Uncertain Futures is an invitation. In staging this snapshot of the work produced at MIT in the last two years (since the publication of Certain Agendas in Architecture in 2007), we concerned ourselves with narratives of relevance that drive both the pedagogical projects and the research at MIT. Uncertain Futures is an invitation to a conversation with MIT about the types of narratives of relevance that we—architects, scholars, researchers—tell ourselves daily, in order to do our work, in order to demand the extraordinary, in order to invent, experiment, and innovate. Since architecture is fundamentally an anticipatory discipline, the collective and individual stories of relevance that architects weave have everything to do with the way we imagine the effectiveness of our designs and ideas in the future. Even when relevance is conceived of in historical terms (and even in conversation with disciplinary histories), the hope for it fundamentally involves a projection.

Descriptions of the future that circulate in the collective imagination, the very concept of future, and certainly the link between the idea of the future and the concept of progress (framed by Modernism’s particular alliance with time) seem now less clear and less reliable than ever before. It is hardly contentious that our world is more entangled than it has been historically. More importantly perhaps, we are able to track that entanglement better than ever, which has in turn allowed us to keep complexities alive longer without having to resort to simple taxonomies of questions and overly simplistic responses to them. While this particular relationship between describing and acting may be reassuring when it comes to the question of impacting the world, it hardly supplies us with ready-made goals for the future. The ideological and material content of our hopes for the world, as well as ways to imagine and describe those hopes, have to be (are in the process of being) retooled to fit our complex sights. It is similarly easy to see that the sheer capacity we now have to retrieve knowledge (both on the successes and the errors of the past) and to simulate future conditions, amounts to something like a specifically contemporary alliance with time: delivering us into a “synchronic society.” In a synchronic society (per futurologist Bruce Sterling’s definition), the future itself is at stake—as a future with more options, not less—a future that makes futures possible. And finally, if the certain and continuous depletion of resources, climate mutation, and wars for fuel were not enough to jolt our collective capacity for historical thinking, then our global financial crisis may be as useful for the discipline of architecture as it is destructive for the profession of architecture.
Epistemological, technical, material, and political uncertainties abound, and, inspired by them, the editorial team wondered how has the school that always saw its mandate as one of making previously unthinkable things possible—through directed innovation or tinkering—adjusted its narratives of relevance to engage the contemporary predicament of the future itself.

Embracing the spirit of the Agenda book series (and the Certain Agendas book that preceded ours), we decided to treat the assembly of MIT’s researchers and projects as just that: an assembly, a parliament in Bruno Latour’s sense, of projects, scholars, and issues, each having the agency to push back on others and to “make things happen.” Not unlike our predecessors in this task, we saw our role as that of reading the work produced in the last two years at MIT, the way an archeologist might interpret their findings, or the way a coolhunter might intuit emergent cultural and material patterns. This ultimately means that we were interpreting the logic intrinsic in the work through the prism of our question about the narratives of relevance.

Uncertain Futures only loosely registers the formal educational structure of the school. In reading this book, one will be able to determine whether a project or a set of concerns emerged from studios, workshops, or theses, but since we were interested in the concerns that traverse across the formal structure of teaching and research, our chapters are meant to be read as constellations of different proposals, in each case producing several different and specific futures along a thread of common concerns. Just as the projects in each section are meant to complement, inflect, and enrich each other, the chapters themselves are not seen in opposition to one another. In fact, what may seem as the core uncertainty in one often becomes the very basis of design in another.

Starting with a literary handshake of sorts, the book opens with a collection of conversations that we initiated with a number of MIT’s own actors and its affiliates and friends. This introduction concludes the Forecast section as our own response to our questionnaire. The Forecast questionnaire is followed by seven chapters, each collecting work around a specific concern: Hybrid Natures, Alternative Geographies, Office 2020, Tricks and Tracks, Home for the Multitude, Expanded Infrastructure, and Future Harvest. The stories of relevance, which in some ways mediate between the circumstances exterior to any given project and the design process, postulating the role of the architect and of the discipline of architecture in a complexly entangled world, often linger in the subconscious of these projects. This is where they sometimes need to stay in order to function at all. In making public the deepest assumptions that seem to operate across the work of MIT’s assembly of scholars, in framing the work along the above-listed six typologies of imagining relevance for architecture today, we invite the community of architects and researchers outside of MIT to respond, to help us clarify our concerns, and to enrich our conversations.

