TERRITORY

On the Development of
Landscape and City

ETH Studio
Basel

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TERMINOLOGY

The Urbanization of the Territory: on the Research Approach of ETH Studio Basel

Kindred Terms as a Working Basis

THE URBANIZATION OF TERRITORY: ON THE RESEARCH APPROACH OF ETH STUDIO BASEL

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The question of territory has been of central importance in the work of ETH Studio Basel since its inception, even though the term and the concept itself have only gradually crystallized in the course of its empirical study. The aim of recognizing and comprehending the various manifestations of urbanization that we encountered in our studies became the starting point for our engagement with the notion of territory. We were increasingly confronted with urbanization processes that were unfolding beyond the realm of agglomerations and urban regions. In the project *Switzerland: An Urban Portrait* (Diener et al. 2006), we found that even peripheral, agricultural, or tourism-oriented areas located far away from the catchment areas of urban regions were nevertheless shaped by urbanization processes in many respects. These areas no longer represent a kind of a counter-world to the city, as they are embedded in diverse urban networks and settings, linked in many ways to urban centers and, of course, are connected to electronic networks. Everyday life in these areas is characterized by a high degree of mobility. The consumption patterns, lifestyles, and architecture differ from those in urban centers only slightly at most, rather than fundamentally, as was once the case.[1] Proceeding from Henri Lefebvre's 23

1   See Meili 2013, Schmid 2014.

thesis of the complete urbanization of society,[2] we were eventually able to empirically demonstrate the development of an encompassing urban topography in Switzerland that renders obsolete, to an increasing degree, the traditional distinction between city and countryside. This does not, however, mean that every region is becoming more homogeneous. On the contrary: in many respects, differences between the various urbanized areas have in fact become more distinct in recent years, with the emergence of clearly distinguishable urban configurations.

How can we examine the phenomenon of peripheral urbanization? First, it requires a fundamental shift in perspective: urbanization can no longer be understood as a spatially bounded phenomenon; it must instead be examined as a comprehensive and extended process. This new perspective ushers in a whole range of consequences. The focus shifts away from the typical questions that have long been central to urban studies, such as defining the borders of urban regions or determining how urban areas are delimited from non-urban areas. Instead, we must first examine the diversity of urban manifestations that inscribe themselves onto the territories and turn them into urban landscapes. Second, the urban should no longer be regarded as a specific form or type of settlement space; it must instead be analyzed as a process – a process that increasingly moulds more regions and repeatedly overwrites them. And third, urbanization should not be taken as a one-dimensional phenomenon, but rather as a multilayered one that manifests itself on diverse levels. Urbanization includes the material structures and practices of the production of urban space as well as the various regulations of the use and transformation of the territory and the modalities of everyday interactions.

In order to examine these extensive and comprehensive urban constellations, classical methods of urban analysis no longer suffice. Consequently, we could not base our research much on the existing set of concepts and methods, but needed to explore new pathways of inquiry. Thus, we developed a theoretical framework and a methodological design that enabled us to establish a typology of urban Switzerland. We accordingly no longer tried to represent urban areas as closed units, each one clearly delimited from the other, but sought instead to find ways of mapping that are capable of portraying the multidimensional nature and plural determination of urban territories. We generated a cartography that operates through superimpositions

2   Lefebvre 2003.

and consciously deployed imprecision, in order to show the complex structure of urban configurations, and to emphasize their temporary and ephemeral nature.

This work was continued by the analyses of a selection of contrasting urban areas that ETH Studio Basel recently presented in the book *The Inevitable Specificity of Cities* (Diener et al. 2015). The book not only examines densely populated urban areas, but also forms of extended urbanization, such as the subtle changes occurring in the still largely agrarian Nile Valley, the massive urban transformations generated by tourism on the Canary Islands, and the urbanization of the area surrounding Mount Vesuvius. Here, too, the aim was to understand which urban processes are in operation and to discern the specific laws of motion that govern these processes. In a related project, Milica Topalović and her team examined the urbanization of Singapore's hinterland. They were able to show that a complex urban hinterland is developing beyond the borders of the city-state, stretching out into the entire region of South-East Asia and even beyond, and also encompassing maritime regions such as the Singapore Strait.[3]

Ultimately, the present volume reflects a systematic further

[3] Topalović et al. 2013, 2015a.

development of this territorial approach. Looking back, it is possible to detect that these studies by ETH Studio Basel have resulted in an original approach to the analysis of urban territories. This approach is distinguished not only through a specific way of looking at the urban phenomenon, but also through a theoretical framework that allows for the comprehensive recognition and understanding of large-scale urbanization processes, and through an appropriate empirical procedure and a methodological design that enable the representation of extended urban topographies.[4]

TERRITORIAL URBANIZATION

In order to understand the widespread occupation of the Earth's surface through extended forms of urbanization, we have first to address the question of what urbanization actually means. Ever since the architect Ildefonso Cerdá introduced the term "urbanization" into the debate in 1867,[5] many theories and approaches have been developed to grasp and define urbanization processes.

Urbanization is often equated with the population growth of cities. But this is a highly limited view that relies on just one criterion –

[4] See Meili 2015; Schmid 2006, 2015.
[5] Sorio y Puig 1999.

population numbers – and focuses exclusively on the growth of urban centers and agglomerations.[6] Urbanization, however, is a polymorphic process of transformation that displays many facets and comprises a whole ensemble of aspects, ranging from the production of the built environment and the formation of centers and peripheries to changes in everyday life and the regulation of the territory.

In a general sense, urbanization can be understood as a certain form of the production of *second nature.* In this process, natural conditions are transformed through social labor, resulting in material artifacts, infrastructures and a built environment that makes the permanent occupation of the territory possible.[7] A specific territory is created by engaging with natural forces, from the clearing of land and the construction of temporary or permanent forms of settlement, through to the large-scale processes of urbanization we experience today. Thus, the territory has been claimed, plowed, and reorganized time and again in new ways until the complex and interdependent contemporary urban landscapes emerge. As a result, the city as a delimited and clearly identifiable unit fragments and dissipates – the urbanized territory replaces the once readily discernible form of the city.

6 Brenner and Schmid 2014.
7 Lefebvre 1991, Harvey 1982; see also Schmid 2015.

Thus urbanization can, above all, be understood as the physical transformation of a territory. The historical point of departure is given by the natural conditions, which have established very diverse pre-conditions for urbanization. In a society's interaction and confrontation with natural forces, a second nature emerges which today presents itself as a given, as quasi-natural; nonetheless it has emerged over decades and centuries, layer by layer. Each layer is determined by very concrete social circumstances that have materialized through this transformation process to a certain extent and have thereby also been incorporated into the urban space.

The result of urbanization can be represented as an urban fabric that is embedded into the territory.[8] This fabric has a material structure – settlements, transport routes, sites where raw materials are extracted, pipelines and high-voltage lines, logistics facilities, and many other elements. An entire urban system, ranging from energy supply and transport systems to diverse information and production networks, is established on the basis of this fabric. An urban practice of networking and linkage also develops, out of which emerge an urban lifestyle and a value system that is founded on industrial rationality. The urban

8 See Lefebvre 2001.

fabric also involves diverse signs, markings, and symbols, from architectural landmarks to traffic signs and even inconspicuous markings on the wayside.

The urban fabric is more or less tightly woven, with smaller and larger interstices between the strands of its mesh. It has an orientation, which is determined by the dialectic of centers and peripheries: the centers never exist without diverse peripheries that supply food and raw materials, water and energy, and which function as dumping grounds for all sorts of waste or provide recreational areas and serve as ideological and mental compensation planes. As a result, even the putatively "non-urban" areas are drawn into the process of urbanization; they become territories linked to urban networks which are increasingly dominated by an urban logic of production and are concomitantly fundamentally transformed. Urbanization is thus a reciprocal process, in which both the urban centers and the hinterlands change in concert with each other.

In a broader sense, urbanization can also be understood as the simultaneity of processes of concentration and extension: any form of urbanization not only generates the concentration of people, means of production, goods, and information that leads to concentrated urbanization, but rather, at the same time, also inevitably causes a proliferation and expansion of urban elements, thus resulting in *extended urbanization.*[9] Food, water, energy, and raw materials must be brought to urban centers, requiring an entire logistical system that ranges from transport to information networks. Conversely, areas characterized by extended urbanization can also evolve into new centralities and urban concentrations. Thus, concentrated and extended forms of urbanization exist in a dialectical relationship to each other and at times can merge seamlessly into one another.

Every urban center inevitably has a hinterland. With industrialization, this hinterland expands further outward, drawing ever more remote areas into the urban process. Through globalization this hinterland assumes a planetary dimension: today the entire planet potentially serves as a resource for urban areas – an idea expressed by the term *planetary urbanization.*[10] Thus the hinterland of an urban center can extend throughout the whole world, as the detailed analysis of Singapore's hinterland exemplifies.[11] Even zones that have hitherto remained untouched – such as areas in the desert, the rainforest, or

9 The dialectics of extended and concentrated urbanization is developed in Brenner and Schmid 2015.

10 Brenner and Schmid 2012, Merrifield 2014.

11 Topalović 2014.

even the ocean – are being integrated increasingly into this encompassing planetary urban process. The analysis of such territories has only just begun, but there is a rapidly growing number of studies that address this topic.[12] The *Swiss Portrait* fulfilled a pioneering function for such studies, and the present volume takes the examination of territorial urbanization to the next level.

THE CONCEPT OF TERRITORY

How can extended forms of urbanization be examined? The challenge is to capture the most diverse manifestations of urbanization and to identify them on the terrain. This requires a fundamental shift of perspective, as the research has to grasp the urbanization of the entire territory, and not just analytically isolated settlements or urban regions. This brings a new term to the fore: *territory.*

Analysis of the urbanization of territory is still at an early stage. This is mainly due to the nature of the term territory itself: there exists a broad range of definitions, and they are found in highly diverse disciplines – from philosophy, biology, the political sciences, and geography to architecture and spatial planning. To date, however, there have been few studies that examine the term conceptually or historically.[13] In the diverse genealogies of the term "territory," one can identify two fundamental understandings that still retain great importance today. A first understanding, which is particularly prevalent in the English-speaking world in the fields of political science and political geography, focuses on sovereignty and state power. In a general sense, this position considers a territory to be an area over which a political body – for example a state – exercises power and control. The territory is understood here as an abstract space that denotes sovereignty, and hence the extent of dominance. Most of the contributions belonging to this line of thinking assign no particular significance to concrete, material qualities – the territory is, as it were, "dematerialized."

By contrast, a completely different position that emerged in the fields of architecture and geography, primarily in the French-, Italian-, and Spanish-speaking worlds, focuses precisely on the materiality of the territory. It is led by the conviction that the territory is produced by human activity, through labor, but also by symbolic means. In one of the classic works on architecture, Italian architect Saviero Muratori (1967) comprehends the territory as a product that is created by

12 An important collection of texts can be found in Brenner 2014.

13 See, e.g., Elden 2013: 3.

civilization and can be analyzed at the levels of the concept, of political economy, of ethics, and of aesthetics.

In geography, it was the Genevan geographer Claude Raffestin (1980) who presented one of the most important theoretical contributions on territory to date.[14] For Raffestin, territory is to be understood as a socially appropriated space. This appropriation can be concrete or abstract, and can be based on material or mental activities. The territory is the result of actions; it comes into being through human labor, through the application of energy and information. The actual social relations and conditions, and in particular the existing power constellations, are thereby incorporated into the territory. The basic structure of Raffestin's analysis consequently rests essentially on two dimensions: first, on the complex grid of borders that evolve over the course of history; and second, on a system of centralities and networks that crystallize in the territory. The entirety of the borders marking a territory forms a kind of netting that Raffestin designates as *maillage.* The superimposition and interpenetration of all sorts of borders can give rise to complex political structures that shape the territory and thus also define a specific power structure. Raffestin uses the term "grid of power" that is incorporated

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14 In his approach, Raffestin links Lefebvre's spatial theory with Foucault's reflections on power.

into the territory.[15] In a similar sense, centralities and their concomitant networks of communication and circulation can be examined, whereby a multilayered reading of the territory is needed in order to be able to understand the design as well as the construction and use of the networks. The systems of centers and networks can be very different, either more polycentric or more monocentric, which in turn has great influence on the significance and arrangement of the peripheries, and thus on the entire socio-economic structure of the territory.[16]

A similar understanding of territory can be found in the writings of Genevan urbanist and architectural historian André Corboz. He also defines territory as the product of processes of appropriation, comparing it with a palimpsest: the land is repeatedly worked and reworked, continually being overwritten with a new texture until it resembles an old, perforated and worn parchment.[17] Corboz also used this concept to analyze urbanization in Switzerland, thereby discovering the emergence of a new urban form that he identifies as *ville-territoire* ("city-territory"): this city no longer forms a delimitable unit, but rather a sprawling, polycentric urban region where the old city centers lose their historical functions and the peripheries take on new meanings.

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15 Raffestin 1980: 139.
16 Raffestin 185ff.
17 Corboz 1983.

What evolves in this process is an encompassing form of the city, a place of the discontinuous, the heterogeneous, the fragmentary, being subject to constant transformations.[18]

These thoughts are consistent with many other, similarly defined concepts, like the *Zwischenstadt* ("in-between-city"), the *extended metropolis,* the *100 mile city,* and the *postmetropolis.*[19] However, all of these concepts still presume that urbanization is a spatially confined phenomenon, and that a vast field of "non-urban" areas extends beyond urban territories – a field, that usually is not further illuminated by the analysis.

Our approach goes one crucial step further than these concepts, because we are not only interested in examining how compact forms of the city dissipate through manifold processes and interrelationships within a regional configuration; rather, we seek to gain a comprehensive understanding of the urban transformation of the entire territory, with its gradual or sudden changes. This approach, however, also requires redirecting the view toward supposedly "non-urban" areas and examining to what extent they have also been involved in the process of urbaniza-

tion. This change of perspective becomes evident in the present book in

18 Corboz 2009a: 254; Corboz 2009b.
19 Sieverts 2003, Ginsburg et al. 1991, Sudjic 1992, Soja 2000.

the fact that the investigations do not proceed from an urban center and then slowly clear their way "outwards," but rather select a large segment of the territory, examine the urban transformations of that entire segment, and in so doing also include, from the very beginning, those areas usually designated as non-urban.

A TERRITORIAL APPROACH TO THE ANALYSIS OF URBANIZATION

The term territory assumes in this context a specific meaning: it can be understood as a socially produced basis for every human activity; in a certain sense it provides the material support for activities and interactions.

This definition prepares the ground for a new type of examination, leading to an analysis of the urbanization of territory, which allows capturing the entire context of urbanization. This means first of all reversing or turning around the dominant perspective: it is, in other words, no longer the main goal to examine various forms of settlement space, the spheres of influence or the catchment areas of large urban centers, but to take a comprehensive look at the urban transformation

of the entire territory. By taking this perspective, urban areas are no longer treated as bounded entities, but as open zones. Urbanization designates, to a certain extent, the condition of the Earth's surface. Thus, the entire area must be systematically scrutinized and all sorts of traces of urbanization must be carefully sought in the terrain. Of course, this search includes not only physical traces, but also the social modalities of everyday life. Concomitantly, the scale of the analysis changes as well, because it has to grasp areas that are unusually large for urbanistic analyses; this book presents segments that stretch across several hundred kilometers each.

The conceptual instruments for an examination of this type were developed in the *Swiss Portrait.* They are based on the three fundamental concepts that guide the research: *networks, borders,* and *differences.* These three terms capture the occupation and urban transformation of the territory, and they are accordingly well suited to identifying different forms of urbanization and developing a typology of urban areas. This group of three terms was transposed to a general level in the book *The Inevitable Specificity of Cities* by introducing the terms *territory* and *power* into the analysis.[20]

20 Meili 2015, Schmid 2015.

The appropriation of a territory by a society begins with traces and paths, the material imprints left by a spatial practice. These first marks develop over time to become networks and nodes – the first centers emerge. Centers inevitably generate peripheries – one cannot exist without the other. The periphery is therefore not just "natural space," "countryside," or "non-city," but a relational space that can be defined through its relationship with the various centers that dominate it. The periphery supplies the material foundations for the urban areas: food, water, energy, raw materials. The extraction of raw materials from the ground and the production of agricultural goods to build and supply cities is not only a crucial precondition for urbanization, but these processes also involve a fundamental transformation of the territory. The resulting intensification of land use can, in turn, lead to urban concentrations and thus to the emergence of new urban areas, which is something clearly shown by the example of Belo Horizonte, where a vast gold and iron-ore mining region ultimately developed into Brazil's third largest city. In every urban area, though, centers and peripheries generate a specific pattern that exists at all scales: while centers of decision making and control of the world economy develop

at the global scale, subcenters and urban corridors emerge at the regional scale. This gives rise to an entire system of networks and nodes that stretches out to establish a logistical space.[21]

On a second dimension, the question of borders and of territorial regulation arrives. Borders mark and identify a territory, they symbolize the demarcation of power and constitute the basis for controlling the territory. They are accompanied by orders and rules, from traffic ordinances right up to complex planning systems. As the ETH Studio Basel has shown through many case studies, border conditions are typical for urban areas. An understanding of the social and political character of borders is therefore key: borders are instruments of action, they exert considerable influence on the process of urbanization and they constitute invisible guidelines for urban development. At the same time, however, they are continually challenged by the process of urbanization itself, because it reveals the inherent tendency to transcend borders and to undermine boundaries, thus disbanding existing territorial entities and redefining them. In this process, borders are overwritten but still remain effective – often hidden below the surface – and are thus able to gain new meanings. An urban territory is therefore ultimately an area in which borders are transformed, become permeable, and a part of new and complex power constellations.

A third dimension is the differentiation of the territory: Urban space is a differential space, in which differences come to light and interact with each other. Separations and space-time distances are replaced by oppositions, contrasts, superimpositions, and the juxtaposition of disparate realities. Urban space can be defined as a place where differences know, recognize, and explore each other, affirm or negate each other. Differences can be defined twofold: on the one hand, they characterize the totality of actions, material elements and relationships which come together in a specific space, and especially the different people with their social wealth, their history, their knowledge, abilities and needs. On the other hand, differences can also be generated by networks: The linking up of different areas can likewise create new differences. Urbanization is characterized in particular by the fact that it overcomes all kinds of borders and brings together previously distant and separate areas. Urbanization in this sense means the connection and articulation of different (near and far) places and situations.

21 Veltz 1996.

UNEXPECTED INSIGHTS INTO URBAN TERRITORIES

How can extended urbanization be analyzed? How does the urban fabric cover the territory? Firstly, the territory has to be carefully examined and the manifold traces produced by urbanization must be analyzed. This begins with the material elements that are transformed through the confrontation of a society with the given natural conditions. This process leads to the appropriation of the territory through human activities that initially remain ephemeral, but over time increasingly condense and solidify. In this way, a society gradually inscribes itself into a territory until it is ultimately covered by the urban fabric that spreads out across the landscape.

Inspired by the experiences gained from the *Swiss Portrait,* ETH Studio Basel developed a specific research approach. First of all, a means of approaching the selected territory must be found. For this purpose we developed the instrument of *drill holes.* In order to examine an urban territory, small sections of the Earth's surface that are expected to provide information about typical urban situations are selected and ana-lyzed in depth. During a full semester, each section is meticulously surveyed and researched by a team of two students. For this purpose, a specific set of field research methods is applied that is tailored to the capabilities, skills, and strengths of the architecture students. It includes literature research and analysis of documents, interviews with local experts, specialists, and inhabitants, field observations, photographic documentation as well as the use of maps and graphics, which also might integrate statistical data. This is in effect a synthetic, qualitative analysis that, by using the technique of triangulation, superimposes and brings together different fields of knowledge. We have made this technique transparent in a number of cartographic illustrations.[22]

In this way, individual sections of the territory are exposed, thus making it possible to gain insights into their underlying deep structure. These punctual insights are then expanded to become encompassing analyses of the entire territory, and thus the sections which are exposed by the drill holes are consolidated into an overall picture. Cartography plays a central role for this task, as it makes it possible to expand our results onto the entire surface area of the territory being examined. The goal is ultimately to take the investigation to such a depth that a dense image of the territory results. Different urban configurations can ultimately be identified using this procedure.

22 See, e.g., Diener et al. 2006, 492ff.

For this book, this methodology was applied to six segments of the globe that are characterized by very different urban conditions. The challenge was to select large bands of terrestrial surface, each several hundred kilometers in length, that contain a great variation of urban situations: urban centers, peripheral and sparsely populated areas as well as areas characterized by agriculture. The analysis singles out a selection of some essential elements: water, agriculture, extraction of mineral resources, industrial production, and human settlement. The quality of this analysis lies in particular in the systematic layout of the investigation, which allows for comparability of the case studies.

The specific studies clearly show that the urban fabric of the six selected territories is considerably more densely woven and the urban imprint is much more widespread and more advanced than might have been assumed. In the segment used for studying Florida, hardly any place is still in its original state. The entire territory has been adapted and transformed by human activity to such an extent that hardly any part of the Earth's surface remains free from the influence of the material traces of urbanization, and nearly the entire soil covering has been completely replaced. It was shown that even the areas beyond the densely populated settlements have been changed almost as radically as the settlement areas themselves, which has to do substantially with the widespread mining of phosphate for use as fertilizer in agriculture. The landscape in the desert area around Muscat, too, has undergone drastic change; massive earth movements have molded the landscape in such a way that the original topography is no longer identifiable in some places. In a similar way, in the desert area embracing the Nile Valley, a parallel urban structure is being built in order to escape the natural boundaries of the linear oasis along the Nile.

In other cases, the transformations remain more discrete. A telling example is given by the extended environs of Hanoi, where, in the densely populated and small-scale areas of rice cultivation, narrow corridors of settlement are developing along local access roads, with urban forms of land use and new building typologies that are replacing the traditional rural structure. The studies also give attention to the inconspicuous manifestations that demonstrate, for example, how differences can emerge from a supposedly rural situation. They document the gradual, initially almost unnoticeable changes that are generated by the everyday mobility of local inhabitants. In the Nile Valley and in

the areas surrounding Hanoi, urban networks have been developing increasingly at a small scale, which can also be understood as a specific form of the urbanization of territory.

The studies presented in this book and in the associated student projects show, in an exemplary manner, how areas of extended urbanization can be examined and analyzed today. The many situations we have studied also document the specific manifestations of the urban, which often have little in common with traditional notions of the city. The richly abundant material that has been gathered over the years about these six urban territories provides us with diverse insights into a contemporary urban process that is full of surprises.

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KINDRED TERMS AS A WORKING BASIS

Marcel Meili

How are the hinterlands of cities urbanized – that realm which we previously called landscape and which, for this investigation, we now call **territory?** Territory denotes both: the surroundings that a city subsumes into its own structure and the core city itself, which is the center of this process of appropriation. Territory replaces the notion of landscape inasmuch as it expands the view of the city to include a category of the greater urbanized surroundings. The term "territory," which comes from the Latin *territorium* and thus has various old meanings, was introduced into the discussion by French geographers following World War I, for dealing with large areas. Then it was applied to architecture by postwar Italian Rationalism for discussing the order and meaning of larger landscapes. Admittedly the term does not primarily or necessarily pertain to the **urbanization** of territories, but it does concern the function of centers within their surroundings and the traces and organizational patterns – which may under certain conditions also be rural – that these cities leave behind in the land-scape, particularly due to their agenda of exercising power or exerting an economic function. It involves the entire spectrum between a political definition and the material and spatial order of the landscape.   51

For our study, it thereby establishes the theoretical basis for the key terminology for describing the form of a landscape space in which the city is embedded and which the city engages.

