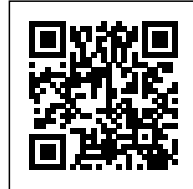# urbanNext Lexicon

Shades of Green.
Amale Andraos & Dan Wood
Extended interviews to Stefano Boeri, Minsuk Cho, Bjarke Ingels, David Gissen & Winy Maas

SHADES OF GREEN

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The series was born out of our desire to open up the conversation around the notion of green and to move it beyond the profession's obsession with sustainability, performance and responsibility.

Amale Andraos When we were planning this lecture series, we found it natural to pair you with Gerald Frug, who is working on how to design systems of government and decision-making. You very intriguingly ran for mayor of Milan last September. As an architect, why did you decide to run?

Stefano Boeri What we do, as architects, is very political. We're accustomed to reacting to any given situation with political rhetoric. We function as thinkers, but there's a very political aspect to our profession.

Furthermore, there's an implicit political element in everything we, as architects, actually produce. I've always been more interested in this second direction – I've always tried to make sure that my work has a political voice and social utility. There are natural, predictive things that you deal with on a day-to-day basis in professional practice that are inherently political. But there are moments when you can enter the political dimension directly, and these moments come when you adopt a certain point of view through which to intervene with architecture.

That's what I decided to do in Milan last September. Running for mayor offered me the opportunity to project all that I have understood and studied about the contemporary city and on man as a platform – as a laboratory that dealt directly with politics. It's been a great experience, very strong, very intense, very fast. It wasn't successful – by a few votes! – but it helped me to understand the complexity of the political dimension in all its ontological layers. I'll never forget it.

Amale Andraos To what extent were you able to bring your ideas as an architect and urban thinker to your political platform?

Stefano Boeri To give you an idea, one of the main arguments of my campaign was the relationship between the urban sphere, the rural sphere and the natural sphere. I'd developed this series of arguments over the last few years, given my preoccupation with contemporary cities. I was really trying to propose an idea of the future of Milan.

We need to imagine urban evolution not simply as a horizontal growth or extension. Instead, we have to recognize that to stop horizontal growth in cities, we have to strengthen the rural, as well as cultural, identity of the land surrounding Milan. This has to do with the fact that nature is re-entering the urban sphere: it's re-colonizing areas that have been urban for centuries. The natural and the urban share a very complex, ever-changing dialectic, so it's important to govern the relationship

between them. It's a series of temporary conditions that change from day to day – politics is about governing those conditions. It's really interesting to see how this dialectic works out in physical space.

To do politics means to build a piece of the future of your environment, but it also means to be capable to governing the relationship between the spheres. Of course, there are many other arguments about this, but it's a way to directly use your practice as an architect, thinker, and teacher, in a very performative way.

Amale Andraos We're interested in how you describe temporary landscapes. You describe them as places for action, using the term "the eye of the needle," referring to local spaces that can ultimately affect global events. You also believe that these spheres have become hybridized; that the idealistic notion of "re-densifying" one side to liberate the other, a kind of MVRDV approach, would not work.

We're curious because we often find ourselves working within very localized, specific conditions. Sometimes we wonder whether they actually add up to something more than a network of small interventions. In particular, you posit that the temporality of these ever-changing spaces makes urban planning impossible. You've suggested that the notion of an overarching vision based on urban planning may be dead, and that the existence of these temporary landscapes and the fact that all of these territories are hybridized now make it difficult to have an overarching vision. So in order to continue governing a city, what type of public policy should we implement?

Stefano Boeri There are two perspectives on this. One is to set up some very strong rules that can be clearly communicated, as issues, to gather transversal consensus. You say, "I know I need to give the 'wild' dimension more freedom, encouraging animal life and so on. So I want to stop the horizontal growth of the city." Or, "I want to bring agriculture back into the urban sphere." In order to do those things, you have to be extremely clear about rules regarding the physical environment. This is what it means to design the future. It's about giving a community of citizens the idea that you're trying not only to predict, but to project your own stance in a temporal dimension. That's politics.

Then there's a second methodology, which is crucial. The contemporary environment is, more and more, made up of an enormous number of individual events, like tremors. When you're working on issues regarding public policy, you have to be careful of these tremors and approach them in a very specific way. You won't ever be able to control the multitude of movements that represent our complex, fragmented society – they're happening on a molecular level. Therefore, it's important that

you prioritize these strong, major issues, while at the same time incentivizing or deincentivizing these small movements.

Amale Andraos Your platform suggests more of a series of guidelines than an urban plan.

Stefano Boeri Absolutely. Guidelines that specify a number of devices that can either incentivize or deincentivize the molecular decisions that take place within the network.

Here's an example: say I want to transform the outer edges of a city into a new model for agriculture. You can specify what remains permeable, what remains rural, but that's not enough. At the same time, you have to work to establish connections between these huge pieces of land that will actually activate this "primal" space. From my point of view, it's not enough to simply say, "I've created a guideline." I must also set up two or three rules to go along with the initial guideline to really communicate what you think should be done. It's also important to incentivize the results of increased proximity. My idea is to develop more sophisticated parameters as part of public policy.

Dan Wood Jaime Lerner, who obviously is the most famous architect mayor, approached leading like an architect, developing designs. At the same time, he was very good at taking seemingly "small" ideas, like the bus, and developing an infrastructure that could transform both a city and an attitude towards the expansion of the city. How would you compare yourself to his approach?

Stefano Boeri It's an acupuncture approach, if you will, instead of creating rules that target molecular movement in contemporary territories. Both approaches stem from disciplines that acknowledge the changing spatial politics of the city. There are other comparable examples, like Medellin.

