Excess Sustainability, Sustainable Excess: A Dossier of Statements by Stefano Harney, Geoffrey West, Rem Koolhaas, Jeffrey Inaba, Bjarke Ingels, and Tomas Saraceno

Edited and Introduced by Tina di Carlo

In little over a decade sustainability in architecture has gone from a design imperative to a default position—a fundamental, if not unquestioned, parameter. 1989 saw the first global conference on the environment as well as the fall of the Berlin wall; these two events implicitly and overtly ushered in an eco-politics of the environment. Since then the discourse of sustainability has remained unnervingly consistent, however, in its espousal of a modernist ethics of "less is more" and echoing the weblog Inhabitat's motto that "design will save the world."[1]

In fact, although modernism was not overtly "green," it could be argued that sustainability, as an economy of means and a leanness of design, has always defined modernist architectural practice and theory. One need only consider Mies van der Rohe and the social and economic imperatives behind the 1927 Wiesenhofsiedlung in Stuttgart that came to define modernist principles. This exhibition of 33 houses and 63 apartments designed by Walter Gropius, Le Corbusier, Bruno Taut, and Hans Scharoun, among others, proposed new forms of postwar living via cost-effective mass production. The memorandum from the Mayor of Stuttgart, who was faced with housing shortages and major inflation, sums up the political agenda: "Efficiency measures in all areas of our lives do not stop where housing is at issue. The economic conditions of today prohibit any kind of waste and demand the maximum effect with minimum amount of means, requiring the implementation of such materials and technological appliances which will lead to lower building and operational costs, and will lead to a simplification of households, and to improvements of living itself."[2]

Today the material, technological, and monumental traces of sustainable design and building are manifold: the double-sided curtain walls that came into vogue in the early 2000s to heat and cool tall buildings more efficiently; the parametric modeling of Arup and Cecil Balmond in which steel use is engineered according to stress loads; the polyurethane coated surfaces of J. Mayer H. that promote a longer-life and more economical means of wood construction; Frank Gehry's new 8 Spruce Street and its controversial status in relation to the LEED (Leadership in Environmental and Energy Design) certification system; the Zaragoza Expo by Nieto Sobejano, or the green roofed visitors center for Sun, Moon, Lake in Taiwan by Norihiko Dan and Associates; the adaptive re-use espoused by Alessandro Petti and Eyal Weizman for settlements in the West Bank in their "Decolonising Architecture" project; or even the temperature-based typologies of Philippe Rahm. In all of these the message is the same: fewer resources, less energy, less waste, lower cost, lower carbon footprint, more efficient, more green. And implicitly this message promises an increase of democracy as well. We have not moved far from Stuttgart in 1927.

But what if this paradigm were reversed? What if, paradoxically, the most sustainable environments were produced through excess? What if instead of leanness and scarcity,

[1] http://inhabitat.com/
[2] http://www.weissenhof2002.de/english/weissenhof.html

we practiced indulgence and overabundance? And what if these practices of excess and hypertrophy came to define not only the present moment in design and architecture, but also an ethics of sustainability itself?

In the short statements collected below, six visionaries from six different disciplines propose that the limits of sustainability are perhaps best thought, best questioned, and best challenged through excess and exacerbation: the speed of work; the density of the megalopolis; the proliferation of erasure and abandonment; the heightened realities of fiction and storytelling; the hedonistic, drug-induced pleasures of a false urbanism; cities that float in the clouds. Ironically and perhaps again paradoxically, such designs are both near and far from other modernist precedents—those of the late 1960s and 1970s, when space seemed to offer a new frontier, and when science, technology, and design assembled to envision future utopias: the self-sustaining biospheres and geodesic domes of Buckminster Fuller; the vertical density of Yona Friedman's floating cities and Paul Rudolph's stacked urban interventions; the No-Stop Cities of Archizoom and Andrea Branzi; or the suspended bubbles and eco-environments of Haus Rucker. Such paper architectures were no doubt proffered as future science fictions, but at their core lay an unspoken imperative for a sustainable future.

Today these future worlds—these prophesied science fictions—are as double-sided as the curtain walls of tall buildings. Far from the utopias, these future imaginaries are tethered, and earth-bound. With the speed of sustainable work comes the exhaustion and exploitation of the worker; with the increased efficiency of density comes increased crime and disease. What does all of this tell us? That perhaps the most sustainable designs are slippery slopes, in which one continually travels back and forth—keeping pace, sending signals, rising above— in order to indulge in waste and convert this into hedonistic pleasure—and maybe into a new politics.