Viewed historically, this structuring of large territories by core cities was ultimately the sine qua non for the establishment of modern states. It is important to bear in mind that this understanding of territory does not so much capture a certain condition, but a process of continual change and redefinition of the spaces under examination, their functions, and their dimensions. According to our concept, the urban territorial genesis ultimately describes the transformation of nature by a city through collective work and culture over very long periods of time, of the organizational structure, and of control by an economic/political mechanism that adopts both urban traits.

Our study entitled *Switzerland: An Urban Portrait* served as the starting point for this inquiry. Although we did not use the notion of territory there, we did begin developing categories of classification for the urbanization of large, once rural, more geographical than architectural spaces in Switzerland: "quiet zones," "alpine fallow lands" and "alpine resorts" were conceptual postulations used to catalog the extensive urbanization found in Switzerland. Although Switzerland does not constitute one large city, it has developed a polycentric urban spatial order whose impact has transformed the entire surface of Switzerland into different aggregate states of structured urban landscapes.

In the international studies made subsequent to our portrait of Switzerland, we used the key concept of **specificity** to shift our focus to the territory of cities (see *The Inevitable Specificity of Cities*). The thesis that drove our actions construed the territory as a large rural space dependent on its centers. Through their formation in historical stages, these spaces enhance cities in their role as centers by supplementing them with large, once rural and now urban structures which are inextricably linked to the central urban order. At its core, this involves a very lengthy process in which the city appropriates nature. We have seen that this appropriation also constitutes a transformation: The urbanization transforms vast areas into a special aggregate state of **second nature,** into a sort of appropriated nature whose social abstraction is so radical and stable that it appears as timeless and natural as the once-untransformed nature. In second nature, we encounter a cultivated nature that, together with the artifacts built

within it, forms a construct that tends toward stability and that, for its part, begins to impede further transformation. Even buildings and roads thereby attain the status of a natural-like condition. Second nature is hence a landscape in which a society has invested work for its development. According to this definition, in most cases where territories are in the process of being urbanized, the landscape that is subjected to urbanization is arguably already a second nature of an earlier stage of development. Hence, through this means of appropriation, vernacular rural lifestyles often also find their way into the culture of the city.

This situation holds a paradox: urbanization, an energetic and dynamic process in the territory, thereby creates circumstances which tend to bury the dynamism beneath its intrinsic vitality and inertia. The process of this transformation is the subject of this investigation and its individual cases. We proceed on the premise that the pattern by which a city appropriates its hinterland and establishes orders therein is as **specific** as a fingerprint left behind in the landscape. This mark is primarily influenced by the natural environmental conditions and the history of settlement, and secondarily by the social and economic structure of the urban society, including its history.

Another particularity of territorial space is its dimension. The space that such zones occupy no longer has the typical characteristics of architectural space; it is rather **geographic.** It can no longer be experienced from one place; it can be perceived only through movement. Whereas closed topographic basins are accessible to immediate perception, the territory occupies sections of terrain whose boundaries are not grasped by immediate perception. It is this geographic scale that incorporates the city into the larger environment and allows it to be an active component within it.

Territories thereby introduce the geographic scale into the structure of a city, and through these large spaces, the **properties of the Earth** are also introduced into the form of the city: the morphology of the landscape, the geological features of the ground, the biological growth conditions, the climatic conditions, the water, the mineral resources, the natural hazards. The space of the territory is the extended space that includes the city and its claims, through the transformation of preexisting structures, both natural and humanly created: the given natural conditions, the space of production and of sustenance, the space of military security, the reach of transport links, the space of trade, the space of

the claim to power over the surrounding region. Interventions in the morphology of the surface, for example, bring into being new landforms that resemble mature topographies in terms of their consolidation.

We have described certain characteristics of this process in qualitative terms, as in our view they form part of every territorial formation. A first category concerns time. The constitution of territorial orders is subject to exceedingly **long temporal cycles** that far exceed the usual surges of urban development. Cities are inscribed into the natural environment very slowly and indications of this process become deposited with considerable stability as traces within the territory. Transforming or overwriting them also requires an extremely long time, and under certain conditions this process is based on different historical stages of development of the core city. Territorial spatial organizations preserve traces of second nature's urban appropriation – that is to say the preexisting orders – over a very long time, and cities tend to slowly reshape these traces or allow them to transmute into new orders. Older ordering systems remain, akin to the faded writing of a palimpsest. Societal property borders or local power structures, for example, often attain the

status of a *fait territorial* through their imprints in these long cycles, as

do paths or military bases, for example. Territories therefore contribute significantly to the **collective memory** of a city. Not to be overlooked, however, is that contemporary surges of territorial development tend to bury the inertial capacity of long-term cyclical phenomena under surges of rapid transformation. Nevertheless, traces of a collective memory are also retained in these bursts of energy, more than in the city itself.

Critical to the form of these territorial structures is the fact that each territory is closely linked to an urban center. **Centrality** is a basic characteristic of a territory, even when it appears that seemingly uniform, self-sufficient systems are being established. Territories are specific expressions of urban organisms, which reflect both their relationship to nature and their fundamental economic and sociological structure. The impact is reciprocal: of course the central city imparts form on the territory, but the characteristics of the latter also have a converse effect on the form of the city, on the way the landscape appears within the urban structure, for example, as in Bern, or the rural exodus of flows of migrants in Casablanca. We have seen a special case of centrality in Italy: there, territorial entities whose genesis can undoubtedly be traced back to Rome have attained a condition of autonomy.

The centrality of a city within a territory relies primarily on a complex and well-developed **network of relationships of exchange,** such as a network of efficient **transport links,** in order to ensure the productivity or control of the urbanized territory. Secondarily, this network guarantees exchange with neighboring urban constructs, such as transit routes. Even though a territory is primarily geared toward establishing a largely autonomous urban unity with the center, these cities, the bigger they are, are for their part linked with other central cities in large-scale urban networks that are based on more than just the relationships of flows of people and goods. At the moment when the central city combines with the territory in such a complex way, the territory loses the status of a landscape tied to nature, and becomes itself a city. The internal and external networks that exist there must not only secure transport, but also flows of information, energy flows, organizational relationships of exchange, and territorial safeguards. In the vicinity of various urban entities, at the latest, another feature of territorial organization becomes the factor in the landscape that constitutes reality: the **border.**

In its genesis, at an early stage, every territorial unit is characterized by its overcoming of preexisting border systems to define new territorial spatial relationships, which in turn define new borders. The driving force may be safety, production, or demography. In these new border networks, however, much older borders survive as traces by becoming integrated into the new spatial organization: the division into fields for preexisting agricultural production methods, for example, as well as lines of demarcation between spheres of power and topographical divides. The boundaries of the smallest territorial units then bring land ownership into play, a spatial system of order that, in its contemporary form of precision, is surprisingly not very old, but which today helps to organize all border systems. Boundaries of larger spaces, by contrast, usually originate in elements of an exercise of political power that organizes settlements, gives order to production processes, or provides space for infrastructures. "Here" and "there," "mine" and "yours," "right" and "wrong" account for basic characteristics of a site that are first introduced into the open space by territorialization. In their definition as well as in their conquest, borders are basic facts of territorial evolution. They also aid in subjecting the expansive space of the territory to the **control of power** and to make it accessible for the production of urbanity, such as by means of rationalized agriculture

or high-performance networks. Contemporary land ownership and its boundaries – guaranteed by the state – become a key driving force of territorial development, despite representing inherent opposition to it. Whereas territories were formerly delimited essentially by the demand for power and security – through the nutritional needs of the cities – today the power of central cities manifests itself in a completely different but equally consequential way. Territories are now essentially managed, engineered, planned, and made safe or more economically productive, and they are connected back to the center by means of administrative acts and through decision-making authority, police powers, and operating structures. It is the center that ensures the rationality of territorial orders within its borders, since its organizational form combines the sum of the specific orders and the social and economic energies into a management and control structure, through ownership and through political mechanisms. The organization of the core city thus becomes similar to that of the entire territory.

The most infallible indicator of the urbanizing character of the steps in territorial development, however, is presented by **differentiation.** Urban territories are distinguished by the fact that their once uniform, rural attributes of demographic or economic nature, their relatively homogeneous pastoral character, are subjected to an ever-increasing process of differentiation through acts of territorial integration. Segments of economic sectors emerge, the division of labor is promoted, and demographic-sociological stratification is intensified. The assignment of tasks and functions to various individual regions and population groups increases. The territory now exhibits differences in individual segments, which are similar to those of the city, and which enter into complex relationships with each other in order to increase their urban productivity. In moments where transportation networks are guided into indissoluble interdependencies by economic factors of production and necessary movements of people, the urban character of the territory lies exposed to view. It is in the nature of these zones' functioning that specific forms of territorial development emerge, with respect to both the field of housing as well as the sites of actual production – be it focused on agriculture or mineral resources or energy generation. Such structural nuclei are frequently also the actual staging posts for the metropolitanization of landscape. In the process, they may even refine and further develop traditional building forms, since they reflect

the climate, locus, and function of the place. New infill is to be expected in the territories primarily where, for example, residential areas are influenced by close commuter relationships with the central city or where entirely new production methods are introduced.

With this notion of territory, we find ourselves in neither the Anglo-Saxon nor the German semantic field, but in that of Italy or France. There, the term has lost all similarity to "landscape" and is focused entirely on the civic organization of space, material transformation, and control of the landscape. We have based our investigations on this field of meaning, inasmuch as we have taken the appropriation of landscape through invested work as the tool of observation of social and economic engineering: urbanized territories incorporate the core city and the sum of all the space-structuring measures originating from the center.

In methodical sequence, we defined a series of urban territories based on specific criteria taken from the investigative work:

In the NILE VALLEY near Assiut, Egypt, we were primarily interested in the notably dense natural corset enveloping a linear city. It was not clear from the outset that urban structures could propagate in accordance with our definition at all under such restrictive natural conditions.

The vitality and productivity of the Nile Valley, however, goes back precisely to the fact that its population had subjected large parts of the oasis to a complex and differentiated urban structure.

The geographical cross-section between ROME and the ADRIATIC COAST presented an entirely different picture. In one of Europe's oldest cultural landscapes, territorial fragments with a certain degree of autonomy have formed within the territory, despite their proximity to such an important metropolis, and spawned on the Adriatic an urban type whose tremendous dynamism is owed to economic and tourism factors originating elsewhere. The territory in this cross-section of Italy shows that the organizing pulls of even a large city can quickly reach their limits within the territory and must then give way to new structures, whose centrality is unclear in some cases or which may relate to urban centers whose weak internal structures are still in a stage of consolidation.

The territory of CENTRAL FLORIDA presents an even more cryptic example of a relationship to a centrality. There, very complex patterns of territorial organization can be traced back to the production of mineral resources and the management of water, to specific forms of

large-scale agriculture, to economically driven nature conservation, and to mobility and a light, itinerant urbanism exhibiting little stability. This differentiated territorial structure owes its tattoo-like surface imprint to a very young history and to the existence of a sort of analogue center. The territorial phenomena are interdependent in large measure, and their relative instability expresses the vital impact of the forces of a territory that continually change the surface pattern. In its unattachedness, the landscape in Florida relates less to a local urban centrality than to the characteristics of a common American type of city formation. By virtue of its recent development, Florida exhibits a perceptual aspect of the territory with particular clarity: Territorial transformations primarily affect the surface of a stretch of land, the outermost skin of the Earth. The depth of the traces is an expression of the time they have been undergoing transformation.

In contrast to this relatively free play of settlement energies, the RED RIVER DELTA in Vietnam represents a sort of contrasting model. Vietnam was late in initiating reforms that exposed traditional settlements and cultivation of the Delta to freer forces. Naturally, the resulting transformations initially began to influence the traditional factors of the territorial structure:

rice production, water management, rural distribution of settlement, and mining. Only recently have the transformations introduced new organizational measures into the territory, which, although fragile and unstable, have nevertheless already left behind distinct traces on the territory, especially with regard to settlement growth and mining production.

In OMAN, we are confronted with an elementary case of the urbanization of a territory, because its formation was essentially an act of reclamation from the desert, which historically necessitated the development of an elaborate traditional system for water distribution. Owing to its growth, the city of Muscat has more recently moved to a significantly more intensive system of water management: large amounts of energy are used to desalinate seawater and distribute it to the entire metropolitan area via a costly delivery system utilizing tank trucks. A very idiosyncratic system of land distribution that results from an almost absolute aristocracy subjects the growth to an unusual typification that produces diverse patterns of adaptation to the difficult natural conditions. Only in the Nile Valley have we found the territorial organization to still exist in such an intimate dichotomy with the natural conditions as in Oman.

In BELO HORIZONTE, Brazil, the natural conditions likewise play a major role in organizing the territory, although here it is in the active and intentional form of resource management through mining. The land is affected more by surface mining than agriculture, as the former entails huge transformations of the natural terrain. In addition, the central city here developed a close interconnection with the surrounding region that also allows for incorporation of the rather sparse agriculture. More than in other developed cities we have studied, the city develops numerous initiatives to subject the center's outreach toward and influence of the surroundings to developmental planning measures, although many of these activities barely have effect in the territory. As in almost all the examples, here it also turns out that territorial appropriation of large areas of urban hinterland are, above all, dependent on the existence of vital economic and demographic energies that in turn reach out to these regions. These energies can hardly be tackled through planning, and as a consequence, unexpected, almost anarchistic qualities adhere to these territorial organizations.

   To understand acts of territorial organization that emanate from cities, we have adopted six **categories of investigation** that have been applied in one form or another as analytical cross-sections of the territories in all of our case studies. They reflect three different levels of examination, beginning with the natural conditions, such as geomorphology, water, geology, and climate, then the creation of networks of all kinds, and finally the establishment of territorial productivity – be it in relation to agriculture, industry, or mining – which also involves the genesis of settlement structures.

NATURE AS SINE QUA NON

Within this category we have gathered together the essential characteristics, in terms of the geosciences, of the nature behind the territory: geology, climate, botany, the morphology of the landscape, the natural boundaries, and its natural hazards. We took these insights and ascribed them to the concrete processes of urbanization that structure the territory and transform it into a second nature. Where the transformation does not have effect, second nature has its gaps: The original nature shines through, although by no means does it need to be a "natural nature," revealing instead much older, more sublime structural features of human influence. One of the things that territories always

depict is the relationship of a city to nature. In the most dense, metropolitan form of the city, issues are raised that represent challenges to the city and threaten the equilibrium between it and nature – through, for example, overtaxed recreational facilities and destabilization of the ecological balance.

WATER MANAGEMENT

Astonishingly, water and its management exhibited an exceptionally large influence on the territorial organization in all the case studies, not only in the desert. Water distribution turned out to be a key factor in the spatial and functional structure of the territory. In many cases, a shortage of water is no longer the driving force for management; the impetus comes instead from a need to control an overabundance of water and from water's significance for energy production.

NETWORKS AND INFRASTRUCTURES

Infrastructures in the territory are frequently networks, but also dams and technical facilities for production and for mining. The dominant organizing force, however, comes from the networks of mobility and transport. They guarantee not only the connection to the center and to other cities, but they also account for the important aspect of internal mobility within territories. They form boundaries as well as cross-border structures and thus establish the foundation for the spatial structure of territories. Infrastructures, because the lines they follow often have ancient origins, are a major aspect in the long-term stability of territories.

AGRICULTURE

For most cities, agriculture and providing sustenance constitute the original act of appropriating their hinterland for territorial organization. Of all the levels of intervention in the surrounding region, agriculture is the one with the most crucial importance. This act not only serves as the economic base for the territory but is often also the reason for the organization of power and security in the region surrounding the city. In the course of the metropolitanization of cities, specific ownership and production relationships with new border regimes are developed over time, which in many cases establish a direct link between the center and agriculture as an urban fact.

INDUSTRIAL PRODUCTION AND MINING

The basis for economic productivity, as already mentioned, rests on the agricultural sector in the majority of cases. Beyond that, specific industrial production forms develop within the territory, usually resulting from one of three causes: the exploitation of mineral resources, the construction of energy plants, and the establishment of production forms that are particularly dependent on their proximity to centers (transportation, work force, market proximity, supplier systems, systems of authority and power, etc.). Like no other factor, production has the power to transform and reshape territorial structures in all their manifestations.

SETTLEMENTS

The built structures of habitation and production constitute anchor points of the territorial order without necessarily dominating it. Conversely, these built structures can often be traced back to dominant characteristics of the territory. Of course, many hang on to old traditional settlement types, which then become the object of a metropolitan transformation: as usurpation of preexisting vernacular historical legacies. In these transformations, the long cycles and the slow pace, for example, can be read as an expression of astonishing local territorial stability. However, it cannot be overlooked that, in contrast to this, newly built architectural structures often represent more sensitive and more fragile indicators of territorial development than their stabilizers. Their organizing power occasionally does not reach those of transport networks, water infrastructures, or production facilities. In these cases, something slightly unstable, and at times precarious, often adheres to the urban built structures in the territory, because their reason for being relies on soft, versatile characteristics of the territory and volatile claims of the center. In early phases, settlements often have a tentative character, inasmuch as they gradually appropriate those features of the territory which can be consolidated for stability. Almost always, proximity to the centers plays an important role in the formation of such settlement structures. The unstable elements of a territorial architecture often have an unstable counterpart in the cities, which represents a delicate sociological balance between the inhabitants of the territorial periphery and migrants to the cities. In extremis: are *bidonvilles* (shanty towns) rural or urban phenomena? Some of these newly erected fragments possess a form of autonomy that enables them to survive as

viable, at times sovereign fragments in the territory with tenuous relationships to the center. The antithesis of the instability of these building forms is represented by those settlements which usurp and simultaneously stabilize older, existing types of development. In both cases they are core parts of the metropolitanization of territory, because they almost always reflect the organizational demands of the center.

These forms of appropriation are complex mechanisms that constitute part of an urban usurpation of the hinterland that in almost all cases has a dual character. In most urban transformations, two forms of appropriation – dialectical and continual – occur in combination: in the form of a powerful, often rapid modification of the terrain and its legacies, and, at the same time, in the smooth conversion of surviving traces into effective new organizational forms of territory, thus in a second nature.

The profile we have described of the individual cities we studied is now composed of sections taken along the criteria described here, almost like a series of CT scans. In the summary presentation of the contents of these sections, we are elaborating on the particularity of an urban territory. The special balance into which an urban territory brings

the various factors we have analyzed forms the basis of the detailed portraits, where we seek to comprehensively express the varied urban territories found in our case studies. The categories have different implications for each case, thus lending specificity to each place.

2
PLACES

NILE VALLEY,
TERRITORY AND STABILITY

Mathias Gunz

Nile Valley and Delta at night

Turning our focus to the territory after having made a series of studies of contemporary metropolitan cities, it was a nighttime satellite view that drew our attention to the Nile Valley. The photograph shows a continuous, meandering band of light that begins at the Mediterranean and – with the density of major European cities – extends deep into the darkness of Northeast Africa. This contrast between density and void also characterizes the aerial view of the country by day. Egypt is roughly a 1000 km x 1000 km square of desert. Inscribed in this square is the Nile, which enters the country from the south and creates a 25-km-wide fertile corridor, a linear oasis that runs through the desert until it fans out into a delta approximately 150 km from the Mediterranean coast. At the beginning of this delta is Cairo, a metropolis with many millions of inhabitants, which dominates the entire country as its economic, political, cultural, and administrative center. In contrast, the Nile Valley and the delta region consist of a fine network of hamlets, villages, towns, and cities, whereby the provincial capitals – including Assiut, 300 km south of Cairo and the starting point for our study – each have many hundreds of thousands of residents. Between Cairo and Aswan, such regional economic and administrative centers comprise a chain at almost regular

intervals of 100 km: Beni Suef – El Minya – Assiut – Sohag – Quena – Luxor. Overall, the Nile oasis is home to around eighty-three million Egyptians or ninety-nine percent of the total population, distributed in thirds among Cairo, the Nile Delta, and the Nile Valley. The remaining ninety-six percent of Egypt's territory is desert and extremely sparsely populated, almost exclusively by nomads.

NILE VALLEY

From a lower altitude, the Nile no longer looks like a serpentine line, appearing instead as a fine capillary system that splits apart from the main river into ever-smaller canals, subchannels, and estuaries. At the starting point of this highly complex water management system, on the southern border of Egypt, stands a mighty work of engineering prowess: the Aswan Dam. It collects the Nile water – which originates mainly from the rainy highlands of Abyssinia and is enriched with fertile silt – to supply the whole country, which, apart from the Mediterranean coast, receives practically no precipitation. The amount of water that flows into Egypt is regulated by long-term fixed international agreements among the Nile riparian states, dominated by Egypt.

Desert and oasis: Satellite view of Egypt

Water management near El Fayma village

The amount that flows essentially defines – or limits – the possibilities for the entire territory. Through a system of channels, barrages, locks, pumps – and frequent measuring stations – the precious resource is distributed to the individual regions, provinces, and villages according to a water budget established in Cairo, in such a way that virtually no drop reaches the Mediterranean. This fine network of waterways together with its underlying control mechanisms form the body of the Nile Valley and are the basis of all existence therein. Within a few centimeters of where the capillary system ends, the fertile, cultivated landscape turns into desert that is hostile to life. For the villages of the Nile Valley – at the end of the capillary system – the complex mechanics of distribution, or the issue of scarcity in general, surprisingly plays a much less significant role. Here, water distribution to the fields works on the basis of age-old customary rights and in reliance on the everlasting availability of this life-giving resource. Thus the promise of this availability is – so it seems, at least – also the foundation for the claim to power made by the central government in Cairo, which has practically no other presence in the villages of the Nile Valley. As a space, the Nile River is largely ignored by the local population. Possibly because the river had no clearly

defined course until thirty years ago – it was a seasonally changing body – its banks are not recognized as fixed points in the territory. The few landscaped waterfront promenades in the cities seem new, and their use still seems awkward. Thus, even though its water determines life in the Nile Valley, the Nile today remains an autonomous body in the territory.

The Nile Valley reveals itself to the visitor as an archaic, extremely fertile, almost paradisal garden. Interspersed in this garden – barely noticeable at first – are simple houses made of limestone or clay bricks and reinforced concrete. They coalesce into villages that can have the population of towns or, as in Assiut, into cities that, despite their considerable size, still remain rooted in the agricultural structures of the valley. These provincial capitals have large universities, hospitals, and other central government institutions, some businesses and a few traces of the global economy – such as the franchise Kentucky Fried Chicken. Despite their rich history, they seem to have developed no clear identity as cities, appearing more like local concentrations within the all-encompassing village network. Aside from a few large factories belonging to international companies (Holcim, Coca-Cola) and some

Desert edge at Luxor

New construction on agricultural land

government-initiated industrial parks, production in the Nile Valley mostly takes the form of small workshops that are lined up for kilometers along the streets and which are substantially engaged in repairing machinery and equipment that have been imported over the last 150 years. The same applies to the tools and techniques of agriculture, which have been continuously refined since antiquity but not fundamentally modernized. The increase in production of recent decades is therefore primarily due to the taming of the Nile with the Aswan Dam. It makes up to four harvests per year possible today, even though this is done using large quantities of imported fertilizer – because the Aswan Dam also holds back the fertile Nile silt. There has been practically no mechanization of agriculture apart from using gasoline-powered water pumps, widespread improvement of the small-scale field structures never took place, and almost everywhere, water-inefficient flood irrigation is still employed. This cannot be taken for granted in a country where low agricultural productivity and high water consumption confront a rapidly growing population. The Egyptian power holders of the last century, all of them great proponents of modernization, evidently have either not managed or not ventured to break apart the millennia-old, tightly knit

patterns of cultivation (and attendant irrigation) in the Nile Valley and replace them with new structures and techniques. Perhaps rightly, because the traditional way of life in the agrarian villages places a grid of stability over a landscape that, due to its poverty and its strong population growth, could be even more strongly impacted by emigration. It ties the population to the cultivated land, to the Nile water, and thus ultimately also to Cairo's claim to power.