Amale Andraos You often speak about guidelines and parameters, but at the same time your projects have beautiful, visionary qualities about them. You come from a background of visual arts, and I wondered about your stance on the agency of the visionary, or the beautiful, in this abstract discussion of guidelines. Is the architect's role to speak in an inspired, visionary voice, or a more didactic voice?

Stefano Boeri It's visionary, yes, but I think the most effective way of producing a vision lies in the political field. It's not just your ability to produce an image or story of the future, like the new Milan. I based my campaign on "flash-forward" visions anticipating a portion of the future. We pushed the contemporary condition onto a plateau where we could introduce a piece of the future. In Milan, we demonstrated how different ideas about public transportation could work by really doing it, by

transforming a square or a street to illustrate how bicycles can be reevaluated in the public sphere.

In my opinion, public schools should function as the central actors in a city's infrastructure. The most effective way to prove this point is to demonstrate how a school is useful, not only for students and teachers, but for a whole social community. In Milan, we worked with several schools as testing fields to show how this could be encouraged. So, we anticipate a possible future, and once we've specified that, we can demonstrate it, do it, flash forward to it. For me, this is the most radical and efficient way to produce the "visionary." And that's related to architecture, isn't it?

Dan Wood Gerald Frug speaks of a similar process, where politics and the decision-making process can be designed. We can understand it as a kind of diagram.

Amale Andraos The act of representing it changes it, somehow, and gives us a chance to argue for an alternative method of producing a decision. I'd like to bring the discussion back to our central theme: the notion of "green" as an expanded, productive idea. Do you think that a specific local environmental condition can become an "eye of the needle" that you speak of? Or has our collective unquestioning belief in technology superseded local building cultures and environments? I'm thinking of a typical glass tower in Abu Dhabi or Dubai that is not very performative – it doesn't matter where it is. Then you've got Norman Foster trying to re-appropriate the image of the wind tower as a "local tradition." Does "green" offer us a method of navigating between these two polarities?

Stefano Boeri It has nothing to do with tradition. The message is one of understanding local space as a more complex set of layers: the expectations of the social community, the heritage, the tradition, as well as the economic interests of the inhabitants and the actual physical space. All of these layers, in unison, create a local environment that cannot simply be transformed by considering them in light of "tradition." The discussion is not about glass towers or culture, which simply bring us back to the idea of architecture as "style." The discussion is about the physical devices and innovations that should articulate and activate this superimposition of local energies. Reinterpreted, if you will – metabolized.

Amale Andraos I was thinking of tropical architecture, the notion that you can use architecture as a way of reacting to the environment.

Stefano Boeri The risk here is of homologation – the standardization of solution in sustainability. I think you're right, but my concern is to what extent we will be able to translate that rhetoric into something de-designed, re-metabolized, re-elaborated for each localized condition. "Sustainable

Dystopias," in the last Biennial, addressed this same risk.

The question we need to consider is the extent to which we can trust the economic solutions, developed to satisfy objective consumption, to regulate our cities. It's worthwhile to pack agricultural surfaces into cities that are in desperate need of collective public space. You can imagine the complex relationship between wild animal species and congregation. These are important questions to consider – and, ultimately, they lead to the comparison between architecture and politics, the tension between visionary and practical experience.

Dan Wood "Sustainability" is a very limiting word. We're much more interested in nature than sustainability. David, it seems like you approach nature with a more traditional understanding, where sustainability is an efficiency argument.

David Gissen The words "nature" and "environment" have been so vilified by contemporary critical historians. When people use the word "environment" now – regarding sustainability – they feel that they must be apologetic. That's a shame, because "environment" is a fascinating word. It speaks of a psychologically perceptive subject moving through space. It could have such a lively and played-out role in architecture. The problem with "sustainability," as a word, is that it comes out of a political and global project.

Amale Andraos In the seventies it was a social word, right? Social sustainability.

Dan Wood The eighties made it an environmental word.

Amale Andraos Min, we're interested in how you're redefining your practice through a "green" lens and using "green" in a productive way. How did that begin?

Minsuk Cho "Green" offers a spectrum of approaches – it's environmental, but it's also social and artistic. The starting point? My fifth semester at Columbia – which I'm going to show you today – in Richard Plunz's studio. It was the deconstructivist era, but we did an urban farming project.

Dan Wood Farming as part of deconstuctivism. That's great.

Minsuk Cho In 1999 when I was teaching in Korea for the first time, my studio did a research project about the history of two islands in Seoul. One was a propaganda city in the seventies and the other was a garbage dump. They've both become green, even though they followed completely different trajectories.

Dan Wood Which brings us back to the role of the atypical, or unexpected, in "green". I don't think people perceive Mass Studies as a typically "sustainable" firm, for obvious reasons. Is there an urgent need to take an indirect approach to green, to sustainability, because of academic skepticism about the idea? Does it need to become a more subversive tool, rather than an explicit practice, to be taken seriously?

Minsuk Cho I am not a "green" expert, but working in an Asian context demands "green" and demands it genuinely. In China, where urban areas developed slowly over centuries, they now have to consider environmental issues simultaneously with rapid industrialization.

Amale Andraos So, do you think Asia's approach to green is more genuine?

Minsuk Cho Clearly there is a lot of greenwashing as well, with every evil project including green spectacles. As practicing architects, we're part of the problem and part of the solution at the same time.

Amale Andraos With Public Farm 1, it was fascinating to design a paper structure and cover it with something that is living and dies and generates moisture where you don't want moisture. In your work, you have not only produced images of green, you've also used it literally, like moss covered walls.

