



EDITED BY

ROB
LATHAM

≡ The Oxford Handbook of
**SCIENCE
FICTION**

Chapter 21

Architecture

Nic Clear

When discussing science fiction's relationship with architecture, the usual practice is to look at the architecture "in" science fiction—in particular, the architecture in SF films (see Kuhn 75-143) since the spaces of literary SF present obvious difficulties as they have to be imagined. In this essay, that relationship will be reversed: I will instead discuss science fiction "in" architecture, mapping out a number of architectural movements and projects that can be viewed explicitly *as* science fiction. It is not my contention that the concept of science fiction should be applied to every aspect of architectural production; however, the domination of the architectural profession by conservative, even reactionary views of the built environment as simply an extension of late capitalism needs to be critiqued, and the possibilities afforded by an engagement with the discourse of science fiction is therefore much needed.

But *which* science fiction? The definition used here to discuss science-fictional architecture takes as a central idea Darko Suvin's conception of the "novum." Suvin contends that science fiction is a "literature of cognitive estrangement" (372) expressing an "exclusive interest in a strange newness, a novum" (373) that distinguishes the represented world of a text as "an alternative to the author's empirical environment" (375). The concept of the "novum" will be a cornerstone of my assessment of those architectural projects best described as science fiction. Following China Miéville, however, I reject Suvin's invidious distinction between science fiction and fantasy, as well as any rigid conceptions of "hard" versus

“soft” SF. An insistence that the science has to hold up, which as Miéville points out it rarely does, is for this chapter of little importance. What is of more importance is whether it can be used in a creative and useful way.

Of equal relevance is Adam Roberts’s conception that science fiction should more correctly be called “technology fiction” in that technological instrumentalities “enframe” the world in a way that abstract science does not (see Roberts 11).

Roberts’s argument suggests that it is technology rather than “science” that is the motive force of science fiction, something that is also true for much of the architecture developed from the late nineteenth century onwards. Or, to put it more accurately, it is *representations* of technology that both SF and architecture tend to deal with, and this too will be one of the main themes developed throughout my chapter. My focus will be on the ways in which those representations are used to critically define an imagined future. My main intention is to make an explicit connection between the genre of science fiction, as a system that uses conceptions of novelty and alterity, and examples of technologically “speculative” architectures that are largely un-built, even unbuildable. Technical considerations alone do not define and constrain the novum: it can also include the social and political dimensions of a project an architect is attempting to imagine.

In *Archaeologies of the Future*, Fredric Jameson, following Suvin, argues that utopian writing is a subset of SF (xiv). Given that architectural theory has had such a close affinity with utopian ideas, it seems strange that the claim of utopian architecture *as* science fiction has not been made more explicitly before. One of the issues that may have contributed to this confusion is the terminology that surrounds many of these projects. Within architectural discourse, the terms “speculative,” “utopian,” and “visionary” are often seen as interchangeable, and they are frequently

used within the same context and applied to the same projects (see Spiller, *Visionary Architecture*). Throughout this chapter, the term “speculative” is preferred for a number of reasons. First, it emphasizes projects that have not been realized, whereas many utopian blueprints have been attempted, if not actually “realized.” (As architectural historian Manfredo Tafuri argues, utopian transformations cannot be achieved through architectural means alone, requiring wider social and political changes.) Second, not all speculative projects are utopian, in the same way that not all science fiction is utopian, even if the utopian is always a part of science fiction. Third, the term “speculative” has interesting connotations within SF itself, since “speculative fiction” is often used as an alternative point of reference by ambitious “literary” SF writers who wish to distance themselves from the genre mainstream—an ironic fact given that the term was coined by Golden Age legend Robert A. Heinlein.

Unlike literary science fiction, there are few nineteenth-century figures, such as Mary Shelley, H.G. Wells, or Jules Verne, who might be seen as founding figures for a technologically speculative architecture. Throughout the nineteenth century, architectural technology made some dramatic shifts: these advances enabled buildings to be taller, with longer spans and more open facades, and enabled people and materials to travel longer distances more quickly. The introduction of these new technologies, combined with the development of other advances in sciences as diverse as physiology and psychology, even transformed, as Jonathan Crary has argued, the way the world was perceived and represented. Given the advance of industrialization and the social and political possibilities it offered, and combined with the onset of more technologically advanced construction techniques, it still took some time before a truly futuristic vision of architecture became possible, and even then the deployment of those ideas lay within the practical realm rather than the speculative. Buildings

such as Joseph Paxton's Crystal Palace, designed for the Great London Exhibition of 1851, employed advanced techniques in prefabrication and was a visual tour de force, representing a new form of global consumption and communication. All Paxton essentially did, however, was to scale up existing construction technologies (see Piggott 6-8).

