Routledge
Taylor & Francis Group

Journal of Architectural Education

ISSN: 1046-4883 (Print) 1531-314X (Online) Journal homepage: https://www.tandfonline.com/loi/rjae20

Learning From Utopia

Antoine Picon

To cite this article: Antoine Picon (2013) Learning From Utopia, Journal of Architectural Education, 67:1, 17-23, DOI: 10.1080/10464883.2013.767120

To link to this article: https://doi.org/10.1080/10464883.2013.767120

ANTOINE PICON
Harvard University

Learning From Utopia
Contemporary Architecture and the Quest for Political and Social Relevance

The Return of Utopia

A few years ago, the subject of utopia and its relation to architecture was solely of historical interest. The utopian character of modern architecture has often been denounced, and is held responsible for the mistakes of modern urbanism. Modern architects, it was said, had jeopardized the quality of life in their attempts to change society. In his 1973 essay, *Architecture and Utopia*, the Italian historian Manfredo Tafuri was even more severe. He believed the utopian streak of modern architecture was based on the fundamental delusion that capitalism needed architectural and urban order to function in an efficient manner.

In order to counter this, Rem Koolhaas and his followers tried to connect architecture with the real trends of the times, beginning with the accelerated circulation of people, goods, and money, as well as sprawling urbanization. In order to cope with the prevailing conditions of the "generic city," architecture had to abandon its pretensions to change the world in a demiurgic manner.[1] It had to become realistic, in tune with what was really happening in the world, rather than pursuing the old pipe dreams of modernity. For Koolhaas, this meant the study of urban areas such as Lagos, which present great problems for mainstream modern architecture and urban planning.[2]

However, there have recently been some changes. Utopia is returning to favor, such that it is being mentioned again at architectural exhibitions, and in books and lectures.[3] Considerable interest has developed in postwar utopian and counter-utopian movements. The megastructural projects of the 1950s, the Archigram legacy, and the provocations of early 1970 radical architecture movements are being scrutinized in detail, not only by theorists and historians but also by a growing number of practitioners.[4] These movements have created an agenda that we still share today. The early megastructures and other radical provocations offered the possibility of redefining design objectives and methods, by taking into account new technologies emerging at the time; electronics, computers, and new media were playing a more prominent role.[5] And because architectural discourse and practice are usually about endorsing the present state of things instead of proposing alternative futures, there is a growing dissatisfaction with the estrangement of architecture from political and social concerns. Megastructural and radical architecture interest us today for their capacity to imagine a different future. Conversely, the influence radical architecture has exerted on designers such as Koolhaas or Tschumi tend to demonstrate that utopia is not necessarily a sterile concept, that it can steer architecture and provoke its renewal.[6]

Thus we clearly have something to learn from the utopian tradition, but we must avoid the temptation to idealize it, after having discarded it for so long. Despite its ambition to transcend the flow of historical conditions, utopia is actually deeply historical; its status and content have changed throughout history, and its connection to architecture is thus more complex and ambiguous than usually assumed. Before returning to the present and to what we may have to learn from utopia, I would like to comment on the historical transformation of the utopian discourse and the various kinds of relations it has had with architecture.

The History of Utopia and Its Relation to Architecture

Until recently, utopia was often treated paradoxically as a genre that had been created during the Renaissance, while remaining at the same time mysteriously untouched by the flow of history. Recent research breaks this mould, by not only paying attention to the context in which utopia is discussed, but also by considering it as revealing a certain state of affairs, rather than as an alternative to the existing order of things.[7]

There is also a new interest in activities involved in the name of utopia; many are established social movements corresponding to specific practices—for instance, the nineteenth-century utopias such as Saint-Simonianism, Fourierism, or Owenism. These movements embraced not only the publication of journals but also the foundation and management of utopian communities. I would now like to identify some of the major turning points, and to underline at each stage the relationship established between utopia and architectural and urban concerns.