Minsuk Cho We didn't start designing with that in mind. After starting somewhere totally different, we picked up the raw infrastructure landscape element. When Mies did the Seagram Building, glasswork was completely new and shocking, and for us, the green wall was shocking too. Of course, five years later, it's completely generic.

David Gissen I like work that doesn't use nature as an allegory or metaphor but actually is working for something that is natural or socionatural, whether it "looks" modern or not. Your farm project uses nature, but doesn't resort to the language of naturalism. I like that it looks like a piece of work; it doesn't look like a meadow.

Amale Andraos What do you think of someone like Philippe Rahm, who is mapping temperature flows to instruct design. Is it real or is it a metaphor?

David Gissen I've seen several of the pieces. Right now it's an image of architecture inhabiting atmosphere, but you do experience the actual temperature changes. I think what I enjoy is this idea of atmosphere as a site. So whether the temperature flows are working exactly like the diagrams claim that they are is not as critical for me. I love the idea of a toilet hanging in a warm patch of an

open room.

Minsuk Cho It's a beautiful idea, close to the traditional Asian vernacular model of a continuous enclosure with varying atmospheric qualities.

Dan Wood One of the interesting things about these kinds of smaller, unique projects, it that they invite you to look closer at the environment. That's one of the most critical ways in which designers can engage with the issue. People are in a haze most of the time about the things that they do and the way that they live. If you can just make people think for a second, things like driving a half hour every day start to seem a little more ridiculous.

David Gissen I've been thinking about work that doesn't necessarily operate at a very large scale, but has an urban monumentality to it. I think that's a very exciting turn for this environmental nature project in architecture.

Dan Wood This is what we say about architecture versus urbanism. Even if architecture was to perform at the highest level, it is not going to make a difference. We can make a much bigger difference by influencing modes of thinking than we can with a single building.

David Gissen Or with legislation. The reason German buildings are the way they are is because of the laws. They have very powerful labor rights that dictate how close you should be to a window and so forth. Corporate environmental technologies are more interesting as code than they are as content.

Amale Andraos What do you think about Masdar?

David Gissen Nature is part of the history of every city, but I don't know whether it can be the total history of the city. In that way, I'm suspicious. What do you think of it?

Amale Andraos Perhaps my least favorite part of Masdar is the big square and the small square, which maintains the idea of center and periphery. Technologically, it's interesting, but everything is riding on its performance: they're not selling it by saying, "We're changing the culture of living in the desert."

After

Amale Andraos Min, you're work seems to approach the issue of 'green' with optimism and immediacy, perhaps as a reaction to the actual genuine Asian need for green, in its simplest form.

You mentioned that industrialization and the environmental crisis are happening at once in Asia. Is there a difference between how Asia is approaching green, versus how we are?

Minsuk Cho It's really difficult to imagine the scale of "300 million people in 10 years." Imagine taking the most amazing city ever created – perhaps Venice, which has about 300,000 people – and creating 1,000 Venices in 10 years. It's completely unprecedented.

Amale Andraos Do the green pockets perform a function? Are they connected to the kind of system they are building?

Minsuk Cho No. We try to push it to be as sophisticated as possible, but most of these projects embody a series of compromises. We fight with this kind of strict, market-driven logic, but we have to provide a deliverable, working design within very strict limitations.

Amale Andraos So to carve out that much green space is really a big feat.

Dan Wood David, when you mention legislation, I can't help but think about the morality and consciousness of nature, and how it's been construed in various ways throughout history. I'm wondering who's going to propose legislation for understanding nature. Is it city planners or architects or botanists?

David Gissen It was the European labor movement, in the end, that was able to argue for the conditions that made many of the projects in *Big and Green* happen. Legislation demanded a certain amount of space, light, and air for each worker.

There's a great story about Barack Obama, where his advisors are prepping him for a debate by asking, "What would you do for the environment?" Obama says, "What do you mean?" and they reply, "Just say you'll use fluorescent light bulbs or something." Obama asks, "That is ridiculous, what difference is it going to make if I screw in a fluorescent light bulb?" The advisors reply, "It doesn't matter; it'll make people feel good," and he says to them, "The only way any of that is going to happen is if we have legislation."

Audience Question: I recently heard a speaker argue that the solution lies in getting public support at the polls and electing the right officials, to put the legislation in place. It seems like you're arguing that we can't rely on legislation to address our fundamental needs. Rather, we must rely on a bottom-up approach from groups demanding changes in civil society. Does architecture have a part in that?

David Gissen Commerce Bank is a great example. Looking at Commerce Bank, you understand the history of labor legislation. Embedded in that building is reproducibility. That's how I would argue architecture speaks to this. Some of the work Minsuk showed also speaks to more generic possibilities.

Minsuk Cho It's clear, from where I practice, that legal matters eventually catch up with architecture. Sometimes things suggested by architects do become standards, and some of our ideas may be employed in low-cost public housing, maybe in a dilapidated form, but nonetheless, you're contributing as an architect.

Dan Wood I'd argue that there is a way to bridge these two conflicting stances on representation and nature. In Min's work, the use of data, information, matrices, and the notion that some of these larger buildings almost create their own ecosystem. There's so much matter and energy and movement and people within these buildings that they create their own kind of dynamics. If you talk with biologists today, they're talking about the exchange of information at the cellular and molecular level. We're working at a macro scale, getting away from the representation of nature, getting down to the level of dynamic systems and information. To me, that's one way to tap into the dynamism of the Asian city and these large-scale projects. The story is about nature, but it's not about naturalism, it's not about green.

David Gissen There's a student of Dana Harvey's who straps sensors to pigeons, which collect data about where pollution is. That's an example of a way to "have your subnatural cake and eat data too."