It was not until the emergence of the architectural avant-gardes at the beginning of the twentieth century that the conditions to create technologically inspired speculative architectures arose, and it is significant that two of the most advanced uses of speculative architecture came from countries whose economies were still essentially agrarian: Italy and Russia. Perhaps it was the absence of those new technologies that created the most potent conditions for the architectural experimentation that took place. Of all the early-twentieth-century avant-gardes, the Italian Futurists were perhaps the most extreme expression of a rejection of older forms and values and an almost ecstatic embrace of the new. Founded by the poet Filippo Tommaso Marinetti with the publication of "The Futurist Manifesto" in 1909, the movement became infamous for its proselytizing of speed, dynamism, and new technologies, including the technologies of war.

The main expression of Futurist architecture was La Città Nuova (The New City) designed by Antonio Sant'Elia and largely developed as a series of small, exquisite perspective drawings that were exhibited as part of the Futurist Architectural Exhibition, *Nuove Tendenze*, in Milan in 1914. The technological ambition, combined with the scale and social vision, of La Città Nuova clearly marks it as a science-fiction project: the New City envisioned by Sant'Elia completely erases existing structures and replaces them with a series of massive buildings that house both industrial works and the population. This population was expected to be mobile

and dynamic, and the buildings deployed a scale and aesthetic that might have been more appropriate for civil engineering projects. In “Futurist Architecture,” originally written by Sant’Elia alone and then transformed by Marinetti (largely by inserting the word “Futurism” wherever he could), the authors pronounce:

We must invent and rebuild the Futurist city: it must be like an immense, tumultuous, lively, noble work site, dynamic in all its parts; and the Futurist house must be like an enormous machine. The lifts must not hide away like lonely worms in the stairwells; the stairs become useless, must be done away with, and the lifts must climb like serpents of iron and glass up the housefronts. (36)

Sant’Elia was, like many other pioneers of Futurism, killed in World War I, and while his influence can be seen directly in a few architectural projects, his significance lies in how broadly his ideas were subsumed into the mainstream of European modernism.

A Soviet offshoot of Futurism, Kazimir Malevich’s Suprematism, developed an architectural language that combined abstract expressive forms, the tectonics of industrial construction, and an agitprop sensibility of social transformation. Working under the collective title of Constructivism, this group of designers attempted to create an architecture that would fuse radical politics with radical aesthetics via the use of advanced technology. One of the major projects from this period was Vladimir Tatlin’s plan for a Monument for the Third International (1919-20), often referred to as “Tatlin’s Tower.” This tower, designed as the headquarters of the Comintern, was to be a 400-meter-high, double-helical steel structure; inside were four rotating substructures: a cube, a pyramid, a cylinder, and a hemisphere, each of which would house a particular department and rotate at a different speed. The plans also contained a radio station and a projection facility that could project messages onto passing

clouds. Given the available technology in Russia at the time (or indeed anywhere), the tower was a work of pure science fiction: if built, it would have been a third higher than the Eiffel Tower. Moreover, given the scale of the design proposed by Tatlin, it is unlikely that the substructures could have been supported, let alone rotated. However, the project was always more a symbol than an actual proposal, a clear articulation of a future in which Soviet Socialism would make the creation of such structures possible (see Lynton). So confident in Russia's technological destiny was Tatlin that he was depicted in Dadaist Raoul Hausman's collage "Tatlin at Home" (1920) as half man, half machine.