On behalf of the editorial team,

Ana Miljački
Assistant Professor of Architecture
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Hybrid Natures

A world in which eyeballs and skin tissue could be grown in petri-dishes and sold on the black market by the representatives of a pan-continental race to rather humanly sad “replicants” became so easily imaginable, almost tangible, in recent years that Blade Runner effortlessly turned into a common adjective. As often happens with good sci-fi, many of Blade Runner’s science forecasts are hardly shocking 30 years later in our post-genome, post-Dolly world. The genetically engineered—which permeates the Blade Runner dystopia—is not exactly synonymous with hybrid, or with nature, but it has been one of the most recent ways in which the status of nature has been made more uncertain and unstable in the last decade. All natures are constructed today, and all hybrids take the forefront of things natural in the 21st century. The 21st century is shaping up to be a real nightmare for purists.

The term “hybrid” makes sense as long as the old categories of classification are still at least partially valid, as long as technology is still something we explain in its own expert terms, as long as we remember programmatic purities, as long as humans are defined in opposition to all other mammals, as long as we hold onto the mythical “memory” of wilderness as an originally pure and uncontaminated state, and as long as most cars run on gas.

The history of architecture is replete with hybrids, but they have never before dominated the scene, and they have never been as wet and as wired as today. Although the often-contested hybridity of the discipline of architecture is implicated here, we use the term more specifically within the context of imagining futures in the architectural studios of MIT, as an architectural equivalent of a horticulturalist’s or a genetic engineer’s series of lab test. Some of the projects in this chapter show the results of obsessive attempts to hatch new futures out of a few elements with known properties. A courtyard parti, we know, supports internalizing; a subway car follows only several possible turning radii; a prayer ritual involves three distinct body positions; a Vierendeel truss can solve long spans and does not obstruct passage within its own height. Together, these known properties could produce a monster or an entirely new register of fitness. Above all, we are interested in projects that suggest more definitively that the future is in the hybrids. Thus, in the projects that follow, you will find hybridity in many modes: as a concentration of intelligence that finds form through a kind of Darwinian evolution in design (may the fittest design win!), hybrids as willed and guided innovation, hybridity as an ethos, or as the political core of a project’s social imaginary. Thus, cross-programming
and typological mutations are augmented with questions that may seem to be category errors at first blush: Could the digital meet the spiritual through scripting spatial density? What shape can one build out of sweat? Does it still excite us to eat oysters standing naked with boxing gloves just a floor above a copy machine and a floor below the kindergarten? Can the architecture of public transportation still support a public, and could it be financed by a health club?

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When, in 1982, Michel Foucault famously told architects that they were no longer the technicians and engineers of the “three great variables: territory, communication, speed”—speaking of the historical fate of the profession of architecture over several centuries—all entities in the world that were previously capable of commanding large regional developments were indeed waning. This is to say that, insofar as there has ever been a single agent with the kind of appetite for territorial development that interested Foucault, it would have to have been a government—a “big” government or a socialist-leaning one—and by the 1980s their effectiveness and even their existence (in the case of the Eastern Bloc) was in question.

To those architects who encountered Foucault’s statement in the 1980s and 1990s, it either represented a direct challenge (which in many cases they vowed to take on to useful and interesting ends in their own work and towards a type of expansion of the discipline) or it summarized their own deepest fears about their relevance. Although Foucault’s (above quote) statement had the capacity to reach the vain core of the discipline, it also just presented things as they were. Architects have historically had all the stamina necessary to dream of shaping “territory, communication, speed,” but they were rarely structurally in the position to also single-handedly realize those dreams at a geographic scale.