Dan Wood The question is whether we're engaged in simply "dressing" things in greenness, or if we're making an effort to engage in nature as a systemic balance of forces.

Minsuk Cho For us, it has become a social experiment. Many things are unexpectedly betrayed, and others are quickly absorbed into a sales pitch, because there's an economy that's driving these types of development buildings.

Dan Wood Is it always very high-maintenance?

Minsuk Cho Not all "green" performs the same. We've done a full range of no-maintenance to very high-maintenance buildings. Putting together our work for the talk today, that was the message I got. That there's a continuing evolution at work.

Dan Wood I also felt that the association with green has a deeper meaning. Considering the transformation of Korea from totalitarianism to democracy, from a manufacturing economy to a

service economy, we see the plaza becoming green, representing that transformation and increased diversity.

Minsuk Cho We learned that it's quite a versatile subject in this sense. David, in your book you use the term neo-Victorian, or Haussmanian, in an almost derogatory way, but that's what many Asian cities are desperate to achieve. It's a very different cultural and economic situation, and it presents a challenge for us to engage and contribute something that has an impact culturally as well as in terms of performance. That's why I come here, to get some distance from the process and provoke thought and reflection on it.

Amale Andraos What does the notion of "green" mean for your projects?

Bjarke Ingels What caused the climate crisis is the reliance on "mechanical" ways of thinking. The arrival of building engineering and building services is what propelled Modernism. If you think about it, building services are essentially a way of compensating, mechanically, for the fact that buildings are very poor at human occupancy. So you design a series of machines that make them inhabitable: electric lights allow you to see independently of natural light; mechanical ventilation allows you to breathe independently of open windows; and central heating or AC makes you independent from the thickness of the walls or the orientations of the spaces.

At their advent, these types of mechanical inventions were considered freeing. Yet, as a result, architecture wasn't really doing much anymore, and the International Style degenerated into what amounted to boring boxes accompanied by big energy bills. I think we should pump all these challenges and environmental realities back into the design phase – they need to inform it.

In many ways, Bernard Rudofsky's Architecture Without Architects exhibition at MoMA called for a similar movement. At the time, he was calling for an aesthetic counter-revolution against the International Style, which was making all the buildings the same. Rudofsky was trying to open our eyes to local specificity.

The same type of thinking could have potential today, and we're trying to launch this idea into practice. Instead of "architecture without architects," we like "engineering without engines." Contemporary engineering offers us sophisticated methods of simulating, calculating and modeling, allowing us to return to design with these environmental attributes in mind, and taking us out of the machine room. The more of these attributes you can wedge into the actual architecture – the choice

of materials, the orientation of the building, the distribution of the volume and program within the volume – the fewer machines you need to fuel to make the building inhabitable. I think that's where there is an incredible architectural potential for new forms of expression. Using contemporary technology to find new vocabularies that respond to specific climates, we may see the appearance of new styles of architecture generated by a designed response to specific climate challenges.

Amale Andraos This suggests that architecture should be about performance. But, one could argue the exact opposite: glass is becoming so high-performing that it liberates architecture to do new things. This makes the idea that we have to express these technologies through the building's shape or materials about discourse rather than performance.

Bjarke Ingels It's very important when you talk about sustainability that you note one of the main failures, or degenerations, of high modernism: "train-track" urbanism, in which housing projects were designed and built according to the logics of construction, rather than how a project would inhabit an existing neighborhood. This is the result of elevating a single parameter and making it the most important thing: you lose sight of all the other parameters. In that sense, I think architecture is very much a science, a science of managing complex conditions that incorporates input from multiple interest groups and concerns into some kind of symbiotic relationship. If there were a mind-blowing view in the wrong direction, it would be silly to ignore it and only orient your windows according to climatic conditions. It's always a balance, and there are so many parameters and buttons you can push and turn, that in each case you inevitably work according to a guiding priority. We are designers of ecosystems, and resources have to flow through the buildings we design. We're doing a tower in Shenzhen where the design blocks out as much direct sunlight as possible and opens towards the north. When you see the façade, you immediately understand that it performs differently.

Dan Wood So experience is a priority: it seems important to you that there is an experiential difference between a north-facing façade and the use of super-reflective glass.

Bjarke Ingels The beauty of the Shenzhen tower is that it doesn't use the traditionally efficient smoky glass. Instead, you'll be looking out of completely transparent glass. You're going to have a beautiful view, because it's not a smoky glass box. Glass towers in Dubai are generally not very sustainable, and even if there are shading screens built in, they just turn up the air-conditioning. So, I think it's a question of using available techniques and technologies in the smartest way to respond to climate. I see this kind of thinking primarily as a potential design resource, instead of ignoring these issues and only dealing with them after the fact, as add-ons.

Much of "sustainable architecture" today remains within this "mechanic" realm when, instead, we can use the resources and tools we have in the design phase, together with the engineers, to eliminate our dependence on post-construction machinery and systems.

Resource consciousness is another example of a so-called "challenge" that can fuel the creative effort. Thinking about all these issues will produce buildings that are more exciting, and with many more qualitative experiences.

Amale Andraos What do you think of LEED? The equivalent system in Europe is reducing the responsibility of the architect and enforcing a standard of performance for all buildings. Do you think there is still an opportunity for design then? What do you make of these kinds of regulations that take away some freedoms from the architect?

Bjarke Ingels If it becomes too prescriptive, it becomes a kind of cage. However, I think that the single best way to increase research and performance within a certain area is to raise the bar. So, some kind of performance criteria makes sense: "We don't care how you get there, but don't drain the grid more than a certain amount per square foot, etc…"

Amale Andraos That's how these systems already work – there are a number of points you have to achieve to be certified.

