Benavides Diego, Gautier Christophe, Herrli Noé, Lapicorey Matthieu, Waller Noé

Adaptation, Transformation, Densification of a mixed-use platform in the Chablais. Agro-urbanity along the Stockalper. Urban Design and Urban Theory, Studio BA5&6, Fall semester 2017, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle – students: Broggini Federico, Benavides Diego, Gautier Christophe, Herrli Noé, Lapicorey Matthieu, Waller Noé



A room with a view, Chablais. Agro-urbanity along the Stockalper. Urban Design and Urban Theory, Studio BA5&6, Fall semester 2017, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle – students: Broggini Federico, Benavides Diego, Gautier Christophe, Herrli Noé, Lapicorey Matthieu, Waller Noé

The Viaison valley in 2050: weak structures. Re-road: The Viaison valley. Urban Design and Urban Theory, Studio BA5&6, Spring semester 2018, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle – students: Jennifer Kessler, Joanne Hélène Nussbaum, Justine Marie Estoppey, Valeria Molinari, Leonie Charlotte Wagner, Zoe Köbrunner

[a]

[b]

[c]

[d]

[e]

[f]

[g]

[h]

[i]

[j]

[k]

[a] Model of the centre of La Muraz in 2050. [b] Sequence of the project, from the view over the Valley to an extension, via the new park, its bowls pitch, the communal vegetable garden and the mobility point. [c] Mobility point with bus stop, fountain, bicycle parking spaces and facilities for recharging the batteries of bicycles and electric cars. [d] Wooden extension to an existing building while preserving the promenade leading to the rest of the village upstream. [e] Communal kitchen garden laid out in the topography of the site, near the mobility point and the redesigned departmental road. [f] A building erected on a former car park, overlooking the new village park, with a public ground floor and outdoor walkway. [g] Artisanal brewery housed in an old residential building with a terrace set down the street, at the interface with the town hall square. [h] The church esplanade and its new vines overlooking the brand new village square and its public programmes. [i] Timber elevation of an existing building, levelling the site to provide a public terrace and creating a cultural café. [j] Bike workshop in an old house directly on the main road, a new destination for cyclists. [k] The town hall placette with its large tree and new vegetation, a former area completely covered in asphalt. Re-road: The Viaison valley. Urban Design and Urban Theory, Studio BA5&6, Spring semester 2018, SAR-EPFL. Prof. Paola Viganò, Roberto Sega, Antoine Vialle – students: Jennifer Kessler, Joanne Hélène Nussbaum, Justine Marie Estoppey, Valeria Molinari, Leonie Charlotte Wagner, Zoe Köbrunner.

Conclusions

At the center of the work carried out with students in different contexts are the consequences that a revised value system, a new gaze, and an urbanism of inclusion can produce on the way we design. The transition engages new life cycles and an intense "reparative project."[12] Urbanism matured in the modern era, oriented towards transformation and growth, through the destruction of cultures and living and non-living systems. The rhetorical question in the title "Are we ready for the transition?" highlights the need for a fundamental design shift, which is particularly urgent today. The transformation of our tools, view, and value system is just as important as adapting to climate change. We must rethink the idea of design itself and the meaning of what a project is and can do.

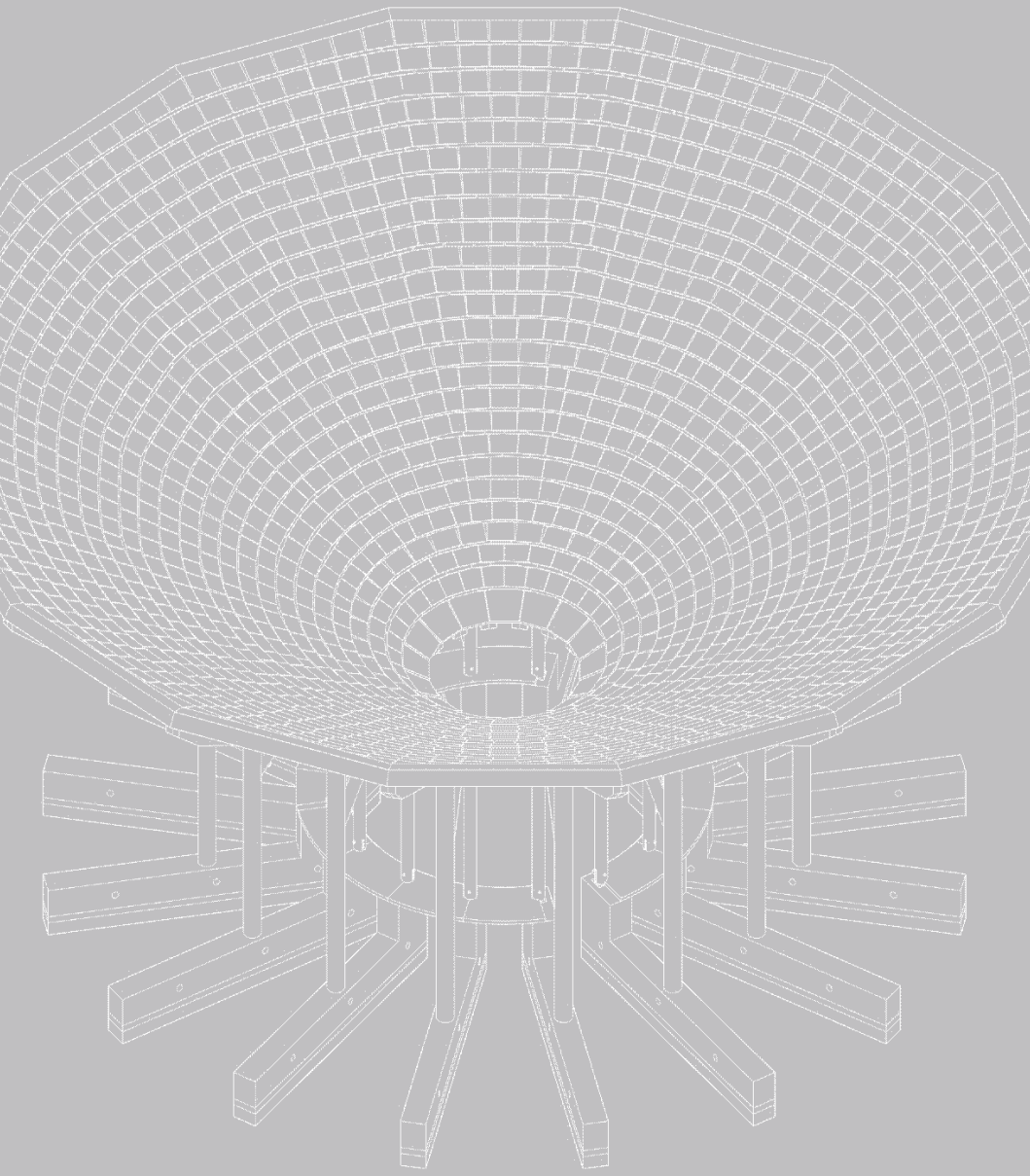
12 Extending the hypothesis of constructive repair formulated by Táíwò, Olúf-mi, O. (2022).

Rather than

Making these connections visible by analyzing, reappraising, and giving new meaning to everyday things. Going back to the act of design, in an almost primal sense.

Position

Anja Fröhlich, Martin Fröhlich



Rather than[1]

Anja Fröhlich, Martin Fröhlich

Every building is a sum of answers to the challenges of its time. While often economic aspects predominate, this sum should also include responses to changes in society, to resources, to beauty, and the building's role with respect to the environment. Which questions will prevail in the future, and the extent to which these are already addressed by successful architecture from the past, is the subject of discourse on building culture. Political shifts, global climate change, and the presence of digital spaces challenge us to recalibrate our ways of working and thinking in architectural practice and academic teaching. We now live in an age in which we produce more information than in-formed objects,[2] and we use

1 Title of the exhibition on the work of Studio EAST held as part of the Biennale Svizzera del Territorio in Lugano, 2020.

2 See also Vilém Flusser, "Die Informationsgesellschaft Phantom oder Realität" [Original tonaufnahme 1991]. In it, Flusser explains his point of view on today's society in which more value is placed on the production of information than on the production of informed objects. In Flusser's view, we are today striving towards a cycle in which we try to regard material as malleable matter in order to then inscribe an in-formation into it. As a result, we create a product that is doomed to lose its in-formation. In the process of decay, various waste scientists, such as ecologists and archaeologists, are engaged with the aim of questioning the product for its cultural value or accelerating its loss of information. In doing so, he shows us that until the Industrial Revolution, the in-formative act was borne by the artisanal search for an ideal form. The in-formation took place in the interplay between knowledge, practice (craft), and the available material. Since the Industrial Revolution, the inscription of information has been taken over by machines. They do not create the form, but imprint it by means of a tool, a stamp. Consequently, matter is seen more as a plastic material and all research follows this trend. Today, every designer is able to create an endless number of forms, in-formations. In the dilemma of technical production, not only can any available material be in-formed until it is completely consumed, but with digitalization and AI (artificial intelligence), the creation of forms is itself becoming a mass product without having to be directly inscribed in matter. They remain immaterial and detach themselves from real existence.

this to simulate conceptual models and explore speculative ideas by visualizing them in advance.

As a result, we are constantly generating new, previously unknown forms from information in these digital worlds. Ultimately, however, it is our built practice that will show whether we are really advancing a BUILDING CULTURE that is aware of its past while responsibly addressing the challenges of the future.[3]

Modern-day design work is informed by a multitude of concerns that goes far beyond formfinding. Our work tries to make these connections visible by analyzing, reappraising, and giving new meaning to everyday things. In philosophy, this principle is known as phenomenological studies. The theories of media philosopher Vilém Flusser link the views of philosophers from Antiquity and the Enlightenment with economics and political science of the capital age and new concepts from the information age. His analytical deliberations have helped designers look anew at the known past and to ask questions for tomorrow.