For a while, it was hard to imagine planning entire territories or even to imagine the agents capable of sponsoring them, both within the disciplines of architecture and urbanism and in the political and economic realms. Also, viewed through the postmodern episteme, planning in both spatial and temporal terms just seemed too authoritarian, too naïve, and, simply, too passé. In the relatively brief historical period after the fall of the Berlin Wall and before the rise of China and the more lavish oil-empires, only corporations had the financial means and sufficient arrogance to dream big, and they were, for the most part, operating through the logic of market opportunism, commissioning office towers, corporate campuses, and production facilities. Their activities did reshape the geography of entire regions, though not through carefully planned regional development and often at the expense of it.

The visible pilings of economic, ecological, and material debris left in the wake of twenty years of unchecked operations of “global” and “multinational” corporations have contributed to our recent change of heart when it comes to thinking big and thinking long-term. In an intellectual climate
in which steering modernization no longer seems by definition "bad," "naïve," and "authoritarian," but newly necessary, could the architect's expanded expertise also, and finally, ensure his/her ability to impact long-term regional development? This question is posed in one way or another by all the projects in this chapter.

Steering away from direct, head-on, and overly righteous proposals, the following work nonetheless proposes design engagement with challenging, even extreme, political, cultural, and climatic circumstances. Taking some of the logistical lessons from the corporation's repertoire of cunning and persuasion and anticipating trends in modernization in the remotest parts of the world, the work that follows re-imagines regional politics and daily life through programmatic and architectural means. It imagines alternative geographies, and proposes organizational methods, financial schemes, and architectural designs that could structure the possibility of those alternatives.

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Can you imagine a wholly nationalized architectural profession? This is how the architectural field was restructured in Czechoslovakia in 1948: imagine every single architect in a country working under one single institutional roof. Expertise moving around as necessary. Starchitecture not an option. It would (it did), of course, get tiring and oppressive, but that is not the point of our mental experiment. The point is that it is not easy to imagine a wholly different structure of the architectural office. Habits, and especially bad habits, are hard to shake in the profession and in academia alike partly because they are in fact habits of mind and partly because they participate in an ecology of ego cultivation, satisfaction of culturally (and therefore economically) codified client needs, NAAB dues, and, in general, in the reproduction of the relations of production—to use that cumbersome, but precise, Marxist term. It is equally hard to imagine real challenges to the structure of patronage in architecture. The global financial crisis, however, might turn out to be our new organizing engine, forcing architects to look for new models of engagement.

There are only a few rare examples of experiments initiated and formulated within the protected realms of academia that have historically managed to pose a real challenge to the structure of the profession. The formation of AMO out of Harvard's Project on the City was perhaps stunning for that very reason. Its final effect might be closer to claiming a specific market niche for an office or two rather than a wholesale shakedown of the profession, but the fact that its logic and its methods were, in part, tested and fine-tuned within the realm of academia demonstrated the extent to which the ruling protocols of architectural production could be challenged.

Although it became almost too hard to notice in the last few years, as the star-spangled icon cities of the Middle East occupied the center stage, or the center spread, of our collective architectural imagination, the architectural profession and even the discipline have been expanding incrementally, but steadily. The core architectural expertise now includes strategic thinking, imagining development and recovery (for municipal and national governments), inventing new materials, and relying on budget-driven ingenuity. And yet, if the delivery mechanisms for architectural expertise stay unchallenged, the architectural profession (and by extension the architectural discipline) will remain subject to a service industry's basic turns of luck.
The models of practice that are at the core of the work collected in Office 2020 each test hypotheses for the functioning of the profession and the very organization of an architecture school studio. Thus, we want to highlight the extent to which the following experiments, each with its own type of swagger, challenge the school. Some do this by establishing a real research link between the agents of political power (which is equal to agents of change in these circumstances) and the studio, preferring to skip the formal professional entity of an office. This direct link between our freshest design thinking with schools in China, ancient cities in Thailand, and the city of New Bedford, Massachusetts, was possible because, in each case, the need for intervention seemed urgent, the politicians were enlightened, and the students and researchers eager to dive in. These engagements either produced a very specific, fine-tuned design, or prototypes and kits of parts that could be interpreted and deployed in more remote contexts. On top of turning the school into the very site of intervention, some of the work collected in Office 2020 poses an even more radical challenge to the structure of the studio—either allowing the distributed authorship logic that is perfectly acceptable and even essential in the architecture office to infiltrate the studio, or by forming an imaginary office whose professional ethos is radically different from any office we know. In all cases, the work that follows asks: what if we did things differently? How would the things we make be different? What could be the shape of a smart and successful office in 2020?
In an era when most big narratives lie dismantled and scattered around our disciplinary fields, available in wiki-sized quotes for our quick access at no cost whatsoever, all lessons and all disciplinary knowledge begin to resemble do-it-yourself catalogues. If we were to print one, a Whole Architecture Catalogue would be a collection of circumstantial questions followed by flash research and tactical responses. This situation is both more hopeful and more design-friendly than the image of an “ideology graveyard” might suggest. In fact, ideologies—their tenets and effects—would have to be included as types of tricks and as possible tracks in this catalogue.