If Tatlin's Tower was science fiction because it required resources and technologies that did not yet exist, the works of artist and architect Lazar Markovich Lissitzky (a.k.a. El Lissitzky) can be seen as SF because he was attempting to describe a type of *space* that didn't yet exist—through the construction of a series of drawings and paintings that he called "Proun." Proun developed ideas from Malevich's Suprematism as well as from Futurism and Cubism; they are not simply drawings for architectural designs but combine different techniques and projections to map out a new spatial and tectonic language appropriate for the new social order. Proun, principally through the use of axonometric projection (a kind of 3D planar rotation), created spaces that were "atopical and polymorphous" (Bois 57)—literally, "out of place" and "multiple." Lissitzky's ambitious plans were never realized, though he did design displays for the U.S.S.R.'s pavilions at international exhibitions, including the 1939 World's Fair in New York City.

Perhaps the most explicit synthesis of Constructivist programs to operate within the realms of science fiction were the speculative proposals designed by Iakov Chernikhov. In his 1933 book *101 Architectural Fantasies*, Chernikhov explicitly

called for an architecture that aspires to think the unthinkable: “Architectural fantasies show us new compositional processes, new modes of depicting; they nurture a feeling for form and colour; they are a training ground for the imagination; they excite creative impulses; they draw out further new creativity and ideas; they help find solutions for new architectural intentions” (62). The fantasies themselves constitute an imaginative taxonomy of form and representation, ranging from highly abstract plays on light, color, and even musical composition to proposals for new towns and factories (see Chibireva). Chernikhov later produced industrial miniatures that developed the fantasies as hard black-and-white illustrations looking almost like woodcuts, along with a series of industrial tales that were never published in his lifetime. A highly respected teacher, Chernikhov’s graphic works remain deeply influential on architectural avant-gardes.

Many other theoretical works produced by other Constructivist architects can be seen as science fiction: the Vesnin Brothers’ Palace of Labor (1922), Ivan Leonidov’s Lenin Institute (1927), Mosei Ginsburg’s Palace of the Soviets (1934), all show an approach to technology that was well beyond the capabilities of Russia at the time. By 1934, the dreams of the Revolution and the progressive ideals of Constructivism were being suppressed by the reactionary nightmares of Stalinism, and Russian architecture took a major step backwards into monumental neo-Classicism. Yet the legacy of the Russian avant-garde has been picked up by numerous architects both formally and politically and is still of major importance today.

At the same time that the Futurists and Constructivists were developing the idea that the city needed to be designed and (re)organized along industrial and technological principles, French architect Tony Garnier articulated a similar proposal

with his *Une Cité Industrielle* (An Industrial City) in 1917. *Une Cité Industrielle* was a call for an industrialized form of socialist town planning where there were no churches or police force. The Cité itself was rigorously engineered, structured according to programmatic zoning and with the construction of all the components meticulously mapped out; Garnier's drawings show blast furnaces represented with the same exquisite detail as the civic center. The systematic application of an advanced use of materials and technology integrated into a proposal for a new social and political organization—what Anthony Vidler calls Garnier's "social utopianism" (271)—is what makes *Une Cité Industrielle* a work of science fiction.

While the Cité was never built, Garnier's ideas were extremely influential in developing theories of urbanism during the early twentieth century, especially those of Swiss architect Charles-Édouard Jeanneret, better known as Le Corbusier. While often derided as emblematic of the airy hubris of modern town planning, Le Corbusier's architecture, especially in its earliest stages, is much more radical than its detractors are usually willing to credit. Completely rejecting the historic form of the city, Le Corbusier fervently believed that new technologies would be key to creating a modern urbanism, free from the ills of traditional cramped and overcrowded urban centers. With his radical town planning proposals, the *Ville Contemporaine* (The Contemporary City, 1922), the *Plan Voisin* (1925), and the *Ville Radieuse* (The Radiant City, 1931), Le Corbusier set out an agenda for wholesale transformation, formally through the development of innovative building techniques, spatially through the application of a new urban syntax, and politically—in the *Ville Radieuse* at least—through the imposition of an egalitarian technocracy. His new, abstract, highly mechanized conception of the city constitutes a science fiction, which he unsuccessfully attempted to apply to various real situations throughout the 1930s. Le

Corbusier's urban visions have often been seen as prototypes for many twentieth-century dystopias, literary and filmic (see Hayward), with critics particularly focusing on his supposed hyper-rationalism—for example, citing his dictum that the house should merely be seen as a “House Machine” (Le Corbusier 227). But a close inspection of what he designed, rather than what he said about his designs, reveals a much more sensuous and playful architecture. His large-scale housing blocks, the “Unites,” are far from the sterile, repetitive, Brutalist nightmares that the term “Corbusianism” stereotypically conjures up.