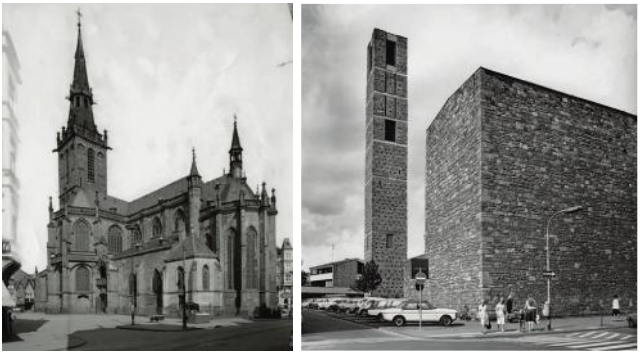
Current architectural discourse raises numerous questions, especially concerning its role in the ecological crisis. A further important aspect is our understanding of form, material, and function. In an essay entitled "Canes," first published in 1972 and contained in the posthumously published collection of essays "Dinge und Undinge" from 1993, Flusser invites the reader to accompany him on a walk through a forest. In this seemingly simple act, he shows us the diversity of different possible cultural perspectives and goes on to explore a primeval act of design. Flusser describes four possible ways of walking in a forest: lost in thought, observing the forest, enjoying the forest, and looking for the way home. For each, he examines the walker's relationship to the forest, in turn holding up a mirror to how we look at the world. If we follow, for a moment, Flusser's rather abstract classification, we oscillate between three different ways of being. When "lost in thought," we disregard the forest and ourselves, so lost are we in our thoughts. In "observing the forest," we consider the forest as a scientific model of thought, and when "enjoying the forest," we try to open ourselves to it and become part of it. In "looking for the way home," Flusser describes how the forest shifts to become a repository of potential material resources:

Walking up a forest path, we stop to look around for a branch we could use as a walking stick. In the moment in which we decide to search for a potential stick, our perception of the forest changes

3 Until the Industrial Revolution, architecture in the Vitruvian sense was described as "utilitas, venustas, firmitas." In the perfection of handicraft production, we developed a canon of local characteristics and forms. With the mechanization of the design and construction processes, "utilitas" suddenly became the focus of building styles. Architecture began to be consumed just like the products of the industrial manufacturing machine. The dream of the circular economy is currently determined by melting everything down again after wear and tear in order to have it available again for new products. The variety of possibilities of architectural freedom of design is fed by the global world of images. They determine our dreams of "venustas." Behind everything, the "firmitas" gets lost. Today we are faced with the task of seeing all three as one again. See also *Firmitas - in search of regaining durability in architecture*, Hartmut Frank in AFF architekten, Quart Verlag, S.8-13.

completely, as does the appearance of the forest itself. This is an example of how the appearance of things changes depending on how we look at them.[4]

In the moment one's thoughts turn to having a stick to aid walking, the forest becomes a collection of branches with potential for use as a stick. We look around for a form – a ROD – in the available material – WOOD – to serve a function – A WALKING STICK; in short, for wood in the form of a walking stick. As our means of production are limited, and the forest has ample wood, we map the idea of the stick to the available surrounding resources, rather than setting in motion the machinery of design and production to manifest a formal idea. While this also springs from not having such facilities to hand, the basic intention is to discover a form in what already exists that can correspond to a desired use. This, almost primeval act of design[5] – in which one sees more in things than they themselves at first appear, and then works with the permanence of their form – should also be the focus of architecture. The same applies to investing them with flexible programmatic uses. A stick, for example, can be used to point, to support, or to defend oneself.



Düren St. Annen Church before 1942 and after 1956. The neo-gothic church was destroyed in the second world war and rebuild by Rudolf Schwarz from 1951–56. The architect has recomposed the form while retaining the function and the existing material. Source: https://kulturbetrieb.dueren.de/index.php?id=7169

4 Flusser, Vilém (1993): "Stöcke", In Krüger, Michael (ed.) *Vilém Flusser Dinge und Undinge*, München Wien, p. 63.

5 To briefly recap, there are three primary types of processes in the production of forms: with tools and labor, as was typical of the pre-industrial age; with the help of machinery and automation, which is a combination of tools and labor that inscribes the form in material and arose in the industrial age; and with mapping images and experiences to existing things, which has been common practice since prehistory. The latter is of particular interest here, not just because it is the oldest productive act of humans to see new potential in existing things, but also because it draws on available resources – i.e., existing or created things – as a basis for new creation. Here resources are not seen as amorphous raw materials from which anything can be formed but rather as things that already exist.

While some may feel this restricts their creativity and constrains the search for innovation, Flusser points out in "Form and Material" that:

> "Forms are neither discoveries nor inventions, neither Platonic Ideas nor fictions, but containers cobbled together for phenomena ('models')."

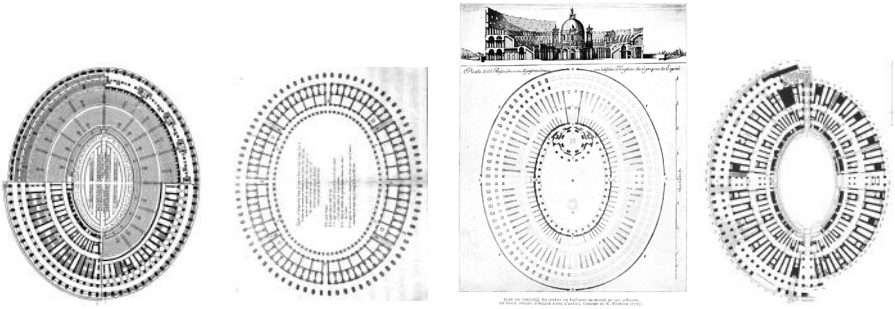
Rather than being constantly preoccupied with inventing new forms for new programs in different materials as answers to the challenges of the day, architecture should today, more than ever, concern itself with recognizing the adaptability of the individual aspects of form, material, and program. When any form can be reproduced in any material, and any program made to fit any form, how we view our built environment changes. Every form is made of a material, but we recognize the material only through the appearance of the form.[6] Thus, wood is made into a beam, and a beam into a roof truss; clay is made into a brick, and a brick into part of a wall. Each of these steps is a cultural act that inscribes information and gives form to a material. The more detailed this information is, the more precise its use and the more constrained its subsequent use. In the roof truss, it is hard to make out the beam that could also have served as a floor joist. This applies not just for building elements: in an oval, we are more likely to see an arena or stadium than a block of flats; in a cross shape, we see a church and less a factory; in a circle, a round hut rather than a school. Over time, cultural patterns have emerged in which forms have fused with programs and sometimes also irrevocably with materials. We have imbued them with meaning, interwoven them with religious and political views, and bound them into a multitude of bizarre combinations of materials. We have, in essence, woven them into a web of CODES. Our generation now faces the challenge of DECODING. The goal here could be a return to an architectural culture of converting, repurposing, and extending what already exists. Vilém Flusser reminds us in the search for the way home "...the seeker, when comparing own experience against theory, sees in the field of theory not only models of the 'map' kind, that is, models of knowledge, but also models of the 'walking stick' kind, that is, models of behavior." From this follows that theory alone is not enough; we must also act. Later generations will judge from our architecture whether we have asked the right questions and come up with the right answers.

To return to our stroll through the forest with Flusser, our search for a walking stick entails comparing the form of every branch against our programmatic notion of a walking stick. However, in the act of breaking a branch, as Flusser explains, we also betray the shape of the stick.[7] As the broken branch can only be an image of the notion of a walking stick, every broken branch – and for that matter every handcrafted or industrially-produced walking stick – must bring us a step closer to the ideal of a walking stick. Each stick is thus a model of our idea. Given that the words idea

6 See Exempels on Coloseum Rome, Chapel Ronchamp by Corbusier and Chruch St. Annen Düren by Rudof Schwarz.

7 Ibid.

and ideal stem from the same root, and that our prevailing social understanding of culture is based on striving for ideals, we will break many branches over the course of our existence in order to test them for their usefulness as walking sticks. If necessary, until there is no forest left.



72-80
PLAN OF FLAVIAN AMPHITHEATER
ROME

1590
SIXTUS V
PLAN OF A TEXTILE FACTORY
WITH HOUSING FOR ITS
WORKERS

1723
CARLOS FONTANA
PLAN OF A CHURCH DESIGN IN
THE ARENA OF THE
COLOSSEUM

2000
PLAN OF THE RUIN OF THE
COLOSSEUM

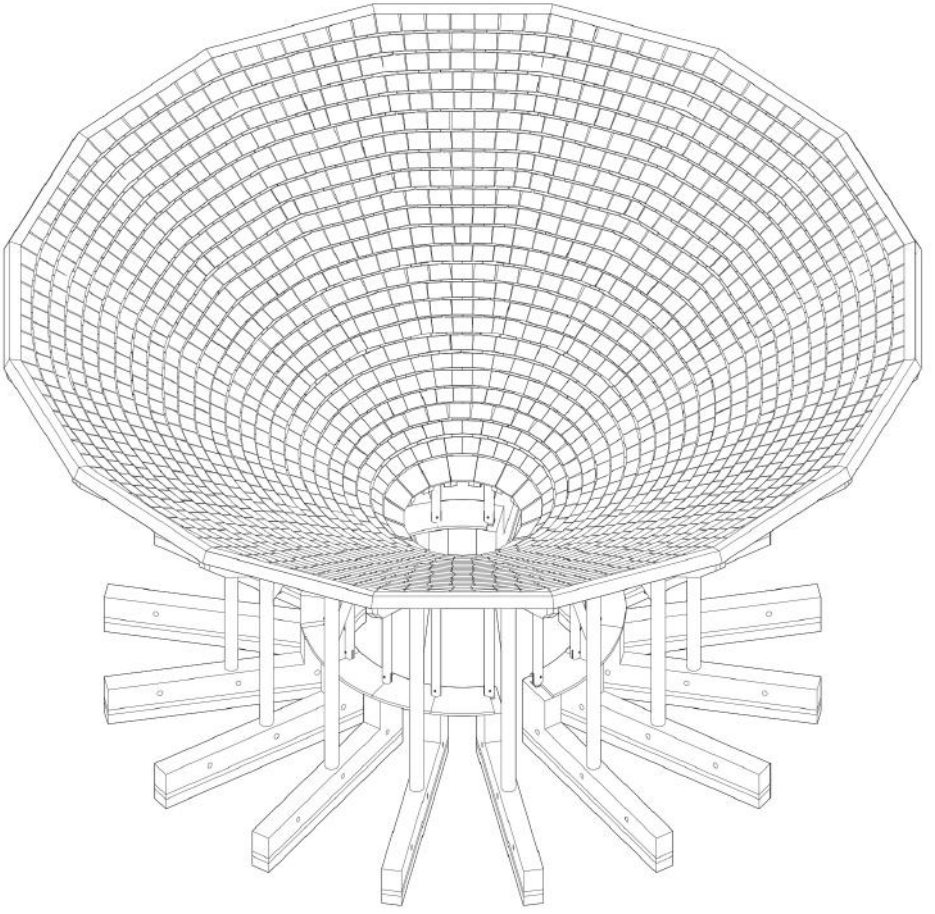
Four phases of the same oval building: 72-80 plan of the Flavian amphitheater; 1590 Sixtus V, plan of a textile factory with residential building; 1723 carlos fontana, plan of a church building; 2000 plan of the listed ruins. Source: collection of plans, EAST

Every stick is thus a model, a transient objectification. If we remain true to these cultural roots, we will likewise build many houses, inhabit them, and tear them down again in our aspiration to come a little closer to the ideal container for habitation that can meet changing programmatic demands or be built with the available materials. At the same time, following this cultural paradigm means we will be incapable of living sustainably on the planet.

