

Markus Dauss: Infrastructural Cities, Ecology and the Visual Arts

What is the role of architecture in the visualization of urban infrastructure? This project seeks to analyze its contribution by comparing Paris and Los Angeles while at the same time considering the different dimensions of 'ecology' involved. Infrastructures are regarded as indispensable *prerequisites* for urban culture, characterized by a high degree of social and spatial complexity, density and networking. At the same time, the systemic construction and expansion of infrastructures as well as their increasing interconnectivity can also be described as the *result* of urbanization itself. As technological components, they have a decisive influence on the lifestyle-forming properties of urban habitats. Banham was one of the first to describe this mechanism by distinguishing four sub-ecologies of the urban landscape of Los Angeles. Cultural sciences, cultural, human and urban geography, and sociology of technology have refined these *analytical* perspectives. Since the first energy and environmental crises in late modernity, however, infrastructures have increasingly been discussed under *normative* auspices. These critical reviews question how infrastructures feed natural resources into the urban metabolism, whether they exploit them or use them sustainably. The concepts of ecology which guide these inquiries combine sustainability with social demands: they claim democratic participation in political decisions concerning infrastructure and a just access to resources as well as to the regulating networks themselves. Although infrastructures are officially meant to operate in an integrating manner, they can in fact also have a disintegrating or even conflictual effect (*splintering urbanism*).

Recent approaches focus not only on spatial-social or material-technical but also on the medial dimension of urban infrastructure. Genuinely art-historical surveys of the subject are rare, however. Infrastructures, spatially and/or metaphorically the 'underneath' of the city, are generally regarded as invisible or at least located below the everyday perceptual thresholds. They hardly seem to relate to the visual arts. In addition, their network structure suggests that they are primarily decentralized fabrics. Both are one-sided views that generally project characteristics of the recent virtualization of networks onto infrastructures in general. In contrast, this project claims that infrastructures are integrated into complex constellations of invisibility and visibility. Furthermore, it argues that visual arts, especially architectures, play a decisive role in the production of the latter. The service which infrastructures offer to urban society is, thus, made symbolically present and available for discourses of social self-conceptualization. However, artistic representations of infrastructures can, in turn, generate discursive elusiveness through aesthetic sublimation. They make it more difficult to fundamentally question the use of certain resources and the power derived from them. For this reason, the project also proposes that urban infrastructural networks often exhibit centripetal tendencies complementary to their systemic branching. This centrality is not only owed to its function of supplying the city as a social entity, distinguished from the surrounding

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countryside. Rather, it also serves to symbolize urban power—or at least political, administrative or technocratic authority. It is precisely architecture that contributes to the creation of the socially desirable visibility of infrastructure. If clustered, infrastructural buildings can combine a decentralized fabric with centralizing tendencies. The first mode may be fostered, for instance, by similarly designed entrances and exits into network channels, typified receiving and distributing stations or branch offices of the suppliers, the second by monolithic water conduits or monumental structures of the public authorities.

These mechanisms can be exemplarily studied both in Los Angeles and in Paris. They are particularly evident in the infrastructural management of fresh water resources and waste water disposal. The objective of our study is an inter-temporal comparison: the peak phase of the infrastructural development in Paris began around 1854 as part of the extensive modernization of the city under city prefect Haussmann and lasted until the end of the century. The central concepts for Los Angeles were realized from 1902 onwards, after the (re-)takeover of the water supply by the city administration. Water was a central resource for both cities although they are in antipodal climatic zones and of very different ages. In Paris, the unhindered in- and outflow of water was a central element in the 'purification' of a historically encrusted city. It seemed indispensable to Haussmann to meet the demands of the hygienist paradigm in order to transform Paris into a modern metropolis. In the French capital, various dimensions of urban circulation were interconnected by linking different infrastructural systems (road, rail, water) in an unprecedentedly coordinated manner. The sewers, which encountered considerably fewer obstacles than the above-ground routes, were designed as an idealized mirror image of the rationalized traffic network on the surface. Under Haussmann's chief engineer, Belgrand, the sewer network (with its optimized flow paths) was extended to five times its original size. It worked both functionally as a central discharge and as a metaphorical key to the city. So it became the symbol of a historically unique reform of the entire city and its metabolism.