Superimposed on this grid of stability is a second system that complements the first in terms of its agility: mobility. The entire Nile Valley, a cloud of dust composed of smaller and larger settlements, is traversed by a fine-meshed, dynamic, and flexible system of movement. Minibuses, taxis, and tuk-tuks, all operated by private micro-entrepreneurs, form a rudimentary regulated transportation infrastructure that is very strongly oriented to the needs and capabilities of its rural customers. It is this mobility that ensures continued survival of the traditional way of life in the villages. Because nearly every village, not to say every family, sends young men to the cities to work – especially to Cairo. They do this on a weekly, monthly, or yearly basis, but only rarely on a permanent basis. The center of their lives, at least

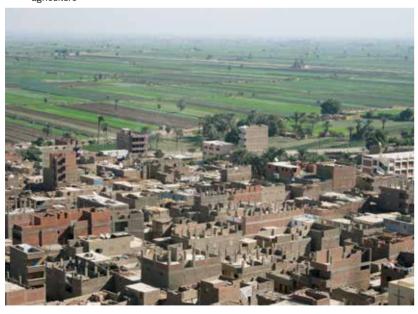Shepherd near Assiut

Transit point near Assiut

sentimentally, usually remains in the village. This brings not only money, but also city life in the form of mobile phones, computers, and satellite dishes to the villages. Moreover, quite a few villagers commute daily to nearby cities, where they augment their agricultural income with part-time work, and more than a few city dwellers cultivate a piece of land, which they have typically inherited, as a hobby. All this gives the Nile Valley today a hint of something hybrid, almost timeless; it is archaically rural in its fundamental structures, yet highly dynamic and globally networked in daily life. It is an antique garden in which shepherds carry mobile phones and villages often have the density of large cities. The most surprising aspect is the serenity that emanates from this landscape, since conflicts over land and water swell up just below the surface: in a closed system with limited resources, the spread of any one use (such as housing) can only be achieved at the costs of another (such as agriculture).

DESERT

Beyond the embattled deep brown soil of the Nile Valley is the second major player in Egypt: the desert. The desert is fundamentally state

property, and large parts of its territory are controlled directly by the military. As apparent as the demographic problems are in the Nile Valley, their resolution seems so obvious in the desert: first, by building cities in the desert and in so doing, freeing valuable arable land from the growth pressure of villages, towns, and cities; next, by juxtaposing the inefficient, traditional, and ossified structures of the Nile Valley with a second, modern ideal Nile Valley, based on industrial, highly ef-ficient agriculture. Both have been and are being attempted.

The conceptual history of the desert cities began immediately after Egypt's independence. Initial attempts to relieve the Nile Valley by creating autonomous satellite cities were made in the desert outside of Cairo (1977: Tenth of Ramadan City; 1978: Fifteenth of May City; 1979: Sixth of October City; 1980: Sadat City). These desert cities of the so-called first generation have actually never reached the desired density, but thanks to surrounding industry, they have become function-ing parts of the millions-strong metropolis. Hosni Mubarak, too, saw Egypt's solution in the desert. In the desert, immediately beyond the Nile oasis, he had sister cities created for every large city in the Nile Valley. These cities always lie on the east side of the Nile, while on

Durunka village: Urban density and agriculture

the west side, a new desert highway forms their infrastructural counterpart. Assiut, too, has such a mirror image: New Assiut. Whereas the early desert cities around Cairo mostly function as bedroom suburbs and are only now slowly developing their independence, the jobs that would enable such commuter lives – in industry, for example – are extremely rare in the Nile Valley. A majority of the population in the Nile Valley earns its livelihood chiefly by providing micro services within their village or neighborhood network. Even in the provincial cities, state institutions are the largest employers. Production or services that go beyond local needs are practically nonexistent. Accordingly, it is no surprise that there has been little success in developing an autonomous local economy in the desert cities or in transplanting the economic humus of the old Nile Valley, which continues to be based on an agricultural and barter economy. Alone the central government and the upper class build in the desert cities; the latter, however, do so not to move there but as an investment for future generations. For the moment, New Assiut leaves one with the slightly eerie feeling of a ghost town in which the seemingly endless construction process overlaps and mingles with already incipient decay.

Hosni Mubarak's second large-scale project, the New Valley or Toshka Project, goes considerably further. Instead of reforming or relieving the Nile Valley, a second, artificial oasis with highly efficient structures is to be created parallel to it. Using the most modern irrigation and agricultural techniques, the cultivated area of Egypt is to be increased by twenty percent with only ten percent of the Nile's water. The megaproject – initiated in the nineties – suffers beneath the huge investment costs for the infrastructure necessary to divert the Nile water. It is also marred by technical problems, such as the enormous evaporation rate and the high salinity of the soil. With the demise of the all-powerful Mubarak and thus his loss as patron of the project, its future is now uncertain. In any case it would still take decades for a new Nile Valley to establish itself in the desert.

In addition to the government's two megaprojects, "Desert Cities" and "New Valley," a third occupation strategy can be observed in the desert. It is individual private actors who have transformed the boundary between the Nile Valley and the desert from a hard line into a dynamic zone. The instruments of these pioneers are arable soil that is freed up through construction projects and water, whether freshwater

New Assiut

Toshka project (NASA)

or recycled wastewater, that is diverted illegally, which are used to wrest small plots of fertile land from the desert in order to make a living for oneself. The desert fundamentally belongs to the state, but it automatically becomes the private property of anyone who is able to cultivate it. Even though the total cultivable area is not substantially enlarged through the industrious activity of these individual actors, the significance of the desert as an alternative to the Nile Valley is nevertheless demonstrated. For the country of Egypt as a whole and the territory's individual inhabitants alike, the desert symbolizes a means of release from the pressure and confinement of the Nile Valley.

CAIRO

Meanwhile it has become increasingly difficult to relieve pressure in the metropolis of Cairo. While the city once profited by drawing labor and raw materials from its hinterland, today it has become the victim of its own appeal. Forty-five million Egyptians, or half of the country's total population, are now under the age of thirty-five. And a large percentage of them seek their fortune in the cities – especially Cairo. But Cairo is no longer able to absorb this demographic wave. Even graduates of the provincial universities no longer find any prospects in the city. They are not trained well enough for the global economy, and the administration, their traditional refuge, is already inflated beyond all proportions. Precisely because the Egyptian government followed a longstanding practice of guaranteeing every university graduate a job, the state apparatus is now a bloated and impenetrable jungle of poorly paid civil servants. The resulting institutional corruption hinders private-sector initiatives and afflicts nearly everyone in their everyday lives. An entire generation of young unemployed people remains with scarcely any prospects in an overcrowded metropolis, where they are systematically harassed by the regime's security forces and bureaucracy. Over the last decades, an expansive complex of social and economic problems has arisen, exhibiting a wide variety of symptoms that include Salafist extremism, rapidly increasing numbers of violent crimes, and regular sexual assaults by groups of young men on female passersby. Thousands of young Egyptians apply for permits to work in America, Canada, and the Gulf states or migrate illegally to Europe.

The hopelessness and indignation can also be seen in urban settings. Cairo is one of the most densely populated cities in the world.

Ringroad, Cairo, 2009 (Bas Princen)

Mokkatam ridge (garbage recycling city) Cairo, 2009 (Bas Princen)

The hoped-for relief for the core city that was anticipated from the satellite cities has transpired only in a very limited way. Inner-city neighborhoods densify into slums like the "City of the Dead," a cemetery inhabited by the living, or Manshiyat Naser, a Coptic district that subsists from the gathering and recycling of urban waste. These days it is primarily the rich upper class that monopolizes the desert cities, where development has largely been left to private economic forces since the 1990s. They escape from the problems of the city in new, self-contained settlements (gated compounds). Especially in New Cairo and Sheikh Zayed City, such verdant garden cities are usually built to include a golf course and are situated close to private schools and universities. They are financed by investors from the oil-rich Gulf States — often in direct cooperation with the influential Egyptian army, which had already controlled large parts of the Egyptian economy before the revolution. The flight of the economic elite from the overpopulated and increasingly dilapidated downtown area, which, with its *Belle Époque* architecture, represents the cosmopolitan Cairo of the *fin de siècle,* exacerbates the already existing segregation and strains the already overburdened transportation infrastructure. Traffic jams in Cairo have taken on such magnitude that the movement necessary for social, cultural, and economic exchange has become extremely difficult. This is apparently also true for many other areas of urban life: overburdened, they have become immobile; blocked. The unbridled energy and refreshing creativity of the metropolis are increasingly confronted with claustrophobic confinement and ruthless competition. While the hinterland is still stabilized and relieved to a certain degree by its agrarian base, the problems in the city are accumulating to the point of complete paralysis.

New town outside Cairo

ROME – ADRIATIC, AUTONOMY OF THE HINTERLAND

Christian Müller Inderbitzin

The territory surrounding Rome between the Adriatic and the Tyrrhenian Seas is one of Europe's oldest cultural landscapes. It has repeatedly been reshaped and subjected to new influences over a long period of time, and thus it exhibits complex, historically evolved structures. In addition to the endogenous factors from its history of civilization, the exogenous influences of topography, climate, and water have also had considerable impact on these structures. Differing cultural landscape spaces have emerged, which are stratified "in section": in low, flat, and strongly urbanized areas near the coast; in the cultivated river valleys along the Tiber and Tronto rivers; in hilly, agriculturally formed regions in the foothills of the Apennines, and in the high, sparse mountainous areas of the Apennines. This topographical and climatically conditioned division into different cultural and landscape areas engenders a certain seclusion or even autonomy of the individual regions. Throughout history there have been repeated efforts to overcome these naturally determined boundaries and to unify the territory and subject it politically and economically to the city of Rome. At the present time, under the influence of a rather weak center and the process of economic globalization, individual regions between the Adriatic and Tyrrhenian Seas are developing a new autonomy.

CENTRALIZATION VERSUS DECENTRALIZATION OF THE TERRITORY

After the territory was shaped by different cultures in the region over a long period – by the Sabines in the Apennines, for example – the Romans unified large parts of the territory for the first time and oriented its structures toward the center, the city of Rome. The archaeological remains of numerous aqueducts, which supplied the ancient city with water from the Apennines, stand symbolically for this period, along with the twelve consular roads that stretch out like a star from the center into the territory, and which guaranteed trade and military control. We took one of these, the Via Salaria, as the starting point for our studies. This road crosses the Italian peninsula roughly from east to west, thus connecting the Adriatic and Tyrrhenian Seas. With the demise of the Roman Empire, the orientation toward the central city of Rome was itself supplanted for a long time by more autonomous, regional cultures. In the Apennines during the Middle Ages, this was above all the religious networks of the Benedictine monks. This is evidenced in the mountains around Norcia by a tight network of monasteries, some of which are still preserved while many others have disappeared.

Castelluccio high plateau

Cultivated land in Bassa Sabina

An orientation toward Rome as the center took place once again when the Italian nation state was founded, which presumably reached its zenith under Benito Mussolini with the building of infrastructures – especially, and again, for the purpose of ensuring the water supply, as well as the development of a tourist infrastructure in the Apennines – one example being Monte Terminillo. The dams built back then for supplying drinking water and generating electricity are still in use today and play an important role in supplying the metropolis of Rome. The rather weak position of Rome, however, led to a situation in which the facilities were badly maintained and the operators were in some cases privatized. In the mountainous regions of this landscape rich in water sources, this situation led in turn to a new demeanor of autonomy: water became a tradable natural resource, and in exchange for it, the mountainous regions demanded compensation money from the metropolis to mitigate its structural weakness.

Under the aegis of Mussolini, one can speak of a high point in centralization, because the efforts for modernization in the territory simultaneously ushered in processes of concentration that soon transformed the landscape into a "periphery" of the city. As part of the process of industrialization and urbanization, the mountainous landscape was confronted with the problems of population drain and ensuing decline. What this has meant is a massive reduction in population, a fall in economic power, the dismantling of public infrastructure, and – concomitant to this – uncontrolled spread of vegetation in the cultural landscape. In the early 1990s, towns and villages in the Apennines lost half, some even two thirds of their inhabitants. This development is comparable to the phenomenon of the "alpine fallow lands" that we identified in our work on Switzerland.

The Apennines, still the topographical "backbone" of Italy, have thus transformed into a "backdrop" of sorts. This development is also reflected in the modern national infrastructure: the key highways and railway lines run parallel to the coasts in a north–south direction and virtually exclude the mountainous terrain of the Apennines. Whereas transverse connections such as the Via Salaria were significant during the Roman Empire, they now play a marginal role, as exemplified by current commuting patterns along this axis. Thus the Via Salaria has largely lost its significance as a direct connection between east and west, between the Adriatic and Rome, and now largely serves the

Industries in the Tronto Valley

needs of local transport, with individual tracts integrated into local transit networks. The significance of the city of Rieti – which lies on the western edge of the Apennines and on the Via Salaria – diminished with the weakening of the territorial bond between Rome and its territory. Nonetheless, tourism – in the form of seasonal movements – has been able to counteract migration and vacant properties to some degree. The small town on the Conca Reatina plateau remains mired in a self-involved agony, with no economy to speak of, nor relevant exchange with other centers.

THE AUTONOMY OF THE HINTERLAND

Since the 1990s, however, trends in the opposite direction can now be observed. Individual villages in the Apennines have recorded a slight growth in population and specialized industries have managed to establish themselves. This development began with the opening of the Monte Sibillini National Park in 1993. The marketing of the park links the notion of unspoiled nature with the historic wealth of the region. Alpine tourism, food products associated with the slow food movement, and "spirituality" that draws on the traditions of the Benedictine order are all on offer. Specific to this development is the phenomenon that these

offers are targeted at a globalized economy: the networks no longer necessarily run through the center of Rome, rather they pursue a logic of self-marketing that allows the territory to begin extracting itself from the relationship between center and periphery. New, global networks thereby transform historical influences and connections.

This tendency can be seen, for instance, in the derelict Benedictine cloister that was reconstructed by an American religious brotherhood that settled there in 2000. Also noticeable is the increase in high-priced hotels in Norcia, which are clearly aimed at a global clientele. Finally, tradition and worldwide sales are united in a new way through the renowned production of salami and other varieties of cured meat. This sphere of food production is prospering so much that pork needs to be imported from Holland to meet the demand. Local processing transforms this meat into a local product which can bear the label of a sustainably produced commodity.

In other places, too, we could perceive an initial loosening of historical bonds with the Roman center, bonds that are being replaced by new networks. We were able to observe comparable phenomena on the Adriatic coast, in parts of the Tronto and Tiber valleys, and in the

A village in the Apennines affected by decline

A Salumeria in Norcia

Bassa Sabina. On the Adriatic – virtually in the shadow of the Apennines – an autonomous, linear urban structure has developed, beginning in Rimini and stretching all the way to southern Italy. It draws its energy from global mass tourism and is, as a result, bound to cycles of prosperity and the needs of tourists. While certain parts are prospering, others are in decline and are being occupied by new inhabitants such as immigrants. The backbone of this urban structure was once the north-south railway, before it was replaced by a counterpart to the Autostrada del Sole, a coastal highway. The dimensions of this territorial transformation are seen not just in the extent of the built town, but also, for instance, in the large-scale "construction" of beaches. International know-how and technology have come to the rescue of sandy beaches affected by erosion.

In the Tronto Valley region we focused on local production. While state economic policy governing the *Mezzogiorno* has barely made an impact and industries that were once based here have since disappeared, a flexible "cottage industry" in the high-end market for shoes and clothes has established itself and the region now has its own prospering economic sector. In micro-production facilities, mostly located within the homes of the artisans themselves, individual products are made on a contract basis for the major fashion houses of northern Italy. This type of production is the expression of a dynamic regime that allows fashion companies to produce according to demand and without fixed contractual obligations. This production is evidently free of state control and the networks run directly between "north" and "south" – Rome is irrelevant here, with the Tronto Valley belonging more to Milan's hinterland. Ultimately, the prosperity of this industry is directly dependent on the global economy. A similar state of affairs can be observed in the Tiber Valley. Here the transportation infrastructures and relevant logistic centers, which are no longer exclusively preoccupied with serving Rome, but are instead subject to a European, north-south logistics route, represent a new autonomy and "globalization" of the territory.

The development of the Bassa Sabina, a hilly landscape at the transition between the Tiber Valley and the Apennines, presents yet another situation. Here we find an old, highly attractive cultural landscape that has been shaped by agriculture and dominated by seemingly endless olive groves. Because olive production here can only be maintained through European Union subsidies and is no longer able to compete with Spain and Greece, the cultivated land is under great pressure.

Ribbon development on the Adriatic coast

Gentleman farming in Bassa Sabina

One the one hand, suburbanization stretching out from Rome has reached the Bassa Sabina, with commuters settling here in ever-greater numbers. On the other hand, the draw of scenic beauty has transformed this area into a private Arcadia for "northern European gentlemen farmers" – abandoned farmsteads are bought up and no longer professionally cultivated as agricultural businesses. In these developments, too, the metropolis of Rome has no significant role to play. The hinterland has achieved a quiet form of autonomy.

CENTRAL FLORIDA, URBANIZATION AS SUSPENSION OF TIME AND SPACE

Roger Diener

From a European viewpoint, the state of Florida is extraordinary: it lacks the stability that we associate with the experience of larger, contiguous geographic and political entities. Neither rural nor urban traditions are perceptible in the urbanized and agrarian territory of Florida. The sum total of all the landscapes perceived and claimed by people appears to be taking form in a fresh engagement with contemporary forces and movements – or to have just done so. Thus, Florida seems to be caught in a state of radical availability and, through the prevailing use of this space by its inhabitants, its territorial identity appears to dissolve.

An aerial photograph first drew our attention to Florida. Not the photograph of a coastline, but of an area midway along a cross-section of Florida stretching between Saint Petersburg and Cape Canaveral. It depicts the phosphate mining area in the Bone Valley near Bartow, the county seat of Polk County, in the western part of Central Florida. Phosphate mining produces various forms of urbanization, yet all are directly related to the prevailing use of the land, whether for agricultural production, settlement, or regulation of the water balance in areas that are kept free of settlement. The aerial photo of the district between Bartow and Mulberry reveals the inseparable link between the various

phenomena: the spatial organization of the mining industry which, much like agriculture and settlements, is inscribed within the Jeffersonian grid, the basic principle of orthogonally subdividing the territory of the United States into a grid of square sectors. Traditional rules do not apply here; the abstract concept of the grid not only serves to organize the terrain, it shapes the landscape itself. Dikes of gypsum enclose vast basins that grow to form tall geometric mounds known as gypsum stacks, Florida's highest elevations. Fields that the mining industry has occupied in the more or less recent past encircle areas urbanized by settlements; these fields are sometimes directly adjacent and suggest that neither the territory of mining nor that of urbanization have achieved stabilization over time. It is the image of a precarious equilibrium. The transportation networks and their intersections with the north-south and east-west axes have doubtlessly yielded the starting point for settlement, yet they, too, have failed to produce any traditional urban figures, having given rise instead to mere concentrated areas of settlement growth without specific urban form. Whereas the mineworkers' settlements were originally set in close proximity to the mines for logistic reasons, this relationship no longer holds and, with the

Aerial photography of the Bone Valley

The inscription of phosphate mining and agriculture in the Jeffersonion grid
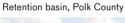
opening of new mining fields, old settlements have in part been destroyed. In a complementary manner, the transportation networks stretch across vast distances through sparsely populated areas – creating an image of rural space which is as nebulous as that of the urban space.

This does not apply in a similar manner to Florida's coasts, which are not seen in this aerial view.

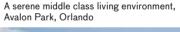The mining industry encroaches profoundly on the territory. These scars alone are not characteristic of Florida.

There is also another reason why the aerial photograph of Bartow/Mulberry suggests an unstable condition. The totality of the interventions and artifacts visible in the aerial photograph all seem to be connected with each other, as if they had a direct functional relationship to each other. This is a consequence of Florida's history, which did not leave behind fixed traces until beginning in the second half of the 19th century because – in contrast to Europe or many areas in Asia – the Native American cultures had only structured the territory, if at all, in a very modest way. There are no older, deeper layers to discover beneath younger ones. There is no figure–ground arrangement. Any sort of fixed ground upon which urbanization could have been inscribed is lacking. Not only are

there no traces of superimposition over extended periods of time, but even the visible stratification of recent times gives no indication that urbanization has evolved in a process of engaging with the landscape. In this aerial photograph, the entire territory of Florida appears as a mirror of simultaneous and equidistant phenomena, without any depth to indicate layering. A relationship between landscape and urban space arises here solely as a flat network, as opposed to a three-dimensional structure that has developed over time. Landscape and urbanization act as equal parts of a single object available at our disposal.

The various forms of urban landscapes comprised of low-density settlements situated at various distances from larger centers along this section that extends from coast to coast are more recent. What we call "Middle Class Urbanism" is most consistent with the traditional image of American settlement patterns which have been laid out as a rectilinear street grid, generally in the years before World War II. These developments have a discernable relationship to adjacent urban settlements. Much more salient to the urbanization of this territory however, are the settlements whose built form does not have a discernable relationship to the adjoining populated areas and their attributes.

Retention basin, Polk County

A serene middle class living environment,
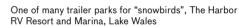Avalon Park, Orlando

These are privately owned communities that are designed and operated as market-based entities. Although immigration to Florida is diverse in nature, these developments are primarily targeted at elderly people who have moved to Florida as retirees. Their communities, whose conceptual origins can be traced to the theme parks of Walt Disney World (1971) and the community of "Celebration" (1993), are still consistently designed according to specific lifestyle codes. Although these communities provide living space for up to 80,000 residents each, life in them cannot be compared to living in a traditional European or American city. The fundamental experience of the city, the continually renewed unfolding of highly diverse forces in a single place that gives its inhabitants an awareness of being able to contribute to urban life while at the same time being subjected to it, is absent in these communities. A "city" no longer possesses the inspiring but also dangerous atmosphere in which every resident must find their way and assert themselves. Instead, the communities in Florida offer the opportunity to choose and live out a specific lifestyle – always in a well-tempered form that eschews experiments. This includes systematically controlling entry to these "gated" communities. The golf courses, the artificial lakes and canals, and the

design of the outdoor spaces that are associated with these lifestyle communities, exhibit corresponding territorial traits. They are systematically designed and realized as a coherent system. The design of these spaces is not the result of engaging with the landscape. In this form of urbanization, the landscape is newly designed and introduced to complement the settlements, thereby radically reshaping the previously existing landscape. It is not as if the houses and gardens would appropriate an existing rural space, but rather that the settlements and the landscape are equal parts of the same urbanization. Here too, as before, the spaces of landscape and settlement coalesce into an impression that is strangely flat – one that barely permits any distinction between nature and artifact, between what is older or younger. This ossification is opposed solely by "Light Urbanism," the southward migratory flows which began in Florida with camping trailers in the early 20th century. Life in these recreational vehicles (RVs) is affordable and offers many, even socially vulnerable segments of the population, a chance to have their own home. Although "going mobile" is associated with a transitory life, living in the mobile home parks still engenders the fundamental experience of settlement: of demarcating and

One of many trailer parks for "snowbirds", The Harbor RV Resort and Marina, Lake Wales

Avalon Park, Orlando

appropriating a piece of land on which to dwell, and of the transformation that the land thereby undergoes. The ephemeral and transitory quality associated with these parks – and, in coastal areas, with resorts – has little to do with the mobility of the homes themselves, which, once installed, are rarely ever moved again. It is due more to the mobility of the inhabitants, the "snowbirds," who only live in the parks for limited periods of time; many of them are here only during the winter, in order to escape the colder climate that prevails in the northern United States.