When the hut on the Fichtelberg was rebuilt, the Ruinous structure served as the formwork for the new hut. The aim was to transform a low-cost prefabricated house into robust architecture with the same function. AFF Architects, Berlin/Lausanne. Source: AFF / © AFF Hans Christian Schink

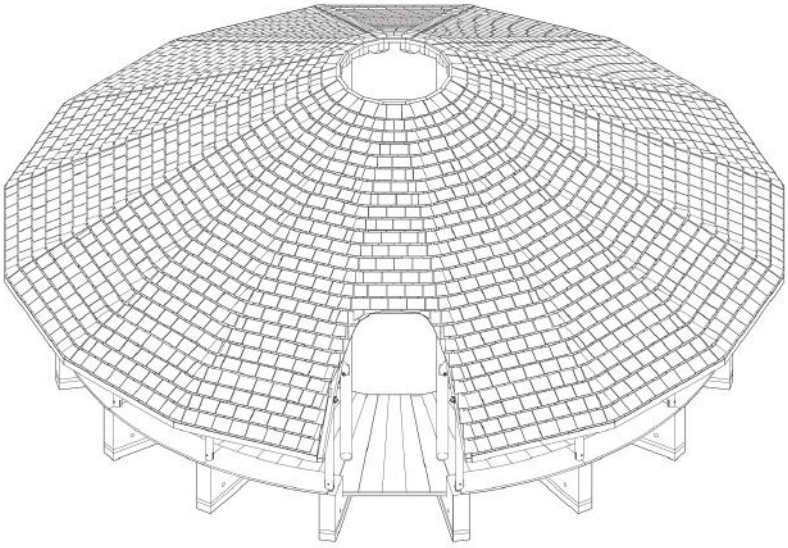
Inherent to the notion of the ideal is the fact that it can never be achieved, and even the apparent moment of having reached it is short-lived. Ideals were originally formulated by religious scholars; now they are defined by elected politicians and scientists. In today's democracies, each of us must realize that we are not just responsible for our own view of ideals, and how we live with models. We must constantly and actively question our own behavior, that of others, and our relation to the environment. Today, more than ever, design must also question its standpoint with respect to the notion of the ideal. A vital aspect of building culture is how it represents values. In our work, we are therefore exploring methods in which architecture can emerge as a collective idea, through communal processes of negotiation and agreement.

SITE A



Every design is informed by and compared against collective historical and contemporary knowledge. Territorial knowledge is as much part of the collective as it is a critique of the financial system. The processes this entails can be seen as a critique of programs and the need for them to be adaptable, of the re-use and adaptation of given or found forms, as well as of the need to employ readily procurable materials. Building culture must achieve a balance between the cognitive and the behavioral, challenging the individual as part of local society and of a global network to draw on and think in terms of models and in a resource-conserving way.

SITE B



In 2019, the EAST Chair launched a project to build an open-air classroom for teaching at the Lausanne/Servion Zoo. The construction elements used should remain dismantled and their function should be combinable into a new form

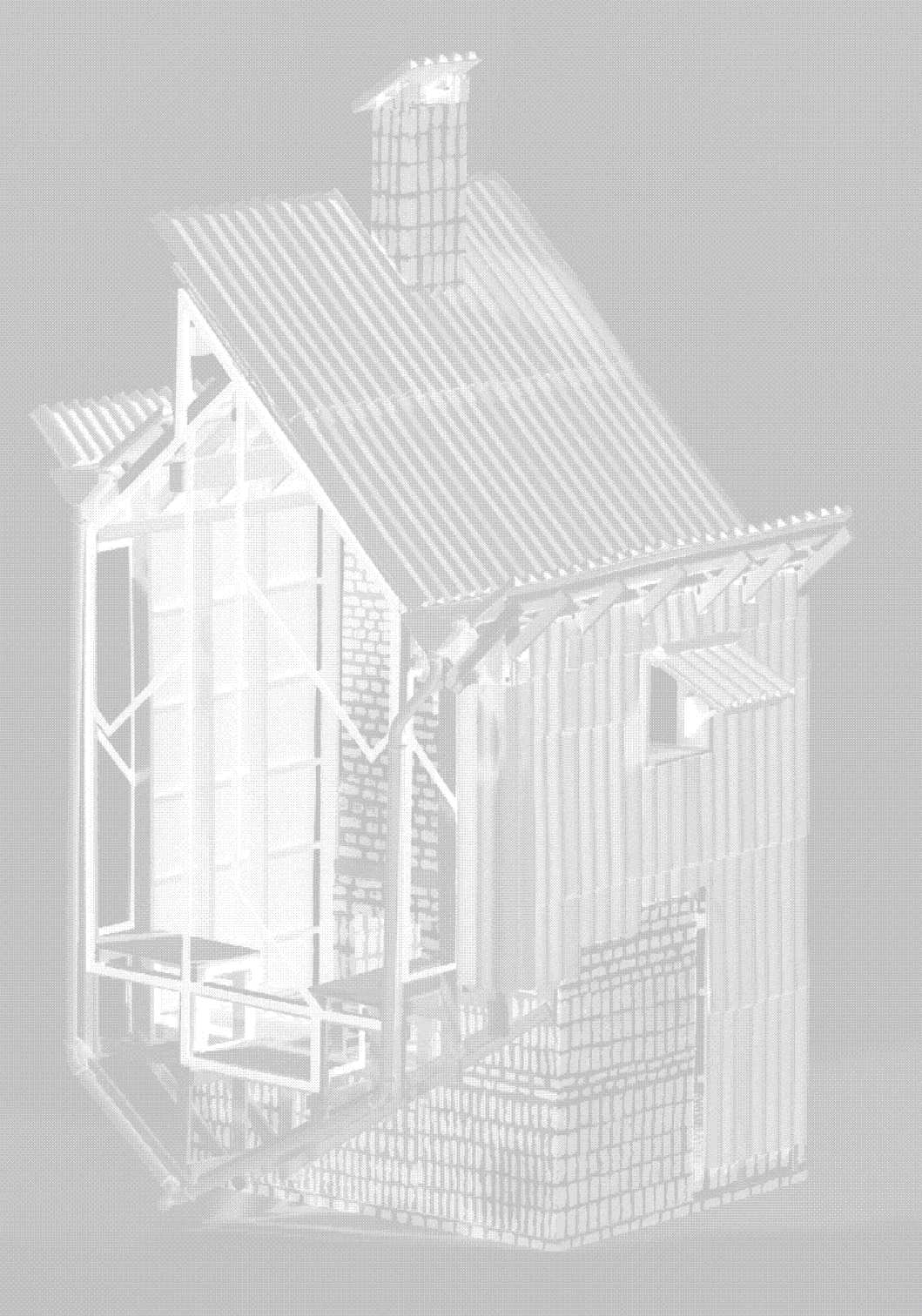
First build Form in 2019 by Students. Work in progress

First build Form in 2019 by Students. First Site / First Form. The deconstruction and rebuild is planned for Fall 2023

Use, space, and material

Language has its own character. The result is a free-for-all. Not everything was fixed; the process of making did its own work. The future as a time element from the outset.

Position Jo Taillieu



Use, space, and material
Jo Taillieu

Designing is about making choices. Choices that form a new whole. Choices that can have various impacts and origins. They are often socially determined but are also influenced by external factors. Some are compelling, such as a context, others are purely free to determine. But each time, they represent a starting point, an attitude, or a vision. Whether or not they are consistent, the author is the conductor. It is a special moment when the author lets go of the reins and hands over the steering wheel to other factors.

This text further explores the ways in which choices can be made. In particular, it looks for elements that could form the basis of a particular approach to which architecture might add value in the future. An architecture without the need for architecture but with the added value of architecture.

A number of examples, visions, approaches are put forward to explore what these approaches might be. Often fragments, aspects, or parts of a whole. But each time things from which the formation of a vision can be distilled. Without wanting to be complete, but in particular with the ambition to shy away from giving answers by asking questions.

The list concludes with work from Jo Taillieu's studio LIF (Laboratoire d'Imagination et de Fabrication) at EPFL Lausanne, Switzerland.

They are undergraduate works, investigations, never finished, but always an incredible whole where many elements always come together. Exploring material, space, use, scale, ... Even more so, they

deal with how these aspects come together and influence each other. Sometimes downright dominating, irritating. They are all masterpieces in terms of thinking. Not from the image, but from imaginative making. Not separate from the content but through the content they come towards a spatial coherence. A thinking about architecture in which the components count. Not an architecture from a programmed vision and transformed through translation into reality, but an architecture that is layered in its principle, that deals with the social, the ecological, the constructive as an obviousness, and not as an added separate value.

Finally, perhaps, the text is attempting to examine how architecture can continue to legitimize its continued existence. By doing more with less. Or doing less with more. By accepting and celebrating. By finding added value in every complexity. Not an architecture of reducing or minimizing, but one of giving opportunities to the unexpected!

Paris-Nord, 2023, a corner eliminated. Photographer: Jo Taillieu Architecten

The logic of things

Presumably an intervention to get rid of unwanted things that happen in a corner of an urban space. The corner is suddenly no longer there. No more cavity, no more cause, but an intervention originating from a necessity, with an image as a result. Not for the sake of the image, but the image is the result. And oh so beautiful. Self-contained and yet again part of the whole. Conceived from the making. The making first. The language the result. The color a choice, and yet again not. A new composition emerges, not sought but simply made. An extra ornament, without the search for it.

Flowershop, Malmö, Sweden, 1969, by Sigurd Lewerentz.
Photographer: Jo Taillieu Architecten

Giving the uncontrolled a chance

A simple flower shop at the entrance to a cemetery (Malmö Cemetery). Simple in its complexity and sophistication. A spacious building focused solely on selling flowers. Hitting the essence, but not refusing added value. And a technicality which is just as obvious. Light fittings working together like a puzzle, starting from the cable, the junction box, the light fitting, and the lamp. Naturally, the location of the lamps is determined in advance, but at the same time the aesthetics of the electrical materials are allowed to do their work. There are limits to the methods of connecting. The language lets itself be written. The language has its own character. The result is a free-for-all. Not everything was fixed; the process of making did its own work.

A construction site in Sri-Lanka, 2024, somewhere by the sea.
Photographer: Jo Taillieu Architecten

Graphics as a bonus

An unprecedented method of construction in Europe. Stacking bricks, changing layer by layer and staggered in direction. Always hidden away by finishing touches. The graphic image that arises on the walls is never the goal in itself. It is the consequence of the construction method. The method of construction creates opportunities. Possibly not exploited here but very useful to the good reader. Not a visual culture of reproducing a preconceived image, but a beauty.