Stefano Harney
At work your company has announced it plans to become a sustainable business. Could there be any worse news? What a sentence, how harsh, how undeserved. You have been condemned, for your own good, for your own health. Now there will always be more work for you. Your job is sustainable. Your job is sustainability. The earth will stay green and the water clean. Your company will sit in a field of flowers, and you will work there forever, sustainably. You will curse the day your company found this most diabolic of all performance measurements, this most satanic of all productivity tools, sustainability. How hard should you work now? Well anything that is sustainable can be made more sustainable, and that includes you. Do you have a green technology? Well then it is time to invent another to absorb more work. And if the water gets too clean from all your hard work, if the air gets too sweet, that means you are not working hard enough. You have got the balance wrong, the work-life balance. That's what it means, you realize, finally looking up from your labors. That's what they mean by work-life balance. Sustainability, more of both, and then, more of both. Walk in balance on the Mother Earth, faster, and more sustainably, and now faster again. Sustainability is our goal says the company, and you better believe them. They never let anything go. They are still steaming about the shortened work day. They loved absolute surplus, until those factory acts. And now they can have it again, sustainably this time. There is no end to how much they can extend work, as long as they do it sustainably. Or perhaps we should say, as long as *you* do it sustainably. Do you not realize how rich the rain forest is? What work lies ahead in the wind and the waves! But do not worry. You will not have to do this alone.

When your labor cannot exhaust the surplus of nature, cannot bring it back into balance, into a sustainable equilibrium, we will help you. We can use our super-profits to gorge on the natural and human surplus you produce through your hard work, but cannot burn fast enough in your work day. We will help. We share your goal. A sustainable planet. But we will have to work for it, together.

Geoffrey West
Is all of this sustainable—all of this meaning everything we do in terms of our lifestyle, our standard of living, and so on? Or is it just a blip? What we realize is that urbanization has been the dominant process of this planet over last 200 or 300 years. The developed world is 80% urbanized. The planet is more than half urbanized. By 2015 80% of the planet will be urbanized. And all of the problems we are facing—global warming, financial markets, risk, disease, resources—all have their origin in urbanization. And this has been happening at an exponential rate. So I propose—and this is critical—unless we develop serious, integrated, comprehensive, scientifically-based, quantitative and predictive theory of cities and corporations, we will not make progress.

Here are the questions. Are cities and corporations somehow biological? We call it the ecosystem of Silicon Valley. The DNA of the company. The metabolism of the city. Is that just bullshit? Or is there something serious there that we can put into a scientific framework? And a slippery question: Can we understand why almost all cities that have ever been formed are still with us, but all companies die? This is a general rule. However all companies that have ever been formed over the last 1,000 years have not died. So can we produce a formula or a general rule that would predict this? Nature is extraordinarily systematic and structural. The question is can we do the same for the city? The same for various companies? And what would this mean?

Life is scalable. Despite the diversity and complexity of organisms, if look at any quantity, it scales, or increases in size, in a simple way. The metabolic rate—how much energy we each need per second to stay alive? Scales in a nonlinear way. This means systematically the bigger you are, the less energy you need to support a unit mass of the same tissue. There is an extraordinary economy of scale. The reason for this is that we are all networks.

Is any of this true of cities? And continents? Cities scale. Every metric scales as if in biology. But the extraordinary thing is that [with cities] it goes the opposite way to biology. In biology the bigger you are, the less you have. In cities the bigger you are, the more you have. Higher wages, systematically. More fancy people. More patents are produced. More police. More taxis. More construction. More death. The good, the bad, the ugly come together. If you double the size of the city, from 40,000 to 80,000, to 2 million to 4 million—it doesn't matter—systematically you increase wealth, income, number of patents, colleges, crimes, number of crazy people, AIDS cases, crime—you name it—all by 15%. And the pace of life, systemically and necessarily, in this framework of networks, gets faster. Walking speed in European cities systematically gets faster.

All these things are coupled, complex adaptive systems. They cannot be considered independently, so we need an interdependent framework. And this interdependent framework leads to an accelerated pattern of life, and that is why we have the problem: they [cities] are accelerating at an exponential rate.