Dan Wood Everything is a "point", whether it's putting in a geothermal system or specifying a bike-rack. Each of these counts as a point, and counting a series of points discreetly, rather than as a whole, is one of the criticisms of the system.

Bjarke Ingels If you can avoid what's prescribed and you can choose your weapon of choice, as long as it doesn't exceed a specified number, it does make sense.

Amale Andraos You said earlier that sustainability suggests what parameters are introduced into the initial design process. Since you choose the parameters that can produce the most interesting project, is there is a dial-down / dial-up system?

Bjarke Ingels Yes, of course. We test a certain approach, and we look at the resulting architecture. But we might still give preference to an approach that points in the most climactically appropriate direction.

Dan Wood You seem to have a preference toward the north. If we mapped all your buildings, would we see that the sun is a bit like Mecca, with all your buildings pointing in a single direction?

Bjarke Ingels (Laughs) Except in Northern Europe. In Norway and Denmark, it's the other way around. It comes down to this question of choosing a priority.

Dan Wood What is your interest in sustainability? Is it a moral responsibility, or something else?

Bjarke Ingels What is crucial is the idea of "hedonistic sustainability". If sustainability is to succeed, the discussion must be rephrased. That's why COP15 in Copenhagen failed: the whole discussion was drowned in the topic of how much of our quality of life we would sacrifice in order to live this way.

Dan Wood Right, this is similar to when President Carter told everyone to put a sweater on.

Bjarke Ingels If sustainable design means you have to take cold showers, it becomes undesirable. Whereas if you think of it not as a moral or political challenge, but as a design challenge – where you have to find ways of delivering the same quality of life but in a way that doesn't drain the planet's resources or pollute the atmosphere – I think that's the goal.

The Modernists tried to do the same thing: give people a better life. For example, at the turn of the century, the automobile became a more efficient, "sustainable" replacement for the horse. Horses were unsafe, because of the psychological stress they endured, and wasteful because a single horse produces 11 kilos of manure every day, which meant that 1,100 tons of horse shit had to be cleaned off of the streets of New York on a daily basis.

The city was drowning in horse shit, and suddenly the car offered a much cleaner, reliable and safer solution. The global success of the car made it a problem, but not because it was designed with any evil intent. No one was aware of global warming at the turn of the century – no one imagined the negative side effects.

I think that as we constantly gain new knowledge and understand more completely the consequences of the processes that we participate in, we also must reconfirm that we're furthering the general project of making human life more enjoyable without creating negative by-products. One of the cool things about pollution is that it's the result of processes that are desirable, but which create a by-product that is not. Therefore, this by-product accumulates until it becomes piles of garbage or it clutters the atmosphere.

In every case where you've got pollution, you have a lot of something for free. All you have to do is invent a process that reorients this undesirable by-product as a potential resource – a kind of infinite loop of the undesired becoming desired. For example, if you could invent something that would eat

CO2 or would use CO2, you'd be tapping into this horn of plenty. That's why I think sustainability and ecosystems are very interesting as design problems: they point toward the future, directing us toward untapped resources that need to be used for something.

Dan Wood The only problem with that argument – the "car that runs on water" argument – is that the car introduced something the horse was missing: range. Add range to the equation and, all of a sudden, the suburbs become feasible and desirable. As you said, we want to preserve a particular way of life, but there is a moment where you do have to put a sweater on.

Bjarke Ingels We have limited space on this planet, right? The answer isn't "no planning" and "suburbs everywhere." That would take away the desirability of nature and landscapes.

Amale Andraos The argument of preserving one's lifestyle is the argument that Bush used in order to go to war against Iraq: "We're going to preserve the American lifestyle; no one is going to tell us how to live."

Bjarke Ingels Obviously, I'm not talking about war. I'm talking about the essential utility of what we do, as architects. Architects try to refurbish our planet. We try to make it fit better with the way we want to live. This implies a huge act of priority definition.

Dan Wood "Hedonistic sustainability" is good, but I think you have to come about it from both sides. One side needs to argue that it is not a pain to be responsible and, the other, that it is actually exciting to be more in tune with nature. Fast food is good, but once you've had organic food, it's very tough to argue that fast food is better.

Bjarke Ingels Of course. However, I think there's a transformation taking place now. Rather than the city being this uninhabitable place and the suburbs being somewhere you escape to breathe, we're seeing the inverse occurring. For example, most of Manhattan's waterfront is being turned into parkland. The functional master plan in Modernism put offices in office parks, residences in suburbs, shops in shopping malls. The Modernists kept things separate – rational. But, increasingly, the things that had been kept separate are mixing, including nature, because it's desirable. Many people are choosing the city because of its cultural or professional attributes, but they also want a nice outdoor space.

Dan Wood Exactly. It's flipped. New York City is something like the 90th most dangerous city in America, while the top ones are somewhere in Iowa.

Amale Andraos I have a question about nature and optimism. You generally sound like an optimistic

person. Everyone in your renderings is very happy – even when they're at political rallies. Though you've described many of the projects largely in terms of performance, there's also a clear and different focus on landscape and nature. I would argue that these choices communicate an image of nature – like the image of the mountain that you project onto the Mountain building. What's interesting about nature is also its other side: the horse shit, the decaying, the smelling and the rotting as well as the grass on the roof that looks bad if you don't maintain it. In some ways, you're projecting an image of nature that's still a very clean, Modernist version of it. You talk about this with the car as well: "The car is better because it's cleaner." Are you not interested in this other side of nature?