Due to its claim of a comprehensive habitat optimization, Haussmann's work has been historically and *analytically* described as ecological. In addition, his *normative* labelling as a '*premier écologiste*' has been repeated since the 1950s: he had created the first livable cityscape through sustainable decongestion, ventilation and greening. Such a view considers primarily the greenery on the city surface (street planting, parks), i.e. free and empty zones, on the one hand, and on the other, it peers fascinatedly into a historically new form of urban underworld in which a spatial rationalization merges with traditional categories of the subterranean (the mystical, uncanny, grotesque and transitory). Partly responsible for the latter is, we assume, a powerful iconographic tradition of the journey into the underworld underpinned by

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modern mass media, primarily by photography (strikingly: the famous photo series by Nadar from 1861) as well as print-making. (Real tours to the sewers were possible from 1867 onwards.) On the other hand, the way in which the caverns were made architecturally present on the surface is often overlooked. This applies, just to cite one example, to the small architectures called *vespasiennes*, a group of toilet kiosks and '*chalets*' placed in public space. Closely related to bodily fluids, they are nevertheless primarily seen as a curious part of the so-called *mobilier urbain* and thus sociologically interpreted as being part of the civilization and 'interiorization' of the street space. In addition, they are mainly categorized as objects of photographic history: the archivist of the city, Marville, had portrayed the different types of pissoirs in a brilliant series (ca. 1870). But, as the project will underscore, they are first and foremost architectures making visible underground infrastructure otherwise hidden from view. It should also be kept in mind that strong ideological struggles were fought over the specific use of the sewers (*tout à l'égout?*) as well as over their cultural interpretation. An organic-holistic image or a more functional understanding were competing against each other. It should not only be clarified how these microarchitectures correspond to the 'entrails' of the city but also to the aqueducts constructed under Haussmann as freshwater transporters reaching far out to river sources in the Île-de-France region. Although these monuments were central to Haussmann himself to underpin the 'Roman' scale of his undertakings, they are also conspicuously little addressed by academic study. It is therefore necessary to ask systematically, also beyond this example, how attention economies and image policies generate different visibilities of infrastructures and how these are categorized.

Water is indisputably also the central resource for Los Angeles. The Southern Californian metropolis, situated in a semi-arid stress zone, is an unlikely phenomenon from an environmental-geographical point of view. Presumably precisely for this reason, it is backed by a strong myth of paradise. Its constantly increasing need for water was a central premise for growth as an impetus for reaching out into the region. Over the years, the metropolis has established an elaborate and effective water management system and can therefore be regarded as the paradigm of an infrastructural city. The purely additive urban structure of the sprawl, which can only be experienced by automobiles, with its prosaic supply stops also underlines this impression. It is completed by the architecture of Californian modernism, which is decidedly constructional and has always tended to experiment with climate technology to such a degree that its iconic buildings can be regarded as infrastructurally determined.

There are already numerous studies on the history of the great thirst of the rapidly growing city. This applies, above all, to the imperial-technocratic water policy of the Progressive Era and the New Deal. It can be easily dramatized because it provides strong historical characters who themselves were already striving for a strong media presence of their works.

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The phases of late and post modernism (which are already increasingly skeptical of technology) and even more the present challenges of climate change have also attracted strong attention. It has become an irrefutable certainty: precisely infrastructure concepts, which determine the ecology of the metropolis as a networked environment, exacerbate ecological problems. A supply deviating water from river valleys over very long distances or channeling storm water through rigid canalization contributes to the fact that there is less and less water permanently available but more and more water suddenly occurring. This is where the non-intended effects of water infrastructure meet with those of land sealing by the structurally analogous pathways of 'Autopia'. This self-intensifying agency of infrastructure also applies to sewage disposal in LA which has a rather hidden history that has recently been critically reconstructed.