The word utopia was coined in 1516 by Thomas More from the Greek *ou* and *topos*, referring to the negation and to the place; utopia was literally nowhere. It was an island far away, on which an ideal society had developed, a perspective which owed a lot to the discovery of the New World, a giant remote island where strange societies could be found.[8] The view prevailed until the eighteenth century. It was imagined that a traveler had visited this island, perhaps by accident, following a shipwreck for instance. Because utopian texts were usually written in the present tense, utopia was thought of as existing in the present, although in an unknown location.

Utopia's most decisive feature was probably its criticism of the existing social order; however, it was not synonymous with social reform. It was therefore not expected to have any immediate social effects, but rather to act as a lens through which to view the arbitrariness of the social order, which bordered on the absurd. Swift's account of Gulliver's travels is a good example, the various countries Gulliver visits being in one way or another evocative of utopias.

Utopia was less critical in dealing with architectural and urban issues; many utopian texts, beginning with More's, described ideal cities very close to those of which architects and engineers dreamt. There were several reasons for this more positive tone towards architectural and urban improvement. In order to be believable, utopia needed to describe concrete features, such as buildings and streets. From its start, utopian concepts fed upon the architectural and urban production of its time, upon the projects of ideal cities of architects and engineers.[9]

There was an expectation that, beyond the critical stance usually adopted by utopians, there lay the possibility of some real social and political progress. Architecture and urban design thus offered a path

Figure 1. Thomas More, Island of utopia, from *Libellus veer aureus ned minus salutaris quam festivus de optima reipublicae statu, deque nova insula Utopia,* Louvain, 1516. Source: Wormsley Library, Oxford.

towards concrete reform. Despite its critical attitude, utopia was even then about hope. But at the end of the eighteenth century, the status of utopia began to change dramatically; having remained most of the time up until then a concept lacking any clear and immediate prospect of application, it now became increasingly associated with social and political transformation. It became a message capable of universal application, intended to reign everywhere in the future. This transformation is already noticeable in the writings of the late eighteenth-century philosopher Condorcet, whose *Esquisse d'un Tableau des Progrès de l'Esprit Humain* paved the way for various nineteenth-century utopian thinkers.[10] The importance of Condorcet's essay should not be underestimated; Karl Marx was one of many influenced by it.

Thus with the disciples of Saint-Simon and Fourier in France, and of Owen in England, utopia further evolved; having been chiefly a literary genre, it now became synonymous with social movements and experiments. In the early 1830s, Saint-Simonianism attracted the bourgeoisie and the workers.[11] Fourierism met with similar success a decade later in both France and in the United States.[12] This popularity must be taken into account when dealing with French utopian thinkers of the first half of the nineteenth century. By this time, utopia was firmly established as a political and social movement, whose influence extended far beyond the initial impact of its founding fathers. Now, its relationship to architectural and urban thought changed profoundly; the project to change society gained a spatial dimension, and utopian thinkers began to grapple with architectural and urban issues. The major novelty was the criticism of existing architectural and urban conditions. Owen, Fourier, and their disciples insisted especially on the rejection of city slums and industrial suburbs; they dreamt of a new architecture for an age of harmony that would be a complete departure from existing conditions.

However, by becoming universal in its ambition, utopia was threatened even more than before; the call for an urban architectural program of transformation implied a risk of becoming abstract and lacing credibil-

ity. This explains the central role played by the architecture of the phalanstery in the Fourierist movement.

The relationship between architecture and utopia had now become symmetrical. Not only did utopia borrow from architecture, but architecture itself was increasingly influenced by utopian perspectives. One reason for this was that nineteenth-century architecture began to lose its own sense of direction, confronted as it was by a rapidly changing society and new programs that challenged its traditional knowledge.[13] Thus utopia naturally led the quest for an organic architectural and urban expression that would fulfill both the material and spiritual requirements of the industrial age. The chart of the successive styles of architecture published by architectural theorist and journalist César Daly in *La Semaine des Constructeurs* neatly illustrates the influence of utopia upon architecture. Indeed, after listing the major styles of the past, from the Egyptian to the Renaissance, the chart ends with a series of question marks regarding the architecture of the future.[14]

For some utopian thinkers as well as architectural theorists, the key to such an organic state lay in the past, particularly the Middle Ages, although for Viollet-le-Duc Gothic was the preferred prototype.[15] The medieval age was also fundamental for the utopian thinker and designer William Morris, the founder of the arts and crafts movement, who suggested the possibility of England returning to a pre-mechanized state in his 1889 *New from Nowhere*.[16] Although the Gothic influence was abandoned, twentieth-century architecture and utopia remained permeated by the nostalgia of a lost state of equilibrium and innocence, which explains the enduring fascination exerted by primitive or nomadic conditions on so many utopian figures as well as designers.