In 1951, the nationwide Festival of Britain promoted the desire for a futuristic U.K. based around science and technology and breaking away from the urgent need for reconstruction and the mundanities of rationing and postwar austerity. It also marked the one-hundredth anniversary of the 1851 Great Exhibition at which the Crystal Palace had debuted. The main exhibition venue, on London's South Bank, presented postwar Britain as forward-thinking and technologically sophisticated. Its centerpiece was the Dome of Discovery, a structure that resembled a flying saucer, which at the time of its construction was the largest dome in the world. Adding to the skyline was the Skylon Tower, a cigar-shaped, steel “tensegrity” structure—a floating design of cables and structural masses. The Festival was hugely successful, with the main site attracting nearly 8.5 million visitors, though it could be argued that its futuristic stylings were a glossy attempt to conceal a Britain very much in decline (see Forty).

Another major influence on the “futuristic” sensibilities of postwar Britain was the 1956 exhibition held at the Institute of Contemporary Arts in London called “This Is Tomorrow.” A multi-disciplinary show featuring the work of twelve artistic teams, it was to prove a seminal influence on the burgeoning culture of Pop art. Its

most iconic image is a delirious collage from Richard Hamilton entitled “Just what is it that makes today’s homes so different, so appealing?”—an image that, with its excerpts from houseware ads and its address to modish urbanites, does as much as any to set the tone for postwar consumerism. The event—and Hamilton’s collage in particular—mightily impressed an ambitious young British author named J.G. Ballard, who claimed that it was “a vote of confidence, in effect, in my choice of science fiction” (*Miracles* 188). And indeed, Ballard’s mature work would grapple with many of the same themes: the consumerist appeal of stark, iconic, sexual imagery, the ambivalent repulsion with and fascination for hyper-urban venues, the lurking fear that “the future is just going to be a vast, conforming suburb of the soul” (Ballard, “Interview” 8).

Riding the wave of queasy optimism unleashed by the “This is Tomorrow” exhibit were a group of young architects who took the possibilities of technological innovation to new extremes and blurred the lines between science fiction and architecture in ways that had not been seen before (or since). Known collectively as the Archigram Group, they came to public attention with the publication of the first issue of their eponymous magazine in 1961 and their exhibition at the Institute of Contemporary Arts in 1963. Archigram were celebrants of new technology and the possibility that a new architecture would do away with the old, “boring” ways; their use of garish collages and Pop graphics created the promise of an architecture of pleasure and liberation, facilitated by consumerism. Archigram’s ideas were developed through a series of playful projects such as Peter Cook’s Plug-In City (1964) and Instant City (1968), Ron Herron’s Walking Cities (1964), and David Greene’s Rokplug and LogPlug (1969), all of which (as their titles suggest) celebrated the mobility and transience of modern life, where we have all become techno-nomads.

Herron's *Walking Cities*, for example, imagined intelligent, mobile structures, while Cook's *Plug-In City*, by contrast, imagined modular dwellings that could be removed from and inserted into any number of architecture frameworks. The inspiration of the American space missions was clearly evident in Greene's *Living Pod* (1966) and Mike Webb's *Cushicle* and *Suitaloon* (both 1966), the latter envisioning portable environments of membraneous shells, almost like waldoes. Within these projects, however, there was also the possibility of a darker, more hermetic aspect to modern technology, a technocratic claustrophobia.

One of the great influences on the development of Archigram's generation was the engineer Richard Buckminster Fuller, best known for his *Dymaxion* projects and his adaptations of the geodesic dome. (Fuller's own great SF project, "Dome over Manhattan," was a floating structure projected to cover midtown from 64th to 22nd streets.) The majority of Archigram's projects are quite clearly within the science-fiction genre; there is often little attempt to disguise their fantastical aspirations. They use science fiction as an attack on the banality of mainstream architecture, even modernist architecture, which they felt had become hidebound and normative, unable to respond to changing social conditions. The main critique of Archigram is that their work is narcissistic, lacks rigor, and is politically naïve, if there is even a politics present at all (see Hejduk); however, their influence, particularly as teachers in fine arts schools (Herron, for example, taught at the Architectural Association and the University of East London for several decades), cannot be underestimated, and their loopy exuberance should not be dismissed.