Bjarke Ingels You mean the horse shit side? Let's take the case of the literal image of the mountain made from perforated aluminum plates. It's evidently an image, but it functions as a metaphor. The Mountain is not at all designed to look like a mountain. It's designed to optimize the cohabitation of an urban block with a parking structure and apartments. It's designed to provide all the apartments with a big terrace and gardens that provide the opportunity to live a "suburban" lifestyle, but in a dense urban context.

It started looking like a mountain, and since we knew we were going to create a naturally ventilated parking façade which would need holes, we thought we might as well play with those holes. It's like trying to take charge of the available, preexisting resources. Instead of being a big metallic parking façade facing the city, it became a canvas where we created this monumental piece of art. So, it's more about trying to optimize all available resources and get the most out of them.

Amale Andraos Opportunism in design?

Bjarke Ingels As an architect, you always work for somebody else. So some form of opportunism is the right approach.

Amale Andraos But why is the reference to nature important in your work?

Bjarke Ingels We try to view landscapes as un-programmed topographies of opportunity that don't necessarily dictate that you must sit under this tree or walk along this lake. What we try to do with a lot of our projects is say: "Okay, there's a certain function that somebody with a need has commissioned us to solve, and we have to satisfy him," but somehow we also have to be good citizens and try to make surfaces that are otherwise unavailable, available – like opening up the interior landscape of the courtyard to people walking through the neighborhood.

Dan Wood Nature, not as recreation, but as a place to do things – this is really interesting. The 19th century park introduced the city to nature, in this very curated, Romantic sense. In your projects, the city becomes that romantic space. I think of the people grabbing The Little Mermaid statue at the Shanghai Expo pavilion, which was a really physical engagement and introduction to the city. It's almost a little bit dirty, even though the water is clean. Grabbing the city and really using it in the same way we used to grab and use nature.

Bjarke Ingels We got involved with Kaspar Schröder, a documentary film maker who did a film called My Playground, which is about Parcours and how it allows people to expand the public spaces of the city by being so fit that they can climb walls and jump across fences that normal people can't. They're expanding the potential human space within the city. What they do in a guerrilla style is very much what we try to do in a more planned and legal way.

Amale Andraos What's interesting about Parcours is that it turns architecture into a landscape, into the place of pleasure and sport, whereas I think in your projects it's still a traditional understanding of the relationship between architecture and landscape. A landscape gesture introduces you to the pleasure of nature, while architecture remains where the program requirements are.

Bjarke Ingels Because it has to be accessible for the disabled.

Amale Andraos I have a question about sustainability and design. Where does the story start and end for architects, in the way that we frame the issues? In the case of the Mermaid for example, it was borrowed from Copenhagen and then it went back. MVRDV's Hanover Pavilion was very exciting when it was built, describing emerging areas of ecological research. William McDonough had written amazing guidelines for Expo 2000, but it all fell apart. There are these sad images of the pavilions left over, decaying – maybe not sad: after all, that is the other side of nature. I'm wondering whether you ever think about where the pavilion went afterwards, or where it came from. Architects tend to frame the story with something like, "We got the program, we designed the structure, then it opened; we handed over the keys and then we were gone." I'm curious about your thoughts regarding these issues, especially when we design temporary pavilions.

Bjarke Ingels The pavilion was designed with prefab modules. In this sense, it's like a ship being dismantled and taken back to the shipyard to be reassembled into a different ship. I like Le Corbusier's last essay, in which he says, "Nothing is transmissible but thought." Aside from what we architects do and say, our projects have lives and afterlives where they're appropriated and misinterpreted and inhabited.

Also, the more often we do projects that offer up ideas for general debate, capable of capturing the attention and imagination of the broader public and increasing the general awareness that architecture is not just an aesthetic enterprise, the better it is. As I keep repeating, architecture is an art and a science, a collective and continued effort to make our citizens' buildings fit with the way we want to live.

I think structures like the Danish Pavilion contribute to that popular consensus. 5.5 million Chinese citizens passed through it and were exposed to the idea that our rivers don't have to be cesspools and that we don't need to drive cars. It is fun to ride a bike and to take a very tangible and desirable condition of sustainable city life and hopefully plant that desire in the contemporary Chinese imagination. I think that has definite value.

But architecture is such a gentlemen's sport, as in, it's something that old guys do, that it takes so long to get anything out there. So, most of our built work has a surprisingly short afterlife. The 8-House has this kind of specific public ambition in that it invites spontaneous public life to occur within the three-dimensional composition of the urban volume. Right now we're working with some documentarians that are moving into one of the row houses this spring to document what actually happens on these Mountain streets within the urban block. That, in itself, is an interesting experiment: to see if all the efforts that went into the idea really triggered life.

Bryony Roberts (audience) I'm curious about whether you have an agenda that speaks directly to progressivism, or whether progressivism is a by-product of an unrelated agenda.

Bjarke Ingels I think our agenda is apolitical, in that we pursue a general understanding of the city as a collective project. And what makes the city interesting – what fuels the city and its architecture as a human enterprise – is the necessity of having to accommodate it all. We're publishing a manifesto called Inclusivism based on this idea. When we were working on the Yes is More book, its working title for a long time was "Bigamy: you can have both." I couldn't explain that to my girlfriend at the time.

This is why Obama is part of the discussion. The idea is to understand that you don't have to choose sides. In fact, in the city, you shouldn't choose sides. You should find ways of accommodating it all. In the tension that comes from refusing to commit to either of the extremes, we find potential for growth – we find the hybrid overlap between the two polarities.