In the twentieth century, utopian concepts reached several defining stages. The most important was the merger between utopian perspectives and mainstream political and economical agendas. The advent of communism promised to many a golden age; others bet on fascist regimes, while some regarded capitalism as a realized utopia.

Connections were established between these utopian perspectives and the new practice of large-scale planning. Territorial concerns were already present, but planning as such first appeared on the eve of the twentieth century. As Tafuri rightly pointed out, planning was the essential link between architecture and utopia throughout the twentieth century. The proposals of Le Corbusier were made utopian through planning, as were so many others, such as Ludwig Hilbersheimer's post-war dispersion schemes.[17]

The gradual discovery of what the brave new worlds of communism and capitalism had in stock for man and society caused a strongly negative contra-utopian perspective in the twentieth century. These worlds exerted an especially strong appeal on radical architecture in the early 1970s. Even more than utopian, radical architecture can be dubbed as counter-utopian, with projects like Archizoom's No-Stop City, where the urban fabric transforms into a continuous strip saturated with mass consumption symbols. The lack of relationship to the exterior makes it comparable to a prison.[18]

Convergent Agendas

Although both utopia and architecture changed throughout the nineteenth and twentieth centuries, their relationship remained defined by several constant preoccupations. It is probably more accurate to speak of a convergence between utopia and modern and contemporary architecture, than to construe their relationship as simply osmotic. The most fundamental convergence was linked to the ambition of reconciling nature and technology, or individual and collective life, at a time when these seemed to be drifting apart. Another was the desire to transform the earth into the "house of man," as the Saint-Simonian utopian movement expressed it.[19] Both utopia and architecture tried to fully equip and manage the earth, even if this implied preserving large territories as natural reserves. This ambition reached one of its climaxes with Buckminster Fuller's reflections on the possibility of inhabiting the entire earth, including the poles.[20]

The growing gap between the natural and industrial worlds preoccupied both utopia and architecture. Even at the height of technology, utopia presented itself as the filler in this gap, and thus a "return to the past," or at least to some of its fundamental values, was tempting. Morris was not the only utopian to envisage such a return; the pastoral has always been a feature of utopian discourses. Even now, our digital society revels in evoking a green and almost pastoral future made possible by the substitution of electronic exchanges to physical circulation, a theme present in William Mitchell's influential essay *City of Bits*.[21]

Architecture has also repeatedly tried to overcome the gap between nature and the industrial world. The symbolic importance of the terrace roof is that it is supposed to put man in direct relation with the elements, light, air, wind, and plants. Terracing, decking, conservatories, and suspended gardens were also put forward.[22] In the megastructural movement of the 1950s and 1960s, individuals were supposed to roam freely, experiencing natural elements, like birds on a tree. The Pompidou Centre in Paris, with its ascending promenade, is an example.[23]

The convergence took other forms, for example, references to tents and huts; the tent has become a useful concept for architects and engineers involved in light structures, which in turn relate to the longing for reconciliation between nature and technology.[24] The longing for a nomadic form of life is a feature of the work of Jean Prouvé and Buckminster Fuller. Ironically, although these designers dreamt of mobile, often ephemeral forms of dwelling, they were also involved in large-scale constructions.

The reconciliation between the individual and the collective was another essential objective shared both by utopia and architecture, particularly when the industrial age brought growing conflicts. Political and social unrest and the increasingly individualistic character of social life threatened the fabric of society.