Mobile home parks, especially those closer to the coast, are resorts that are more densely built and consist of simpler, low-cost homes. They can be distinguished from the lifestyle parks only by their greater building density and the more modest, prefabricated homes. Their owners have often started as "snowbirds," only to eventually become permanent residents. This development is also reflected in their homes, which are steadily transformed into permanent homes and thus consolidated. More socially deprived residents often live in conglomerations of mobile home parks that are created in areas located near main arterial roads, thus enabling the residents to reach their workplaces in the nearby centers. These, too, are ultimately a simpler form of a traditional settlement in

The Harbor, Lake Wales

the catchment area of larger cities: exclusion and segregation are also practiced in such parks.

The parallelism of the phenomena that is typical for Florida's urbanization, in which the formative intervention of the people who settle there has not developed any contours, also pertains to the mainstay of Florida's agriculture: citrus production. This important sector of production stretches from north to south and is concentrated along US Highway 27. The highway follows the "ridge," a slightly higher plateau whose sandy soil is particularly fertile. Even this territory lacks the stability that is associated with agriculture in general. Due to the influence of complex climate changes, the citrus industry is pushing toward the warmer south. At the same time, it is being steadily displaced by a pattern of settlement that seeks to occupy the area along this main arterial road. Moreover, a mechanism familiar to agriculture also has its effect: small-scale farmers are put under the pressure of larger production units and ultimately displaced. The citrus trees are not raised on the plantations but are instead planted in nurseries and then later transplanted to the fields by the farmers. Harvesting occurs only after a few years. For the labor-intensive harvest, migrant workers are

Citrus plantation south of Orlando towards Lake Placid

employed on a temporary basis. Seventy percent of these workers come from Mexico. Thus not even citrus agriculture forms a stable basis for urbanization – belying the external image conveyed by the strict linearity and dense layouts of citrus plantations.

Only the nature conservation areas, especially those in the wetlands, initially seemed to be stable. Efforts to protect the wetlands began in the 1960s, after uncontrolled settlement had increasingly led to difficulties in securing the supply of drinking water. However, the nature conservation areas are not simply unspoiled natural environments. The protection of areas crucial for the water supply was never conceived as a continuous, fixed system of unspoiled areas whose scope was officially defined by statute. The protected areas were caught in a conflict among state, regional, and local proponents of nature conservation and a system of land ownership that also recognized public and private interests. Various strategies have developed that are correspondingly diverse. What is certainly unusual about this is that the extent of protection has become the object of private trade with the land and its development opportunities. The protected wetlands are therefore closely linked to the urbanization of Florida. They now stand under the pressure of

a land utilization in which the concern for protection is only one of the considerations. Thus territorial demands are expanding into these areas, too. Areas like these gain their urban identity not only through their connections with urban spaces, as is the case for certain landscapes in Alpine resorts, but from a dynamic relationship with the process of urbanization. Since the 1960s, models for demarcating nature conservation areas have been developed based on the added value of urbanization. With this package deal, however, the sources for funding the nature parks have largely dried up as a result of the real estate crisis. In Florida the results are more disastrous than elsewhere, because the delimitation of these protected areas serves to secure the water supply, and is therefore of existential importance to the settlements.

Communal project for replanting wetlands

RED RIVER DELTA, PULLS ON AN EVEN FIELD

Vesna Jovanović

Vietnam's geography is defined by two large, low-lying surfaces, the Mekong and the Red River Deltas. They are the repositories of the colossal influx of water from two of the largest rivers in South East Asia. Both of these rivers originate in China and end their long journey by slowly fanning out to create vast stretches of fertile land on the coast. When seen from the sea these two deltas appear locked by a continuous mountain range that encloses them and defines the national limits. The Red River delta is home to around nineteen million inhabitants including the nation's capital Hanoi at the apex of the fan. During our research, we sampled three distinct elements of this territory: its agricultural landscape, Hanoi, and its coastline, where we specifically focused on the UNESCO protected natural heritage site of Ha Long Bay. What sparked our curiosity was a remarkable change in the pace of development over the last twenty years, a significant change in a territory that had previously been characterized by extremely slow physical formation processes.

A RICE BOWL

The Red River Delta is a geographic composite of smaller entities: thirty polders of different shape and size constitute the inhabited flat lands and between them the river bifurcates into many smaller branches that flow finally into the Gulf of Tonkin. These entities have evolved from the slow meandering of the rivers, even as their flow has over time been fixed by the raising of dikes. The polders are subdivided further via an intricate system of drainage canals that form a patchwork of partial grid systems, owing to the slow development of the irrigation system. Compact villages of a similar scale scattered densely over the surface no more than 2 km apart from one another. The outlying paddy fields form a patchwork of equally sized rectangular field units. The roads that connect villages and traverse these fields for the most part follow an order that emerges from the logic of the drainage channels. The ubiquity of human activity gives a uniform impression throughout the delta.

In the 1990s, the fine-grain of this agricultural landscape has been rendered more "even" with the subdivision of land which leased to each farmer a surface of $360 \, m^2$, or one *Sao*, an area estimated as sufficient to yield 360 kg of rice on a yearly basis. The land was further divided into categories of soil quality and distance from the village. A farmer's *Sao* can be broken up into up to four plots that are sometimes

Landscape of rice paddies

Drainage canals of the polder
Bac Nam Ha

located in different directions from the village, making the activity of farming extremely arduous. Large landowners had been abolished under the socialist regime and their lands have been equally redistributed to all farmers. The endless landscape of rice paddies is in fact entirely composed of individually split-up *Saos.* The impression of productivity that the landscape evokes can, however, be brought into question: while many people remain employed in the agricultural sector (eighty percent of the rural population of the Red River Delta) and while Vietnam remains the second largest exporter of rice after Thailand, only about twenty percent of this comes from the Red River Delta itself. Vietnam's other rice bowl, the Mekong River Delta, with its large-scale holdings, is more productive and by far the leading contributor to the sector.

The inter-city road network completely obfuscates the river system by connecting all the polders together. Villagers are now leaving their farm homes to settle along these roads, constructing four- to six-story houses on very narrow strips of land. These tall structures are typified by shops on the ground floor, and blank concrete flanks that await the construction of the adjacent houses. The shop-house is very typical in urban areas where plots are mostly arranged 3–4 m wide and around

20 m deep (this varies greatly based on the urban fabric and street layout). The typology stems from a 17th-century regulation to calculate land tax based on the width of the facade frontage, and was originally a single story family house organized around a sequence of inner courtyards that oriented the inner spaces and provided ventilation. In cities, urban pressure has led to the typology solidifying and growing vertically, and it is in this latter derivative that we see it along the regional roads, the price of land once more playing a key role. Farming villages are rarely composed of such plots; one is more likely to see free-standing houses with gardens surrounded by fenced walls.

In the linear settlements, the ground floor usually connects to a covered space in front of the house that protrudes up to the road. Here products are showcased for sale: mechanical spare parts, various locally produced arts and crafts, furniture, as well as any manner of imports from cell phones to bridal dresses. The lived-in upper stories often have terraces, even roof balconies, and decoration is frequently applied. This typology replicates across the delta, varying only in facade color and ornamentation. Each plot size abides by the uniform logic of the territory, but the developmental energy clearly relates to

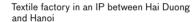Individual facade treatments along the street front

Store fronts in Xuan Mai

a tertiary economy and the network of urban centers. Curiously, a two-lane highway will have a development that is similar to that of a simple regional road. Between the cracks of this development one glimpses the silent agricultural landscape beyond. The development rarely has any depth and clusters rarely form except at road intersections. It is also difficult to locate a center, or central functions for that matter, along these settlement threads. This specific scene may appear sturdy and well established due to the brick and concrete constructions and cared for facade details, but it has emerged only over the last twenty years within this tranquil landscape of rice paddies.

In reaction to dire poverty during the second half of the 20th century, marked by the end of the Vietnam-American war, the reunification of the country, and a collectivization of industry and agriculture that failed to resuscitate the nation's economy, Vietnam introduced a series of liberal economic reforms known as the *Doi Moi* (in English "renovation"). These reforms created a socialist-oriented market economy almost overnight to replace the previous state-controlled model. What was specific to the *Doi Moi* was the mediated re-privatization of the agricultural and industrial sectors, as well as a push toward privately owned

commodity enterprises. This created an economic explosion as the stagnant economy transformed into a market-driven, capitalist system. The escape of the shop-house into the countryside is one of the more visible immediate trends that the *Doi Moi* inspired through facilitating property exchange (property is bought and sold for a period of ninety-nine years, therefore we are speaking of a lease-hold system) and the changing of place of residence.

An increase in the mobility of villagers who are attracted to newly founded industrial parks (IPs) strewn across the entire delta and to busy road connections that connect major cities in the region, relieves pressure on the agricultural sector that, due to the impossibility to mechanize rice production, remains robust and difficult to innovate. While road settlements exude permanence, in many instances familial ties to the old villages are maintained, with the younger generation returning to the fields to help out in times of harvest. This ambivalence of the Vietnamese youth towards the ongoing developments is even more legible in the industrial sector where employment is seen as precarious or seasonal, and we often find provisional workers' housing as a secondary economy adjacent to the IPs, where people lease out

The backside of the road village of Xuan Mai

Textile factory in an IP between Hai Duong and Hanoi

rooms to migrants on a short-term basis. The decentralization of industry is geared towards creating these work opportunities in the countryside, and the positive effect of locating a new IP in a municipality is so highly desired that local authorities squabble to have a zone allocated within their borders. These "land reserves" are former rice paddies infilled with earth and sand that then lie empty for longer periods of time awaiting their new purpose. The allocation of IPs has proceeded faster than the industrialization process itself, evident in the fact that the Vietnamese government has halted the further allocation of new zones (at the time of our investigation, conducted in the spring of 2012).

Demographic growth and lack of incentive to increase productivity by switching to alternative crops or reforming the structure of land holdings contributed to the need for the *Doi Moi* reforms. With their introduction both the possibility to lease out multiple *Saos* as well as the freedom of choice of crop were opened up. The successful switch to so-called cash crops requires access to adequate markets and usually a significant initial investment, with most farm holdings starting off only being suited for growing rice. A good bonsai tree, a top luxury item, can sell for up to 10,000 USD a piece, however it takes about ten years to

Empty industrial park

grow, and its customers are rather in Japan or Korea; the local demand is smaller in comparison. Switching to the bonsai business is therefore a long-term, high-risk gamble. We also observed the production of shrimp on the coast, in the hinterland of Ha Long City. Such production has become more appealing as it is easier to industrialize the process and occupy a larger area, especially if there is a possibility to extend the breeding pools further out along the shoreline. This aquaculture landscape, however, remains eerily empty and much like the "land reserves" that anticipate IPs; it reveals the tensions that the *Doi Moi* have created of land (and sea) speculation outside of cities. The tension is all the more pronounced when one investigates how newer developments within the delta erode its very fabric, the irrigation system, which undergoes fragmentation that renders it progressively less functional.

HANOI

The capital of Vietnam has been starkly impacted by the reforms; its periphery along its second ring road (a surface area of equal size to the rest of the built city) has become a checkered field of high-rise, large-scale, residential developments that cater mostly to the local

Hanoi City Model, National Exhibition Construction Center

affluent class and to high-income expatriots. Gated communities, often constructed by foreign investors, such as the Indonesian "Ciputra" or South Korean "Manor," function as high-security, all-in-one complexes with their own offer of educational facilities, shops, and community services. These new urban areas offer a clean, serene, and comfortable "modern" living environment. However, far from being self-sufficient, they are almost as a rule accompanied by new residential areas that sprout adjacent in order to house workers to maintain the complexes, or otherwise offer the lacking services, food and goods. A game plays out on former agricultural land, which at times remains as a left-over that farmers continue to cultivate. Land confiscation has slowed down, and furthermore the urban developments themselves illustrate the result of an overinflated demand as they continue to lie empty. Housing has been perpetuated through purchases with the intent to resell, against which the city has had no legal control (taxes or the like), to dissuade speculative real-estate investors. The "wildness" of this entire outer urban belt is perhaps most revealed when one looks at Hanoi's metropolitan master plan, which envisions the preservation of a green belt exactly in this disputed area outside of the second ring road, in favor of the

creation of three satellite cities around the perimeter of the metropolitan region, forty kilometers away. These are still nowhere to be found, and the only urbanization taking place where these three cities ought to appear tends to form linear settlement threads following the roads, as described at the beginning of this text.

HA LONG BAY

Ha Long Bay is a meeting point of what seem to be two eternally irreconcilable extremes: a coal-rich industrial hinterland, which faces one of the most beautiful and protected natural geological formations in the world, an archipelago of 2,500 cone-shaped, karst islands that elegantly "drop" from the mountain range into the sea. Over the last fifteen years, the coastline of Ha Long City has been subject to immense reclamation in order to create new buildable land which the city has slowly encroached upon. The ambition of this urbanization now directly challenges any balance that might currently exist between mining in the hinterland, the city, and the pristine nature of the bay. For the moment this balance is tenuous: a lot of the investment within the city comes from the coal industry, and a lot of the material used for land

City edge of Hanoi

The reclaimed shoreline of Ha Long City

reclamation from debris of the coal mining process itself. The mining activity is effecting an immense deterioration of the landscape, but remains visually hidden from the rest of the bay behind a hilly coulisse. The coastal reclamation also makes use of karst cone hills located on land that are detonated for material supply, and this is supplemented by sand scooped up from riverbeds. Precious mangrove forests and oyster farming communities have been destroyed and displaced in the process, and UNESCO constantly threatens to remove its natural heritage label due to the ecological devastation resulting from urbanization.

Most visitors to Ha Long Bay make the trip once, either overnight on a boat in the bay or in a hotel on the coast. Nevertheless, the recently reclaimed virgin land is designated for the construction of villas and second-residences, towering hotels and large commercial centers. In the bay, one of Vietnam's self-made billionaires is converting the 220-hectare island of Tuan Chao into a resort intended to attract the global elite. Already now it lies incomplete and in stasis, built out of scale perhaps because it lies outside of the inert and already occupied rice paddy delta, perhaps due to the UNESCO label and the weak

promise of global tourism, or perhaps due to the fact that the region has

Tuan Chao development as seen from Ha Long City

produced many industrial magnates who want to reinvest their riches. The initial land expansions of the city were filled in with dense, narrow housing typologies and function as relatively vibrant urban neighborhoods. The current reclamations are solely tourism driven, and gamble on an expected increase in visitors.

Within the delta certain elements (IPs, gated communities, and highways) are inserted with a degree of negligence towards the existing layers of the territory. The surrounding environment undergoes a process of differentiation afforded by the multitude of citizens, migrants, farmers, merchants, and foreigners that act with individual energies developing new networks of exchange. The puzzle of Ha Long Bay exhibits such bottom-up process of differentiation as well: self-made hotels sprout up in the hillside for workers as a parallel economy establishes itself in the urban recesses on the hill slopes of Ha Long City, farmers recycle coal residues that get lost during transport and sell them, fishing villages begin to sell snacks and soft drinks to tourists on boats as well as on the roads entering the city, and one would also mention, albeit with caution, a persevering tradition of smuggling and prostitution that no port city escapes. These activities all stand on the edge or

Inside "Ciputra" residences, Hanoi

in-between much larger and more dominant developments. Similar to what is happening in the delta, the initial transformative surge caused by the *Doi Moi* results here in large plots of destroyed, locked-away, or simply under-used land: scarred post-mining and post-reclamation karts hills, endless greyish and lifeless aquaculture, vast empty lots laid out with roads on the city's periphery awaiting urbanization. Their sheer density and scale has worked to the immediate detriment of the pre-existing landscape, and in this regard Ha Long Bay represents the most extreme case in our study.

Ruthless interventions in the landscape: removal of mangrove forests for the purpose of land reclamation.

MUSCAT AND OMAN, POWER MANIFESTED IN TERRITORY

Liisa Gunnarsson

Mathias Gunz

Several dozen two-story houses surrounded by simple blank walls that hide the interior from view shimmer in light shades of yellow, beige and pink in a stony and grey desert landscape. On the flat land between rocks and small hills these large, single-family houses are scattered loosely, sometimes forming seemingly accidental groups. Unpaved gravel roads, leading to some nearby highway, meander between them. Only rarely is their density high enough that one can recognize the orthogonal grid underlying it all. They are indeed lone fragments of a large, regular plan indiscriminately projected on the stony desert. The scene is from the Amarat plain next to Muscat, but it could be almost anywhere in Oman. All over the country such new housing colonies appear, sometimes next to old oasis settlements, sometimes isolated, but always in dialog with the ever-expanding highway system. They are part of a major territorial transformation; a comprehensive project of urbanization planned and executed at the direction of Oman's Sultan Qaboos bin Said Al Said. In only forty years, the Sultan has used the revenues of oil export to overlay Oman's natural condition of extreme scarcity with an enormous infra-structure, thereby not only engineering the landscape of his country but

its economy and indirectly its society.

PALM TREES

As one of the most arid areas on Earth, the Arabian Peninsula is up to ninety-five percent covered by deserts and semi-deserts. One of the few mountain chains on the otherwise relatively flat peninsula, Al Hajar, is found in Oman. Starting at the Strait of Hormuz, it forms a bow down to the city of Muscat, the capital of the Sultanate. The mountains generate a differentiation in climate; by catching the humid air drifting in from the Gulf of Oman they create seasonal rains, which flood the otherwise dry gulches called *wadis*. This annual surface water feeds the groundwater aquifers, which allow for the irrigation of the Al Bathinah coastal plain, the only continuous strip of fertile farmland in the region. Inland of the Al Hajar range, sparse green lines and dots at the foot of the barren mountains mark millennia-old agricultural settlements along the desert's edge. The DNA of this ribbon of oases is an age-old system of gently sloping underground irrigation channels known as *aflaj,* capable of transporting the water over long distances without losing it to evaporation. This water produces patches of irrigated green fields protected by palm trees and sharply demarcated by walls. Dense housing cores in clay or stone have been built outside these lush date

New housing near Hibra

Palm Garden at the foot of the
Al Hajar mountains

palm plantations and vegetable gardens – often at the entrance point of the water. Communal water management inside the oasis has been perfected over centuries. Drinking water is first to be extracted from the stream, followed by water for the mosque, the households and finally the livestock. Only after running through the entire settlement is water brought to irrigate the fields. Such compact oasis settlements, together with the Bedouin camps and the small fishing villages along the coast, were home to no more than 730,000 inhabitants in one of the world's poorest and most undeveloped countries in 1970. This year marks a turning point for Oman. After overthrowing his father, Sultan Qaboos bin Said Al Said initiated a rapid modernization funded by the exploitation of the country's recently discovered oil and gas reserves. This brought with it a decoupling from the former resource base of the country, the agricultural oasis and its traditional lifestyle. Agriculture today only accounts for a bare two percent of Oman's GDP and employs no more than eight percent of the workforce. Many Omanis maintain the inherited farmland just as a hobby. They let South Asian immigrants tend to the fields while they themselves work white-collar jobs in the city. Consequently the age-old knowledge to maintain the *aflaj* system has been

lost and many oases have fallen into decay. Most of the traditional clay village cores have been deserted for more comfortable housing and are now merely used as shelter for livestock. The state aims to counter this with the development of a modern so-called "smart" oasis which would allow for profitable food production within the traditional setting. Plastic greenhouses and water pumps have been introduced with limited effect. So far only a few large farms in Oman can operate more or less profitably and the state has resorted to acquiring or leasing farm properties in countries like Sudan, Kenya, and Pakistan to strategically secure its food supply.

CLIFFS

While Oman's interior was historically run by tribal leaders and conservative Imams, the coastal Sultanate of Muscat was a powerful maritime empire, at its peak extending from the Persian Gulf to Zanzibar. Since the mid-19th century, this network of trade, specialized in slaves, has lost its importance. Today the 2,800 km coastline sees much new development in tourism, high-end housing and international trade. Nested between the rocky cliffs southeast of the capital, luxury hotels

Modern villa inserted into an oasis

Construction for a coastal resort

and tourism complexes developed by the state in collaboration with global hospitality companies occupy former unsettled beaches and bays, as well as old fishing villages. Enormous investments in infrastructure are needed to access these remote beaches. In the process local fisherman are resettled inland where they receive new houses of modern living standards – yet far away from their traditional livelihood on the sea. West of Muscat high-end housing complexes such as the "Wave" or the planned but floundering "Blue City" occupy the coast with private or semi-private beaches, marinas and gated private compounds accessible only to a few. The "Wave," a so-called "Integrated Tourism Complex" close to the International Airport of Muscat, specifically aims to attract western expatriates with tax incentives and the offer to purchase houses (foreigners are generally not allowed to in Oman). These well-off, so-called expats, who form a minor part of Oman's immigrant population, can find here everything needed for their international luxury lifestyle: marinas, golf, pork, and Starbucks. But such developments, which are based on role models from Dubai or Doha, are equally popular among rich Omanis. They are enclosed islands of western lifestyle within a still very traditional country. Similarly, Oman's tourism is based almost exclusively on high-class resorts and the country's scenic landscape, while Muscat knows very little urban or individual tourism. Ruwi, the commercial hub and potential "downtown" of Muscat, where South Asian immigrants offer the few cheap hotel and dining options in the city, is running mostly on informal energies while state interests seem to have moved out since the seventies. The Sheraton lies abandoned, state ministries are relocating to the suburbs, and most international companies now set up their businesses next to the new airport in the Al Batinah plain.

OIL

Today, Oman's population is about four times the size it was before the oil boom, counting 2.8 million, with Muscat and the Al Batinah plain each concentrating one fourth. This fast growth, urbanization and a comprehensive modernization are bound sooner or later to put into question the Sultan's autocratic regime. The distribution of the oil-based wealth, the amenities of modern living and a well-measured amount of political participation is therefore crucial for the Sultan's hegemony. This goes not only for the traditional opposition – the inland tribes,

New highway southeast of Muscat

Muscat stretching along the Al Batinah plain in the west

which are for example awarded with ministerial posts – but for every citizen. All Omani citizens must see themselves as direct beneficiaries of the Sultan's power and benevolence. Enormous investment in infrastructure forms the basis of a rapid rise in the living standard. Highways, streets, schools, hospitals, modern housing, and shopping malls are distributed all over Oman's territory; but no place sees as much transformation as the capital region of Muscat. Hills are flattened, material crushed, sites excavated or filled in; an enormous act of material reshuffling that reconfigures the entire landscape is taking place. Several large-scale infrastructural projects were under construction at the moment of our investigation. A second parallel highway along the Al Bathinah plain, the Muscat Express Way, had just been inaugurated. Construction of a third highway along the coast was being carried out at the expense of agricultural land and traditional fishing villages. New roads kept penetrating deeper and deeper into the steep coastal mountains and cliffs east of Muscat to unlock their beaches for touristic exploitation. The city had grown from its old ports, Muscat and Muttrah, into narrow valleys like Ruwi, and has now spilled into Al Batinah Plain stretching almost

to Bawshar and As Sib 50 km away. As with the rest of the country,

Muscat's urbanization is based solely on the car. The city is flat and dispersed. Blocky commercial buildings line the highway, malls and large shopping centers have replaced traditional shopping districts, such as the souk in Muttrah and the dense, intimate clay houses have been abandoned for free-standing single family houses.