St. Mark's Church, Stockholm, 1960, by Sigurd Lewerentz. Photographer: Jo Taillieu Architecten

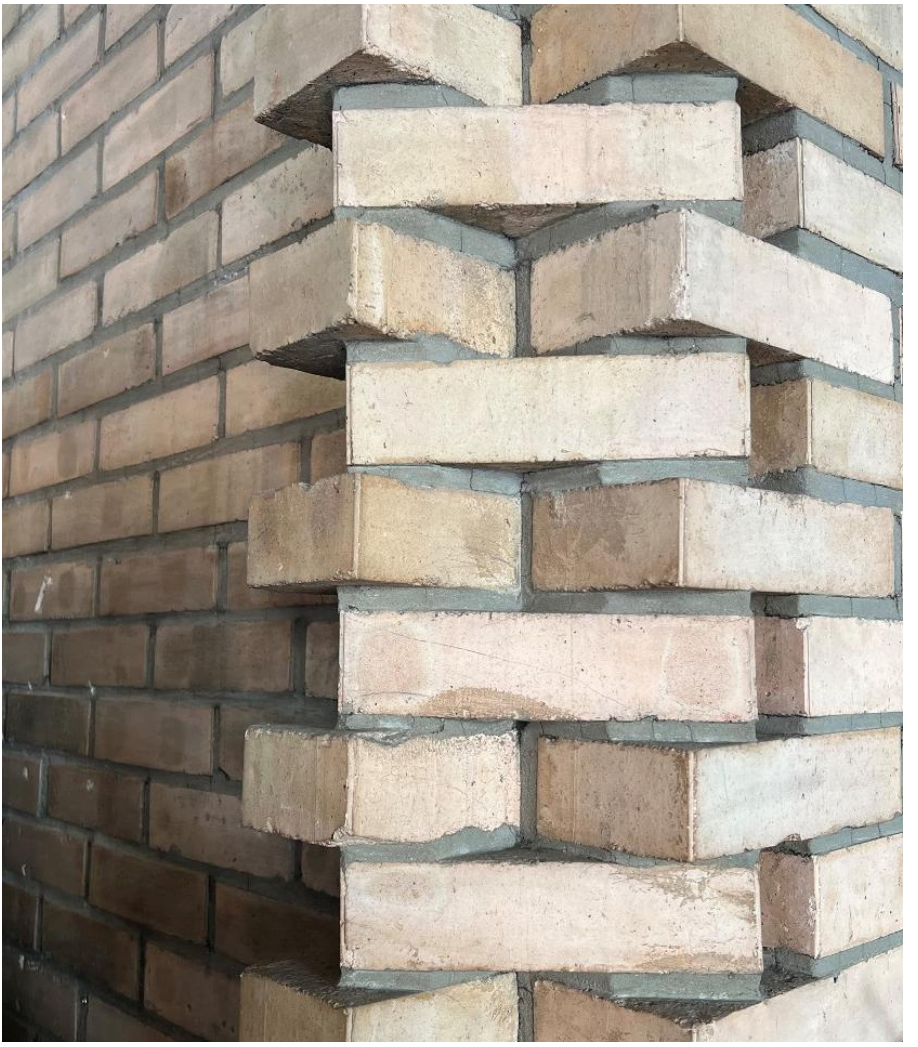
The mistake that is not a mistake

Tiles have a certain size, so does architecture itself. The union is not always a union. Or yet it is, by leaving both elements in their dignity. The tiles don't have to adapt. Neither does the wall. Materials should not be adapted in order to be able to bring them together. Confrontation without adaptation has its added value here.

A temporary wall in the project Spijk, Ghent, 2024, jo taillieu architecten.
Photographer: Jo Taillieu Architecten

The unconscious conscious!

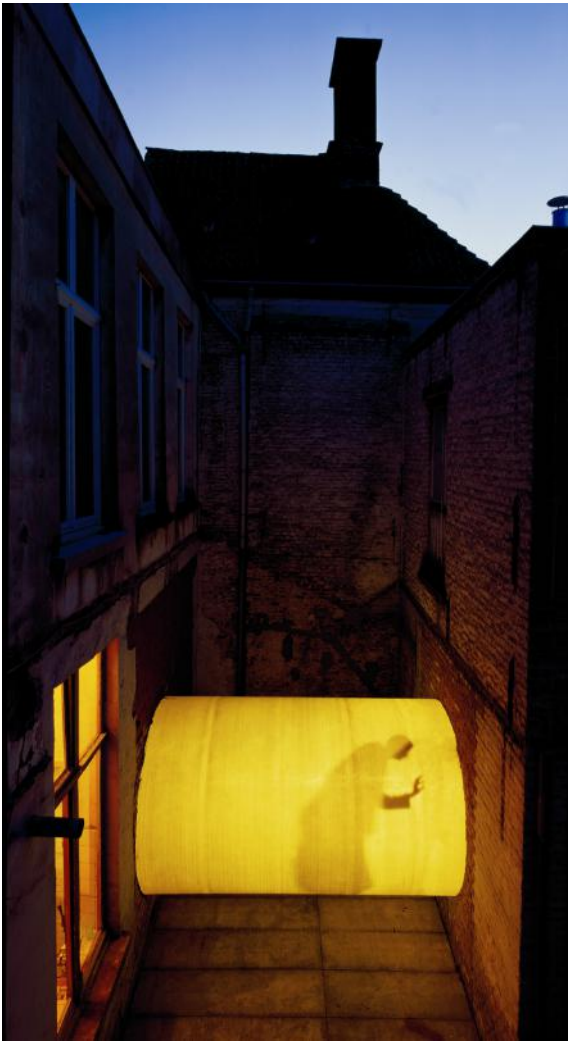
A wall as a barrier between inside and outside. A temporality to allow indoor construction work to continue in all weather conditions. A foil-like wall and door. A framework of wooden slats, a door with the same slats. Reinforced corners, a cross-bar in the middle, the lock adding to the strength of the cross-bar. A language of the unconscious, using available materials, slats for the stiles, plywood for the corners. A found aesthetic with the material as a guide.



A corner in the Ferantov vrt building by architect Edvard Ravnikar in Ljubliana, 1964-1975. Photographer: Jo Taillieu Architecten

Ornament without the ornament

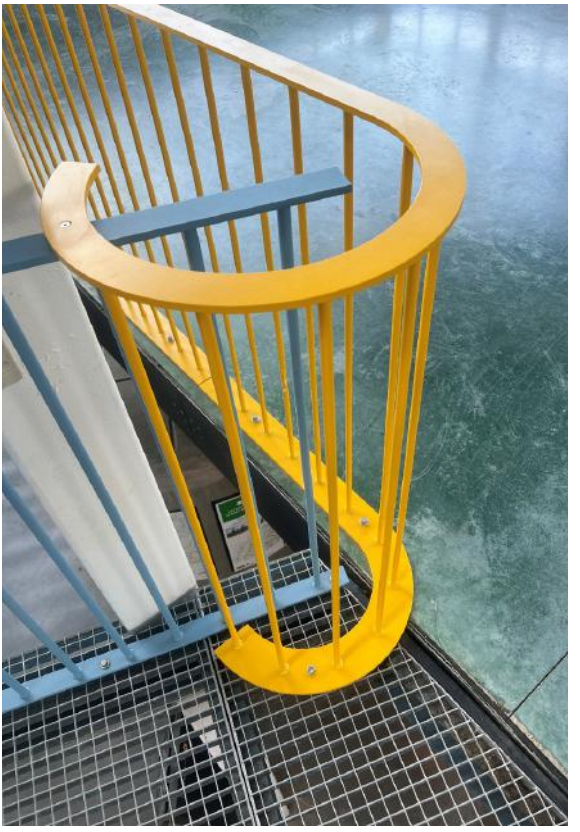
Reversing the corner by making the corner itself. The brick is placed transversely to the corner. In that way the sharp corner is eliminated. It has lost its fragility. The extra detail that gives scale to the large building. The scales are placed opposite each other. Fragility carried out with the existing.



The connection between two buildings. The project Verzameld Werk, Ghent, 2000, jo taillieu architecten. Photographer: © Jeroen Musch

The not imagining of what cannot be imagined

An example of dealing with the idea that a limited budget opens the door to sharp thinking. Creating a floor, a wall, a roof, a window, a bridge through one object. A machine product, made for other purposes, and here the solution to all the requested functionalities. The shape does not matter for architecture, all the more for the strength. Sustainability not from materialization but from cautiously dealing with resources.



Paddenbroek, jo taillieu architecten. Photographer: Jo Taillieu Architecten

Connecting without merging

One balustrade after another. Within the project Paddenbroek, Gooik, 2021, jo taillieu architecten, the yellow balustrade had to be installed when the blue balustrade already existed. Strength is found through the rounding, which in turn has its meaning in safety. Just at slightly different heights to connect. In symbiosis with each other and dismantlable if necessary. Or thinking of making but also of dismantling. The distant future already taken into account.

Verzameld Werk, Ghent, 2000, jo taillieu architecten, a gallery for applied arts.
Photographer: © Jeroen Musch

The erasing of authorship

Three doors in an entrance space. One out of the three doors has to get the upper hand, without having to close the other two off. Two doors reversed. The closed part at the bottom suddenly blocks the view. The plain door becomes the obvious door. The lock is placed exactly in the middle. Everything remains in working condition. Habit takes a turn. Architecture as a consequence of redefining use. Or rather the re-coding of obviousness. The architect was there and is gone again by putting use on the line without adding a single element. Nothing except habits give a sign of change.

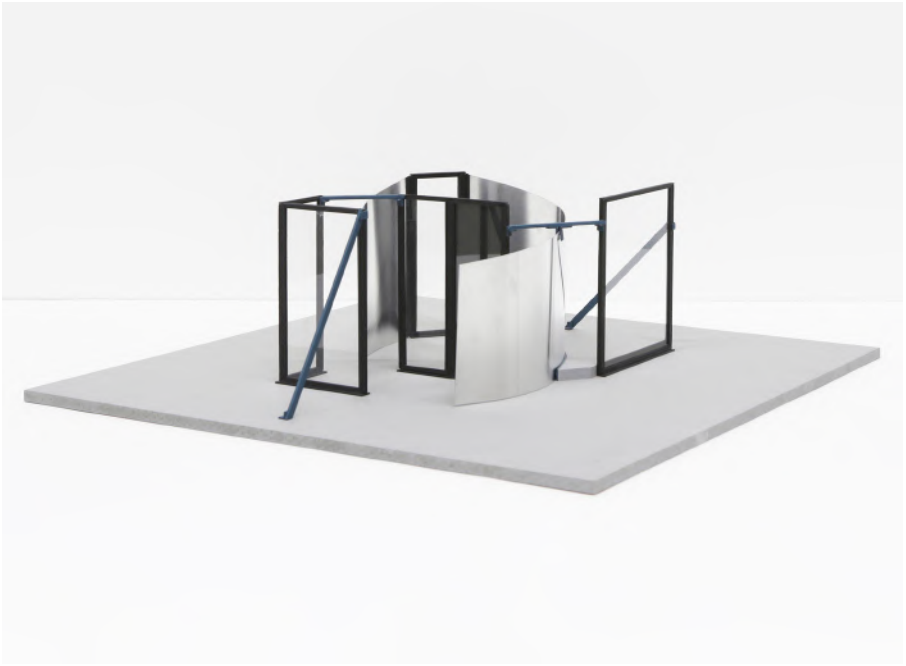
A shelter, Belgium, 2021, jo taillieu architecten. Photographer: © Filip Dujardin

Architecture as engineer-ship

The project originated from the need for a shelter in a forest. The need for a place to shield two cars from the damage of falling branches and acorns. A strange object, or not really. A thick column with the thickness of the trees around it and a mountain of concrete on top. A table as formwork, concrete frayed out from the center towards the edges. More mass in the middle, and thin at the edges until the concrete starts to crumble. The canopy barely two meters above the ground, executed in washed-out concrete as if it were a pebble field. The world upside down.

Many things come together. Lots of concrete on top of the column, the cantilever thinner to have less mass. The top is rough and unfinished. Nature will take over. The concrete will resist but transform. The choice of using only one material comes from its logic. It was the only right choice, so it was actually not a real choice, but the result. At the same time the robust through time and the decay as added value. The future as a time element from the outset.