Throughout the nineteenth and twentieth centuries, many architectural theorists and practitioners embraced utopian thinking; for example, Ruskin's theory of ornament. For Ruskin, Gothic ornament in

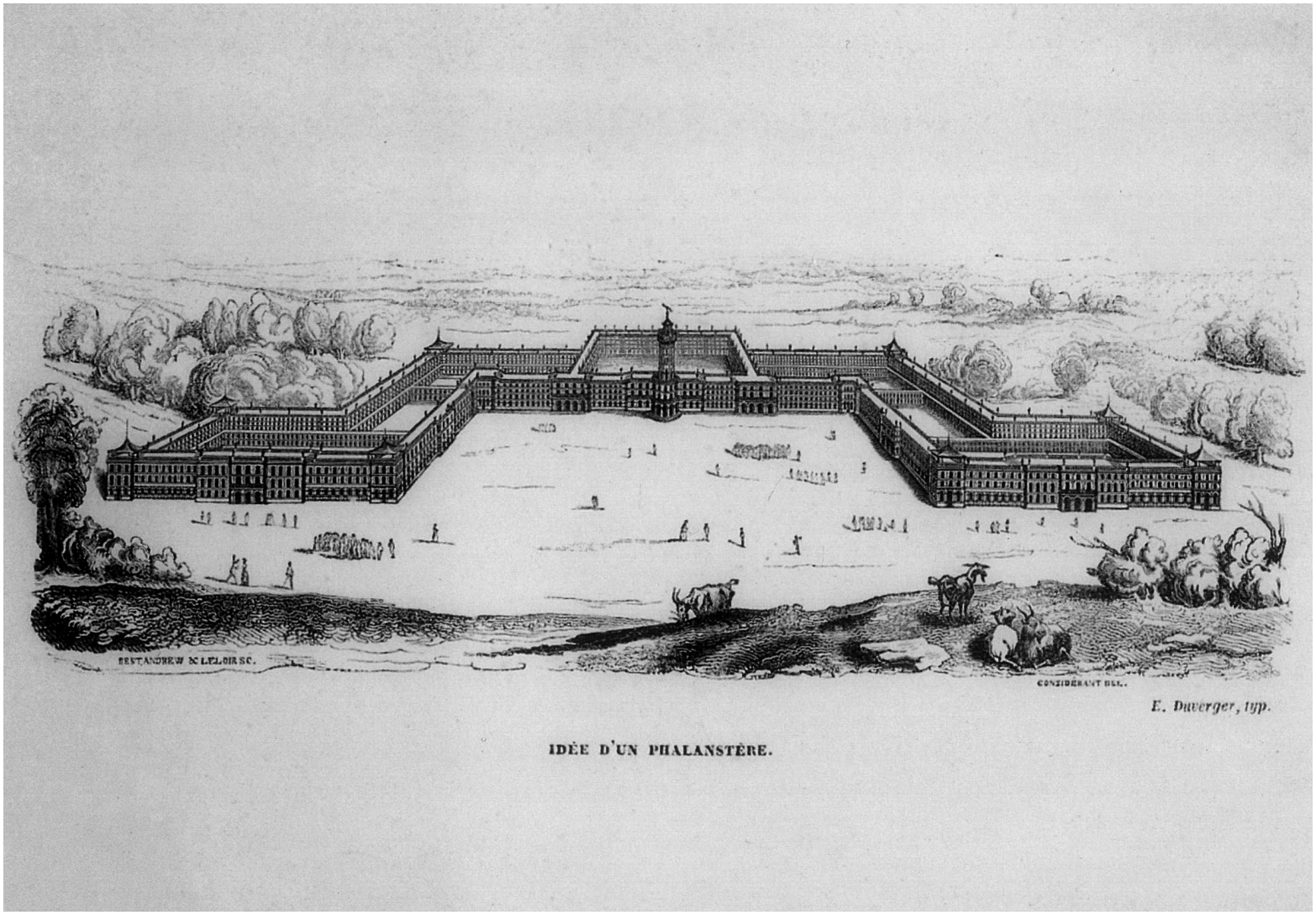

Figure 2. Victor Considérant, *Idea of a Phalanstery,* c.1840. Source: National Archives, Paris.