The road secures the mobility of not only people and goods, but also water. The street grid has taken over the traditional role of the topographically and quantitatively limited *aflaj* system and given the distribution of water a new compass – at the same time setting the individual consumers free from the close dependency on their neighbors. Potable water consumed today is up to seventy percent produced in desalination plants along the coast, and its consumption cost is heavily subsidized. It is transported via blue trucks to local water towers or directly to the end consumer and his or her rooftop water cistern – a white, plastic, tower-like barrel, which comes in different sizes but only in one design and crowns most buildings alike. Wastewater and grey-water is first collected in septic tanks that are emptied by yellow trucks while green trucks distribute recycled water to greeneries or construction sites. With the lack of common infrastructure, such as water

Muscat Express Way

Commercial buildings in the Al Amarat plain

pipes or sewers, the iconic water tank on each building comes to symbolize an almost intimate dependency of each citizen on the Sultan. Behind this network lies the one system that, albeit almost invisible, enables them all. Oil and gas is extracted deep in the desert and transported via pipelines and trucks to the coast for processing and export. All the facilities of this system are closed compounds. New gas and oil terminals in Qalhat and Duqm will connect the oil wells directly with the eastern coast, circumventing Muscat altogether. The oil industry employs relatively few people but makes up half of the country's GDP. Oman's entire economy – and with it the power structure of the absolute monarchy – is then based on the distribution of this wealth. Beyond the mentioned infrastructure and an extensive welfare state, the Sultan is trying to offer Omani nationals attractive jobs in new sectors such as industry, modern agriculture and tourism, eventually also diversifying Oman's economy. Such white-collar jobs, preferably in public administration, were also the main demand of the coy demonstrations during the Arab Spring. At the same time the country relies heavily on the import of a South Asian workforce to do all the menial jobs. Almost thirty percent of the population in Oman is made up of blue-collar immigrants

holding temporary residence permits. When they do not reside in the old urban cores, abandoned by Omanis, they live in one of the many temporary work camps next to major construction sites or – in the case of domestic workers – on their employer's land. The imported, cheap labor was, and still is, a decisive factor for the realization of the unprecedented development of the country. Their increasing number and importance have evoked concerns and in combination with the need to engage the growing population of nationals in the labor market this has led to laws like the "Omanization Act" – obliging each and every sector and employer to hire certain quotas of Omani nationals. An informal consequence of this law is that some sectors employ nationals only on paper while in reality work is done by immigrants.

PLAINS
Al Amarat, mentioned at the beginning, is a wide and flat plain spatially confined by two sharp armlets of the Al Hajar mountain chain. The Mars-like landscape with hard, stony grounds is devoid of vegetation and scattered with jagged rock formations, in-between which new detached family houses sprinkle the land. They are the product of the

Al Amarat plain

"Land Allotment Decree," a planning initiative started in the 1980s, based on the promise that each Omani, once he reaches the age of twenty three, has the right to a piece of land for the construction of a single family house. While plots ranged from 200 to 300 m^2 in the 1980s and 1990s, today they range from 600 to 1200 m^2 – and since 2010 women can also apply for them. This means the state has to constantly subdivide land into new plots, which it does in a very technocratic manner by projecting large, uniform orthogonal grids over the still open landscape. This is all done on satellite images inside the planning ministries of Muscat without any contact to, and little consideration for, the specific location. The plots are then distributed by means of a lottery. Omanis are allowed to enroll for the draw in their home or work district, usually waiting around five years for their turn. Since not everyone has the desire or means to build a house at the assigned spot at the given time, the housing fields lie in random states of completion. The municipality provides paved connecting roads and canalization to the areas only when sixty percent of the plots have been settled, creating a very fragmented and disconnected form of urbanization. Naturally this also undermines

144   an open housing market, leaving the distribution of Oman's people in the

hands of the Sultan. The absolute power of the monarchy warrants absolute control over the urbanization of the territory – and vice versa. And here again, the state's relationship is extended directly to the single individual or single-family unit. Communities or civic groups – be they traditional or modern – are, intentionally or not, excluded from Oman's hegemonial system. This is also mirrored in the built environment where civic spaces are hard to find and the few dense urban knots, such as Ruwi, seem to be frequented only by minorities and a few tourists. New terrain is constantly unlocked for further development, while the complex, dense tissue of the historic neighborhoods is left behind. Public facilities – the Opera House, the giant Sultan Qaboos Mosque or equally grand Sultan Qaboos University – form peripheral compounds accessible only by car, while public transport is limited to the more or less informal practice of shared taxis used almost exclusively by working class immigrants. The Sultan's urban project, based on a technocratic, German–made master plan from 1991, is one of de-densification and disentanglement. Muscat today is a conglomerate of very different societies living in parallel; but this is, to a certain extent, true for all cities. Muscat's specific character is defined by the   145

Land allotment area, Muscat

Portrayal of Sultan Qaboos on a shopping mall

fact that there is almost no exchange – and no spaces for exchange – be-
tween these different realities. Instead everybody is directly, and almost
intimately, connected to the Sultan, forming what seems like one big
court society.

Street view, 651 Way, Muscat

BELO HORIZONTE, RED SOIL

Vesna Jovanović

What drew us to Brazil was the immense scale of its geography: it is possible to travel for days through the country and still remain in the same biome; on the other hand, the Brazilian colonial history gave us the impression that the riches of the land have always been the blueprint for its urbanization. Given this vast scale, we had the idea to investigate the *frontier*, what mechanisms open up a territory, and how urbanization takes place on the periphery. We chose not to investigate the predominantly agricultural state of Mato Grosso – where the large-scale agricultural holdings are pushing into the Amazon forest and defining the current frontier of human occupation – but to focus on the state of Minas Gerais, beginning with the city of Belo Horizonte. Our reasoning was based on its conspicuously reconfigured landscape, a result of three hundred years of colonizing, coupled with the metropolis' location at the intersection of different geographic spaces: the Brazilian tropical savannah known as Cerrado in the west, the former Atlantic Forest removed already by the Portuguese in the south, the hilly iron-rich region *Quadrilátero Ferrífero* ("Iron Quadrangle"), and the Sertão semi-desert to the north.

The most striking thing about the landscape of Minas Gerais is the bright red color of its soil, which characterizes the entire region. In its original state this land was lush green (during the season of heavy rainfall) or timidly yellow (during the four dry months of winter). The soil lies under the vegetational surface; therefore when we perceive it today in this region it is because the earth has been scratched: the land overturned, cut into, exploded, ploughed, or shifted. The red soil of Minas Gerais becomes an observational tool of the ongoing processes of man-made physical interventions that were begun by the Portuguese and subsequently continued since Brazil's independence. Cerrado pastures, eucalyptus plantations, iron ore and limestone mining, new highways that create cuts in the landscape, artificial lakes created by retention dams, and condominiums that resculpt the tops of hills often as extensively as the process of open pit mining, are the *second nature* Minas Gerais, characteristic of a rapidly developing society with a pragmatic and unabashed attitude towards the land.

Belo Horizonte itself did not grow out of a previous settlement, or upon an intersection of human activity, it was artificially sited within this colonized landscape of agriculture and mining. Over the last century, the Brazilian government has implemented more than two hundred new cities under a similar administrative logic, including the capital

Belo Horizonte metropolitan core today

Grazing pastures and coffee plantations of the Cerrado

Brasilia during the late 1960s. In comparison to these developments, the planning and implementation of Belo Horizonte is old, with the foundation of the city laid down in 1897. The form of the city today has far outgrown its initial outline, which still remains identifiable in its dense, vertical and multifunctional metropolitan core laid out on a clear orthogonal grid that is ocassionally interrupted by large diagonal avenues. Beyond Avenida Contorno, the city sprawls out with a much less clear logic, but remains connected by highways that stretch outwards leading north to the international airport, west to São Paulo, and south to Rio de Janeiro, linking the city's different neighborhoods. To the south, city development is somewhat curbed by the presence of a sharp ridge, the Serra do Curral, which also marks the beginning of the *Quadrilátero Ferrífero,* the second largest region of iron ore deposits in the world. In all other directions the preexisting pastoral landscape has been confiscated by the rapid growth of the metropolis.

A METROPOLITAN GREEN BELT
The Cerrado is a vast agricultural plateau where we find cow herding pastures with their outlying barns, small scale beef, poultry, and dairy

industries, vegetable and grain growing farming estates known as *fazendas*, as well as coffee plantations at higher altitudes where humidity levels are more agreeable. West of Belo Horizonte lies the Triângulo Mineiro, where large-scale agricultural holdings and organized industrial production characterize the landscape, extending to the recently settled and predominantly agricultural states of Goiás, Mato Grosso, Rondônia, and beyond. The farther away one ventures from Belo Horizonte, the more dominant the savannah becomes, and the land itself becomes flatter. Closer to the city smallholder family farms prevail, and within the metropolitan region most *fazendas* vary in size from several to several dozen hectares. These holdings are financially supported by the government through incentives for modernized production, cooling, and state run wholesale centers in order to allow the farmholds to move beyond self-sufficiency. Land-owners located closer to Belo Horizonte have, over time, established a productive economic exchange with the city, and in recognition of this, the area has become incorporated into the planning of the region as a metropolitan green belt, encapsulating the city from northwest to southwest. In this green belt, farm buildings are scattered very loosely across the grazing

Agriculture in the metropolitan green belt, Igarapé

Family *fazenda* in Itatiaiuçu, metropolitan green belt, Belo Horizonte

pastures with dirt roads linking these outposts and occasionally leading to a cluster of single-story farm houses. The whole region is sparsely populated, with the seemingly barren grazing pastures associated with low productivity as this certainly is not an intensive form of farming. Vegetable farms are more compact and center around villages, emerging on patches of more productive soil, i.e., around water sources. The dry season, from May to September, means that multiple crop yields are not possible, which implies a certain rhythm to the landscape: of shifting grazing grounds, rotational grazing and farming practices, and dried out patches of land awaiting the autumn rains.

However, this generally "slow" impression is offset by another image that appears along the state-built roads that crisscross the countryside. Here, mid-sized towns are experiencing a residential boom with repetitive housing grids laid out on slopes that undulate on the side of the road. With the proliferation of road infrastructure, the countryside has become more compact than it was before, leading to an imbalance within the region as the time of travel depends greatly on whether there is a good road connection to where you are going. It is worth keeping in mind that the scale of the Brazilian landscape compares far better to the scale

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of the United States than to any densely populated landscape of Europe. In Brazil, urban centers are spread apart at a minimum of five to ten hours of driving, with sparse human occupation in between. The inter-city highway network has meant that close-lying villages can profit economically with a connection to more populated areas and grow into small towns, but it has also meant that the "rustic" village life is now only a couple of hours away from the congested city and the appeal of a second country house has given rise to the development of entire fields of housing catered to city folk. Some of these are planned as isolated gated communities, connected by a single road, however many develop next to existing village centers that provide services, produce and the necessary aesthetic Cerrado ambience.

The pressure of urbanization from the metropolis lies exactly on this productive belt. The character of production gives the impression that urban densification does not threaten the agricultural layer, which is left no choice but to simply shift farther out whenever a development project emerges. This is done without necessarily considering the qualities of the soil during these transformation processes, which can perhaps be accounted for by the impression of endless land availability. 155

Grazing pastureland close to Carmopolis de Minas

Land clearence for the construction of "Reserva Real," north of Lagoa Santa

However, the fact remains that the Cerrados are not particularly fertile ecoregions, and a significant expense in artificial fertilizer and water provision is required in order to make the land arable. The newly obtained productivity is also offset by the fact that agricultural production itself erodes the soil once more, thus requiring continuous management and investment. From a different viewpoint, we have observed that the potential for economic profit through land cultivation has emerged as a viable alternative to a low paid job in the congested city, and this has been followed by a small demographic shift back to the countryside. This phenomenon is privately driven, but it clearly reveals that what we are observing is a certain symbiosis between the green belt and the city, and not simply a case of urbanization carelessly overwriting all underlying traces in the landscape.

QUADRILÁTERO FERRÍFERO

South of Belo Horizonte lies a region rich with large geological veins of iron ore. Mining has characterized the region since it was first colonized in the 1700s, and it is here that two thirds of Brazil's iron reserves are located. This immense quadrangle of land is approximately 40 x 60 km

and touches the Serra do Curral on the southern edge of Belo Horizonte. Open pit mines are the size of settlements here, reaching one to two kilometers in diameter, and it is impossible to drive for more than twenty minutes in any single direction without spotting a large crater denting a hill, human activity rendering it with a new form which, once reserves are depleted, resembles a terraced-down, brown or green ziggurat. Older villages, such as the former colonial capital of Ouro Preto, were once sited close to mineral resources, often on very steep terrain. Today, settlements have grown out of these existing small towns with residential extensions typically built by the mining corporation giants that operate and own the land. Improved mining technology means that it is no longer necessary to create entire new mining towns when mines are opened: they would become quickly obsolete as the average mine remains active for a maximum of twenty years. A dense, private commuter bus network has emerged along the two major roads in the quadrangle, and it is on these same roads that hundreds of trucks loaded with iron ore make their way daily to the coast or to the cargo train stations. The *Quadrilátero Ferrífero* mines export eighty percent of the iron ore, most of it heading for the largest global consumer, China.

Fazenda Kyoshi, Mario Campos

Itabira town and mine

While being the recipient of immense transformational energies caused by industrialization, the *Quadrilátero Ferrífero* is also dotted with historical artifacts as most settlements here predate Belo Horizonte, and have a distinctly Baroque Portuguese architecture. This was one of the earliest colonized areas within Brazil's interior, initially appealing for the opportunity to mine gold, diamonds, and other precious gems, and although they are overshadowed by iron ore mining today, these activities are still pursued, and forty percent of Brazil's gold still comes from Minas Gerais. Old mines, train stations, and colonial towns remain as if lost between elaborate mining operations that busily appropriate the mountain ridges, roads, and the settlements themselves, sometimes erasing them entirely. The constellation of towns and their incessant streams of commuters travelling to the active mines dominate the identity of the region today, and continually transform the hilly landscape in the manner of large land-art installations. In parallel to attempts to protect the built colonial heritage of the region, there is an initiative to preserve the landscape itself as testimony to the development of the mining industry – as a kind of Ruhrgebiet with an active component, because the iron ore mining process will allow for continuous exploitation over the coming decades.

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A ziggurat in the Samarco mine north

BELO HORIZONTE

After having begun its existence as an artificially created urban island, the city of Belo Horizonte has kept growing unchecked by formal urban planning. Official developments that have attempted to structure the sprawling city have also tended to employ a strategy of island-making. Yet each time these new islands are overrun by informal urbanization. To the west, large industrial lots and factories are locked within an urban sprawl that rises and falls with the topography. A planned "ideal" industrial city (Cidade Industrial) in the neighborhood of Contagem has become almost illegible, with the interplay between spaces of production and of living characterizing the overall impression of this planned city expansion. In Pampulha to the north, the city had at first implemented a large university complex, an artificial lake with cultural pavilions along the waterfront, and a small airport – intended to remain as campuses and pavilions surrounded by blue and green. Lake Pamulha was one of the first built projects of Oscar Niemeyer, developed together with landscape architect Roberto Burle Marx in the 1940s. It now represents a central node within the city, a recreational park that has been surrounded by urbanization on all sides. As the city's borders

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Belvedere housing district on the Serra do Curral, Belo Horizonte

continue to push farther out, the dialectic between the city and its surrounding environment that Niemeyer and Burle Marx originally envisioned with Lake Pampulha appears to be finally finding its embodiment in the proliferation of second houses, *condominios,* throughout the countryside. Sometimes water features play a role in these developments; other times the allure of the Cerrado provides the desired tranquil immersion with nature.

Federal investments have connected Belo Horizonte effectively via highways and the airport to other Brazilian metropolises and this has enabled for its integration into a wider urban constellation, one that thinly covers the whole Brazilian carpet of soil exploitation. This constellation is calculated and planned in an almost militaristic manner. Its logic derives from decisions being made in Brasilia that have little to do with the nature of the soil. Belo Horizonte was originally sited in the geographic center of the state, at that time the poorest region in Minas Gerais, and it developed into a center through multiple strategies of concentrated federal and foreign investment. Minas Gerais itself remains a sparsely populated region where moving around is slower, and closely embedded with the logic of the shifting activities of the soil. The urban network

forms a complimentary layer that fixes this moving carpet with determined points of exchange. Even though it was founded relatively recently, the city emanates permanence over the landscape. It feels almost a paradox to state: although the urban areas appear to be the ones growing chaotically, and the countryside feels slow and consolidated, it is the metropolis that predates the agricultural transformation of the Cerrado into a cow-herding pastureland and the development of the dairy "tradition" of the Mineiros. Such is the unique order of things in Minas Gerais. Our observation of the older towns and villages has revealed their tendency to augment and stabilize, even as the countryside develops an urban complexity and moves away from the true Brazilian tradition of planting endless monocultures.

Downtown Belo Horizonte

3
SECTIONS

WATER MANAGEMENT

Vesna Jovanović

Natural ecosystems are characterized by both abundance as well as a lack of water. Whether the marshlands of Florida or the arid desert of Oman, all of the territories we investigated revealed a series of engineered incisions that mediate the flow of water upon and within the Earth's surface. The management of these man-made systems remains crucial to the security of a territory, both to facilitate prosperity as well as prevent disaster. Subsequently, the system of control has become ever more complex, due to the expansion of cultivated surfaces and a greater need for water for urban and industrial use, which often compete over the same resource. As water systems reach their limits, often paradoxically in areas of water abundance such as Vietnam or Florida, they adapt by taking into consideration the replenishment needs of the hydrological cycle, as well by developing protective mechanisms in key parts of the system to shelter water reserves from the negative impacts of other activities. While more difficult to observe, the hidden mechanics of water playing out in a territory manifest themselves through webs of ecological and political conflicts, which explain why water remains one of the crucial steering points in the governance of territories in all our case studies.

GRIDS

It is not surprising that water is often historically considered a natural menace. For a long time its effective "mastery" was only attained through an immense construction effort, or remained technologically unfeasible. Irregular and excessive flooding, as well as longer periods of drought of the Nile River would often result in the failure to achieve food security, causing famine and uprisings. This was something that Egyptians simply had to live with. Engineers had been proposing a large dam in Aswan since the 11th century (the first attempt was made by Ibn al-Haytham, an Arab polymath and engineer), almost a millennium before it became technologically feasible to construct. The need to secure a steady provision of water to agriculture fields greatly increased in Egypt during the 20th century, as the country has experienced exponential population growth and a process of industrialization. This coincided with the first time in history that technology was capable of constructing the Aswan High Dam. This grand project at the beginning of the

Barrage on the Nile River between Sohag and Qena, Egypt

course of the Nile through Egypt, and a series of barrages along its course, delivers water equally to all of the fields, year round. The construction of this immense project has meant the complete adaptation of the archaic field structure, enabling the production of up to four yields a year, and an increase in the irrigated surface by an additional third of the entire agricultural area of the country, or almost two billion *feddan* (a *feddan* is an area unit equaling 60 m x 70 m, or 0.42 ha). Since its introduction, the dam has mitigated the negative repercussions of several potential droughts. Unlike previous instances of natural flooding, when the Nile would bring nourishing sediment with the water, the system today needs to be constantly enriched with nutrients and fertilizer. Furthermore, additional drainage canals are now needed to bring water back to the main body of the Nile, to avoid an over-soaking of the fields. The government also urges urbanization to take place outside of this precious grid of agricultural production, in the desert, with the two systems of water consumption, that of the settlements and of agriculture, now directly competing for the availability of the resource.

The condition of inhabiting a biotope

abundant in water does not automatically provide an advantage to the development of settlements. More often it is the case that an initial level of security of human occupation must be introduced in order to provide for further settlement growth. Two thirds of the Red River Delta's surface area used to be covered by floods during the monsoon rains until a centuries' long process of creating earth embankments knitted the land closer together. A seamless territorial entity composed of large polder units now continually extract and release water back into the "tamed" rivers. Even today, this climate is harsh, with heavy annual rainfalls causing a myriad of negative effects in urban environments unfit to handle such oscillations of large rainfall. Strangely enough, a network of new dams in the upstream region of the delta, as well as in neighboring China, significantly reduce flood risk downriver, to the extent that drought has now become a common occurrence, and salinated water intrudes inland through tidal forces along the coast. This has been followed by a large-scale conversion of land into aquaculture pools and salt flats. Furthermore, with the onslaught of urbanization and industrialization, the water infrastructure that

previously defined the delta is no longer its dominant organizational logic. The traditional landscape of water canals is being incrementally erased through the informal processes of river dredging undertaken in order to infill land to make it suitable for urban development. Boats collect sand from the riverbeds and sell it to farmers who fill in their plots and build houses, a process that repeats throughout the delta wherever new road infrastructure or the development of industry has created an impetus for additional growth. This process positively lowers the river level, reducing flood risk (and therefore it is tolerated), however it can also lead to erosion of the protective embankments, damaging their structural integrity. Furthermore, the logic of infilling appears to not follow that of the water capillaries within the polders; rather, it simply follows property laws (only a recently tradable commodity in Vietnam) and ends up fragmenting the drainage system. Another crucial consequence of this process of urbanization is that the increase in urban and industrial water usage is not accompanied by adequate purification before water is returned to the unitary water body that flows through the polders. The grid partially

extends along the coastline with land reclamation, but the insertion of new urban elements within the delta has so far been an uncalculated burden on its unitary water system, and the water quality has become increasingly degraded. Perhaps a contributing factor making a coordinated development all the more difficult is the administrative layout of the delta which, instead of corresponding to water management units, i.e., the polders, has a configuration that corresponds to the historic settlement constellation and their political influences. This is also reflected in the fact that the engineering of the rivers of the delta was a piecemeal project, and not the result of centralized or coordinated governance.

The desert provides a new urban promise in Oman, where horizontally spread infrastructural projects have unlocked these otherwise hostile surfaces to host new cities adjacent to older oasis and fishing villages. Earlier, the scarcity of water created a compact, highly efficient settlement model based on the recycling of water in the oasis settlements: from drinking water, through water used for washing, to finally water to irrigate the fields and feed the animals.