A condition in which all histories and at least a number of futures are simultaneously available—where descriptive geometry and Rhino software complement one another, or where Gaudi’s hanging models are as good a structural lesson as the script for a robotic bricklaying arm—has been dubbed most recently “the synchronic society” (by our favorite futurologist Bruce Sterling). It has also been called schizophrenic (by a number of philosophers and theorists) and anticipated as “the epoch of simultaneity” (by Michel Foucault, as early as 1967). No matter how we describe our contemporary condition, making a hundred mistakes, testing a thousand hypotheses, and keeping the winning solution side-by-side with the monsters is exactly what architecture and design need to do in a world where our access to history’s successes and failures is easy. Tracking tricks becomes as important as coming up with them.

We may mourn the loss of the deep knowledge of history with every Wikipedia entry we read, but if there is any lesson to be learned from the projects in this section, it is that invention can be incremental, tactical, and tool-based; and although historical thinking might not be foregrounded here, a form of historical knowledge is the content of this research. Research, especially long-term research, which is what architectural education is for most of us, can be conducted through fragments of hypotheses, moments of clarity, and nuggets of skill.

Tricks and Tracks is a selection of useful nuggets of knowledge and skill, produced in various corners of MIT. Still, as you will see, a great many of the projects in this chapter come from the first year studios. The main reason for this heavy representation of first year Masters studio work is that in many ways the first year of architectural education resembles (in its shock and versatility) a Borgesian encyclopedia of disciplinary knowledge or our imaginary DIY Whole Architecture Catalogue. It is in the spirit of open source, and for the purposes of advancing that collective disciplinary catalogue of successes and errors, that we have organized the works in this section in the form of a catalogue: each project is identified...
by the MIT course number (locating thus the particular educational circumstance of its production) and a name for the particular recipe we offer.

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Home for the Multitude

The 20th century, the century of increasing abstraction and rationalization, was also the century of the masses. Crowds, mobs, masses: even if we take into account the technical differences between these terms, the main characteristics of these entities were their sheer size and their actual physical presence. The masses were distracted, blasé, alienated, objectified, manipulated, and, in some cases, emancipated, class-conscious, or just simply elated. Any description of the public life of the masses was a matter of position. By extension, architecture was—at various junctures in its historical engagement with this awesome 20th century subject—charged with organizing, articulating, or symbolizing the political, intellectual, moral, economic, and aesthetic aspects of this new type of public life. Our ability to see the differences between various projects of Modernism is itself a product of our own age's ability to conceive of and hold contradictions together, at least as much as it is granted to us by the usual benefits of historical hindsight.

Since the golden era of Modernism's masses and the emergence of the private and public lives that constituted it, we have been told that the masses have been virtualized, that they operate through a kind of silence, and that they have become “phantom.” More recently, we have learned that they have been networked, assembled, and globalized. In fact, we are now told that “masses” as such no longer exist, that there is a new collective entity operative in the 21st century. The philosophers Michael Hardt and Antonio Negri have already famously described some of the characteristics of this new historical player, this subject of the era of globalized capitalism: the Multitude. This new entity does not have an address per se, and its sheer physical size is not its most important property; the multitude is distinguished by the various ways it is networked. Although the idea of the multitude promises a new unified narrative, the nature of this entity is such that it, for the most part, undermines totalizing descriptions.