particular was supposed to bear the imprint of individual impulse while relating to collective inspiration.[25] The Ruskinian architects Deane and Woodward imposed elaborate decoration on their Oxford University Museum; the relation between the cast and wrought iron structure with its elaborate decor and the hand carved stone sculptures was supposed to express a new equilibrium between collective means of production and individual creative impulse.[26]

The fascination with the ocean liner represented the same concern for the expression of a true collective spirit. In the industrial age, the liner appeared to authorize individual life, while submitting it to a common destiny, a concept mentioned as early as the 1840s by the utopian writer Victor Considérant, the main disciple and inheritor of Fourier. He considered liners to be prototypes of the collective living of the future, and was thus clearly a model for the phalanstery collective dwelling.[27] This emblematic character of the liner probably explains why the sinking of the Titanic so gripped the imagination of the public; despite this catastrophe, however, the liner remained a source of inspiration for modern architecture. Its cabins inspired the German concept of the existence minimum. With his *unités d'habitation*, Le Corbusier was among those who admitted the influence of the liner as a model.[28]

Beyond the attempt to reconcile nature with technology, or the individual and the collective, another common property of utopia and architecture was their paradoxical attitude towards time and the direction of history. On the one hand, they presented themselves as the logical outcome of history and the prevailing historical conditions. On the other, they both aimed at identifying principles that could resist the erosion of time. Their attitude towards time was characterized by a simultaneous quest for both historical relevance and for permanence, an ambiguity which remained fundamental to architectural modernity; for instance, were the five points of Le Corbusier supposed to be the pure products of their time?

Like utopia, modern architecture often announced implicitly or explicitly the end of history in

the very name of history. Despite their harsh criticism of former modernist utopian attitudes, the counter-utopian radicals of the 1970s were no better; what did their spectacular projects announce, if not the ultimate end of history under the dissolving power of global capitalism? In such a context, the necessity of architectural form itself, as an historical product, was often challenged.

Figure 3. Richard Buckminster Fuller and Shoji Sadao, *Dome over Manhattan,* c.1960. Source: The Estate of R. Buckminster Fuller.

Utopia Realized

How should this complex history of interactions, exchanges and convergence between utopia and architecture be assessed? I will argue that it is far from being globally negative, as historians and critics such as Tafuri have generally put it. I will begin by addressing the commonly acknowledged shortcomings of the utopian perspective in architecture. The most common criticism is of the failure of the demiurgic ambition of modern architecture, and the sometimes inhuman ambiance it has generated. I believe this is a superficial approach to the problem; the real flaw is an excessive desire for reconciliation, as if the world could be pacified once and for all. It is a dangerous temptation for architecture to believe that it has the key to ending conflict rather than revealing its true nature. Similarly, the ambition of terminating history in the name of history is another major flaw, which has often prevented modern architecture and urbanism from adapting to changing conditions, despite claims to the contrary.

These criticisms, of architecture as excessively foundational, parallel those of Peter Eisenmann. Must we engage in some kind of deconstruction to cure architecture from its utopia-related problems, its demiurgic ambition, and its tendency not to acknowledge human history? I think not, for at least one reason. What is attributed to utopia often belongs to its double, ideology. As philosophers such as Karl Mannheim and Paul Ricoeur have shown, utopia and ideology are simultaneously both opposed and strangely connected one to another.[29] Both are about society and the projects that can be formed in relation to it. But whereas utopia is about social change and the possibility of a radically different future, ideology tries to stabilize the dominant features of the present. This does not mean that utopia does not care about the present; in *Principle Hope*, Ernst Bloch stated that utopia is always about the present.[30] But it chooses in the present the seeds for the expression of radical difference, rather than encouraging the continuation of existing societal norms.

As a deeply social art, architecture is about both the stabilization of existing social uses and their possible mutation. It thus always relates to both ideology and utopia; its foundational character and its presence are probably even more ideological than utopian. The utopian dimension in architecture always has a somewhat disturbing character, which challenges the received categories of monumentality and permanence, even if the aim is to redefine them. In other words, I am not sure that the deconstructionist cure really addresses the question raised by the enduring relation between architecture and utopia.