This is one of the main ingredients of Darwinism, of evolution: the male and female merging of DNA, creating a third entity. So, politically, it's an inclusive approach to the collective project of

accommodating all aspects of human life and culture.

Amale Andraos Can you tell us about your project in Spain, where you're designing a large-scale green city?

Winy Maas Logroño is one of five Spanish projects made possible by a national grant funding exemplary eco-cities. We proposed a solar park in combination with housing in the middle of the city. Normally, solar parks exist on the periphery of the city, as part of the landscape – for security reasons and because of the excessive heat they produce. We solved that problem by elevating and tilting the solar panels, so they acted like trees. We proposed, literally, a solar park – a publicly accessible space in the middle of the city. That's the first part of the proposal. The second is the revenue of the plant: the generated power doesn't go directly into the grid but is instead stored on site and controlled by the local community, which preserves the right of the neighborhood to utilize the energy first. It becomes more personal, more direct and the revenue from the park allowed us to propose 3,000 housing units. The last reason I believe our proposal was selected was our approach to the site, which sits on two hills in the middle of the city. The slopes are rocky and difficult to build on, so they've always stayed empty. We understood that and built social housing with energy benefits within those financial constraints.

It is important to be precise: when you're thinking about an eco-city, you can either try to achieve an overall vision or you can focus on a few special, particular elements. In the case of Logroño, there are of course other elements built in, like water treatment systems, but those are minor and have been done before. We wanted to focus on the three site-specific elements I described.

Amale Andraos This is quite an interesting idea, especially compared to other eco-cities like Masdar, in Abu Dhabi. The problem with eco-cities is the idea that what's inside the city is green, and what's outside is not, knowing that the networks and infrastructure at work are always crossing the city's 'boundary'.

Winy Maas The more you can define what eco-cities can achieve, the more productive they are. In the case of Masdar, the narrow streets are great, and the parking and access systems are exemplary. Even if those are its only good attributes, they're already an achievement.

We should judge eco-cities on three levels: first, what is achieved within their boundaries? Second, what is achieved in terms of the discussion on the future of cities? Third, what is the project adding

to the discussion on eco-cities? Masdar can be criticized on the third level: it's top-class, it's expensive, but it may have been better to build it somewhere else. We have to evaluate the positives and negatives of any case study.

Amale Andraos That brings us to our ongoing discussion about the "visionary" and the question of implementation. The last time we spoke, Obama had just been elected. Today, there's a discernible feeling that his vision has failed somewhat. To what extent is this a specifically American problem, considering that, in Europe, governments have had great success in implementing change, especially with regards to environmental regulations.

Winy Maas I can't speak about the American situation now, since I don't work there. But from the outside, Obama is doing a good job. I met him in Indonesia: we spoke about plans for a new capital there, and his ideas were very good, very pragmatic. Yudhoyono, the Indonesian President, had asked me to comment on his proposal to create a new capital in the jungle of Kalimantan. At that time, I was working on a Kampung in Jakarta, and I reacted by saying "for the same amount – 10 trillion U.S. dollars – I can create four metro lines, I can improve 20 Kampungs, I can clean the whole sewage system of Jakarta and improve the value of Jakarta so drastically. What's better? Obama was there by coincidence; our flights out of Jakarta overlapped while he was there to advise the president. He said, "Clearly, it's better to be pragmatic and restore the capital instead of escaping it." So that was a nice example of idealism combined with pragmatism.

Indonesia is a good place to be working; there's momentum. For me, it's a very symbolic moment, seeing things coming together; not in the U.S., but in Southeast Asia. Indonesia is the fourth largest emerging economy after India, Brazil, and China. Coming back to the notion of the visionary: Can it exist? I think this is an example where it is needed, in creating new capitals for example. Vision is also needed in the case of Europe where there is widespread bankruptcy, which has undermined the plurality of voices and critique that made it unique when all the countries were equal. Can pragmatism lead to a visionary moment? Do we always need the visionary as a reference to produce change? I am not sure, but the charismatic, almost religious behavior of Al Gore or similar figures didn't actually work out, in the end.

Amale Andraos An interesting example for architecture is McDonough, who argued that we can be visionary and not sacrifice anything for it. He suggested pragmatic ways in which visionary thinking could work within a liberal economy. And it didn't work either. In Obama's case, it's more about a constant move towards the center – and if you lose the progressive agenda, things become blurred very quickly. In the U.S. today, the extreme right constitutes a much more powerful grassroots

movement than the left.

Dan Wood The stimulus plan, in which billions of dollars were directed towards infrastructure, represents a kind of short-sightedness. It could have incited a moment of inspiration and change, but in reality, it filled three million potholes and repaired old highways. Even when there was impetus for a high-speed rail between New York and New Jersey, it was vetoed by the Republican governor. Meanwhile, the new railway infrastructure in California is being built and managed by the Chinese.

Winy Maas That's a good example. How could the meta-regions of east and west be served in terms of infrastructure? For me as an outsider, it's a pity that a good high-speed train network has not been established in either zone. The revaluation of the highway system seemed to have no architect, no discussion. In Europe, these things are discussed every day in newspapers and the media.

Amale Andraos The infrastructure discussion was very public and very exciting, at least in New York. And one of the most positive things to come out of the discussion for the city was the appointment of a Commissioner of the Department of Transportation, Janette Sadik-Khan, who is an amazing, pragmatic visionary. But I think at the level of the whole country, the conversation didn't last very long.

Dan Wood In a strange confluence, the automobile companies were being rescued at the same moment. We seemed to have blinders on as to the largest possibilities in front of us.

Winy Maas I like your idea of the "pragmatic visionary" as an attitude we need to apply to wider fields. It's quite beautiful.