Is this sustainable? Biology grows and stops. Cities, the dimensionality of space, continually increases due to wealth creation and innovation. But built into the city is the fact that it will eventually collapse; there will be booms and busts, and collapse. So what you have to do to sustain that growth is to continually reset the conditions by making a major innovation: you discover coal, you discover IT. But the theory demands that this happens faster and faster. So something that took 5,000 years to develop 20,000 years ago, would take 20 years now, and in 20 years, will take 10 years. Eventually you are on this accelerated treadmill, and it cannot be sustained. So with the good, driven by the economy, necessarily comes the bad, and the question is: what is the final state of the planet?

Rem Koolhaas
Architects—we who change the world—have been oblivious or hostile to the manifestations of preservation. Since 1980, in Paolo Portoghesi's "Presence of the Past" exhibition, there has been almost no attention paid to preservation in successive Architecture Biennales.

OMA and AMO have been obsessed, from the beginning, with the past. Our initial idea for this exhibition* was to focus on 26 projects that have not been presented before as a body of work concerned with time and history. In this room, we show the documentary debris of these efforts. But 2010 is the perfect intersection of two tendencies that so far have untheorized implications for architecture: the ambition of the global taskforce of "preservation" to rescue larger and larger territories of the planet, and the—corresponding?—global rage to eliminate the evidence of the postwar period of architecture as a social project. In the second room, we show the wrenching simultaneity of preservation and destruction that is destroying any sense of a linear evolution of time. The two rooms together document our period of acute CRONOCAOS.

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Embedded in huge waves of development, which seem to transform the planet at an ever-accelerating speed, there is another kind of transformation at work: the area of the world declared immutable through various regimes of preservation is growing exponentially. A huge section of our world (about 12 percent) is now off-limits, submitted to regimes we don't know, have not thought through, cannot influence. At its moment of surreptitious apotheosis, preservation does not quite know what to do with its new empire.

As the scale and importance of preservation escalate each year, the absence of a theory and the lack of interest invested in this seemingly remote domain become dangerous. After thinkers like Ruskin and Viollet-le-Duc, the arrogance of the modernists made the preservationist look like a futile, irrelevant figure. Postmodernism, in spite of its lip service to the past, did no better. The current moment has almost no idea how to negotiate the coexistence of radical change and radical stasis that is our future.

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Just like modernization—of which it is part—preservation was a Western invention. But with the waning of Western power, it is no longer in the West's hands. We are no longer the ones who define its values. The world needs a new system mediating between

preservation and development. Could there be the equivalent of carbon trading in modernization? Could one modernizing nation "pay" another nation not to change? Could backwardness become a resource, like Costa Rica's rainforest? Should China save Venice?

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The march of preservation necessitates the development of a theory of its opposite: not what to keep, but what to give up, what to erase and abandon. A system of phased demolition, for instance, would drop the unconvincing pretense of permanence for contemporary architecture, built under different economic and material assumptions. It would reveal tabula rasa beneath the thinning crust of our civilization—ready for liberation just as we (in the West) had given up on the idea.

*This text has been excerpted from a longer one that accompanied CRONOCAOS, an installation at the 2010 Venice Architecture Biennale.

Jeffrey Inaba
What if research and technology into environmental sustainable technologies took place at such a rate that it began to approximate Moore's Law? If that were the case, then potentially the consumption of architecture would decrease, and in that case, urbanization wouldn't be a situation where architecture is depleting resources and polluting the environment. Rather it would be an issue of resource development and remediation, environmental mediation.

The rule of thumb in terms of cities is to densify as a way to lower transportation costs and increase the amount of green space. If you increase the amount of space so that you can create even more green space, that's even better. We propose to lift buildings off the ground to create even more space. With Arup[3] we are developing a hydrogen conversion system in which solar and wind energies are used to generate electricity; water is then added to the electricity to create hydrogen with hydrolysis; the hydrogen is stored and then used at a later point when energy is needed. Because the main problem with alternative energy today is how to store it. PV [photovoltaic] panels would create an extra skin that would rotate to capture wind energy, which would be stored as electricity, turned into hydrogen, and then wrapped in helium. Together the helium and hydrogen would allow lift to occur within the buildings.

These buildings would then be clustered together to create cities, and these clusters would be expandable or retractable. In the summertime the buildings would expand and move further apart from one another as a way to create shade on the ground. As they received more sun exposure, they would create more energy; as they created more energy, they would lift higher off the ground to cooler temperatures that would reduce the amount of energy they would consume. At night they would pack together to conserve the heat gain they received during the day. These cities of the future would have an infrastructure in the sky that would project down to provide an infrastructure on the ground.