[a]



[b]


[c]


[d]


[e]


[f]


[g]


[h]


[i]


[j]


[k]


[l]

[a] Céline Gruffel.[b] Victor Kleyr [c] Federico Reichel [d] Lily Blanchard [e] Briana Prelicz [f] Alice Dareys [g] Inès Branet [h] François-Xavier Pfyffer Von Altishofen [i] Basile Immer [j] Agathe Ducos [k] Raúl Hansra [l] Léo Duyck. Works from Jo Taillieu's studio LIF (Laboratoire d'Imagination et de Fabrication) at EPFL Lausanne, Switzerland

What architecture won't be

Essay

Valentin Bourdon

What architecture won't be

Valentin Bourdon

The affirmation of a European culture of the built environment comes at the beginning of the twenty-first century, at a particular moment in the trajectory of the discipline of architecture, which, as experimented in the past,[1] can be described as a state of transition. In the early 1960s, Constantinos Doxiadis, for very different reasons and with very different concerns, already identified such a situation of an intermediate state, similar in every respect in its disciplinary implications. In *Architecture in Transition* (1963), he points to both a significant gap between a tradition of learning and the reality of the problems encountered in practice, and an insufficient progress in the urban production system in the face of the rapidity of modern changes and opportunities. He describes the acceleration of construction needs in a context of demographic growth, massive industrialization and globalization, and the difficulty for the means of architectural design to come to fruition in the light of new distributions of issues; the intensity of the change disrupting the priorities and habits of teaching and norms; the "for whom" and the "why" taking over from the "how" for a time; the open hand to other disciplines pressing towards new articulations. Sixty years on, the status of architecture has not simply evolved: it is facing new situations of rupture in relation to previous mechanisms of successive legitimization. It is being thrown into a new tight corner at high speed, confronted simultaneously with the challenges of the post-carbon

1 See Henri-Robert Von der Mühll (1973).

era, climate change adaptation, expectations of decolonization and inclusivity, advances in digital technology and artificial intelligence. These new conditions are defining so many of the issues and themes that architecture feeds on, that it confronts, or that can bring it into a renewed crisis.[2] Things are moving fast, and popular perceptions are adapting too. Among other aspects, the personalization of the figure of the architect is once again called into question. The act of drawing is disrupted by concerns about technical legitimacy, objective impact, and spatial justice. The possibility of a composed projection of the spatial, the living, and the material is betrayed by the primacy of seemingly irreconcilable necessities. It is on this shifting terrain, and in contact with other established fields, that architecture is today recomposing its area of influence, its levers of action, and the prospects for its own development.

These concerns are not exclusive to the discipline of architecture, and they certainly affect the collective culture of the built environment, just as the recent emergence of Baulkultur is contributing to shaking up the most disciplined lines of architecture. From this point of view, it is surprising to realize how much the relationship between the culture of the built environment, as it has developed in Europe in recent years, and the discipline that is probably still most relevant to it, is so implicit or still poorly defined. Is there such an obvious understanding of the way in which Baukultur substitutes for architecture as a renewing culture in the scales and dimensions that concern them both? At what level of implication does the culture of the built environment pragmatically take precedence over the supplanted art of building? Are the state of the discipline and its epistemological fragilities sufficiently informed in the political establishment of the principle of building culture itself? Although these questions are generally ignored in order to emphasize the extra-disciplinary dimension of a broader interpretation of the built environment, they are nevertheless legitimate in terms of understanding the fundamental directions in which this early century is taking collective representations of intervention in space. Today, architecture – like many other fields in a position particularly predisposed to transition[3] – continues searching for new directions that its confrontation with the culture of the built environment might clarify, or even confirm or prioritize. In the same way that the field of culture continuously inflects the trajectories of that of art, the emergence of the notion of "culture of the built environment," far from being the institutionalization of a dispersal vector, might, on the contrary, be an opportunity for architecture, in the light of environmental concerns, to clarify its disciplinary contours, its fields of action, to identify its limits, and even to redefine itself in line with new ambitions. Architecture once

2 Antoine Picon's (1998) definition of architecture as the art of the interface emphasizes an intrinsic vulnerability that is also generative.

3 The particularities of architecture as a "quasi-discipline," identified by Sylvain Malfroy (2001) on the basis of Stephen Edelston Toulmin's classification (1972), highlight its predisposition to such orientations.

again being revalued. In such a perspective, Baukultur coupled with the culture of Transition could reposition the field in relation to its own capacities to shape beyond the environment: interactions, customs, rules, as well as relationships to the living, to the world, or to one's own existence. From an epistemological point of view, the confrontation between these two cultures can also be seen as an opportunity for architecture to clarify its position with regard to the state of second nature, where the field generated by practice assumes its more institutionalized anthropocentric logics.[4] Such a point challenges architecture even more than the wider culture of the built environment, which also integrates the effects of natural action on the inhabited territory. In a future strongly conditioned by natural parameters, it quickly raises questions about the scope and becoming of architecture. What prospects do these two cultures offer for the future of the discipline? How far will the culture of the built environment and that of socio-ecological ambition push the most deeply rooted architectural ambitions? Such questions lead to a distinction between what the field might include in terms of knowledge, tools, and reasons, from what architecture (probably) won't be. What will architecture no longer – or not – define in the future?[5] From this introspective stage, as prudent as it is forward-looking, could emerge the most expansive conditions for a possible revaluation: of architecture and its socio-political capacities.

State and rules of the art

Baukultur is first and foremost a challenge to architecture in terms of its increased visibility and assertive content. The affirmation of such unity – and political unity at that – around a given principle in the field of planning is, in any case, not so common in European history. Trends and practices may well become uniform, and recurrences may multiply. But decisions to adhere collectively to such a unifying principle are much rarer. Modernism gave us the founding examples of the Bauhaus and the CIAM, whose charters and manifestos were backed by the growing support of an international avant-garde. Their products still reflect the recognition of crucial directions in the production of the built environment, the organization of its transformative forces and the value systems associated with it. The analogy between such meetings in the history of architecture and the Davos Declaration is exaggerated only in terms of the intentions it expresses, but it does not exclude the possibility of a new disciplinary benchmark yet to be seized. From this perspective, it is clear that neither bioclimatic, frugal, nor even vernacular architecture are limited to the challenges of the present; on the

4 In 2008, the Fourteenth International Philosophical Colloquium in Evian reported on the confrontations between the French, German, and English philosophical schools on this subject.

5 Such a question, arising from the confrontation between both architecture and the culture of the built environment and architecture and the culture of Transition, presents, in an updated and analogous way, a reformulation of the issues raised by Bernard Huet in his text "Architecture against the city" (1986).

contrary, they have a fundamental permanence in the way in which architecture has very gradually acquired its foundations. However, it is also necessary to recognize that the centuries that preceded us have taken us a long way from these architectural registers. They profoundly committed the production of architectural tools and reference systems to a designed, authored, and authoritative practice, motivated primarily by the exigencies of an exclusive anthropocentric functionalism and the priority fight against insalubrity. This dual orientation towards the defense of modern comfort and decency for the greatest number of people is not the only one that should attract our attention – many others need to be documented and developed – but it is the one that has probably most clearly colored the collective culture of architecture in the last century.[6] This commitment to the idea of progress, with which architecture is identified in many respects and with a variety of manifestations, does not fail to refer to and confirm the values of general interest that underpin it, and to which today's discourses on Baukultur also tend to cling. Since its Vitruvian definition, despite the military, colonial, or capitalist setbacks of its most controversial exploitations, and if for no other reason than its highly cultural dimension, architecture has, over the centuries, also acquired the character of a resource – or set of resources – with the value of a public good.[7] Among its most varied uses, repentant architecture could claim this utility in the future, in the face of a new ambition: still linked to human needs, but not exclusively so. Architecture as a reallocated resource won't be exclusionary.

Initially understood as an art form, it has more recently been emancipated and continues to assert itself as a social and collective component extended to the realms of territory, landscape and the everyday. In France, the year 1968 was highly symbolic of the break with the Beaux-Arts tradition in favor of a rediscovered openness to the broadest social realities that it could address.

While the shift from an art for the initiated to a culture for the masses cannot be summed up in a single administrative change in supervision or pedagogy, it does effectively illustrate the propensity of a discipline to find the widest possible conditions for making the most of it. Above all, the identification of such an orientation is a reminder of the extent to which architecture, even before it was recognized and named as such, manifested itself in ways that were much more tacit than those that theory, criticism or even survey have since taken on the task of informing. There was a time when architecture was simply spontaneous culture, in the sense of ethnic transmission, with no recognition of authorship, no awareness of the status of science, disciplinary frameworks or the values of theories. The approach to buildings was already a system, combining

6 See Karl Scheffler (1998) about the German ambitions of the *gross-stadt* in the twentieth century.

7 The universality of architectural appropriation is exacerbated by the regular rediscovery of earlier values, such as John Ruskin (1849) about the Gothic European tradition, or before him Eugène Viollet-le-Duc and his definition of architecture hailed by Aldo Rossi.

geographical features, economic contexts, and socio-cultural representations. It was probably even before architecture was theorized as a discipline that it best embraced the recent definitions attributed to the culture of the built environment, as a reflection at all scales and in all dimensions of society through and on the built environment. In the light of the socio-ecological transition, this dimension of total awareness invites the users of architecture as a set of intellectual resources to multiply their holdings and to be inclusive in weighing up interests in order to cope with the contemporary roughness of the world and its state of trivial wear and tear. Such a recovery of control over the systemic realities inherent in the transformation of places undoubtedly implies being less talkative, both in discourse and in form, and above all being more attentive to the potentials that remain and the vulnerabilities that increase. Architecture would then be neither presumptuous nor voluble.

Habits of action and sense of reaction

The hypothesis of a direct filiation between architecture and the culture of the built environment is useful, but reductive in several respects. The idea that the art of building simply precedes the culture of the built, in the sense of a causal relationship between the act of transformation and the result of values, firstly undermines the diachronic possibility of architectural thought. It feeds the related idea that architecture can only be carried out through projection and realization. But reading the past, redrawing, measuring, analyzing, comparing, even criticizing and evaluating, are in themselves manifestations of architecture, which could be all the more valued in a context of increasingly limited resources. The discipline also changes and regularly expands its fields of action in response to societal challenges. Today, the recognition of the qualities present in the existing built environment and the identification of its potential for transformation are becoming even more widely accepted standards of architectural activity than the act of building, beyond positions and specializations.[8] And what of the future, when the art of deconstruction becomes a recognized skill and a recognized work of architecture? The rise of conversion and reuse, and the increasingly debated principle of a moratorium on the artificialization of land and on new construction, only serve to confirm such tendencies, thus invalidating a misleading distinction between the art of building and the culture of the built. Nor can the culture of the built environment be reduced to the collective and normative reception of architecture, as one of the fields of knowledge that inform the relationship between humans and the territory, as well as its transformations under the effect of anthropic pressure. It is more than an extrapolated view of a given state of the existing environment. Baukultur is an awareness of what has gone before, but also a

8 See the two collective books by Christoph Grafe and Tim Rieniets (2020) and Jana Revedin (2022) respectively entitled "Umbaukultur: The Architecture of Altering" and "L'architecte et l'existant: Construire avec ce qui est déjà là."

demand for what is to come. It implies a broader view of architecture than the disciplinary one, without going as far as the prescriptive character traditionally associated with the rules of art.