Producing a home for this historically new entity is more than finding the right-sized roof to fit over it. Dare we think that architecture could help to articulate the particular characteristics of the multitude at least to some extent? The multitude assembles—the sociologist and theorist Bruno Latour will tell us—thus its home may have to be a parliament of sorts.

The subject of architecture is no longer the bourgeois (19th century) individual or the class conscious proletariat of Modernism (20th), but our dispersed subject whose collective political power we have perhaps
only begun to feel during the last American election. This reality is fully coterminous with our newly found ability to also describe the world in terms of big and small actors. The greatest relief for architects is that architecture is not only constituted through actors in various networks of influence, power, and use, but that architecture is itself an active agent.

The pedagogical projects in this section are all charged, in one way or another, with defining architecture’s mandate when it comes to the shape and protocols of the daily life of the multitude, and of the appropriate versions of publicity and monumentality. You may recognize in them the old masses, or the even older protocols of privacy, but even if they resemble elements of those older forms, they will appear inevitably in a new mash-up. This is because the multitude has absorbed old modes and invented new ones—it is both archaic and radically new. Where does the multitude live? Does it care about being represented or channeled? Is it smarter when it is multiplied? Can we predict its mood enough to enable its various pleasures? Just like the available descriptions of the multitude itself, the questions and answers it invites in architecture are both archaic and unprecedented. Most importantly, the architectural tests in this section both dream big and dare to be modest, looking for various versions of effectiveness: versions in which organizational and formal propositions are retooled to fit the morphing future of the global masses, the multitude, as well as versions where the production of desired effects involves seeing architecture as only one of the agents of change, working in concert with other systems and intelligences.
In 1985, Rem Koolhaas opened his article on a then still bucolic Chinese landscape, which would soon be absorbed by the Pearl River Delta development, with an observation that had a delicious capacity to jolt every architect and student of architecture: “Where there is architecture nothing (else) is possible.” On the other side of this signature rhetorical flipness, we find another equally heroic truth: infrastructure makes communication, cities, life as we know it, and life as we might not yet know, possible. Without infrastructure, nothing is possible. Infrastructure, in the sense of both pavement and wiring, was, of course, installed in that Pearl River Delta region one way or another in order for it to function as an urban entity it is now, only a short time after it was nearly wilderness.

The concept of infrastructure and the material that constitutes it—roads, rails, bridges, and other logistical aspects of the built environment—have historically served as canvases for and have been the direct materialization of various empires’ colonizing appetites (think of the 2000-year-old Roman roads that criss-cross Europe), dreams of modernization, efficient war-making, market expansion, or job creation. This has not diminished the concept’s capacity to also symbolize social connectivity and, in recent years, public space itself. Most importantly, it is precisely the continued capacity of those Roman roads to define both the territorial shape of the Roman Empire and now, much of the EU, that commands an allegorical reading of infrastructure’s capacity to structure the daily life of large populations and of entire regions over a very, very long time.

Even as our eyes glaze over from the speed and scale-shifts in our Google Earth “travels,” the very access to its totalizing view forces us to appreciate that investing in the shape and the logic of infrastructure approaches something like thinking about permanence on a massive scale and, therefore, also fundamentally involves politics. Imagining and designing within an infrastructural mindset involves thinking through interpersonal relationships, histories of regional interdependencies, and all aspects of the environments that become structured by our interventions.

Even if the word “infrastructure” might initially conjure up a cartoon version of a road, our collective infrastructural imagination has expanded from the Autobahn and Interstate variety to include many other elements of our globalized world: from container shipment facilities to large server farms, from tomato greenhouses to sleek windmills, from giant satellite dishes to
water treatment systems, from RFID encoders to Facebook. So when we qualify the infrastructural thinking that is taking place at MIT as “expanded,” it is not just that the field of infrastructural imaginary has expanded to include more varieties of it, but more importantly, that thinking along infrastructural lines has allowed a body of work to emerge which in its turn expands the very definition of architecture. The projects that traffic in infrastructure-based expansions of architecture (that we were interested in collecting together) rely on an offer of expertise into areas that are not often thought of as the architect’s domain, despite the fact that architects have dreamt about engaging them throughout the last century.