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[3] http://arup.com

Today buildings consume about 30% of all electricity and they produce about 60% of all CO2 that is in the air. Our idea (with Moore's law-meets-sustainability) is that more energy would be generated, and, through the energy that would be generated, fewer [buildings] would emit carbon dioxide.

Bjarke Ingels
The general perception of sustainability is this idea of a moral code: How much of our existing quality of life are we prepared to sacrifice to afford being sustainable? It is the protestant perception that it has to hurt to be good and that the sustainable life is less than the normal life.

But we are looking at how sustainable cities, or sustainable buildings, can increase the quality of life—to finds ways of designing cities and buildings as double ecosystems that are both ecologically but also economically profitable and where the outcome doesn't actually force people to alter their lifestyle to have a better conscience. They can live exactly the way they want, or even better, because the world and the city are designed in such a way that they can actually do so. Essentially it is to approach the question of sustainability not as a moral dilemma, but as a design challenge.

So two examples. We did the Danish Pavilion of the Shanghai World Expo. Our main idea was to show how a sustainable city can increase the quality of life. The example we took was that in Copenhagen, because we prioritize bicycles, 37% of all Copenhageners commute by bike, which means that you virtually have no traffic jams. So the joy of riding your bike replaces being stuck in a traffic jam or looking aimlessly for a parking spot. Also in Copenhagen our harbor water downtown is so clean that people can swim in it. So the first project that we did was the Copenhagen Harbor Bath that basically extends public life into the water in the middle of the city.

In our current project, the Waste-To-Energy Power Plant, the mass of the building serves as a ski slope for the citizens of Copenhagen. It is economically profitable because it turns waste into heat and energy. It is environmentally profitable because it disposes of waste, thus eliminating landfill. And in Denmark only 4% of waste ends up in landfills. The rest is either turned into energy or recycled. And finally, it is socially profitable because it actually creates social activity—skiing—which would otherwise be impossible. We have the climate. We have the cold. We don't have the topography. So now Copenhagen will get its first ski mountain. Right now people commute eight hours to go southern Sweden where the slope is only a third higher than what we can provide on this building. It has a black slope, a blue slope, and a green slope. And they loop around. There is even a mogul slope.

In the brief they were asking for a visitor's center, this thing where you take the school kids to tell them that this is where the waste turns into power. But then we thought: you are only going to go once, and when your teacher tells you to. What if it actually becomes a destination where, by accident, you discover [something]? Why do we have this ski slope here? Ah, it's because it is on top of a waste-to-energy power plant. So somehow it is the ultimate example of sustainability.

In the brief for the Waste-To-Energy Power Plant all of the competitors were given the machines, some were low, some were bigger, and somehow we had to make a building around it, to make it look beautiful—the beautification of a factory. So we thought,

"Okay, we add a social program." And they asked to make an illumination of the factory so it looks beautiful. And we thought, "Okay, maybe it is more interesting to play, instead of adding light to it." If you are cynical, adding lights is just wasting energy. And we have the chimney: it pans out, a thirty-diameter disk that fills up with smoke. There is actually a piston with 200 kilos of smoke; the piston collapses, which blows a giant smoke ring. And, of course, the idea is artistic: it is a symbol of hedonistic sustainability that you can blow smoke rings with a factory. But the idea is that smoke is also uncountable. You know one of the main drivers of behavioral change is knowledge. And right know you can't really see what is coming out of the chimney…When I was a kid and I saw a light flash and my parents would tell me, "You count one case of beer, two cases of beer, and it [the lightning] is two kilometers away." I can tell my kids, "Okay, five smoke rings is one ton of CO2."
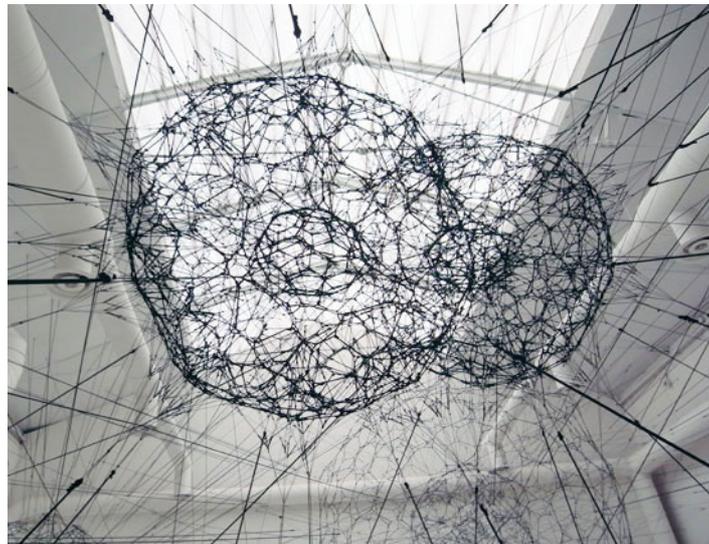
How do you take the ultimate symbol of work, production, and pollution and turn it into something playful?