In the wake of previous major societal developments involving changes in spatial norms and production systems, it is probably both more robust and more inspiring to think of architecture as a tool (with its accumulated uses over time) and the culture of the built environment as an evolving ambition, both of which constantly contribute to their mutual reformulation. These are, at least, the lines along which most of the principles theorized in architecture have been implemented, as vehicles for transformations forged in the light of ideological motives that are more or less shifting, distinct, or even contradictory. The banner of the Transition, as not only a political but also a methodological, technical, economic, and social imperative, intersects with and contains within itself a blurred multiplicity of these motives, which only the analysis of its practical modes of implementation could help to elude. The distinction between tool and ambition thus reinforces the role of means and their subordination to broad lines of reaction, facing environmental trends that even the most modest architectural practice can no longer ignore. The ambition of culture expressed today at the European level differs from the already performative state of knowledge and practices in the field of environmental transformation, whether natural or built, in that it is linked to oriented and explicit expectations: to maintain and ensure quality, but also to improve and move towards continuous improvement. With its clear focus on progress, it stands side by side with the resolutely positive nature that a dominant part of architectural thinking implies in its relationship, however biased or circumstantial, to the fundamental act of argued transformation. In such conditions of intrinsic partiality, the urge to take account of implicit quantitative and qualitative objectives will leave the practice of the discipline neither indifferent, neutral, nor satiated.

Carbon diet and humanspreading

In contrast to the more quantitative considerations that could – and already do – insidiously undermine the gains in comfort that domestic architecture has sought to achieve throughout the twentieth century, the quest for quality in the built environment, especially in its most intimate and private forms, could consent to certain negotiations. The renewed architectural responsibilities now focus on the minimum size of dwellings and the preservation of permeable, non-artificialized land. But this hunt for excesses does not preclude a response to the ever-present and asserted needs of the human condition, which is inevitably and politically massive in its environment. If its scope for the most collective impact possible is extended, through Baukultur and through its own legitimacy, architecture will once again have to address the embarrassing but salutary responsibility of the greatest number and of its critical dimensions. This

concern of architecture, or of architects, for the greatest number is now drawing particularly acrobatic conceptual lines, because we now know that the project of having given decency to the inhabited masses is now paying the price of past irreparable environmental sacrifices.[9] Such an observation, which is not fatal, does not exclude the possibility of other orientations, provided that there is a clear shift in the criteria that motivate and organize the main changes at work in terms of the habitability of the earth's surface, both constructed and biological. After more than a century of relentless struggle against the scourge of insalubrity, the fight against global warming and its effects is as disconcerting as it is new for architecture. Its orientation is quite different, seeing the quest for progress as being at odds with the search for alternatives that consume less energy, space, and mobility. It takes place on the even more prevalent front of transformation, that requires a renewed interest for the architectures as they are, in their concrete and constructive understanding, in what they could inspire, welcome, and become. In this context, the ability to read – in the architectural sense – the existing built environment is of particular interest and can only be enhanced in the education of future professionals. If today's climate crisis tends to make young generations of architects lose interest in the practice of designing and building – as was the case at the end of the late 1960s for political and ideological reasons by breaking with the main vehicles of international modernity – it is probably because the importance of reading what is already there has not yet been given the full legitimacy it deserves or the sufficient weight it should be given in educational programs.

This renewed interest in pre-existing built forms and in reading their renewed capacities is not completely new. On the contrary, it is an expression of a recurrent cycle of revaluation that episodically runs through the history and theory of architecture. The last time architectural discourse and tools made such a claim was in the 1980s, in Italy and then in France, when architectural literature and production were marked by a return to history and a return to the city, with the so-called typo-morphology school. A renewed interest in the city fabric as a powerful cultural sedimentation was inspiring a new way of addressing architectural design and the urban project. Redrawing the very character of buildings, their soul or aura, was a way to catch renewed collective meanings and imaginaries. The responsibility of numbers, which fully characterizes the heroic grasp of architectural modernism, is replaced by the heightened responsibility of memory and cultural belonging. Today, the view on constituted urban fabrics is returning to a more pragmatic angle, particularly from the quantitative point of view of grey energy and their carbon footprint. It goes through reality to find not so much metaphors or stylistic guidelines as physical

9 Raymond Unwin's book entitled "Nothing gained by overcrowding! How the garden city type of development may benefit both owner and occupier" (1912) sums up the risk of architecture abandoning itself to a quantitative response, and the need for a virtuous approach based on relationships between housing and open space.

and formal potentials for transformation, recycling, or distortion. Typo-morphological analysis was the most appropriate technical tool to respond to the need for rereading that characterized the 1980s. It could still prove its worth, or at least inspire the development of new, equally appropriate tools, this time around in the face of the renewed need for rereading that characterizes an architectural approach to the culture of the built environment in phase with the culture of Transition. Architecture won't be abstract, let alone under-equipped.

Optimism and responsibilities

The growing preoccupation with reducing the amount of living space per inhabitant profoundly challenges the positive self-assurance that architecture has gradually built up. It directly questions whether architectural ingenuity is still capable of generating a concern for space, generosity, and abundance, despite the vigilant and realistic filter of limitation and the need for new simplicities.[10] What the future of the discipline still has to assure its most feverish interpreters or its most skeptical commentators would then remain the promise of possible large-scale improvements, capable of continuing and renewing the trajectory inherited from a progressive thought of architecture. The assumed responsibility of memory coupled with that of the greatest number: this is a direction of prudent and well-considered sacrifices, of increasingly refined ethical dispositions, which promises architecture a demanding, engaging, and assertive orientation. In such a perspective, which keeps the discipline away from defeatism, architecture will be neither exclusive nor amnesiac.

These are definitely its main conditions, and perhaps even its most vulnerable ones.

10 Jacques Lucan's (2015) identification of architectures without rhetoric draws a historical perspective from such a position.

Open trajectories

Architecture still has to say

Related to the challenges of implementation, the preliminary means for action that we have inherited through education and shared representations have not yet been effective enough to provide a sufficient and appropriate response to the situation. We are convinced that such an accumulated delay is not a question of ill will. Clearly, the culture of the built environment upon which territorial planning is still based must evolve. However, behind the slowness with which practices have gradually reacted and begun to adapt over the last fifty years, the initiated evolution of technical knowledge and the required inventiveness of society also point to certain signs of hope and proactivity. The vitality of collective re-compositions of tools and methods leads us to believe that a disciplinary practice continues to be supported, and that it remains useful.

Space for Projects

We are concerned with leaving open the possibility of action, by imagination and foresight. Without ignoring the inherent violence of any transformation, the collective necessity, satisfaction, or even pleasure, that can be gained from certain alterations thus deserves to be preserved, if not extended. Although subject to ongoing requalification,

the terms of the project remain in our opinion those of a shared culture. We propose keeping the very idea of the project at the heart of a growing culture of the built environment. Abandoning it would mean letting contradictory forces collide in tragically overwhelming quantitative percolations. Rather than abandoning choices to the dilemmas of their measures, we think that prospective and qualitative positions still deserve to be taken. Space as an agent for change cannot be underestimated.

No Selection

We believe that a general adaptation of our built environment that does not revive with great resource-consuming plans calls for a wider attitude that can draw on all available means. In such a perspective, every situation deserves not only to be looked at but to be revalued: in the sense of recognizing the value, the potential, and the qualities of each situation, including the most ordinary or the most silent. For too long, attention has been focused on specific areas of tension and friction, in contrast to the need for openness in the attribution of the criteria, the apprehension of their values, and the recognition of their related scales. This is particularly true for the different forms of urbanization,

including the urban-rural conditions which are still waiting for attentive recognition, reuse, and reconditioning.

Universal Dignity

We are calling for a change towards widespread revalorization. Without neglecting the strategic points of architectural, urban, and territorial transformation, our shared culture should pay attention to the general quality of the environments rather than excessive polarizations that have been constituted in the past. The grounded categorization of territorial elements along rigid categorical lines has also rendered certain apprehensions and judgments more biased, which greater fluidity of styles or categories would allow to overcome. A more democratic and inclusive understanding of the reuse of buildings, infrastructures, landscapes, and the urban fabric represents, in our opinion, a prerequisite and a horizontal basis for the affirmation of an emancipatory culture of the built environment.

Poetic Pragmatism

We like to remember that a built environment is just that, an environment. Such an evident consideration is nevertheless useful for applying the first change in our view of the inherited built context. Just like any other environment,

the built one has its own logic and the extent of its modifications is ruled by our capacity to master –and understand– a given structure, material, architecture, or infrastructure, no matter its scale or its common identity and perception. Those "elements of clarity" arose from the selection that lays below every modification process, enlightened by an ability to detail the beauty of what is already there. The material availability that follows a process of selection provides a design challenge, but at the same time forces the design process to pay tribute to "survival objects," exerting a form of both aesthetic and pragmatism.

Right to Obsolescence

Everything gets old: any culture confronts the notion of time, and the strategies shaped in relation to it frequently define the culture itself. In western civilizations, Modernity has contributed to erasing any form of decay from its cultural realm, producing considerably biased expectations of the durability of architecture and infrastructures. As a radical change of perspective, we propose considering obsolescence not as an inevitable process but instead as a cultural right whose project shall take part in defining the future built environment. The cultural understanding of context

has been inherited together with a hyper-enthusiasm towards technology: we believe this is no longer a reliable attitude, together with the myth of everlasting objects. Obsolescence does not affect technological performances exclusively, yet provides the "occasion" to modify formal and functional structures. Obsolescence is, in other terms, a means towards modification that we cherish and salute when it comes.

Knowledge of Places

The concept of environment is so broad as to seem generic. However, the insistent use of this term suggests its essential function despite the unclearness of the idea. Another term whose lack of definitude is largely tolerated is context. Contextualism has operated in the past to establish a formal relationship between a given built condition and additional interventions, assuming localism as a reaction to abstract and siteless solutions. While we agree that there is no such thing as a comprehensive strategy, we also argue that context and environment are now at the core of the design process rather than subordinate elements belonging to a different realm. The specificity of sites, urban and territorial conditions, as well as architectural and structural features, are design resources

that provide variety in procedures and solutions. At the same time, the environment we are confronted by is a living subject dominated by inherent transformations and evolutions. Design practice must embrace the understanding of a site as a fundamental starting point: the act of "reading" a given condition defines the first steps toward any project.

Potential for repairs and alternatives

A detailed reading of the characteristics in place, coupled with adapted synthesis and projection tools, can guide the project's handling toward broader considerations. These in turn require new capacities for weighing up interests and arbitration, embracing the ever-increasing number of parameters involved. In the shadow of its most catastrophic aspects, the present age in which we live remains absolutely fascinating in its relation to design practice and major architectural positions. Perhaps the time has finally come for repair, as an unprecedented condition for dominant architectural and urban thinking. It would imply that every new intervention and every new project approach could represent a renewed and post-anthropocentric opportunity: not only to improve the state of a given place, but the state of the world we will continue to learn to inhabit.