The flank of a newly built house in a rice paddy structure, Vietnam

Water tower in Assiut Governorate, Egypt

The settlement model of today represents liberation from frugality, in favor of an impressive increase in living standards. This is manifested in the high consumption of water per capita. Household water consumption is now employed for the maintenance of greenery in gardens, a display of abundance clearly discrepant to actual water availability. Throughout the Arab Gulf, this attitude is proliferated through subsidizing the price of water for urban households. Although located for the most part in the rocky desert adjacent to older settlements with a limited source of drinkable water, new settlement expansions receive their water from several desalination centers located on the coast that supply water towers in the Al Batinah plain via road transportation. Water is distributed from these towers to clearly recognizable water tanks located on the rooftops of each house. This system of small elements repeats across the landscape: the white fort-shaped water tanks, the blue distribution trucks and the concrete water tower structures, are the grammar and form that water has in the desert. However, underneath this infrastructure lies also the very relevant fact that water consumption in Oman – even with the immense effort to introduce desalinated drinking water – is drawing from unrenewable aquifers (a fifth of the overall consumption), rapidly reducing their water level, and introducing new issues for other sectors of the economy with the penetration of saline water from the coast. Its ease of availability obscures its actual scarcity. With the population explosion of the recent decades, Oman's capacity to feed itself has become almost impossible, however, the sector remains the largest water consumer in the country (eighty percent consumption to attain only a slight sufficiency in dates and vegetables), and the government is still pursuing a strategy of achieving self-sufficiency. To name one example, Sultan Qaboos bin Said Al Said has recently decreed the planting of one million new date trees in the country. While the date palm is traditional to the oasis settlements in Oman, it is one of the biggest consumers of water among the traditional crops. The key issue for water management in Oman appears to be where to dedicate the available water.

RESERVOIRS

Contemporary urban environments consume copious amounts of water, often drawn forcefully from the surrounding hinterland. As cities grow to develop ever more interwoven relationships with their immediate surroundings, this relationship also evolves. The case of contemporary Rome reveals tensions that the management of the water resources can create once the hegemony of the dominating center weakens, and local and private agencies become actors in these processes. Since ancient times, Rome has built large territorial artifacts to bring water into the city. The more recent peak of this projection of power onto its surrounding can be identified during the Mussolini period with the annexation of the Rieti province, due to its rich water resources, to Lazio. The 130 km long Pischiera-Capore aqueduct running from the Rieti region constructed at this time still delivers eighty-five percent of Rome's drinking water, with Rieti itself being serviced by a parallel independent system. The region's identity and autonomy remains intricately bound to its role as a supply system for Rome. The renegotiations of state powers and the privatization of the entities that maintain this fixed system, processes that are still underway, hope to reduce this hegemony and provide an economic impetus that could bring much needed revenues for the maintenance of said system.

Belo Horizonte lies in a hilly region characterized by many small rivers. In order to make use of them as a water resource, water is retained in *reprezas,* artificial reservoirs that typify the landscape through a series of serrated lakes shaped by the hilly topography. The idea of the *repreza* as an entirely urban recreational space was born with Oscar Niemeyer and Burle Marx's project for Lake Pampulha built in the 1950s. Originally located north of the city, Lake Pampulha was intended as an urban park extending outside the city to provide both drinking water and a recreational, educational and cultural venue embedded in nature. It currently lies enveloped by urban sprawl as the city has outgrown this original urban plan. While it is still used as one of the city's more successful parks, it suffers continuous ecological problems. Other *reprezas* in the region were installed to provide for the escalating need for drinking water, however, with far less foresight for the integration of the city into its natural surroundings. They are maintained as no-go zones, protected reserves for the acquisition of water, by a

A road village in the Red River Delta

single state entity in charge of utilities called COPASA (*Companhia de Saneamento de Minas Gerais*) that has been rather efficient in covering the city with water infrastructure, especially since its partial privatization in recent years. Nevertheless, our investigations have revealed a tendency to colonize around the waterfront, partly because the city has simply expanded to reach these areas, as had happened once with Pampulha, but partly as a specific lifestyle choice of the residents. Informally we see this beginning to occur in neighborhoods such as Betim, around the lake Varzea das Flores. We also observed the forming of a new model for upscale condominium communities as a reaction to the requirement to compensate the developments by "restoring" nature. This is happening in the area surrounding the no-go zone of Serra Azul, and in Nova Lima in the condominium development Vale do Cristais, where a designated RPPN (*Reserva Particular do Patrimônio Natural*) is appropriated for the added value of its "pure nature." On the one hand, we see the city threatening its own resource base with the confiscation of agricultural land and the pollution of lakes; on the other, we see water once more becoming influential in the shaping of the city.

ENGINEERED LANDSCAPES

In the case of Florida, the very elaborate initial physical interventions undertaken in order to create usable virgin land from a swampy terrain have paved the way, quite literally, to the realization of the American dream of owning a house within an idyllic landscape. Traditionally, one could say, the landscape has been in the service of pleasure here all along. It is not surprising that the series of environmental problems, particularly the thousands of sinkholes which evenly dot the settled areas of Florida (as a result of the overzealous sealing of the surface with concrete), have led to a very specific approach to environmental design that integrates "nature design" within the construction of lifestyle. Landscapes are created with the intention of reconstituting parts of the water cycle, becoming a component within a larger logic of urbanization. The mechanism through which surfaces are reserved for the purpose of nature protection and the renewal of the water ecosystems is mitigation banking. This is a process whereby landowners are able to sell legal rights to their lands so that developers are able to achieve the required quotas of land left undeveloped in their projects. These become "Nature Parks."

It is often land that has already been rejected for a building license, and through mitigation banking the owner is able to acquire some compensation and is dissuaded from entering a lengthy legal process to eventually obtain building rights. Some of these developments have become aesthetic annexes to suburban developments, as we have also observed on the periphery of Belo Horizonte, while others are utilized to recreate broken eco-systems and purify water through the creation of wetlands. The two are not mutually exclusive, although, in possessing a higher level of sophistication when handling water, nature is in this instance completely commodified, and becomes an industry in itself. In this case, the role of the state is less to provide everyone with the right to water, but more to introduce a series of legal constraints and economic mechanisms that can additionally create, or re-create, necessary parts of the water cycle. While Florida may depict an exemplary neoliberal model of water management, the surface of water, because of its importance in all other activities, remains a contested space within the territory, and the state still heavily relies on the involvement of governmental agencies to assure its quality and

continuous flow. Unlike with the case of agriculture, we see the territorial balance of the water cycle achieved only at great expense; the limited strategies of commodifying water environments to fit urban recreational use at most times further antagonize the ecological efforts of protection.

Middle class urbanism, Avalon Park, Florida

AGRICULTURE

Mathias Gunz

In nearly all the cases we examined, clearing and cultivating the Earth's surface constitutes the first layer of territorial appropriation. Even in countries like Italy or Switzerland, where agriculture has declined sharply in economic importance over the course of industrialization and tertiarization, it still occupies large areas – albeit under completely changed conditions. The slow linear cycles of agrarian production have been replaced by complex figures of parallel uses and demands. Cultural landscapes have become among other things landscapes of leisure and recreation for the surrounding urban networks – which at the same time profit from them and threaten them through constant expansion. The spatial permanence of the cultural landscapes is therefore all the more astonishing. In many places, particularly in Switzerland, the structures of land cultivation – formed through continuous human work – have attained such fixity that they are regarded as naturally given. This gives their existence a justification far beyond the initial economic raison d'être. Yet even when agriculture is absorbed by the wavelike expansion of urban networks, it does not disappear entirely from the territorial structure. Its patterns and imprints are incorporated into the urban figure. The presence of agriculture in the territory is therefore a constant to this day; however, its form, its mechanics, and its relationship to the city differ greatly between Egypt, Italy, and Florida.

VILLAGE SYSTEMS: AGRICULTURE AS A WAY OF LIFE

In areas that are not yet or still poorly integrated into global production networks, agriculture is usually not only an economic form but determines the entire social organization. We encountered such coherent traditional village systems in Egypt's Nile Valley and in the Red River Delta in Vietnam. In both cases, the rural living environment is increasingly threatened or at least superimposed by more urban forms of living. In Casablanca, by contrast, we observed that traditional rural forms of living can also be brought into the city through migration. In Switzerland, landscapes of homogeneous, introverted villages have, under the umbrella of local hegemonies, formed a kind of background figure for cities, in some places well into the 20th century. Even though this way of life has largely disappeared in Switzerland, it remains an important

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Agricultural landscape in Minas Gerais, Brazil (NASA)

reference point for the identity of communities, cantons, and even the federal state.

In this traditional configuration, city and agriculture are opposed as dependent but clearly separate systems that allow exchange only within a clearly defined framework. The basis of the relationship is the nutritional need of the city; food that the city extracts from the territory by means of trade or oppression. The individual villages are nevertheless largely self-sufficient. They isolate themselves not only from the city but also from the neighboring villages. Accordingly, boundaries in such landscapes have great importance. At the focus of agricultural production are staple foods, such as rice, wheat or potatoes, and vegetables that ensure the sustenance of the villages and their allied cities. The transformation of the territory into such cultural landscapes is generally comprehensive and so permanent that a new balance is established between natural conditions and agriculture. This process of continuous transformation through human labor is very slow and the occupation of the land basically linear. Different uses or cultures are not superimposed, but alternate in very long cycles. This creates an image of permanence, which allows one to

forget the artificiality of the cultural landscapes and gives them the aura of a primal state; they are perceived as *second nature.* Traditional village agriculture is hardly mechanized, which is to say that it relies heavily on manual labor that is typically provided by a large extended family. This form of life often implies poverty, or at least a lack of comfort, but also great stability.

It was in our study of the Egyptian Nile Valley that the direct relationship between agriculture and stability first became evident to us. In its techniques – irrigation, sowing, harvesting – agriculture there has changed only slightly in the last thousand years. As a result of Gamal Abdel Nasser's land reforms of the 1950s and early 1960s, which limited land ownership to 100 feddans (42 ha), all of the farms are small. And fragmentation of the field structure continuously increases due to the division of land among heirs. This and the spatial constriction in the Nile Valley – every square meter of fertile land is in use – make it extremely difficult to introduce modern methods of cultivation and especially irrigation. Thus, agriculture in the fertile Nile Valley is characterized today by a high intensity of labor and relatively modest productivity.

The way of life of the fellaheen, the Egyptian peasants, seems to still be strongly tied to traditional models. It is overlaid rather than displaced by the presence of modern telecommunications and by increasing mobility. Despite intense commuter and migratory traffic into the cities, the villages in the Nile Valley have remained the center of life. They form a dense, homogeneous network of mostly self-contained cells that stretches from Cairo to Aswan. The serenity and stability that this carpet-like landscape continues to emanate today initially conceals that this region's demographic development has long since undermined its ability to feed its inhabitants. Only upon second glance does one recognize the continuous sprawl of villages and cities, which unavoidably occurs at the expense of agriculture and thus doubly burdens the supply balance. Beneath the surface of archaic tranquility, one discerns an incredible pressure that calls for a myriad of artificial valves and outlets. Government imports of fertilizer and food, an almost urban mobility, an inflated security apparatus, academic promotion with guaranteed employment in the state apparatus, and most notably, the mega-projects for desert

greening and settlement: they can all be read as mechanisms for keeping this precarious imbalance from completely toppling and for preventing alienation of the valley's approximately thirty million inhabitants from agriculture and their traditional life. Because farming binds the people of the Nile to their land, to the water supply system, and thus also to the hegemonic claims of the central power in Cairo, it forms a network of stability which plays a significant role in the political control of the territory, and not only in Egypt. Traditional agriculture – which is based not on maximum productivity but on full employment, self-sufficiency, and a homogeneous culture and way of life – can, in emerging countries like Egypt, be at the same time an obstacle to modernization and a pillar of social and political stability.

A similar stability grid, even more rigid and isolated than in the Nile Valley and underlaid with the ideology of communism, must have existed in Vietnam until the mid-1980s. The communist land reforms that followed the Vietnam War placed the equitable distribution of land resources for self-sufficiency of the population above the interests of productivity. This went so far as to parcel all

Clover harvest, Nile Valley

Vegetable fields, Vietnam

agricultural land into relatively small units, allocating to each peasant fields of varying quality, often at great distance from one another. Paddy rice cultivation, which is prevalent in Vietnam, is inherently labor intensive and incompatible with mechanization on a practical level. There was no market access for other export-oriented products. So until recently, in the Red River Delta, rice was almost exclusively grown in traditional family farms. Since a weighty portion of this harvest had to be surrendered to the state for export, considerable poverty and hunger prevailed among the rural population. Today, around Hanoi, one encounters archaic scenes – water buffalo, rice pickers, and wooden plows – right next to modern greenhouses and aquaculture. The cultivation of high-value export products, so-called cash crops, is promoted by the government and international NGOs alike, and it has quickly and drastically changed the way of life in the delta. Farmers suddenly appear as entrepreneurs investing money in growing nonnative species, especially shrimp, as well as cashews and bonsai trees, which can be sold at a profit on the world market. Abandoned shrimp farms in the Bay of Ha Long, which were created just a few years ago at considerable financial cost and at the expense of ecologically valuable mangrove swamps, reveal the risks of globally oriented agriculture. Globally competitive production facilities require high levels of investment that the farmers can only muster with loans, which are often state-subsidized. When world market prices sink, even if only briefly, the peasants may lose their land and with it, their families' livelihoods. Whereas the life of a Vietnamese peasant was still largely predetermined a few years ago, he or she can or must now strike a balance between, on one hand, the security but modesty of traditional agriculture and, on the other, the high profits but also risks of the global market.

GLOBAL PRODUCE

Global produce entails the decontextualization of agricultural production, its separation from the organism of a local rural environment as a whole and its direct connection to international flows of goods. This form of agriculture has as its goal the most efficient and cost-effective production of certain foods that are in demand on the global market. This results in large monocultures that are unsuitable for the local food supply. A territory's agriculture is thereby decoupled from its direct relationship or dependence on the core city, so the city continues to serve only as a logistical hub or it is bypassed altogether. The city consequently secures its own sustenance on the global market. Within this global market agriculture, if not protected by massive subsidies, becomes obsolete in many places where it can no longer compete with the international competition. The fields on which global produce is cultivated are almost always so large that they cannot be managed by a peasant family alone, but instead require – at least seasonally – the aid of farm laborers. Land for cultivating global produce emerged on a grand scale in the course of European colonization; as plantations worked by local forced laborers or imported slaves. While its economic model was initially based on the use of cheap labor, and to a large extent still is, its later development is closely linked to the mechanization of agriculture. The technological cornerstones of cultivation for the global market are fertilizer, optimized seed, and the use of pesticides. This entails relatively high investment costs and financial risks, which in many cases reduces the autonomy of individual farmers to the benefit of large agricultural corporations. The widespread use of fertilizer means that in addition to the naturally fertilizer-rich regions of the world – Midwestern North America, Argentina, and Manchuria – areas with nutrient-poor soils, such as Brazil's Cerrado, a tropical savanna, can also be exploited for agriculture. Today, cultivation of global produce covers the majority of the world's food needs. In addition to market mechanisms, global political interests – such as the question of dependence or self-sufficiency – also play a role but shall not be discussed here.

Export-oriented agriculture, which today competes with traditional agriculture in Egypt or Vietnam, had been the initial driving force behind the primary territorial occupation of Brazil by the Europeans. Indigenous use of the rain forest created almost no permanent traces, or at least they were not recognizable as such for European eyes. The first occupation of Brazil took place by establishing a number of relatively independent captaincies, so-called *capitanias,* along the coast, which were essentially large plantations chiefly for growing sugarcane. Such agriculture, which solely targets the extraction of resources, differs little from

Abandoned shrimp farm, Vietnam

mining, which would soon be booming in Brazil's interior. Both the labor force – African slaves soon replaced the indigenous forced laborers – and the plants for cultivation were imported. The territorial occupation initially had a rather temporary character. The first major landowners, mostly unwed young adventurers, lived directly on their plantations; cities, with their institutions and civil society, hardly took form. The first commercial towns did not emerge on the coast until the fields for cultivating global produce penetrated deep into the country's interior, clearing virgin forest to plant coffee and cacao. In the 20th century, it was increasingly immigrant European farmers who made the heartland suitable for farming. The region around the city of Belo Horizonte is located exactly at the intersection of several agricultural systems that still dominate Brazil to this day: the impoverished peasant farmers of the semi-arid Sertão region in the north, mid-sized coffee farms in the south, run mostly by farmers of Italian descent, and agribusiness in the west, the latest and most widespread form of globalized cultivation. The city itself, home to several million people, maintains a surprisingly direct link with the surrounding agriculture: a green

belt of small- and medium-sized farms surrounds and supplies the city. Such fruit and vegetable farms, often state-supported family businesses, alternate with landscapes that obviously bear traces of former cultivation (erosion, fencing, etc.) but today seem to lie fallow. The transformation and exploitation of nature is ubiquitous in Brazil, but this does not always result in permanent occupation; without its original vegetation, the humus-poor tropical soil quickly washes away and cannot renew itself. Every production cycle here demands investment but can also yield profits, as lucrative as the urban economy. In macro-economic terms, this kind of specialized agriculture in proximity to the city, which is frequently pioneered by urban career changers, remains totally insignificant compared to the large-scale operations of agribusiness. These are found in the state of Mato Grosso, for example, where at the expense of the Cerrado savannah and the rainforest, immense monocultures are created. Until the 1980s, the scientific consensus was that, due to the lack of nutrients and high acidity of the soils in the Cerrado, no intensive agriculture was possible. Major advances in plant breeding, modern farming techniques, and sophisticated

fertilizing systems have meanwhile made the savannah landscape there – with the size of Central Europe – into one of the world's most important areas for growing sugarcane, corn, cotton, eucalyptus, rice, and soybeans. A large percentage of these plantations do not produce food; their harvests are destined instead for further processing into fuel or livestock feed. Both the cleared rainforest and the sandy soils of the Cerrado are virtually free of humus and demand the use of large amounts of fertilizer. Much like with *hors sol* cultivation, the fertilizer – we have observed the mining of its principal component, phosphate, in Florida and Morocco – must be added continually and thus accounts for up to forty percent of the cultivation costs. That, the high use of pesticides, and significant transport distances all make this form of agriculture very energy intensive. The rational pattern of fields laid out according to the dimensions of the harvesters and the enormous scale of this form of agriculture nevertheless also make it highly efficient and lucrative. Global trade in fertilizer and animal feed bypasses the traditional agricultural material cycle of plant-animal-soil-plant; this means, for example, that Brazilian livestock

feed imported into Switzerland allows for greater animal populations, whose farmyard manure surpluses pollute Swiss soils and water, while that same manure is lacking in Brazil and must be supplemented by fertilizer imports from, for example, Morocco. In operational terms, the spatial dimensions of these cultural landscapes can be handled solely through the use of increasingly sophisticated equipment that is often unmanned while guided by GPS. Accordingly, the villages and small towns with the fields no longer constitute integral landscape forms, appearing instead as isolated urban islands within a potentially endless sea of fields.

We encountered a similar impression of detachedness in North America. In Europe or Asia, agriculture has often embedded itself irrevocably into the territory, so much so that it is usually regarded as the intrinsic zero level or second nature – and forms, together with settlements and road networks, self-contained organisms; in Florida, it seems to have remained mobile. The citrus orchards here are just another possible form of land exploitation and must stand on equal footing against competing uses, including highly lucrative real estate development.

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Plantations and erosion, Brazil

Florida's citrus growing region covers a strip running from north to south in the center of the state. This territorial occupation is under pressure from several sides: by the slowly wandering frost line moving southward from the north and by the spread of settlement areas from the coast or large cities such as Orlando. The citrus orchards are thereby kept in constant motion. At the same time, the pressure leads to internal densification; increasingly greater amounts must be produced on the same area of land. The workers are similarly not tied to any specific place; Mexican seasonal workers appear at harvest time and live in makeshift camps directly in the fields. The fact that agriculture is exposed to competition without protection also shows that it pursues no further goals other than production. This is in contrast to another trend: cultural landscapes, especially within the sphere of influence of major cities, now often meet not only production needs, but also a superposed function of recreation, ecology, and/or tourism.

AGRICULTURE UNDER URBAN CONDITIONS

Whereas the land for cultivating global produce has largely disengaged itself from the surrounding cities, peri-urban production landscapes are based on the interlocking of city and agriculture. It is part of a continuous urban structuring of the territory. This underpinning and transformation goes hand in hand with introduction of technical systems and artifacts into the landscape. Roads, bridges, canals, dams, and avalanche safeguards are overlaid on the landscape or fixed directly within its basic geological forms. In addition to yielding energy gains or providing safety, they ensure accessibility of the landscape. This also has consequences for local agriculture. Spatial proximity to metropolitan centers and their transport systems is ordinarily the cause and generally a prerequisite for a new type of "urban" cultural landscape. Once agricultural products can be marketed directly to an urban clientele, the economic conditions of cultivation change fundamentally. Specialized agricultural products in particular experience a massive increase in value within an urban context, by being promoted with such labels as gourmet, local, or organic, for example. This certainly concerns the quality of the food products, which are not produced and marketed under the uniform conditions that dominate the cultivation of global produce,

but go further. It also concerns the rejection of these conditions themselves and fulfills an urban longing for proximity to agriculture, to the soil, and to what we perceive as nature. The consumption of such local products and even their cultivation have long since become part of an urban lifestyle.

In the context of settlement areas that are becoming increasingly dense, the relative emptiness of cultivated landscapes themselves become valuable. These areas become landscapes for recreation and adventure, where hikers, cyclists, flower-gatherers, and all sorts of others spend their leisure time. The result is a shift in the public claim on these landscapes – ecological compensation and landscape conservation are now on par with securing the food supply in many European countries – and thus also the expectations put on farmers. The professional image of farmers, who have always had to rely on seasonal supplementary income, thereby receives further differentiation: in addition to market-oriented, "full-throttle" farmers, there are specialized organic farmers, agro-restaurateurs, cultural mediators, landscape conservationists, and part-time or gentlemen farmers, who practice farming as a hobby,

thereby shifting the activity closer to the realm of gardening. In the rural setting of traditional village systems, countless actors, needs, and propositions suddenly abound. Agriculture, recreation, and housing exist side by side – sometimes symbiotically, sometimes in conflict. These profound radical changes are not always visible; ordinarily they are masked as much as possible. Whereas the traditional agrarian living environment was characterized by homogeneity, linearity, long cycles, and high stability, contemporary cultural landscapes, with their overlapping and interdependent networks, develop a complexity that is comparable to that of the city.

The phenomenon of urban landscape structuring, which has reached all parts of the country in Switzerland, is relatively new in Vietnam and stands in contrast to both traditional village life and the cultivation of global produce. Here it is the proximate municipal boundary of Hanoi – a peripheral band in which landscape and city abruptly collide – where, for instance, fields of sunflowers are offered as a theme for wedding photographs. Along the country roads and highways in Brazil, there are fazendas that specialize in agro tourism and direct marketing of agricultural products.

Strawberry Harvest, Florida

Wedding photo shoot in sunflower field, Vietnam

And several forms of urban production landscape are revealed by a journey through the Italian Apennines. Following the Tiber upstream from Rome, one first reaches the Bassa Sabina. Here the foothills of the Apennine Mountains make up a hilly Arcadian landscape, dominated by olive groves, vineyards, picturesque villages, and old monasteries. The narrow stone villages clustered on the hilltops are largely depopulated except for retirees and cats; the region's small-scale olive production is not very competitive on the international market. For some time now, migration of the younger rural population into the city has been counteracted by an opposing movement of various groups. First and foremost, there are commuters who take advantage of the "park and ride" connection to Rome's metropolitan transportation network. They almost never live in the narrow centers of the existing villages, but in newly built villas. Then there are the so-called gentlemen farmers, affluent city dwellers from all over Europe who have chosen farming as a lifestyle during vacations or permanently, without having to live from it. Lastly, there are unskilled laborers, often Eastern European migrants, who take over the abandoned and narrow, often ill-equipped old village cores. They cater to the needs of the over-aged village community, thus forming, for all intents and purposes, retirement homes in the old villages. As a result, a new "rural" society that is only marginally linked to agricultural production is emerging in the Bassa Sabina. Here, the cultivated landscape no longer serves as the economic basis, but at most as an atmospheric background.