Tomas Saraceno
I agree with Geoffrey West that we must densify. But then I like to think that floating above these dense megalopolises there can be something else. Cloud cities.

Tomas Saraceno, *Cloud Cities*, 2010.

Tomas Saraceno, *Galaxies Forming along Filaments, Like Droplets along the Strands of a Spider's Web*, 2009.

The statements gathered together here were drawn from work presented at two panels at Munich's annual Digital Design Life conference in January 2011: "EVER CLOUDS," moderated by Hans Ulrich Obrist, and "Science Fiction Urbanism" proposed by Bjarke Ingels and organized by Carson Chan. The statements by Geoffrey West and Jeffrey Inaba are excerpted from their presentations at "Science Fiction Urbanism." Rem Koolhaas's text is excerpted from CRONOCAOS, which appeared at the 2010 Venice Architecture Biennale.

Tina DiCarlo is a curator and writer living in London and Berlin. From 2000 to 2007 she was a curator of architecture and design at the Museum of Modern Art.

Stefano Harney is the Deputy Director of School of Business and Management, Chair in Strategy, Culture, and Society at Queen Mary, University of London. He is an expert on business ethics, corporate governance, and responsible management education, a frequent commentator in the media on banking regulation and ethics and the author of Business World *(forthcoming, Routledge Press) and* State Work: Public Administration and Mass Intellectuality *(Duke University Press, 2002).*

Geoffrey West, Distinguished Professor and Former President of the Santa Fe Institute, is a theoretical physicist whose long-term fascination has been in general scaling phenomena. In 2006 he was named one of Time magazine's "100 Most Influential People in the World," and his work was named among the "breakthrough" ideas of 2007 in the Harvard Business Review. *He is the author of several books, a visiting Professor of Mathematics at Imperial College, London, and an Associate Fellow of the Said Business School at Oxford University.*

Rem Koolhaas is the founder of OMA (Office for Metropolitan Architecture) and the think tank AMO and received the Pritzker Prize for Architecture in 2000. His publications include Delirious New York: A Retroactive Manifesto for Manhattan *(first published 1978), and* SMLXL *(1997), which summarized the work of OMA in "a novel about architecture." Koolhaas was awarded the Golden Lion for Lifetime Achievement at the 2010 Venice Biennale. He is a professor at Harvard University where he conducts the Project on the City.*

Jeffrey Inaba is Founder of the architecture office INABA, Founding Director of C-Lab, a think tank at Columbia University's Graduate School of Architecture, Planning, and Preservation, and features editor of Volume. *INABA specializes in an analytical approach to form making and building, and to transforming observations about culture, human interaction and the environment into comprehensively designed artefacts. INABA has recently created installations for the Whitney Museum of American Art and the New Museum.*

Bjarke Ingels is founder of Bjarke Ingels Group (BIG) and the author of Yes is More: An Archcomic on Architectural Evolution *(Evergreen, 2009). His design philosophy of a pragmatic utopian architecture has won numerous awards and international recognition for projects such as the Waste-to-Energy Plant in Copenhagen and a residential project on West 57th Street in New York. Ingels has been a speaker at TED, the World Economic Forum in Davos, and is a visiting professor at Columbia University's, Graduate School of Architecture.*

Tomas Saraceno is an artist who was born in Argentina and originally trained as an architect. He currently lives and works in Frankfurt am Main and shows at Tanya Bonakdar Gallery in New York City. Saraceno's exhibitions include "14 Billion" at the Bonier Konsthall in Stockholm (2010), "Lighter than Air" at the Walker Arts Centers, Minneapolis (2009-2011), "Cloud Cities" in Atelier Calder in France (2010), and "Drops on a Filament," for the 2010 Venice Art Biennale, curated by

Daniel Birnbaum. In fall 2011 Saraceno will have a solo exhibition at the Hamburger Banhof in Berlin.