Imagining future situations and space adaptations will remain at the core of our reflection, with all the socio-economic and political dimensions: we propose continuing to consider the need for alternatives as a matter of design, as a hypothesis for desirable futures, or even as a timely opportunity to reconsider our collective culture of the built environment.

Alberti, Leon Battista.
L'Architettura [De re aedificatoria], a cura di G. Orlandi e P. Porthoghesi. Milano: Il Polifilo, 1966 [1485].

Aymonino, Carlo.
Piani Particolareggiati dei Centri Storici – Obiettivi politici e strumenti operativi di intervento. Comune di Pesaro, 1973.

Bailly, Jean-Christophe.
« L'architecture au-delà du projet. » *Le Visiteur*, no. 28 (April 2023).

Basbous, Karim (ed.).
« L'usure du monde » *Le Visiteur* no. 28 (April, 2023).

Brandi, Cesare.
Teoria del restauro. Roma: Edizioni di storia e letteraturea, 1963.

Bourg, Dominique.
« Transition écologique, plutôt que développement durable. Entretien avec », *Vraiment durable*, vol. 1, no. 1, 2012, 77-96.

Cairns, Stephen
and Jane M. Jacobs.
Building Must Die – A Perverse View of Architecture. Cambridge: MIT Press, 2014.

Caniggia, Gianfranco
and Gian Luigi Maffei.
Composizione architettonica e Tipologia edilizia. 1 lettura dell'edilizia di base. Venezia: Marsilio, 1979.

Caye, Pierre.
Durer, Elements pour la transformation du système productif. Paris: Les Belles Lettres, 2020.

Carmona, Matthew,
João Bento and
Tommaso Gabrieli.
Urban Design Governance: Soft Powers and the European Experience. London: UCL Press, 2023.

Corboz, André.
Le territoire comme palimpseste et autres essais. Paris: Éditions de l'Imprimeur, 2001.

Derrida, Jacques.
Psyché: inventions de l'autre. Paris: Galilée, coll. « Collection La Philosophie en effet » (translated by Joseph F. Graham), 1987.

Dortier, Jean-François
and Louisa Yousfi.
Edgar Morin, L'aventure d'une pensée. Auxerre: Éditions Sciences Humaines, 2020.

Doxiadis, Constantinos.
Architecture in transition. London: Hutchinson and Co, 1963.

Eco, Umberto.
Dire quasi la stessa cosa. Esperienze di traduzione. Milano: Bompiani, 2003.

Ferragina, Emanuele.
"The Socio-Economic Determinants of Social Capital and the Mediating Effect of History: Making Democracy Work Revisited," *International Journal of Comparative Sociology* 54, Issue 1 (2013).

Flusser, Vilém.
Die Informationsgesellschaft Phantom oder Realität. [Original sound recording 1991]. Wyk auf Föhr: Supposé Verlag, 1999.

Flusser, Vilém.
„Stöcke." In *Vilém Flusser Dinge und Undinge*, edited by Michael Krüger. München and Wien: Carl Hanser, 1993.

Flusser, Vilém.
„Form und Material." In *Vilém Flusser Vom Stand der Dinge*, edited by Fabian Wurm. Göttingen: Steidl Verlag, 1991.

Genette, Gérard.
« Proust Palimpseste. » In *Figures* I. Paris: Seuil, 1966.

Genette, Gérard.
Introduction à l'architexte. Paris: Seuil, 1979.

Genette, Gérard.
Palimpsestes. La littérature au second dégré (Engl. Transl. *Palimpsests. Literature in the Second Degree,* trans. C. Newman and Claude Doubinsky, Lincoln, NB., 1997), 1982.

Graf, Franz
and Giulia Marino.
La cité du Lignon, 1963-1971. Étude architecturale et stratégies d'intervention, Cahier hors série de la revue Patrimoine et architecture. Gollion: Infolio, 2012.

Graf, Franz.
Histoire matérielle du bâti et projet de sauvegarde. Devenir de l'architecture moderne et contemporaine. Lausanne: PPUR, 2014.

Graf, Franz
and Giulia Marino.
La buvette d'Evian, Novarina, Prouvé, Ketoff. Lausanne: PPUR, 2019.

Graf, Franz
and Giulia Marino.
Le Cèdre. Jean Tschumi 1951-1956. Gollion: Infolio, 2022.

Graf, Franz
and Giulia Marino.
Avanchet-parc : "Cité de conception nouvelle et originale." Gollion: Infolio, 2021.

Grafe, Christoph
and Tim Rieniets.
Umbaukultur: The Architecture of Altering. Dortmund: Kettler, 2020.

Gregotti, Vittorio.
Identità e crisi dell'architettura europea. Torino: Einaudi, 1999.

Habitat Research Center;
Fondation Braillard Architects.
"Transition as a project. Space, life and politics." Bernardo Secchi Days 2022.

Hertweck, Florian
and Nikos Katsikis.
Positions on Emancipation. Architecture between Aesthetics and Politics. Zurich: Lars Müller, 2018.

Hertweck, Florian,
Christian Hiller,
Markus Krieger,
Alex Nehmer,
Anh-Linh Ngo
and Milica Topalović.
Arch+ *The Great Repair – Politics of the Repair Society*. May 2023, Leipzig: Spector Books; Berlin: Arch+, 2023.

Huet, Bernard.
« L'architecture contre la ville. » *Architecture, Mouvement, Continuité*, no.14 (Paris, 1986).

Koolhaas, Rem
and al.
Small, medium, large, extra-large. New York: The Monacelli Press, 1995.

Kull, Kalevi.
"On semiosis, Umwelt, and semiosphere." *Semiotica* 120(3/4) (1998), 299–310.

Leroi-Gourhan, André.
Milieu et techniques. Paris: Albin Michel, 1945.

Los, Sergio.
Carlo Scarpa Architetto Poeta. Venice: Cluva, 1967.

Lucan, Jacques.
Précisions sur un état présent de l'architecture. Lausanne: PPUR, 2015.

Mack, Gerhard.
Herzog & de Meuron: the complete works, Volume 2: 1989-1991, Basel Boston [Mass.] Berlin: Birkhäuser, 1996.

Malfroy, Sylvain.
«Le projet architectural: entreprise rationnelle indisciplinée.» In *Discipline, visée disciplinaire*, edited by Philippe Louguet and Frank Vermandel. Cahier thématiqques Architecture Histoire / Conception, Lille: Éditions de l'École d'architecture de Lille, 2001.

Material Cultures.
Material Reform. London: MACK, 2022.

Meadows, Donella H.,
Dennis L. Meadows,
Jørgen Randers and
William W. Behrens III.
The Limits to Growth; A Report for the Club of Rome's Project on th Predicament of Mankind. New York: Universe Books, 1972.

Muratori, Saverio.
Per un'operante storia urbana di Venezia. Roma: Istituto Poligrafico dello Stato, 1960.

Payreson, Luigi.
Estetica: teoria della formatività. Milano: Bompiani, 1988.

Pelluchon, Corine.
Réparons le monde: Humains animaux nature. Paris: Éditions Payot & Rivage, 2020.

Petzet, Muck.
"Re-use." German Pavillion in the Venice Biennale 2012.

Picon, Antoine.
La ville, territoire des Cyborgs. Besançon: Les Éditions de l'Imprimeur, 1998.

Revedin, Jana
and al.
L'architecte et l'existant: Construire avec ce qui est déjà là. Paris: Éditions Alternatives, 2022.

Riegl, Aloïs.
Moderne Denkmalkultus: Sein Wesen und seine Entstehung. Vienna: W. Braumüller, 1903.

Rostow, Walt Whitman.
The Economics of Take-Off into Sustained Growth. London: Palgrave Macmillan, 1963.

Ruskin, John.
The seven lamps of architecture. London: George Allen, 1849.

Scheffler, Karl.
Die architektur der gross-stadt. Berlin: Gebr. Mann Verlag, 1998.

Secchi, Bernardo
and Paola Viganò.
La ville poreuse. Geneva: MetisPresses, 2011.

Shokry, Galia
and al.
"They Didn't See It Coming': Green Resilience Planning and Vulnerability to Future Climate Gentrification." In *Housing Policy Debate* 32, Issue 1: Special Issue: Housing Policy and Climate, 2022.

Société française d'architecture.
«L'usure du monde.» symposium organized by the *Société française d'architecture* on May, 20–21, 2022.

Stahel Walter
and Geneviève Reday.
"Potential for Substitution Manpower for Energy." Report for the Commission of the European Communities, 1976.

Táíwò, Olúf᾽mi, O.
Reconsidering Reparations. Oxford: Oxford University Press, 2022.

Unwin, Raymond.
Nothing gained by overcrowding! How the garden city type of development may benefit both owner and occupier. London: P. S. King and Son for the Garden Cities and Town Planning Association, 1912.

Valéry, Paul.
Les Principes d'anarchie pure et appliquée. Paris: Gallimard, 1984.

Valéry, Paul.
Œuvres... Paris: Gallimard, 1957.

Veltz, Pierre.
« Quelques remarques sur l'industrie et l'écologie. » *Le Visiteur*, no. 28, 2023.

Viganò, Paola.
Elements for a theory of the city as renewable resource: life cycles, embodied energy, inclusion. A design and research program. In: *Recycling City, Lifecycles, embodied energy, inclusion*, edited by Lorenzo Fabian, Emanuel Giannotti, Paola Viganò. Pordenone: Giavedoni Editore, 2012.

Viganò, Paola.
Territorio-soggetto/Territoire-sujet. In *Territori della post ruralità /Territoires Post-Ruraux*, edited by Marta De Marchi and Hamed Khorasani Zadeh. Roma: Officina Edizioni, 2020.

Viganò, Paola.
Typen, Prototypen, und das Project Stadt. In *Morphologie von Stadtlandschaften: Geschichte, Analyse, Entwurf*, edited by Andri Gerber, Regula Iseli, Stefan Kurath, Urs Primas. Berlin: Reimer, 2021.

Viganò, Paola.
Il giardino biopolitico. Roma: Donzelli 2023.

Viollet-le-duc, Eugène.
Dictionnaire raisonné de l'architecture. Tome VIII, Paris, 1875.

Von der Mühll, Henri-Robert.
De l'architecture. Lausanne: Anthony Krafft, 1973.

Wende, Wolfgang,
Steffen Nijhuis,
Angela Mensing-de Jong
and Melanie Humann.
Inclusive Urbanism. Advances in research, education and practice. Research in Urbanism Series (RiUS) 6, TU Delft OPEN, 2020.

Valentin Bourdon is an architect, researcher, and lecturer at EPFL in Lausanne. After graduating in 2013 from the École d'Architecture de la Ville et des Territoires Paris-Est under the direction of Jacques Lucan, he worked on housing and urban projects at MGAU's office. In 2020, he completed his PhD thesis at EPFL, under the supervision of Luca Ortelli. From 2021 to 2023, he coordinated the Master of Advanced Studies ETH EPFL in Urban and Territorial Design, and the Habitat Research Center at EPFL. Since 2023, he has continued his academic commitment while holding a position as head of the Project unit at the Office de l'urbanisme of the Canton of Geneva.