If Archigram saw the movement to a society of consumerism as benign, then the Italian design group Superstudio took the opposite view completely, resisting and opposing consumer culture. Led by Adolfo Natalini and Cristiano Toraldo di Francia,

both committed Marxists, Superstudio spawned conceptual projects such as a “Continuous Urban Monument: An Architectural Model for Total Urbanization” (1969), which envisioned a single building that spanned the entire surface of the Earth. Composed of interlocking grids, this hypertrophied global megalopolis—echoed in many contemporaneous New Wave SF texts—was an ironic comment on the banality of modern architecture. Displayed as a series of beautifully composed collages, the Continuous Urban Monument is a work of SF architecture at its purest, pitched in a dystopian vein. By contrast, Paolo Soleri’s vision of “arcologies”—immense, self-sustaining architectural ecologies designed as an alternative to wasteful suburban sprawl—convey a more utopian futuristic vision, subtly critiqued in Robert Silverberg’s 1971 novel *The World Inside*, with its vision of vast, teeming “urbmons” (“urban monads”).

The Situationist International emerged in 1957 from a number of Marxist avant-garde groups. Led by Guy Debord, who had been a key member of the Letterist International, the Situationists were concerned with the transformation of everyday life and a total reimagining of the city. Situationist ideas regarding the city were first developed through the Letterist International’s theory of “Unitary Urbanism,” consisting principally of the concepts of “psychogeography” (the ludic, personally motivated mapping of urban landscapes) and the “derive” (a mode of subconscious wandering). The spirit of this attitude toward urbanism can be gleaned from a text written by Gilles Ivain (a.k.a. Ivan Chtchetglov), “Formulary For a New Urbanism” (1958), which calls for a completely new spirit in architecture, with cities predicated on emotion and desire rather than function and utility. “Everyone will live in their own personal ‘cathedral,’” he writes. “There will be rooms more conducive to dreams

than drugs, and houses where one cannot help but love. Others will be irresistibly alluring to travelers” (38).

The Dutch architect Constant Nieuwenhuys, who had also been a member of the Letterists, developed the most comprehensive proposal for a Situationist architecture with his “New Babylon” project. New Babylon went through various iterations, but there were a number of consistent themes and ideas. It was to be constructed on the principles of “homo ludens” rather than “homo faber”; the overall layout and construction would be determined by the inhabitants and in a constant state of flux; and the use of robotic systems would insure freedom to roam the extended city structure, which expanded from a series of nodal points. Constant maintained that New Babylon was an unrealizable utopian dream impossible in capitalist consumer society, yet like any good work of science fiction, he saw it as way of critiquing existing social and political conditions. In Simon Sadler’s words, New Babylon’s “dynamic labyrinth” could only be conceived as “an ongoing project founded upon degrees of social freedom and creativity unimaginable in utilitarian society” (146-47).

Ironically, the generation of architects that followed Archigram and the Situationists, while adopting many of the visual elements of those movements’ playful architectures, replaced their flights of fancy with a more utilitarian approach. For this generation, speculation was of secondary importance to construction, the use of industrialized imagery to highlight the functional aspects of architecture within a “high-tech” aesthetic that expressed this functionalism stylistically. High-tech architecture, sometimes also called Structural Expressionism, is one of the first clear examples of a late-capitalist architecture, and its techniques echo Jameson’s famous anatomy of postmodern art. Its methods are historical pastiche, borrowing from nineteenth-century neo-Classicism, paying lip-service to the Futurists and

Constructivists, mimicking 1950's Sci-Fi and Meccano. It is totally consumerist and highly corporate. High-tech has had nothing truly interesting to say about the city; its sleek mechanical surfaces sit seamlessly within an urban landscape of banks and insurance buildings.