The problems of unemployment, migration, and degradation of the infrastructure intensify the farther you follow the meandering Via Salaria highway up into the mountains. Nearly at the top, where three large national parks meet, you reach the Monti Sibillini National Park, which, far from any urban centrality whatsoever, surprisingly generates its own developmental energy. Agricultural production, history, religion, and the landscape have a synergetic effect on one another here. The products, black truffles and salumi from Norcia as well as lentils and honey from Castelluccio are part of an experience that is marketed to a global audience. This creates what we have described as an urbanized production landscape – agricultural production overlaid with urban interests, such as tourism or ecology – outside the direct zone of influence of a city.

The example of Monti Sibillini National Park in the Italian Apennines shows that contemporary cultural landscapes can, as a sort of agrarian resort, tap directly into global tourism networks and succeed there.

Marketing of local products, Norcia, Italy

INDUSTRIAL PRODUCTION AND MINING

Christian Müller Inderbitzin

The clearing and agricultural use of the land is the primary force impacting the territory in nearly all of the places we studied. Agriculture's vast scale and high degree of permanence has created patterns and structures in the landscape that we take for granted – or perceive as a kind of *second nature.* Industrial production, a much more recent phenomenon when seen from a historical perspective, overwrites some of these areas but has – apart from exceptions such as Germany's Ruhr region – always remained limited to relatively small areas, to island-like portions of the territory. The secondary impact on the territory from industrial production is, however, in many cases more substantial and conspicuous than that of agrarian production due to the built structures that the former engenders. Unlike agriculture, industry's relationship to "nature" is commonly perceived as antagonistic even though it, too, is often directly dependent on natural resources – take hydropower during Switzerland's early industrialization, for example.

   Industrial production involves the large-scale manufacture of goods with the aid of technology and machinery and with a more or less pronounced division of labor. For the purposes of our studies, this common definition was of rather minor importance: we investigated "typical" industries only in the booming northern region of Vietnam. Otherwise, we focused on small-scale, artisanal forms of production or very large production regions with, for example, mining, where the land itself becomes an essential resource for production. The forces impacting the territory differ accordingly. In the case of small-scale artisanal modes of production in places like Egypt or Italy, the impact is barely visible, whereas with phosphate mining in Florida and ore mining in Brazil, the forces lead to a radical transformation of the landscape at a geographic scale. We took only a cursory look at situations where agricultural production takes on industrial traits, such as citrus production in Florida, monocultures in Brazil, and shrimp farming in Vietnam. Likewise, we did not closely examine situations where processes of industrialization take on anthropological traits, as it were; that is, situations that reveal an unconscious, primal energy of becoming a city. In this respect, however, the activity in northern Vietnam that has been sparked only

Beni Ghaleb industrial park outside of Assiut, Egypt

in the last twenty years is perhaps the only truly impressive example of this in our studies.

ARTISANAL PRODUCTION TO SUPPLY LOCAL NEEDS

In the northeast part of the Egyptian city of Assiut we encountered a nondescript row of single-story sheds along an arterial road near the boundary between the fertile, agriculturally active valley and the desert. In front of each shed were cars, or rather what was left of them, and small groups of craftsmen working on them. As it turned out, this is a sort of informal production line: a group of local micro-entrepreneurs consisting of auto mechanics, bodywork specialists, painters, and so on assemble cars from the remnants of wrecked and junk cars; for every five unusable cars, one essentially "new" car is built.

We were also able to find less spectacular examples of such networks of artisanal production in the dense center of the old town in Assiut. Here there were mainly small manufacturers that work with wood and metal. What is interesting about these businesses is that they do not manufacture and sell any specific products; they solely produce upon demand. Thus, their offer is more along the lines of selling a particular trade or technical skill. Urban density and its spatial proximity between different trades are essential preconditions for the networks that are constantly reconstituting themselves based on current demand. As with the car repair example, it is not an individual manufacturer that produces a certain product, but rather an informally organized collective that constantly reorganizes itself to make the various individual products.

This form of production is also dependent on customer proximity. Only then is this sort of fast, demand-driven manufacturing possible, since the products are consumed almost exclusively by the local market. It is a very efficient means of supply for meeting the most important needs of the local population and reflects the extreme scarcity of resources – the task is to repair, recycle, and improvise. There is not only a lack of spare parts for cars; even a simple commodity like wood must be imported at high cost. There is, in turn, great pressure to utilize and recycle every piece of material. The network-like character of this form of production also reflects the scarcity of resources: the division of labor in general and the allocation of work to the most competent operation and most skilled craftsmen reduces material consumption. We encountered the most extreme form of scarcity in Cairo, where the city's daily waste, such as cardboard, plastic bottles, glass, and metal, have become a tradable commodity and represent a means of subsistence for the residents of entire neighborhoods.

The production of everyday consumer goods is not only characterized by economy and the efficient use of materials but by the use of labor as well. According to official statistics, only twenty percent of employed persons in the Assiut region work in the second sector, manufacturing. A fraction of these people are employed by the few major industries, such as a fertilizer producer, the local cement factory of the Mexican firm Cemex, and the beverage giant Coca-Cola Egypt; the rest are likely to work in artisan-like businesses. The majority of the workforce is therefore employed in agriculture and services – approximately forty percent in each. The services, however, are not so much private businesses but rather one big, bureaucratically organized public service sector. The regional University in Assiut, for instance, is an important institution with around 70,000 students.

In the Assiut region it appears that the Egyptian state, despite its efforts since World War II to effect greater industrialization in the country and to reduce dependence on imports, still has not succeeded in turning industry into a significant economic force. Thus even the Beni Ghaleb Industrial Park, built outside of Assiut on state initiative, is more like a cluster of workshops in the same form one finds in the city center or along arterial roads. Workshops like the one we visited that manufacture small quantities of furniture without advance orders were the exception here, too. And the new towns in the desert look like ghost towns because the jobs in industrial production that people had hoped for are lacking, making it nearly impossible for anyone to make a livelihood here.

ARTISANAL PRODUCTION FOR THE GLOBAL MARKET

We found an entirely different form of artisanal production in the Tronto Valley region in Italy. The form of production in the central Nile Valley that is described here has, to some extent, a pre-industrial character because factors like a small production force suited to the division of labor, limited capital, and a lack

Car workshop on the outskirts of Assiut, Egypt

Workshop in Assiut center, Egypt

of resources such as raw materials prevent any real industry from taking a foothold. By contrast, the artisanal production in the Tronto Valley is a post-industrial phenomenon – and the expression of failed industrialization.

The Tronto Valley region is situated at the same latitude as Rome. It is therefore positioned between the historically strong industrial north and the economically weaker south, in terms of both its geographic location and the modes of production. This dualism between northern and southern Italy has existed since the country's unification in 1860. During the postwar period and the concomitant political and economic reconstitution, an ambitious economic plan called the Cassa del Mezzogiorno was instituted to compensate for the discrepancies between the two regions. The fund provided generous investments in the southern regions as support and compensation in the form of direct payments from the north and other benefits. Some industries were established in the Tronto Valley with the help of these resources, but they now lie vacated and fallow. After more than three decades, the Mezzogiorno project was ended in 1992 due, among other things, to corruption. The Cassa del Mezzogiorno never succeeded in counteracting the inequities between northern and southern Italy – today they have actually regained intensity.

The regions of central Italy, which include Tuscany, Umbria, the Marches, and other regions, have not, however, been drawn into the structural weaknesses of southern Italy. In addition to the two Italies of the north and south, a third Italy has in fact emerged – one that is characterized by a specialized, post-Fordist mode of production: an artisanal form of production in which high-quality products, a large portion of which is destined for the global market, are made predominantly in small workshops. The production facilities are often family-run businesses with between five and fifty employees, although most have fewer than ten. The artisans are highly skilled, and some are also well paid. The regions often specialize in a particular range of products, such as furniture, shoes, or other leather goods. The Tronto Valley specializes in clothing. The workshops employ designers, engineers, laborers, and investors as required. These networks make products that are developed in-house.

However, it is more common for large, northern Italian couture houses to commission these manufacturers to produce individual, high-quality products. This type of production reflects a dynamic, liberal system in which the fashion companies operate on a demand-driven basis and without fixed contractual obligations – a contemporary form of a flexible "cottage industry." The micro-production facilities are, in fact, predominantly hidden within the homes of the artisan families doing the work. These facilities are flexible both in terms of production volume and in terms of staff and installations, in that they are capable of responding relatively quickly to changing circumstances, such as the demand for other products.

On the ground floor of a featureless apartment building on a side street of Via Salaria, we came across a sewing room that manufactures jeans for the internationally known label Miss Sixty. The manufacturer employs anywhere between zero and twenty workers. The owner is pleased by the anonymity of his workshop, which is not recognizable as such from the outside. Here he can make products for his client, the Sixty Group, without disturbance from any consequential state control. He had also tried to sell garments himself, but quickly realized that it can't work without a recognized brand. For this reason, he is now part of a network of over five hundred small manufacturers that make items for the Sixty Group, which is headquartered in Chieti.

For this network to function properly, it needs more than just the flexible availability of a competent workforce; the good transport infrastructure in the Tronto Valley is an essential prerequisite for the rapid distribution of raw materials and finished goods. Because the workshops are often commissioned to fill single orders, this form of production is extremely attractive for the couture houses involved because they can terminate or expand relationships without any further commitment, which allows them to react extremely quickly to global sales opportunities and economic fluctuations. A tight network of suppliers has established itself in the shadows of this production. Direct sales and outlet tourism are booming as well. Even though these structures achieve a certain visibility within the dispersed urban structures of the region, this sector of the economy hardly requires any land or territory of its own. Instead, it is a form of production that seeks to remain obscured, both spatially and legally.

Textile manufacturing in the Tronto Valley, Italy

INDUSTRIALIZATION PROCESSES APPROPRIATE THE TERRITORY

The recent industrialization processes in the Red River Delta in northern Vietnam are achieving a completely different spatial presence and a particularly visible appropriation of the territory. The *Doi Moi* economic reforms of the late 1980s, which were accompanied by the economic opening of the country to foreign investment, led to the establishment of a vast number of industrial parks and to rapid economic growth. In 2010 the GDP growth rate was eight percent. Whereas in 1990, seventy three percent of the population was still employed in agriculture and eight percent worked in industry, these proportions had already shifted drastically by 2008, with fifty four percent in agriculture, fourteen percent in industry and thirty two percent of the population employed in services. The most important export goods are crude oil, textiles, shoes, and seafood.

Industrial parks are established under strict state control. There are various types of such parks, distinguished primarily by the authorized investors and the companies that settle there. Thus there are industrial parks exclusively reserved for Vietnamese investors and manufacturers, while others are designated for foreign companies and export goods – the so-called "export processing zones." In their territorial localization and their physical structure, however, they all follow similar patterns. They are concentrated territorially in the Red River Delta in the conurbations of Hanoi and Hai Phong, the most important port city in the north. When it comes to establishing an industrial park, its connection to a well-developed transport corridor is more important than the proximity to an urban center.

An industrial park is typically built on what previously had been agricultural land. Its construction follows an orthogonal layout with a street grid and plots of various sizes. The entire site is fenced in and has its own security staff, which is housed in a separate building at the main entrance, together with the park management. Industrial parks also have their own electricity and water supply, which makes the facilities practically self-sufficient entities. Companies lease the individual plots, each of which are generally fenced in. Once all the plots are allocated, the park is frequently expanded. Because most of the parks are located away from urban centers, they trigger further urbanization processes in their environs. These range from state-built infrastructure projects to informal settlements for the workforce. Only in one case, the Sai Dong B Industrial Park, which was established in 1996, were we able to depict a relatively old industrial park whose enclosure had been razed, allowing it to enter into an interactive relationship with the urban surroundings. Here we see not just the occupation of territory, but the creation and transformation of urban space.

During our research work on site, we visited the textile factory of a Danish clothing manufacturer that produces work clothing, in particular waterproof jackets and trousers for police officers, construction workers, and other occupations. In a large factory hall devoid of natural light, thick piles of the supplied textiles sorted according to the given, tacked-on paper patterns yield the piece parts cut out with jigsaw-like tools. Long rows of seamstresses subsequently process the parts into finished articles of clothing in countless individual steps.

The factory manager who leads us through the hall is pleased with the quality of the jackets and trousers and shows us the finished pieces, with fluorescent detailing on the chest or reflective stripes on the sleeves. Nevertheless, she also points out a few problems. She mentions, for instance, that the workers are only slowly adjusting to the structured daily working life and fixed working hours that are essential to the efficiency and sustained operation of this kind of production. Since many seamstresses come from peasant families, harvest time leads to particularly widespread absenteeism because they want to help their families in the field. Their loyalty to their employer is, she says, rather low. These comments are a sure indication that Vietnamese society is currently in a transitional phase and a solid industrial workforce has not yet evolved. Many people pursue parallel occupations in industry and on their family farms. This phenomenon recalls the dawn of early industrialization in Europe.

THE SOIL AS A RESOURCE OF INDUSTRIAL PRODUCTION

With regard to visibility and transformational power within the territory, it is those forms of production that use the soil itself as a resource – quarries, surface coal mines,

Seamstresses in a textile factory between Hanoi and Ha Long City, Vietnam

phosphate and ore mines – which have proven in our investigations to be especially impressive and influential. In comparison, the travertine quarries we saw in the Tiber Valley near the city of Rome seem small and local. This is a traditional form of mining that leaves behind an "open" landscape only in isolated locations – bright spots in a topography that is otherwise overrun by thick, bushy vegetation.

In contrast, we saw larger forms of territorial transformation in Vietnam, such as those in the hinterland of the well-known coastal city Ha Long, where surface mining is used to extract coal. Even if a single mine encompasses an area of just twenty-five square kilometers, an observer has the impression that the hilly landscape of the entire hinterland is being reconstructed. This mining leaves behind a completely artificial topography with terracing that results from the logic of the mining process and the provision of access, and which reaches from the deep valley incisions all the way to the horizon of the mountain ranges. The surface is covered in earth and stones, with no surviving vegetation. Similarly extensive are the water fields in the bay of Vinh Cua Luc, also located beyond Ha Long, which were laid out for shrimp cultivation

but never fully completed. The coastal landscape resembles a ruined and abandoned landscape, even before it has ever been cultivated. Valuable mangrove forests are being destroyed for such facilities all along the northern Vietnamese coast. The example of Ha Long is interesting for the internal, initially concealed links between various economic sectors. Thus we were able to show how revenues from open-pit mining and the booming tourism sector in Ha Long Bay flow into large-scale, speculative real-estate projects, which, along with land reclamation on the coast, also encompass the construction of large artificial islands, and into major territorial projects such as the water fields for industrialized aquaculture as mentioned above. Many of these projects remain unfinished.

We encountered yet another dimension of territorial transformation in connection with industrialized land use in Florida and Brazil. The central interior region of the Florida peninsula holds rich phosphate reserves at a relatively shallow depth, which made mining a profitable prospect early on. The extractable reserves extend in a north-south direction over several hundred kilometers, covering almost half of the east-west breadth of the peninsula.

The mining process follows a movement from north to south, in which the entire territory is successively "dug up" and formed anew. Phosphate mining began in the Bone Valley around one hundred years ago, and thus has endured almost as long as the intensified settlement and urbanization of the southern state.

The simultaneity of using the soil and settling on it evinces interesting phenomena that have led to a unique view of nature and something of a state of equilibrium between "city" and "nature." This is due to the natural conditions that prevail in Florida, particularly its hydrology. Florida was originally swampland, and heavy rainfall that triggers dangerous flooding recurs continually. Domination of this "unstable" nature was a fundamental precondition for settlement just as it was for cultivation, of for example, citrus. Just like the settlement areas, agricultural land use required control over the water that generated the same conditions for the entire territory. Consequently, "city" and "nature" cannot be read as a pair of opposites. On the contrary, the urbanization and cultivation of the territory form one shared layer. The issue here is the transformation from

naturally to artificially established equilibriums that are achieved through the use of modern technologies and infrastructure.

These interdependencies have intensified with the expansion of settled areas and rapid population growth – Florida is now the fourth most populous state in the USA. Previously untouched swampland was incorporated into the system of urban metabolism and market economy, thereby serving the purposes of retention or regeneration, for example, or as a reservoir of drinking water. With regard to the economy, the trade in land certificates for valuable swampland should be mentioned in particular. It means that nature conservation is by and large free of aesthetic or sentimental conceptual categories, and thus also obeys the requirements of the city. The assessment of these requirements is ultimately dependent on the performance and efficiency yielded by a certain function at a certain location.

This points to a further, essential characteristic – one might speak of "mobility" in territorial occupation. That is because the use of a certain area of land initially corresponds solely to the present functional and economic conditions. A pasture can become a mine,

Coal mining region close to Ha Long City, Vietnam

Abandoned shrimp farming basins north of Ha Long City, Vietnam

only to subsequently be converted into a nature conservation area or a settlement area. Conversely, it is conceivable that a settlement that is no longer viable could become pastureland or revert to "nature" as fallow land.

With regard to phosphate mining in central Florida, these observations are significant, because the previously mentioned immense dimensions lead to a correlation among agricultural, settlement, and mining areas. Settlements continue to grow around, and even in, mining areas. Added to this are the demands of nature conservation, which yield complex negotiation processes and compensation mechanisms in the acquisition of the mining areas. However, the value creation of the phosphate industry – which currently consists of only two remaining large companies – is sufficiently high and the territorial occupation sufficiently "mobile" that it is not just unused and agricultural land in mining regions that can be converted; roads, too, can be shifted and small towns relocated. The Mosaic Company, which we visited, is the global market leader in phosphate production and the seventh-largest landowner in Florida.

Due to the long temporal horizon of the mining process, there is a simultaneity of divergent territorial conditions in close proximity to one another. In areas that are not yet affected by mining, pristine natural landscapes exist side by side with agricultural and settlement areas as well as infrastructure works. Where there is mining, certain areas are designated as nature reserves. If the mining activities cannot take place profitably around settlements and infrastructures, they are relocated or rebuilt. After mining is discontinued, there are protected landscapes alongside restored landscapes and existing settlement areas alongside new developments – although reclaimed tracts are subject to certain building restrictions with regard to loading capacity – and agriculture, which can only be carried out to a reduced degree due to the limited fertility of the restored soil. Interesting synergies emerge between different uses, such as between settlement developments and landscapes that have undergone renaturation: artificial lakes in former excavation tracts, for example, increase the value of the surrounding building land. As the largest landowner, Mosaic is becoming an important actor in the property market, beyond its core business.

The mining process restructures the landscape completely. Surface mining is a highly land-intensive process. Enormous, electric-powered excavators remove the phosphate rock in a linear trajectory that traverses the terrain, hence the term "strip mining." The worthless overburden is piled up directly alongside each of these furrows, which also requires space in cases where there is no previously excavated trench that can be filled back up in the process. Even more land is required by the other elements of phosphate extraction. The excavated sediment layer – the so-called matrix, which is made up of one part sand, one part clay, and one part phosphate rock – is dissolved with water after being excavated and then transported via pipelines to the processing facilities. These facilities resemble major industrial chemical production sites and are also located on the mining site. From there the extracted raw material is transported away for final processing in freight cars on specially laid tracks. The waste material, sand and clay, which is still dissolved in water, makes its way from these facilities to the clay settling ponds. These artificially created water basins, with earth dams up to ten meters high, can reach sizes of up to four square kilometers and serve as settling ponds for the sand and clay.

As each pond fills up with material, new ponds are created.

This complex, multiphase process gives rise to a new, artificial, and intensely geometrical topography. In plan, this geometry essentially follows the Jeffersonian grid, which even before the advent of mining determined the property rights and the layout of settlements and infrastructures, and has impact even beyond. On the one hand, the trenches from strip mining cut into the surface of the ground, filling with ground-water in some places to form artificial lakes. On the other hand, settling ponds backfilled with sand and clay create plateau-like hills in relation to the original level of the territory.

The soil of central Florida offers resources for industrialized fertilizer production of great value while at the same time producing phosphate creates a new landscape; after mining it is a different one in both form and use. In our investigation we attempted to describe this phenomenon with the paired terms "Landscape of Production – Production of Landscape." The newly created topography becomes a second nature for further land use.

A number of parallels exist between the mining of raw materials in central Florida and

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Aerial image of a phosphate mining region in Central Florida

Topographic relief of the mining region on opposing page

that carried out in the Iron Quadrangle in the southern part of the Brazilian state of Belo Horizonte. In Minas Gerais, too, the landscape is transformed through land-intensive surface mining, whose dimensions assume a geographic scale. Just as in Florida, the mining is done by a handful of large private companies. The market leader in Minas Gerais is the company Vale. Here, too, correlations arise between areas for mining and those designated for urban expansion, exhibiting conflicts as well as synergies and convergences. However, there is a fundamental difference that began to fascinate us: namely, the phenomenon that the chronologically successive categories of "untouched" territory, productive mining areas, and post-productive, transformed landscapes are to a certain degree interspersed in the transformation processes within the Iron Quadrangle. The reason for this is that today the "residual material" that is of no economic interest for the iron ore extraction process holds future potential for secondary processing. Thus the landscape enters into a process of constant transformation.

Since its discovery and colonization, Brazil has been a land of resources that the former European holders of power knew how to exploit early on. The state of Minas Gerais played a significant role in the extraction of metals due to its reserves of iron, gold, and diamonds. At first the extraction of gold led to a true gold rush, with great wealth and an initial boost of urbanization following soon after. The city of Ouro Preto, nearly one hundred kilometers south of Belo Horizonte, was the center of this gold production in the 18th century and its Baroque architecture speaks of the riches accrued in that era. In its peak period, the region's annual production amounted to eleven tons of gold. Iron ore extraction overtook gold production in the 20th century and has today reached a large volume. Iron currently represents seventeen percent of Brazil's export volumes. The Iron Quadrangle has one of the richest reserves of iron ore in the world.

Because of the local geology in southern Belo Horizonte, these reserves are readily accessible. The orogeny of the Caué Formation is such that the iron-rich stone came to lie on the ridge of each hill. These layers mainly comprise itabirites with an iron content of twenty to thirty percent. The hematites, with an iron content of at least sixty-five percent, are found less frequently. Thus far it is mainly the hematites that have been processed while the extracted itabirites are stored elsewhere, unused. Because of the location of this rock, mining begins on the ridges of the hills and then continues downhill. By excavating entire ranges of hills, a new, artificial horizon is created and the flanks are terraced. As with coal mining in Vietnam, the terracing here follows the needs of transport routes and slope stabilization. Valleys are filled and new hills are heaped up with the unused, merely displaced rock material. Furthermore, the mining process here requires infrastructures similar to those in Florida: treatment plants, kilometer-long conveyor belts, rail lines, loading facilities for transporting away material, and sedimentation basins. These infrastructures, together with the displaced rock, require more terrain than the actual mined area.

As described, up until now only those rocks with high iron content are the ones that have primarily been processed. With rising steel prices and a shortage of worldwide resources, however, rock with lower ferrous content is now of increasing interest for iron extraction, so much so that previously extracted and merely displaced material is now being processed. Even the sediment in the settling ponds contains around thirty percent iron content and is ready for secondary processing. This means that the territorial transformation process in the Iron Quadrangle doesn't end with the initial mining of the hill ridges and mountain flanks, but continues instead at lower heights. Whereas in Florida the termination of phosphate mining creates a new landscape, in Minas Gerais there is no longer a "before" and "after." Temporarily inactive areas constitute wastelands that await their future cultivation. The landscape is set in motion.