I now return to the most common criticism of the utopian dimension in architecture, namely the assumption that it ultimately always failed; in fact, I believe that the main goals of utopian architecture have been achieved. One of these was to fully inhabit the earth, to equip and manage it as the "house of man." As philosopher Peter Sloterdijk puts it, the result has exceeded the expectation, for the earth has truly become a house.[31] In other words, the world no longer surrounds architecture, it is rather that architecture encloses the world.

As Sloterdijk rightly points out, this situation was already anticipated by the gathering of many nationalities in a single building, the Crystal Palace. We now have to regard our technology as a giant structure sheltering the world, as a glass house shelters all kinds of trees and plants. Buckminster Fuller was prompted to compare earth to a spaceship or to imagine giant domes on the geological scale. If these domes could enclose towns the size of New York, they could also enclose nature and perhaps earth as a whole.

By the same token, the conflict between the natural and the artificial has become totally blurred

today. As the social scientist Bruno Latour puts it, we live in a techno-nature in which the traditional distinction between the two domains no longer applies.[32] Genetic modification is an example of this.

Similarly, we have also overcome the typical nineteenth- and early twentieth-century concerns about reconciling the individual and the collective. Our consumer-driven, digitally equipped society functions through a series of short circuits between the individual and the collective, as Nicholas Negroponte demonstrated in his 1995 best-seller *The Digital Condition*.[33] Globalization is also based on these short circuits, and is often described as a crisis of the intermediary levels between these two orders of reality.

Francis Fukuyama announced "the end of history" in a famous essay of that title.[34] Some advocates of digital culture held a similar belief in the capacity of the Internet to put a definitive end to the traditional vicissitudes of history. The "realistic architecture" advocated by Rem Koolhaas and his followers similarly envisaged an ever-intensifying urban present, instead of a radically different future. Thus one might almost claim that the utopian program of modernity has been largely realized, and, contrary to Tafuri's claims, this is perhaps the real reason for the demise of utopia some thirty years ago.

But what does it mean to say that utopia is realized? Koolhas's outlook suggests that this has been, in reality, synonymous with its transformation into a new ideology. The architectural star system is an integral part of this ideology, embracing the unconditional acceptance of globalization into the new forms of individualism made possible by digital culture.

Utopia Now

Let me be clear that I am not against the architectural star system, globalization, and digital culture, nor the transformation into icons of projects like the Guggenheim Museum or the Seattle Library. But do we need perhaps to replace them in the perspective of a different future? How can we otherwise restore hope? In the past years, we have forgotten that architecture is also about the hope of a different and better future, and this is its real political and social function. This hope cannot be found in traditional formulas; the issue is no longer to design ideal cities or plans. The first lesson of history is to try not to repeat itself; a new kind of utopian perspective is needed today.

Its starting point must be present-day conditions, one of which is the blurring between nature and technology. Sustainable development also has to start from this point; for instance, in projects like the Fresh Kills Park, in New York, created on one of the world's largest dumps, the designers have had to put vents for the gases still produced underground as well as all kind of monitors.[35]

The short circuits between the individual and the collective, and also between the local and the global, raise a series of as yet unanswered questions, such as whether we should try to recreate intermediary levels between these orders of reality, or consider that the immediate communication between the particular and the general is an unavoidable fact. If sustainability is among the clearest paths to reconstruction of the utopian dimension of architecture today, the question of the relationship between the individual and the collective remains unclear.

Indeed, the true importance of the individual in a world that is unfolding before our eyes remains unclear. Our age of paroxysmal individual expression, from iPod playlists to blogs, is also one of increased anonymity, because of the sheer number of potential authors. Should architecture participate in the individual screening that is going on from consumer markets to security administrations, or should it rather play on the new conditions created by modern communication media? The answer is far from clear.

Speaking of the individual, one cannot but be struck by the importance of faculties such as sensory experience. Architecture has recently preferred abstract schemes; a return to experiential dimensions may bring back richer sensory experiences. However, the advent of the digital age implies that these sensory experiences differ greatly from traditional ones.