As British High-tech became a favored architecture of big business, its stylistic flourishes giving way to a slick corporatism, another generation of architects—many of them American—was preparing to take up the science-fictional mantle. Neil Denari's early projects, such as the West Coast Gateway (1988) and the Tokyo Forum (1989), develop a mechanical language through a series of ultra-cool black-and-white images: the drawings look as if they were produced by a machine but are in fact hand-drawn, their smooth forms suggesting the surfaces of spacecraft and rocketships (at the very least new forms of hybrid car). His early perspectives eschew the traditional Cartesian point of view, rendered as if from a helicopter, complete with head-up display. Denari's contemporaries in the Los Angeles-based partnership collectively known as Holt Hinshaw Pfau Jones used similar aesthetic devices and shared an equally mechanistic approach to architecture (see McCarter), as did the work of Bryan Cantley, whose company Formula wears its SF credentials like a badge of honor. The debt owed by these architects, whether consciously or not, to the work of SF illustrators such as Chris Foss and to the stylings of Ridley Scott's *Blade Runner* (1982), especially the work of designer Syd Mead, cannot be overstated.

The pages of contemporary architectural magazines, websites, and blogs are filled with images of buildings created using complex double-curved geometries and composed of apparently seamless materials; they are always sustainable, "smart" buildings with programmable systems and interactive facades, seeming to promise that the future we had always dreamed of is already here. The skies are always blue,

the streets are always clean, and the spaces are populated by photo-shopped models drinking cappuccinos. Much of this architecture has been developed using computational software that allows the generation of complex shapes, the justification for this methodology being that it allows for optimum structural solutions and a more efficient use of space. Moreover, when linked into Computer Aided Manufacturing techniques, these forms can be produced cost-effectively. Such “parametric” tools are held by digital evangelists such as Patrick Schumacher of Zaha Hadid Architects to be a completely new style of architecture and the “only” way forward.

We should not allow ourselves to be seduced by the SF look and techniques of these projects, however. The real technologies that drive this architecture are the technologies of global finance, management, and procurement. Jameson’s words have never seemed more apposite: “Architecture is ... of all the arts the closest constitutively to the economic, with which, in the form of commissions and land values, it has a virtually unmediated relationship” (56). Yet despite founding one of the most megacorporate entities in the field, the Office for Metropolitan Architecture, Rem Koolhaas is one of the most articulate critics of the “new” architecture. In his essay “Junkspace,” which itself reads like a frenzied stream-of-consciousness SF story, Koolhaas creates a vivid indictment of a culture trapped by its own hubris, technological addiction, and vapidness. It might seem contradictory that one of the main practitioners of contemporary architecture should be so vociferous in his condemnation of the practices of the architectural mainstream, but Koolhaas knows three important things: clients don’t read architectural theory, the essay in its original form is almost unreadable anyway, and its aggressive pugnacity makes him seem to be even more of a genius. In contemporary architecture, there really is no such thing as bad publicity.

With the growth of the Internet since the mid-1990s and the development of virtual and augmented realities, the assumption that architecture and architectural spaces have to be physical has been questioned by a few architects on the periphery of the profession and in the academies. Mainstream architectural practice has not embraced these new technologies in any way other than the commissioning of business websites, and so the possibilities of virtual and augmented reality as spaces of architectural inquiry are still largely unexplored. Indeed, given the rise of practices that require spatial skills in creating new digital environments and designing games and films, web-design architecture should be well-placed to grow, but to date its main achievements have been theoretical (see Carpo).

Neil Spiller's two issues of *Architectural Design Profile* devoted to "Architects in Cyberspace" were among the first attempts to deal with the concept of the virtual in a mainstream architectural publication. They both featured a wide variety of contributions from architects, artists, cyberneticians, environmental psychologists, product designers, and philosophers, but unfortunately Spiller's lead has not been taken much further. Spiller's own projects show a restless eclecticism borrowing from heavy metal music, Surrealism, alchemy, nanotechnology, synthetic biology, Pataphysics—and also science fiction, with the work of William Gibson, Jeff Noon, and Neal Stephenson being particular influences. One of the architects featured in both issues was Marcos Novak, a self-styled (trans)Architect, theorist, composer, and artist whose "liquid architectures" tackle many themes of the Situationists while placing them within virtual worlds. His utopian ideas on virtual environments and his seductive data-driven forms represent one of the few attempts to synthesize virtual and real-world aspects of architecture.