Iron ore processing in the Iron Quadrangle, Minas Gerais

SETTLEMENTS

Vesna Jovanović

Places where people constructed physical structures to make way for a sedentary life slowly over time began to form organizational anchors within the overall area of human activity. This territoral organization had enabled land cultivation and resource exploitation to reach a far greater scale than nomadic life could offer. Both natural conditions and the organizational form of labor played a significant part in where a settlement would be laid down, and how large it would become. In labor-intensive agricultural regions today, settlements are small and numerous, related to the daily work that farmers do on their fields. Elsewhere, agriculture is mechanized and one covers with ease large fields of monocultures. Consequently, settlements are sparser in the territory, and reached by private car or public (organized) transport. In Central Florida, where we investigated citrus plantations, large-scale agriculture is nevertheless characterized by labor-intensive picking seasons, and here "settlements" have the form of impermanent workers' camps situated in trailer parks, and workers migrate among the southeastern states in order to follow the various picking seasons of different fruits.

Centers that arose in fecund environments had at their disposal extensive production surfaces essentially through subjugation or influence over other settlements, thereby establishing an economico-political territorial order. The negotiation of a land's resources would take place over a long period of time, often wrought with periods of instability in the form of war and natural disaster. Established power structures leave traces behind even when their significance has withered away or diminished. Marks of contemporary municipal order, whether the cantonal boundaries in Switzerland or the administrative subdivision of the Red River Delta, embody to this day a complex history of this evolution. The hegemony of the center is intrinsically bound to the establishment of security and stability in a territory. Current transformations in former rural backlands reveal for the most part a renegotiation within these established power grids. One example we studied of emergent "pockets" of resistance were Appenine villages that today draw spiritual pilgrims from afar and sell their pecorino and dried meats to a global (mostly European) market – and in this regard seem liberated from the influence of Rome. The same cannot be said of the Rieti

Land allotments on the Amarat Plain, Oman

A hilltop village in the Apennines,
Via Salaria, Italy

province; to this day Rome claims control over its significant water resources.

Technological advancement, both in overcoming natural constraints and in directly influencing the organization of labor, has meant that compact settlements have given way to an incredible multitude of dispersed forms of urbanization, which now loosely intermingle with other, pre-existing layers within a territory, or spread across reclaimed or barren land. In a lot of our investigations, infrastructure has recently invited extended forms of urbanization that base their emergence on less stable processes of development directly or indirectly caused by the tertiary economy of nearby urban centers. The infrastructural project of Oman has unlocked its rocky desert for first-time colonization. Here, where virtually no resources exist, we now find vast carpets of housing estates being built individually, as one could imagine pioneer settlers had done in the American and Australian outback; the difference here being that the modern Omani pioneer finds no resources around his house, but is instead delivered electricity and drinking water through the road network which thus provides a connection to the urban center where a job may await. Furthermore, the prescribed allotments actually constitue a state-driven urbanization, the landscape dotted with single family houses is only an intermediate state of one overarching idea and not the result of individual energies.

As we directed our gaze away from the city, we started to look at the entire organism of settlements comprising of all the various built structures of living, cultivation, and production, most recently of tourism and recreation that appear within territories. We were particularly interested in how vernacular settlements had taken shape and how they in turn become usurped by urbanization. In studying the influence that a center has on the surrounding land, a complex array of anthropological themes was opened up whose wider implications we can only tangentially approach, the most significant of these is certainly migration. "Peripheral" demographic reconfiguration can become permanent over time, as with city borders that swell with rural migrants. This vector is practically a constant in all territories at some point in their historical development, certainly in every one that we have researched. At other times, for better or for worse, remaining constantly on the move can, too, become a territorial trait, as is the case with workers' camps that tend to disappear out of sight the moment the job is done. We do not consider these forced nomadic practices as lying outside of a territory, but as an integral part of it. Referring once more to the case of Oman, it is equally through the exploitation of oil and the almost military "deployment" of workers from South Asia in mobile and controlled working environments that the current transformation of the territory owes its dues.

AN ENDURING VERNACULAR

In the Nile Valley, we discovered a settlement growth pattern that takes place without eroding the compactness of the steadily growing villages. The image that drew our attention to Egypt – the aerial photograph of a densely populated valley more lit at night than many regions in Europe – hardly reflects the experience of being in the valley itself. At first sight, the view is magnificently archaic and agrarian: lush, thickly cultivated grain fields and date palm groves are ocassionally interrupted by groupings of very dense, simple, bare, red brick buildings that house farming families. Building technology remains rudimentary even with structures up to eight stories high; sometimes construction is done without concrete beams. Bricks are either imported or made from dried Nile mud – a resource that has been banned from being used in construction due to its nourishing potential for the farmland. In fact, building on arable land has also been banned. Many families have built upwards to provide living space for their growing families. Through necessity, the younger generation has started to leave the villages and move around for work, either to regional centers, to Cairo, or abroad to the MENA (Middle East and North Africa) region thanks to special politico-economic agreements that exist among the Arab speaking countries. Seen in the light of the demographic explosion that Egypt has experienced in the last half century, it is no wonder that the state looks to maintain valley life as it is, and open up a new future for the country in the desert. The Egyptian desert New Town, although offering a suitable source of housing, relies on the possibility to successfully create an economy independent from the one established within the Nile Valley.

In Minas Gerais the mining region now known as the *Quadrilátero Ferrífero* ("Iron Quadrangle") was formerly where Portugese

Land allotment near Bahla, along Highway 21, Oman

colonials set up several towns for the purpose of mining gold and other precious metals. Mariana, Ouro Preto, Nova Lima, Miguel Burnier, Ouro Branco, João Monlevade were all small towns that, after the depletion of precious metals in the region and before the discovery of iron, experienced an economic and subsequent population decline. With the discovery of abundant reserves, the iron ore industry began in the 1940s and these towns began to function as a network whose augmentation was propelled solely by the economy of iron ore extraction and the related steel production. At the time of their founding, it had been necessary to situate the towns close to the mines themselves; today, an extensive infrastructure characterized by two parallel axes connects the inhabitants of the region with active mines. New mines are not accompanied by new settlements. Instead, old centers such as Mariana and Ouro Branco expand for the most part with privately planned urban extensions constructed by the mining giants to house the workers. A tertiary service economy has also arisen to accompany the industrial sector with the addition of transportation services, gastronomy, worker's hotels, etc. The urban centers now compete on the basis

of their municipal boundaries: if a mine finds itself within the district's borders, the cities claim a large sum of tax for extraction and this is reinvested into social and other infrastructure (sixty-five percent of the lump sum; twelve percent goes to Brasilia and twenty-three percent to the State with its seat in Belo Horizonte). A district without a mine will struggle to survive, even if employment opportunities exist. As iron ore is extracted at an ever-increasing rate, the life span of a mine is ever decreasing. Due to this disassociation between mines and settlements, the former colonial towns remain the anchor points of the territory. In fact, mining activity can overrule this, as we noted some older settlements being removed in order to reach the iron ores underneath, such was the case in Miguel Burnier. The municipality welcomed the opening of the mine, its revenues and job oportunities, although in other instances Brazil's mining giant Vale, the most significant actor in the territory, does enter into an antagonistic role with local municipalities, especially with regard to working conditions, environmental concerns, and concerns over the future of the landscape.

BETWEEN THE SEDENTARY AND THE NOMADIC

An upward shift in mobility between existing settlements, provided for by regional infrastructure improvements and the possibility to own a private means of transport, whether planned or spontaneous, in other cases created a dispersal of settlements horizontally. Sticking to lines of movement between cities and industrial parks (IPs), new linear settlements have started to coalesce throughout the Red River Delta, the population migrating from rural villages is very young and due to demographic growth unable to live anymore solely off the land. The *Doi Moi* state economic reforms of the 1990s decoupled the farmer from his landholdings which together with a strategy of decentralization of IPs has created a strong development pressure on the transport infrastructure, i.e., the meeting point between the cities and the rice paddy landscape, with its thousands of small villages, and millions of inhabitants. Along the infrastructural axis that connects Hai Duong and Hanoi, which collects a series of IPs and traverses an active coal mining area, the regional road has become a space of residence and a space of labor in its own right.

The housing tracts are peculiar in their fine grain: firm, uniform, weather resilient structures four to six stories high and distinctively narrow (3–4 m) extend along roads forming a solid inhabited wall that frames the activities of the road and obscures the depth of the paddy field landscape. The relationship to its agricultural hinterland is ambiguous: on the one hand, it is a transformation that has been brought about by demographic growth and the 1980s crisis in agricultural production; on the other, the actual physical interventions cause this surface system to deteriorate further, with pollution, loss of agricultural land, and the destruction of irrigation flows caused by the new developments (although the latter can also be ascribed to the negligent placing of infrastructure, and not necessarily to the settlement that ensues). The settlements do not reveal immediate connections toward the centers of Hanoi or Hai Duong, nor are the people inhabiting them all commuting to the centers for work; rather, they capitalize upon the intense use of the road and establish commerce, or work in nearby IPs. In either scenario, they maintain a connection to their villages of origin and some still work seasonally on the fields.

Road village in Quang Ninh Province, Red River delta

On the Adriatic coast of Italy, between the towns of Pescara and San Benedetto del Tronto, we discovered a rather different form of linear settlement which we called "Adria City," that is shaped by two distinct infrastructural lines. First, the coastal road linking the separate towns had the consequence of creating a single linear resort facing the beach. The stretch of land between the towns is now replete with *palazzinos* (a villa typology subdivided into several apartment units) that are rented during tourist season or have been bought as second homes. Hotel resorts that for the most part appeared in the 1960s and 1970s rhythmically break the *palazzino* carpet. The whole settlement represents an almost inert, inhabited wall facing the water. To preserve this shoreline, the shifting sand of the coast now requires deliberate occassional adjustment, otherwise it would naturally erode. A second, perhaps economically more significant life plays out along the A14 inland highway and the regional railway, both running parallel to the coastal road. Perpendicular roads leading into the valleys of the hinterland of this coastal "city" are riddled with large and small logistical and industrial complexes that profit from the efficient infrastructure. While originally isolated, these links have connected the entire region to the metropolitan economy of Milan and the industrious cities of northern Italy. A strong indication that "Adria City" is a settlement and not simply a seasonal resort coupled together with a metropolitan periphery is the mobility pattern of its inhabitants: working, living, education, and leisure all focus within this linear settlement system itself. In addition, there is even a level of immigration in the settlement from abroad. Some areas that were once steadily growing on account of tourism have started to fall into ruin, and are today home to an immigrant population looking for alternative economies of subsistence.

A territory with a completely dissolved center may be difficult to imagine, at the very least it would challenge our understanding of the city and its outlying field of traceable influence. We have observed a case favoring dissolution in Central Florida. However it is a dissolution that should be read within the wider geographic frame of the United States. Florida's endless summer has made it vital for the entire population of the east coast; one could describe a similar relationship between the mountain resorts and villages in the Swiss Alps that attain their role only within the urban network of Switzerland, and in this sense are an exension of the city. The migration from colder northern European countries to the Mediterranean countries is a similar example of a larger geodemographic space. In Central Florida, land occupation initially concentrated around citrus plantations and phosphate mining, the cities of Orlando and Tampa emerged as logistical hubs around these activities. Today, however, concentrated urbanization has become diluted in favor of a horizontal sprawl promoted on the one hand by the automobile and the desire for home ownership, and flexibility in the organization of economic activities over a larger surface on the other. Inhabitants have chosen to live remotely from their source of economy, accepting an increased daily movement in order to live in spacious, pleasant environments. This leads to an extremely ephemeral landscape, reduced to an infrastructural field. This can be clearly observed in the most provisional Floridian occupation, that of the trailer parks. In these cases, settlement is in fact a challenging word, implying as it does an actual act of settling, and it is perhaps more worthwhile to talk of Florida as a vigorous field of temporary and constantly shifting communities. The pre-existing landscape is always effaced in these shifts, but is then reconstructed once more in order to build a sense of identity for the emerging community. The environments thus created are individually frictionless and the territory a collection of various monocultures that erase and flatten land. As the life of each community is on average ten to thirty years, this creates an impression of a constantly redrawn landscape.

RETURNING ARCHITECTURE TO NATURE

In currently urbanizing territories, long exertions of human labor have transformed nature into what we have called *second nature,* which we inhabit, which exudes a permanence that we perceive as natural, and within which we continuously in one way or another produce and renew. What happens when we let things be, or, better put, when we are unable to find a use for things any longer? The state of temporary or permanent ruin, architecture's human abandonment and return to the influence of natural conditions, is equally a trait of the territory

A segment of "Adria City," Adriatic coast, Italy

as are temporary constructions, architectural adaptations, industrial conversions and urban renewals.

In Muscat, as in the oases throughout Oman, the drastic change of life, and the development of extensive housing carpets in the desert, has curiously left the future of the oasis villages under stark question. Previously, a resident was restricted to building, or rather, renewing the built form, only on their own plot, and the village was compact for practical reasons, located adjacent to the oasis itself in order to preserve fertile land and economize on water. Subsequently, the provision of infrastructure to even the remotest of villages in the 1970s and 1980s, and the introduction of electricity via this new infrastructural line, meant that new village centers had to be built (it was often impossible to bring the installations into the old cores). Further development of the village has shifted focus once more into the desert with land allotments whose distribution began in the 1990s. The life of the settlement now oscillates between the established newer village centers, and these emerging allotment fields. Old village cores lie completely in ruin in most oasis towns, left to the natural forces of erosion of

their soft earthy construction materials. Some of these old structures have become shelters for animals kept for husbandry, while families remain in others, but in most what we find is in essence the subject of archeology – former traces of a forgotten way of life.

The speculative face of the contemporary global economy has proliferated a particular kind of residential/tourist fabric tailoring to a rich global class, or an affluent (but usually not very numerous) local social milieu. A clear example of this situation is an island we investigated in the vicinity of Ha Long Bay, called Tuan Chau. A characteristic of this island, and of significant parts of Ha Long City, is that these spaces remain uninhabited for long periods of time, becoming derelict perhaps without ever fulfilling their purpose and essentially becoming ghost towns. Whether due to the sheer size of the project, or due to the global climate for such investments (in the post-Dubai crisis), the island currently reads as a kind of fata morgana across the bay. Dotted concrete megaliths disappear in the horizon through the mist. The 3,200 ha "Blue City" development based on the master plan of Norman Foster and, located a couple of hours' drive along the coast from Muscat, is

another project that has been declared a bust. In "Adria City," many stretches of *palazzinos* are held back from ruin thanks only to the care of the immigrants that have come to occupy them. The olive growing region of Bassa Sabina northeast of Rome is another example of a re-used vernacular, also due to a steady influx of poor immigrants. However, with more grandiose projects that we spotted amid our researched territories, finding a new purpose, or even finishing their construction, already appears out of reach. A state of ruin becomes a natural state, at least for the time being.

Grand projects led by the state can also lead to ruin, even though they may come from good intentions. An incredible impression is left behind by New Assiut, Assiut's sister New Town in the Nile Valley. As already mentioned, New Assiut is part of an immense project of the Egyptian government to colonize the desert with over forty new settlements, and spare the precious and fertile valley from encroachment. The newly created city possesses a kind of vacuity, and a sculptural grandeur. Its economic backbone is an intended industrialization that has yet to create an economic impetus. We are still far

from seeing what the exigencies of Egypt's wanting resources will produce, but a parallel existence on the desert edge is already a partial reality. For one, the highway network runs in the desert on both sides of the valley and has proven to be more efficient than any valley road. Furthermore, first and second generation New Towns have become inhabited and are functioning at least in the way of having some public services and local commerce, relating economically to their sister towns in the valley, or to Cairo (in the case of its many satellites which comprise the first generation of New Towns). What appears to be taking place in some parts is a softening of the harsh natural desert edge, rather than the creation of two parallel worlds. New Assiut's brutish tabula rasa character tenuously floats above the desert sand for now, displaying both Egypt's positive stubornness in the face of its resources challenge, as well as giving a glimpse of a radical new settlement organism for a territory that has known valley life for many millenia.

Old village core of Al Hamra, Oman

New Assiut under construction, Egypt

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ETH STUDIO BASEL is an institute of urban research set up by architects Roger Diener, Jacques Herzog, Marcel Meili, and Pierre de Meuron in Basel in 1999, as part of the Swiss Federal Institute of Technology Zürich (ETHZ) – Department of Architecture, Network, City and Landscape. After the four-year study *Switzerland: An Urban Portrait* that investigated the urban condition of Switzerland as a thoroughly urbanized country, ETH Studio Basel started a research program on processes of transformation in the urban domain on an international scale, focusing on the urbanization process of the seven Canary Islands, in the development of the tri-national region of Metro-Basel, and in cities such as Belgrade, Havana, Nairobi, Casablanca, and Hong Kong. The institute's research activity uncovers traces of urban change in the material space of the inhabited landscape. A main focus of the research engages issues of contemporary urban conditions by meticulously describing the modalities of physical transformation in different environments and contexts. The particular modality is developed in the work with the students in Basel and makes no distinction between teaching, fieldwork, design, and research. Recent publications of the institute include: *Belgrade: Formal – Informal* (2012), *The Inevitable Specificity of Cities* (2014), and *Achtung: Die Landschaft* (2015).

ROGER DIENER, born in 1950, established the firm of Diener & Diener in 1980, continuing the firm established in 1948 by his father, Marcus Diener. Roger Diener has led the office with Terese Erngaard, Michael Roth, and Andreas Rüedi since 2011. Following appointments as visiting professor at the Swiss Federal Institute of Technology Lausanne (EPFL), Harvard University, and universities in Vienna, Amsterdam, and Copenhagen, he held the position of Professor of Design at the EPFL from 1987 to 1989. He has been teaching at the Swiss Federal Institute of Technology Zürich, ETH Studio Basel: Contemporary City Institute, since 1999. He has received numerous awards, including the French Grande Médaille d'Or, the Prix Meret Oppenheim, and the Heinrich Tessenow Gold Medal. Internationally renowned works include the Java and KNSM Island in Amsterdam, the Novartis Forum 3 on Novartis Campus in Basel or the Mémorial de la Shoah in Drancy. The office has developed various urban plans to restructure large industrial areas such as the port of Malmö, as well as working with heritage buildings and buildings with complex site

conditions such as the Swiss Embassy in Berlin and the City Museum in Aarau.

MARCEL MEILI was born in Zürich in 1953. He studied architecture at the Swiss Federal Institute of Technology Zürich (1973–1980) and was a research associate at the Institute for History and Theory of Architecture, ETH Zürich. He worked in the office of Prof. Dolf Schnebli (1983–85) and was a teaching assistant for Prof. Mario Campi (1985–87). In 1987, he formed an office in Zürich together with Markus Peter. The recent built work of Meili, Peter Architekten includes the Zürich Central Station extension, the Swiss Re Center for Global Dialogue in Rüschlikon, The Sprengel Museum in Hannover and the high-rise urban development in Zürich West. The *Mitten in München* complex, a large passage in the old town of München has been opened 2014. The office currently employs forty-five staff members in Zürich and in München. Marcel Meili has taught as a visiting professor at the Harvard Graduate School of Design, and since 1999 has been teaching as a professor at the Faculty of Architecture of the Swiss Federal Institute of Technology in Zürich.

CHRISTIAN SCHMID was born in Zürich in 1958 and studied geography and sociology at the University of Zürich. Since 1984, he has been active as video activist, organizer of cultural events and urban researcher. He has authored, coauthored, and coedited numerous publications on Zürich's urban development, on urbanization and urbanism in international comparison, and on theories of the urban and of space. In 1991, he cofounded the International Network for Urban Research and Action (INURA). In 1993–94, he was a fellow researcher at the Laboratoire de Géographie Urbaine, Université Paris X Nanterre, and from 1997–2001 he was an assistant lecturer at the Geography Department of the University of Bern. In 1999, he became the scientific director of the project *Switzerland: An Urban Portrait* at ETH Studio Basel. Since 2001, he has been a lecturer in Sociology at the Department of Architecture of ETH Zürich. In 2003, he received his Ph.D. from the Friedrich Schiller University in Jena. His dissertation *Stadt, Raum und Gesellschaft: Henri Lefebvre und die Theorie der Produktion des Raumes* was published by Steiner Verlag, Stuttgart. In 2009, Christian Schmid became Titular Professor at the ETH Zürich. He currently works together with Neil Brenner on the development of a theory on planetary urbanization. In the framework of the ETH Future Cities Laboratory Singapore he

leads a project on the comparison of urbanization processes in the urban areas of Tokyo, Hong Kong/Shenzhen/Dongguan, Kolkata, Istanbul, Lagos, Paris, Mexico City, and Los Angeles.

VESNA JOVANOVIĆ, born in 1985, is a practicing architect involved in territorial urban research and teaching at ETH Studio Basel since 2011. She obtained her Master's degree from the University of Belgrade, and a Postgraduate degree from the Berlage Institute in Rotterdam. She has worked as an architect in Rotterdam on several projects, including a MATRA capacity-building government collaboration between Holland and Turkey in Diyarbakir, on the topic of restructuring the development of the city, governmental housing, and the preservation of the historical city core. Subsequently, she has worked in Brussels for 51N4E on large-scale urban studies for Istanbul (IABR 2012: Making City) and on a restructuring project for the Brussels Metropolitan Region (*Brussels 2040,* BOZAR). Recently, she has guest lectured at the Moscow School of Architecture, the Academy of Fine Arts in Prague, Universität der Künste, Berlin, and the Institute for Housing and Urban Development Studies, Rotterdam. In 2014 she held an urban and social geography course at the Université de Neuchâtel on visualizing territorial issues. She is currently working on urban and architectural projects in Diener & Diener Architekten in Basel.

MATHIAS GUNZ was born in St. Gallen in 1979. He studied architecture at the Swiss Federal Institute of Technology Zurich from 2000 to 2007 and worked in architecture offices in Zurich and Tokyo. During his work at ETH Studio Basel from 2007 to 2015 he was involved in a variety of projects and publications dealing with urban phenomena in Switzerland and world-wide. In 2011, together with Michael Künzle, he formed the office Gunz & Künzle Architekten in Zürich, which deals with architecture and urbanism on all scales.

CHRISTIAN MÜLLER INDERBITZIN studied architecture at ETH Zürich, graduating in 2004 with a diploma project under Jacques Herzog and Pierre de Meuron. Following his studies he worked briefly for Marcel Meili, Markus Peter architects in Zürich and in 2005 he founded Edelaar Mosayebi Inderbitzin architects together with Elli Mosayebi and Ron Edelaar. Alongside his practice, he served as a teaching and research

associate from 2005 to 2015 at ETH Studio Basel. In 2011 he taught a studio at TU Graz, and is currently serving as Guest Professor at EPF Lausanne, teaching a studio on collective housing.

LIISA GUNNARSSON, born in 1980, studied architecture at the Royal Academy of Technology in Stockholm (KTH) after brief spells in philosophy and the applied arts. Before graduating in 2011 she attended an exchange program at the Federal Institute of Technology Zürich for one year. Her diploma thesis on a sustainable development for a cultural heritage site in Fez, Morocco, was nominated for the OFFECT-Student Award. After gaining experience with her own practice and from working at various architect offices in Sweden and Switzerland, she joined Studio Basel as a teaching assistant in 2012.

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