Overall, however, for Los Angeles (as for Paris) the specific contribution of *architecture* to the visualization of infrastructures has not yet been comprehensively reflected. What do they do to symbolize the interlocking of decentralized network ideas with a strongly centered structure? How do they, at the same time, conceal alternative supplies, potential savings or even ecological consequences of the use of water? There are only few studies available which are taking first steps in this direction: they recapitulate the form, symbolism and location of the buildings of the Department of Water and Power or its predecessors. To some extent, they even dare to draw some conclusions about the architectural communication of corporate policies of the water supply of the metropolis. The authors examine monumental water pipelines (aqueducts), the reservoirs and dams. Decentralized branch offices of the DWP are also recorded. (Although they primarily serve to promote electricity consumption, they also promote the flow of water, which is closely linked to electricity generation). The administrative buildings of the department are also being discussed here, above all, the central DWP building with its techno-corporate symbolism of a rationalist power regime that has undergone multiple adaptations to changed energy regimes. These studies will have to be followed up and extended to the highly interesting but largely overlooked architecture of wastewater treatment (Tillman and Hyperion Water Reclamation Plant). Recent research on the LA River (which has given the city its name) should also be included. For several years now, the water course has been regained public and academic attention as being part of LA's water management and of the urban fabric: current projects are attempting to make the River, which is mainly fed by industrial wastewater and restrictively regulated, accessible or visible again, to re-ecologise it or to make it the nucleus of an urban riverfront. Accordingly, urban and environmental-geographical aspects dominate the academic discussion of the River.

Some of the studies, however, touch on the invisibility or non-observance of infrastructure buildings: for example, the question arises whether, when and where impressive but also threatening dam walls are visibly presented or rather

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concealed (Weid Canyon Dam); some authors discuss under what terms and in what formats—including artistic representations—the marginal or transitional space of the LA River enters the public consciousness. But the role of architecture is largely left out here. These approaches must therefore be methodically extended, including an analysis of the typological traditions and contextual references of the realized or projected architectures in question. The conscious selection of styles or, more broadly, constructional metaphors must be historically elucidated, as well. Where and why are classical traits dominating (reference to the ancient Rome Empire)? What are techno-futuristic references to Art Deco, Hollywood-Regency, Streamline Modernism, Mid-Century Modernism or futuristic Late Modernism intended to communicate? Which segments of infrastructural networks have been and are being made visible, which are rather concealed? Which connotations are evoked, which body metaphors are conjured up, reaching from organic-metaphoric to functional-abstract or even digital-virtual? Above all, in a systematic comparison with Paris, it must be clarified which historically and culturally specific conditions have prevailed in each case. What role did different resource regimes, urban concepts and image discourses play in these settings? What forms and perceptions have been brought forth—and which impact do these structures still have today?

A research visit to the Getty Research Institute would be indispensable for several reasons. As one of the few collections worldwide, the library contains all the relevant references to urban infrastructures and infrastructure buildings in Paris and especially Los Angeles. It holds a vast variety of studies on the urban/environmental development of Los Angeles in particular, some being the result of it from its own research (*Overdrive*). In addition, there is a treasure of archive material in the collections, both on theorists—especially those of the infrastructural city (Reyner Banham papers)—and on their architectural protagonists (e.g. Albert C. Martin). These funds are to be sampled in response to the key questions of the project, in the first instance the visibility/concealment-complex. As it has been suggested, the study will therefore also regard the media iconographies of the infrastructures, above all, their photographic orchestration, as an extremely powerful part of the overall tableau. It will discuss which imagery renders specific sides of the infrastructure but, at the same time, conceals others. The Getty Fundus would also be an ideal tool for these tasks as it encompasses major positions such as Shulman's images (here primarily those of the DWP headquarters but also those covering urban development more widely), John Humble's, Lane Barden's or Ed Rusha's photographs of the main transitory routes (including the LA River) through the urban fabric. The boundary between popular and artistic representations—taxonomically relevant but in fact often blurred—will also have to be discussed. The author has been able to work intensively on Paris which can facilitate and accelerate the comparative work. The editorial goal is a comparative study in book format.