Eugen Brühwiler has been a full Professor at the Swiss Federal Institute of Technology (EPFL) since 1995, as well as director of the Structural Maintenance and Safety Laboratory. His expertise is particularly renowned in the field of the examination of existing structures, with the main goal of limiting construction intervention to a strict minimum. The economy of means, costs, and ecological footprints is deeply rooted in his vision, teaching, and practice, without any contradiction with a revaluation of cultural and historical qualities. In this respect, he has dedicated over thirty years to the protection of engineering heritage, in coherence with a pragmatic and thoughtful approach to sustainable development.

Pierre Caye, philosopher and director of research at the CNRS, has devoted a large part of his research to the knowledge of architecture,

urbanism, and regional planning, thus questioning the very sense of technique by renewing its genealogy. Among other projects, he conducts research on Vitruvius' *De architectura* and on architectural theory in the humanist and classical ages (*Le savoir de Palladio*, Klincksieck 1995), through which he questions the contemporary productive system. Translator of Leon Battista Alberti's *Art d'Édifier* in collaboration with Fr. Choay (Seuil, 2004), he has just published a philosophical study about our relationship with time and the construction of duration: *Seul le temps nous appartient* [Only Time is ours] (Verdier, 2024).

Corentin Fivet is Associate Professor of Architecture and Structural Design, leading the Structural Xploration Lab, EPFL. Previously he worked for two years at the Massachusetts Institute of Technology in Cambridge, USA. Corentin Fivet holds a Master in Architectural Engineering and a PhD in Engineering Sciences from the Université catholique de Louvain, Belgium. His work combines the development of new design methods for low-carbon low-waste building structures with the materialization of new conceptual pathways for a more sustainable and circular built environment. Corentin Fivet joined the National Centre of Competence in Research (NCCR) Digital Fabrication in June 2018 as an associated investigator.

Anna Livia Friel is an architect and researcher. She studied at the École Nationale Superieure d'Architecture Paris La Villette and at the Iuav University in Venice, where she graduated in 2014. She completed her PhD in 2021 with a research project on the urban role of demolition, under the supervision of Paola Viganò. She has been a visiting PhD at the American University of Beirut and a research assistant at Habitat Research Center at EPFL. Since 2022, she is a visiting researcher at the "Gestaltungslehre und Entwerfen" research unit at the TU Wien (Vienna University of Technology). She is a partner of the architecture office Supervoid in Rome.

Anja Fröhlich is an architect and associate professor for architectural design at École Polytechnique Fédérale de Lausanne, where she co-directs the Laboratory of Elementary Architecture and Studies of Types (EAST) in collaboration with Martin Fröhlich. She graduated from the Technical University of Graz and the Bauhaus University of Weimar, where she obtained her doctorate. She teaches design studios at the Bauhaus University Weimar and at the University of Navarra in Pamplona. Her research and publications focus on the integration of typological considerations into architectural studies. She is convinced that knowledge of typological aspects of buildings will provide insights for conversion of the built environment.

Martin Fröhlich graduated in architecture from the Bauhaus University in Weimar. In 1999 he co-founded AFF Architects with Sven Fröhlich. Today, the office operates as a collective with partners based in Berlin and Lausanne. Fröhlich is part of the AFFECT

research laboratory, which focuses on responsible building practices. After teaching at the Bauhaus University and a one-year visiting professorship at the Berlin University of the Arts (UDK), Martin Fröhlich has been running the design and research laboratory EAST (Elementary Architecture and Study of Types) together with Anja Fröhlich as associate professors at EPFL Lausanne since 2012. From 2020 to 2023 he was Vice-President of the Swiss Architectural Council.

Franz Graf has worked as an architect in Geneva since 1989. A lecturer at the University of Geneva (1989–2006), he became Full Professor of Technology at the Accademia di Architettura di Mendrisio in 2005 and Associate Professor of Architectural Theory and Design at the EPFL Lausanne in 2007, as head of Laboratory of Techniques and Preservation of Modern Architecture. His research focuses on modern and contemporary systems of construction and techniques of preservation of twentieth century heritage. Since 2010 he has been President of Docomomo Switzerland and a member of the International Specialist Committee on Technology, and since 2012 member or the "Comité des experts pour la restauration de l'oeuvre" of the Le Corbusier Fondation.

Maxence Grangeot is an architect and doctoral researcher at the Structural Xploration Lab and the Creative Computation Lab, both at École Polytechnique Fédérale de Lausanne. He explores upcycling fabrication methods of structural systems made of concrete rubble from demolition. He graduated in architecture from the EPFL Lausanne in 2021, with a focus on construction, materials and resources, and has since worked as a freelance junior architect alongside his research. In 2024, Maxence Grangeot won a "New Frontiers Runner-Up" award for his contribution on the robotic fabrication of walls with reclaimed concrete debris, presented at the Rob|Arch 2024 conference in Toronto, Canada.

Célia Küpfer is an architect and doctoral researcher at the Structural Xploration Lab, at École Polytechnique Fédérale de Lausanne. Her work explores new design approaches and assessment methods for the reuse of construction components, with a focus on steel and concrete. In 2023, she published a historical survey of concrete reuse, demonstrating that reclaiming concrete structures is more common and feasible than often assumed. Together with Corentin Fivet and Barbara Lambec, she coordinates the Building Design in the Circular Economy course taught at EPFL as part of the ETH EPFL Master of Advanced Studies in Urban and Territorial Design (MAS UTD).

Barbara Lambec is an architect, heritage specialist, and doctoral researcher at the Structural Xploration Lab, at École Polytechnique Fédérale de Lausanne. She graduated from the ENSA Paris-Est in 2013 and obtained a DSA Patrimoine from ENSA Paris-Belleville in

2015. In 2022, she was a visiting scholar at the Circular Construction Lab at Cornell University, where she studied applied cases of reuse in the United States. Her work is driven by a passion for banal architecture and its necessary ingenuity linked to an economy of means. She examines the fundamentals of current deconstruction and reuse practices in order to assess the reuse potential of building components.

Giulia Marino is an architect from the University of Florence and a PhD from the École polytechnique fédérale de Lausanne. Professor at the Université Catholique de Louvain, LAB Institute (Bruxelles) and a visiting professor at the EPFL, Giulia Marino is also a consultant architect in heritage preservation. Her scientific interests are centered on the history of strategies for the conservation of modern and contemporary heritage, and on the history of construction techniques and twentieth-century building services. She has been Vice President of Docomomo Switzerland since 2015. She is the author of numerous books on the preservation of modern and contemporary architecture.

Ludovic Pépion is an architect and urban planner with a doctorate in Architecture and Aesthetics. He works at the APUR (Atelier Parisien d'Urbanisme) and teaches in the urban planning programme at Sciences Po Paris. A graduate of the École Nationale Supérieure des Beaux-Arts and the École Nationale Supérieure d'Architecture, he holds a Master's degree in Aesthetics and Art Sciences from the Université Paris 1 Panthéon-Sorbonne. In 2021, he completed his doctorate in architectural theory at the École Normale Supérieure under the supervision of Pierre Caye. His activities include both research in architecture and urbanism as well as urban planning recommendations.

Jo Taillieu is professor at EPFL, director and manager of his own office, but he is first and foremost an architect. Jo Taillieu founded his eponymous office (jta) in 2004. The practice evolved from 2009 to 2019 through a collaboration with Jan De Vylder and Inge Vinck, as architecten de vylder vinck taillieu (advvt). In 2018 advvt won the Silver Lion for Promising Young Participant at the 16th Biennale of Venice and was one of five finalists for the Mies van der Rohe Award 2019. The genuine effort to execute a design and its realization remains the fundamental concern of the office. In this respect, jta always strive to the "logic of construction."

Paola Viganò architect and urbanist, is Full Professor in Urban Theory and Urban Design at the EPFL (where she directs the Habitat Research Center) and at IUAV Venice. She received the Grand Prix de l'Urbanisme, the title of Doctor Honoris Causa by the UCL in the frame of "Utopia for our Time," the Flemish Culture Award for Architecture, the Golden medal to the career of Milano Triennale, and the Schelling Prize for Architectural Theory. She is the president

of the NRP 81 "Baukultur" Steering Committee. Together with Bernardo Secchi, she founded Studio (1990–2014), today StudioPaolaViganò, which works on the ecological and social transition of cities, landscapes, and territories.

Acknowledgments

This book could not have been published without the support of the Habitat Research Center, the Institute of Architecture, and the Financial support for Open Access from the Library of the École Polytechnique Fédérale de Lausanne. The commitment of Lucas Giossi from EPFL PRESS and the contributions of the many authors to the project were also essential.

We gratefully acknowledge the involvement of all participants in the March 28, 2022 seminar led at EPFL, in particular Karin Rath, Muck Petzet, Sébastien Marot, Sylvain Malfroy, and Tom Avermaete.

Many thanks to all those involved in the associated workshop organized during the second colloquium "Culture du bâti dans l'existant" led by the Fondation Culture du bâti Suisse at EPFL on November 23, 2022, in particular Charlotte Malterre-Barthes, Olivier Martin, Estela Schaffner, and Séréna Vanbutsele.

Special thanks to the doctoral students in EPFL's Doctoral Program Architecture and Sciences of the City (EDAR) who attended the doctoral course organized in the frame of this project: Elena Calafati, Anna Karla De Almeida Santos, Noélie Locoanet, Estefania Mompean Botias, Tommaso Pietropolli, Shyam Sirimalla Sunder, and Marine Villaret.

Art direction: Zoo, designers graphiques
Graphic design: Marine Stephan

First edition 2024
EPFL Press, Lausanne
EPFL Press is an imprint of the Presses polytechniques et universitaires romandes
PPUR, EPFL – Rolex Learning Center,
CM Station 10, CH-1015 Lausanne,
info@epflpress.org – t.l. : +41 21 693 21 30
www.epflpress.org

Printed in Czech Republic

ISBN 978-2-88915-628-3, print version
ISBN 978-2-8323-2270-3, ebook (pdf), doi. org/10.55430/6641BKVA01

The publication of this book received support from the Habitat Research Center, the Institute of Architecture and the library of the École Polytechnique Fédérale de Lausanne.

The notion of Baukultur marked a fundamental step towards a comprehensive definition of the built environment. The idea that landscape, architectural heritage, and all the existing built context could converge to portray the richness and complexity of our habitat now points to a collective and strategic approach to design. In this perspective, the value of architecture arises essentially as a tool to convey the emerging culture of Transition within the existing Baukulturen. *Architecture revalued* structures a theoretical framework around these concepts leaning on the research, design, and pedagogical experiences of six architectural and urban design practices/academics, as specific readings and valorization of the existing built environment. Three essays articulate the ongoing debate, and a manifesto enunciates the basics of a common discourse on Baukultur and the socio-ecological Transition.

ISBN 978-2-88915-628-3

EPFL PRESS

Habitat
H

Research
R

Center
C