Of all the architects using the new spaces offered by speculative architecture, Lebbeus Woods is perhaps the most radical and inspiring. Through a series of projects that are formally innovative, programmatically challenging, and beautifully illustrated, Woods has produced some of the most exquisite drawings since Piranesi. Woods cares little for traditional architectural protocols, not to mention physics and gravity. His interventions are nearly always bricolaged from various elements directly inserted, sometimes improbably, into the existing city, and it is difficult to tell whether Woods's insertions are acting as sutures to hold the scarred city together or working as irritants to force them further apart. Often situating his projects in contested areas such as Berlin (before the wall came down), Sarajevo, and Havana, or in disaster areas such as earthquake zones, Woods rejects the notion that architecture can remain neutral: his "Anarchitecture" manifesto calls for architecture to be "a political act."

As this chapter has I hope shown, it is possible to trace a history of modern architecture as a form of science fiction. Yet few SF critics or historians have included architecture in the forms of media encompassed by the genre. John Clute and Peter Nicholls's magisterial *Encyclopedia of Science Fiction* contains very few references to architecture, and Adam Roberts, in his otherwise excellent history of SF, never mentions architecture despite having a final chapter that covers painting, sculpture, performance, and digital art. One of the principal aims of this essay has thus been to alert SF scholarship to the centrality of architecture in the genre's history—not just in the form of inspiration for specific SF texts (e.g., the Crystal Palace as the model for the dystopian glass towers in Yevgeny Zamyatin's *We* [1921]) but as a crucial mode of science fiction in its own right. At the same time, I hope to provoke architecture into recognizing its own place within the history of SF and to

embrace the field's speculative possibilities in order to generate a critical alternative to the banalities of the corporate-architectural complex. Despite its often superficially futuristic appearance, architecture has lost its utopian desire to create a better society; it has at best contented itself with the goal of creating a slightly less worse society, for some.

We are clearly at a moment of great technological change. One hundred years ago, architects were imagining how the technologies of the industrial revolution might impact and transform our cities. Currently, the most interesting speculations involve a whole range of new technologies, from nanotech and synthetic biology to artificial intelligence and virtual reality. While SF literature is industriously exploring these domains, architecture has been content to sit timidly on the sidelines. Architecture needs to regain its curiosity and begin to ask “what if...?” questions again. The importance of science fiction, as numerous SF critics have pointed out, is that it provides an opportunity to develop a socially critical perspective on society. Science fiction creates the kind of “cognitive maps” that Jameson calls for at the end of his postmodernism essay, offers us the possibility of navigating the “unmappable” technological spaces of late capitalism (89). Given the tools at architecture's disposal, it too should be embracing these possibilities more fully.

Works Cited

Ballard, J.G. “Interview with Andrea Juno and V. Vale.” *J.G. Ballard*. San Francisco:

RE/Search, 1984. 6-35. Print.

_____. *Miracles of Life, Shanghai to Shepperton: An Autobiography*. London: Fourth Estate, 2008. Print.

Bois, Yve-Alain. “Metamorphosis of Axonometry.” *Daidalos* 1 (1981): 41–58. Print.

- Carpó, Marco, ed. *The Digital Turn in Architecture, 1992-2010: A Reader*. London: Wiley, 2012. Print.
- Chernikhov, Iakov. "Architectural Fantasies 1929-1933." Special issue on "Russian Constructivism and Iakov Chernikhov," ed. Catherine Cooke. *Architectural Design* 59.7-8 (1989): 61-67. [Can you please check this citation?]
- Chibireva, Natasha. "Yakov Chernikhov: An Architect of His Time." *Building.co.uk*. July 26, 2012. Web. July 20, 2013.
<<http://www.building.co.uk/comment/blogs/yakov-chernikhov-an-architect-of-his-time/5040301.article>>.
- Crary, Jonathan. *Suspension of Perception: Attention, Spectacle, and Modern Culture*. Cambridge MA: MIT, 1999. Print.
- Forty, Adrian. "Festival Politics." *A Tonic to the Nation: The Festival of Britain, 1951*. Ed. Mary Banham and Bevis Hillier. London: Thames and Hudson, 1976. 26-38.
- Hayward, Susan. "Luc Besson's *Cinquième élément* (1997) and the Spectacular: The City-Body and the Sci-Fi Movie." *The Seeing Century: Film, Vision, and Identity*. Ed. Wendy Everett. Amsterdam: Rodopi, 1994. 136-46. Print.
- Heinlein, Robert A. "On the Writing of Speculative Fiction." 1947. *Turning Points: Essays on the Art of Science Fiction*. Ed. Damon Knight. New York: Harper & Row, 1977. 199-204. Print.
- Hejduk, Renata. "A Generation on the Move: The Emancipatory Function of Architecture in the Radical Avant-garde." *Transportable Environments: Theory, Context, Design and Technology*. Ed. Robert Kronenberg and Fritz Klammer. New York: Taylor and Francis, 2006. Print. 40-52.