In the work that follows, two distinct currents of research projects might be recognizable. One line of research involves the oldest, or, at least, the most inert technologies of construction, forcing infrastructural installations to indeed perform as territorial organizers that are not merely efficient at performing their functional tasks, but that will structure possibilities that we, by definition, cannot imagine at the moment. They ask questions like: what will matter to a region or a population a hundred years from now? In experimenting with possible answers, the projects collected in this chapter invite architectural form-making to intervene with organizational and logistical intelligence, insuring that road, rail, energy-making, and other infrastructural installations take on a civic dimension. The other line of research claims a new territory moving from architecture and urban planning outward, imagining new uses and new technologies that perform tactically, involving individual agency through distribution and one-on-one engagement. The design possibilities and needs of information, transportation, and communication are each investigated at the scale of their delivery systems and as particular interfaces.
In April 2009, a posting for a new material on the Transmaterial website read: “Made up of four main layers consisting of plants, outer surface, growth layers, and irrigation, the modular wall panels may be ‘pre-grown’ or planted on site. Whenever possible, the wall units also incorporate rainwater harvesting and catchment systems.” Only a month later an article in SEED magazine explained the Darfur conflict as fundamentally driven by water shortages. And we hardly need any popular press explanations of the twin bond between energy costs and the US defense and foreign relations strategies (intertwined already at the inception of the Department of Energy in 1977). Each of these fragment stories opens up to an entire world of concerns: one, the availability and possibility of extremely smart construction materials; two, ever-scarcer water supplies and, by extension, food shortages; and three, the finitude of energy supplies as we know them. Since these three points are nodes in a large network of issues (whose technological, aesthetic, and political complexity gets routinely flattened by the terms “green” and even “sustainable”), their meaningful connection could be a design matter. Of course, “connecting” these worlds of issues does not inevitably produce a neat triangle of causally related issues. They may not even be on the same plane of reference, which would make them impossible to connect. Yet, if at all possible to imagine, the strange territory that is defined between these three concerns supplies architects and architecture with both the means and the urgency to take on the task of producing nutrients. Power architecture.

A relationship between architecture and the production of energy has in some form intrigued architects for at least a century. Before the Futurists sang odes to car crashes and speed, they dreamt of power plants. Antonio Sant Elia’s La Citta Nuova is filled with heroic renderings of architecture that produced power, or at least housed the production of power. Archigram’s electronic tomatoes and cushicles similarly aestheticized a multi-tasking architecture. Both of these instances of mechanistic turn-ons belong to the history of an architecture that is simultaneously infrastructure and architecture, and that is equally a new technology as it is a new representation of that technology’s ethos. The conditions of possibility for an architecture that counts its success in part by the calories it produces are now palpable, imaginable, and this architecture's whole-scale infiltration into the field is finally plausible. That said, a favorable intellectual climate, along with the availability of new technologies, does not inevitably conjure up an architecture or any of the disciplinary questions that could define it. It is precisely the definition of these disciplinary questions to
accompany our new, and often unsuspecting, farms and power plants that is the topic of this final chapter of Uncertain Futures.

The projects presented in this section use the technologies of fuel extraction, crop cultivation, and energy production as their building materials. They produce windmill walls, public canopies, light, energy, and new methods for sustaining entire farming regions. Although they require and marshal deep expertise in the particular technologies at stake, the projects in this section look for the forms and the deployment of technologies that might transcend both a one-to-one presentation of those technologies and their simplistic, symbolic representation. Not unlike Archigram or the Futurists or Superstudio or the Metabolists, they imagine and picture the worlds that might be engendered by their core inventions and attitude, and demonstrate thus their plausibility and probability. More importantly, they must be seen as tests in a search for the most compelling and the most appropriate fusions of performance and form.