A Question of Mediation

Ultimately, a new utopian concept may necessitate a different sort of relationship between image and practice, which will determine architecture's social impact. The hope it inspires is linked to the perception of how images and projects relate to reality, and how they can be realized. This in turn raises the question of mediation and media. Key moments in the history of the interaction between architecture and utopia often correspond with a redefinition of the relationship between image and practice. One such instance came at the end of the eighteenth century, when Boullée produced spectacular, innovative drawings at a time when architecture was being regarded as an integral part of the public sphere, and was widely discussed.

The press became the dominant medium during the nineteenth century. New journals (e.g., the Saint-Simonian *Le Globe* and the Fourierist *La Phalange*) appeared, and many former members of the Saint-Simonian and Fourierist movement became founders of, or contributors to, such journals. Similarly, one could argue that Archigram and radical architecture reflected the reorganization of the relations between image and practice implied by the media of their time, from television to the first computers. Like pop art, they participated in this reorganization.

The utopian dimension of architecture is inseparable from the question of how we communicate architectural concepts to the public. Digital media present the obvious route, although this is more problematic than usually assumed. Take Toyo Ito's Sendai Mediatheque, or Foreign Office Architect's Yokohama Terminal; notwithstanding the continuous chain of computer documents linking the initial concept to the finished structure, the eventual realization differs markedly from the initial idea. Reinventing utopia today might ultimately not only be about sustainability or contemporary emergencies, as considered by Shigeru Ban; these issues are of course absolutely imperative, but we need also improve the linking of digital imagery to reality. What radically different future lies in such links? This may prove to be one of the questions architecture has to address today.