- Ivain, Gilles (a.k.a. Ivan Chhtchetglov). "Formulary For a New Urbanism." 1958. *The Situationists and the City: A Reader*. Ed. Tim McDonough. London: Verso, 2009. 32-40. Print.
- Jameson, Frederic. *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*. London: Verso, 2005. Print.
- _____. "Postmodernism, or The Cultural Logic of Late Capitalism." *New Left Review* (July-Aug. 1984): 53-92. Print.
- Koolhaas, Rem. "Junkspace." *The Harvard Design School Guide to Shopping*. Ed. Chuihua Judy Chung, Jeffrey Inaba, Rem Koolhaas, and Leong Sze Tsung. Cambridge MA: Taschen, 2001. 408-21. Print.
- Kuhn, Annette, ed. *Alien Zone II: The Spaces of Science Fiction Cinema*. London: Verso, 1999. Print.
- Le Corbusier. *Towards a New Architecture*. 1923. Trans. Frederick Etchells. New York: Dover, 1986. Print.
- Lynton, Robert. *Tatlin's Tower: Monument to Revolution*. New Haven, CT: Yale UP, 2008. Print.
- McCarter, Robert. "Building Machines." Pamphlet Architecture No. 12. New York: Princeton Architectural P, 1987. Print.
- Miéville, China. "Cognition as Ideology: A Dialectic of SF Theory." *Red Planets: Marxism and Science Fiction*. Ed. Mark Bould and China Miéville. London: Pluto, 2009. 231-48. Print.
- Novak, Marcos. "Liquid Architectures in Cyberspace." *Cyberspace: First Steps*. Ed. Michael Benedikt. Cambridge, MA: MIT, 1991. 225-54. Print.
- Piggott, Jan. *Palace of the People: The Crystal Palace at Sydenham, 1854-1936*. London: C. Hurst, 2004. Print.

- Roberts, Adam. *The History of Science Fiction*. Basingstoke, UK: Palgrave Macmillan, 2005. Print.
- Sadler, Simon. *The Situationist City*. Cambridge, MA: MIT, 1998. Print.
- Sant'Elia, Antonio, and Filippo Tommaso Marinetti. "Futurist Architecture." 1914. Trans. Michael Bullock. *Programs and Manifestoes on 20th-Century Architecture*. Ed. Ulrich Conrads. 1964. Cambridge, MA: MIT, 1971. 34-38. Print.
- Spiller, Neil, ed. "Architects in Cyberspace II." *Architectural Design Profile* 136. Ed. Neil Spiller. London: Academy Editions, 1998. Print.
- _____. *Visionary Architecture: Blueprints of the Modern Imagination*. London: Thames and Hudson, 2006. Print.
- _____, and Martin Pearce, ed. "Architects in Cyberspace." *Architectural Design Profile*. London: Academy Editions, 1995. Print.
- Suvin, Darko. "On the Poetics of the Science Fiction Genre." *College English* 34.3 (Dec. 1972): 372-82. Print.
- Tafuri, Manfredo. *Architecture and Utopia: Design and Capitalist Development*. Cambridge, MA: MIT, 1987. Print.
- Vidler, Anthony. "The Modern Acropolis: Tony Garnier from *La cité antique* to *Une cité industrielle*." 1989. *The Scenes of the Street and Other Essays*. New York: Monicelli, 2011. 258-73. Print.
- Woods, Lebbeus. *Anarchitecture: Architecture Is a Political Act*. London: Academy Editions/St Martin's, 1992. Print.