Amale Andraos You work all over the globe. Can you speak about what "green" means in China, if you're currently working there, versus other places? As Dan said, it is somewhat ironic that the Chinese are now building the high-speed rail lines in California.

Winy Maas The fact that everything will soon be built by the Chinese, in Europe and elsewhere, means that, somewhere along the way, we missed the bus. Our societies failed to manage economic growth and so, in one way or another, we outsourced everything. We have to learn from this and come up with new answers. Is "green" the same everywhere? "Green" has existed for 30 years already. Is "green" helping urban planning or architecture? Probably not, because it's so expensive. 25% of every budget already goes to "greenness." And I have trouble designing buildings that can address certain kinds of materiality or have complex spatiality or address urban issues.

Smaller budgets don't allow for much more than a green roof, 30% maximum glass on the façade, and a heat pump. That doesn't help architecture in terms of spatial quality, but it does help our behavioral responsibility as inhabitants. Does it help the cities? Yes. Density, as a strategy, is far more acceptable than it used to be. Farmax was published 17 years ago, so I'm happy that we could see the translation of that. Another achievement is that we no longer only have to discuss housing and offices; we can have an agenda that incorporates urban agriculture for example.

Architecture is in a state of in-between, because of financial constraints. People think we can convince clients to go green because it lowers running costs, but that takes five years to prove. We all suffer from these issues.

Amale Andraos In the United States, fewer regulations have been absorbed into building codes, and so there are still many small demonstration projects, but they're getting tiresome.

If we assume that regulations will take on more and more to ensure sustainability, it is still exciting for architecture to engage green's potential to be generative and inspirational? As a design parameter rather than just a performance enhancer?

Winy Maas My hypothesis, as part of my Green Dream text, is that we should accelerate. Acceleration would help us skip the subject altogether, getting us to that moment where everything is green, and then we're done with that question. As I was writing the book, I was afraid I'd have to be 160 by the time the green movement achieved that. Now I'm hoping we'll get there before I'm 80, so I'll have twenty years before my 100th birthday to make buildings that aren't "green." I mean this with a hint of irony, of course, but I'm largely serious.

One of the strategies that could accelerate "greenness" is beauty. It's quite funny, because the newspapers in Europe say I'd like to only make buildings that look like Avatar. But renderings should portray the future on that level – they should seduce everyone, not only in the process of getting a commission, but also when it's realized as a poetic vision.

The water lilies that we have patented now are solar panels, floating around in Hong Kong or Phuket. Those are beautiful, but of course they're verging on the Disney-esque! They touch the Avatar image. So did our recent study for the bacteria in the canals in Amsterdam. Beauty is one of the methodologies that allows us to absorb "green" and accelerate the process.

The phrase "Avatar" is now more or less a buzzword that flies around among European clients. I should have patented it in that sense (laughs). That's one good outcome from the last year. The

second element is the Green City Calculator, which would allow us to get rid of LEED and BREEAM. I understand that the standards and regulations are still needed in the U.S., but ultimately I don't want to compare apples with pears. I want to have truth, or realism. We should be analyzing all the mechanics, the laws of the planet, the social rules involved as well, in each case. In BREAAM, you get points if you have a mixed program! How is that precise?! It's the same with LEED – having a social component increases your points. We have to talk about juice and we have to talk very directly and simply about technology in order to judge it. If you're building outside the urban periphery, it costs more to get people there and you have to calculate the amount of juice that takes. But please do it in juice terms… That's what we've been working on. The European Committee has adopted the Green City Calculator, partly because of our pushing, but also because of the universities and research committees working on it. This program of neutralization turns into a measuring device, which is the next level after BREEAM, LEED, and the older European codes. It's a tool that promotes acceleration in one way and neutrality in the other. At the moment, these are the two points we're focusing on.

Dan Wood It's nice to talk about beauty and a calculator as the two things that are most important.

Winy Maas First, beauty was always there, both in your work and ours. But we're talking about making it more pragmatic – that's the funny part.

Amale Andraos Maybe the more interesting part, actually.

Winy Maas Yes, how to measure data… Let's not get into that debate (laughs).

Amale Andraos I'd like to ask about the success of the Why Factory as a model. I'm going to generalize: here, in the American Northeast, many schools of architecture have developed a knee-jerk reaction against the words "green" and "sustainability." It's become the discourse belonging to the public, and many academics are taking their natural stance against that popularity. We wanted "Shades of Green" to open up that tension and show that it's a ridiculous opposition. Students are generally interested in questions of sustainability, but it has produced particularly ugly architecture, and so it's been put in a box and has not gained critical momentum. The Why Factory model is an interesting merging of the academic and the more pragmatic engagement with real issues outside of itself…

Dan Wood It also has a populist streak, in a Dutch way, as the books produced could be opened by almost anyone, and they would find something.

urbanNext Lexicon

Winy Maas Our intention is to produce books that make sense to a wider audience. We focus on how to present our research as connected to the world outside of academia. There are magazines like Quest, or Wired, that are able to span the gap between technology and populism, so why not bring that into the heart of the academic system? I had to convince all the assessment boards to give points to our researchers for being scientific, since you can only get funding with their approval.

Actually, I find it okay. What helped was to be able to approach a PhD student or research program and say: "You tell us what the end target should be." They would already imagine the headline in the newspaper, or the patent, and we worked backwards from there. Sometimes you have to work in reverse and maximize the slogan to find something new, and I go back to that model often. It's still producing research that gets funding, though it's in small amounts. In the Why Factory, there are 10 staff members in 10 faculties – as small as MVRDV.