Notes

1. Rem Koolhaas, "The Generic City," in *S, M, L, XL* (New York: The Monacelli Press, 1996).
2. Rem Koolhaas et al., *Mutations* (Bordeaux: Arc en Rêve, 2001).<AQ: Provide all author names up to 6.>
3. Let us mention for instance the exhibition "Utopia's Ghost: Postmodernism Reconsidered," organized in February–May 2008 by the Canadian Centre for Architecture, or Felicity Scott's book *Architecture or Techno-Utopia: Politics after Modernism* (Cambridge: MIT Press, 2007).
4. On Archigram and radical architecture, see, e.g., *Archigram* (Paris: Editions du Centre Georges Pompidou, 1994); Dominique Rouillard, *Superarchitecture: Le Futur de l'Architecture 1950–1970* (Paris: Editions de La Villette, 2004).
5. The English historian of architecture Reyner Banham had already foreseen this dimension in his pioneering book *Megastructures: Urban Futures of the Recent Past* (London: Thames and Hudson, 1976).
6. On the influence of radical architecture on Koolhaas or Tschumi, see for instance Dominique Rouillard, "'Radical' Architettura," in *Tschumi une Architecture en Projet: Le Fresnoy* (Paris: Editions du Centre Georges Pompidou, 1993), 89–112.
7. See Michèle Riot-Sarcey, *Le Réel de l'Utopie: Essai sur le Politique au XIXe Siècle* (Paris: Albin Michel, 1998); Michèle Riot-Sarcey, Thomas Bouchet, and Antoine Picon, eds., *Dictionnaire des Utopies* (Paris: Larousse, 2002).
8. See on that theme Lyman Tower Sargent and Roland Schaer, eds., *Utopie: La Quête de la Société Idéale en Occident* (Paris: Fayard, 2000).
9. Cf. Ruth Eaton, *Cités Idéales : L'Utopisme et l'Environnement (non) Bâti* (Antwerp: Bibliothèque des Amis du Fonds Mercator, 2001); Lorette Coen, *A la Recherche de la Cité Idéale* (Arc et Senans: Institut Claude-Nicolas Ledoux, 2000).
10. On Concorcet, see Keith Michael Baker, *Condorcet: From Natural Philosophy to Social Mathematics* (Chicago: University of Chicago Press, 1975).
11. Cf. Jacques Rancière, *La Nuit des Prolétaires: Archives du Rêve Ouvrier* (Paris: Fayard, 1981); Antoine Picon, *Les Saint-Simoniens: Raison, Imaginaire et Utopie* (Paris: Belin, 2002).
12. On the impact of Fourierism in America, see Carl J. Guarneri, *The Utopian Alternative: Fourierism in Nineteenth-Century America* (Ithaca, NY: Cornell University Press, 1991).
13. This is the title of the influential essay of German theorist and architect Heinrich Hübsch. Cf. Wolfgang Herrmann, ed., *In What Style Should We Build? The German Debate on Architectural Style* (Los Angeles: The Getty Center for the History of Art and the Humanities, 1992), 63-101.
14. César Daly, "Tableau de l'Evolution des Styles d'Architecture en Regard de l'Evolution des Civilisations Correspondantes," in *La Semaine des Constructeurs*, 20 July 1889. On Daly's theory, see Marc Saboya, *Presse et Architecture au XIXe siècle: César Daly et la Revue Générale de l'Architecture et des Travaux Publics* (Paris: Picard, 1991).
15. See for instance Martin Bressani, "Science, histoire et archéologie: Sources et généalogie de la pensée organiciste de Viollet-le-Duc." Ph.D. dissertation, Université de Paris IV-Sorbonne, 1997.
16. Cf. Paul Meier, *La Pensée Utopique de William Morris* (Paris: Editions Sociales, 1972).
17. Ludwig Hilbersheimer, *The Nature of Cities: Origin, Growth, and Decline: Pattern and Form: Planning Problems* (Chicago: Paul Theobald, 1955).
18. On this project, see Rouillard, *Superarchitecture* (note 4).
19. The expression was coined by the Saint-Simonian engineer and philosopher Jean Reynaud. See Jean Reynaud, *Prédication sur la Constitution de la Propriété* (Paris: Everat, 1831), 23.
20. Cf. Joachim Krausse and Claude Lichtenstein, eds., *Your Private Sky: R. Buckminster Fuller, The Art of Design Science* (Baden: Lars Müller, 1999).
21. William J. Mitchell, *City of Bits: Space, Place and the Infobahn* (Cambridge: MIT Press, 1995).
22. Cf. Antoine Picon, "L'Invention du Toit-Terrasse: Imaginaire Architectural, Usages et Techniques," in François Leclerc and Philippe Simon, eds., *De Toits en Toits: Les Toits de Paris* (Paris: Les Éditions du Pavillon de l'Arsenal, Hazan, 1994), 35–44.
23. On the Centre Pompidou's ambition, see Renzo Piano and Richard Rogers, *Du Plateau Beaubourg au Centre Pompidou, a conversation with Antoine Picon* (Paris: Editions du Centre Georges Pompidou, 1987).
24. See, e.g., Horst Berger, *Light Structures, Structures of Light* (Basel: Birkhäuser, 1996).
25. Michael W. Brooks, *John Ruskin and Victorian Architecture* (London: Thames and Hudson, 1989).
26. Eve Blau, *Ruskinian Gothic: The Architecture of Deane and Woodward, 1845–1861* (Princeton, NJ: Princeton University Press, 1982).
27. Victor Considérant, *Description du Phalanstère et Considération Sociales sur l'Architectonique* (Paris: G. Durier, 1979 [1848]).
28. This is especially clear with the unité d'habitation of Marseilles. See Jacques Sbriglio, *L'Unité d'Habitation de Marseille* (Marseilles: Parenthèses, 1992).
29. Karl Mannheim, *Ideology and Utopia* (Bonn: 1929, English trans. New York: Harvest/HBJ, 1985); Paul Ricoeur, *L'Idéologie et l'Utopie* (New York: 1986, French trans. Paris: Le Seuil, 1997).
30. Ernst Bloch, *The Principle of Hope* (Oxford: Basil Blackwell, 1986[1959]).
31. See among other writings his *Spheres* trilogy.
32. Bruno Latour, *Politiques de la Nature* (Paris: La Découverte, 2000).
33. Nicholas Negroponte, *Being Digital* (New York: Knopf, 1995).
34. Francis Fukuyama, *The End of History and the Last Man* (New York: Free Press, 1992).
35. On the Fresh Kills project, see *Praxis*, no. 4, 2002.