

# Conversation on Designing Future Cities with Measures for a New Urban Agenda with Richard Hassell

## **Book Chapter**

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# Future Cities Laboratory

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Richard Hassell, Naomi Hanakata,  
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# Conversation on Designing Future Cities with Measures for a New Urban Agenda with Richard Hassell

Richard Hassell (RH) is the co-founder of WOHA Architects—Singapore. In an interview with Naomi Hanakata (NH) and Aurel von Richthofen (AVR) (Future Cities Laboratory) in September 2016, he discusses his approaches to measuring city characteristics and how this can support a more complex view of designing in cities.

NH *Could you tell us a little bit about how you adopt technology in your daily architectural practice?*

RH We are very quick to adopt new technologies. When you are designing and you want to communicate something or explore something, then you might like to use whatever new tools that are available because they are so exciting and you can do so much more with them. This is also the moment when we develop our own tools in the field of communication, simulation and so on. Design work is quite fast moving and when we want to explore an idea, we need new methods and we need them to be fast; there is a real need for quick and dirty tools. We should be aiming for statistical and ‘fuzzy’ improvements in performance—instead of highly optimised and calibrated solutions—because over-optimised solutions are not ‘real world’ in both data and practice. At the time of

design we have too few parameters, and we can only guess how the end-users will interact with a building, yet many software solutions try to optimise the results based on this patchy and inaccurate information as if it were a simple equation.

AVR *Your work has been driven by ‘green’ ideas from the beginning. Could you tell us how you started that?*

RH We have been driving an ethical desire to create a sustainable world and could see that architects seem to be the only people who are in a position to make sustainable solutions actually happen. The reason behind this is architects are generalists—we have to operate across all kinds of domains and fields, and we come face-to-face with all kinds of specialists. Somehow we have to stir them together into a kind of soup where we achieve a desired outcome. In fact, the world is getting into a situation where we can only survive with very complex sustainable solutions that integrate many different processes. We will need more and more of these specialists in all sorts of projects, not just architectural projects, yet the specialists are quite helpless to contribute unless they are placed into a broad framework and strategy so that interests are aligned and there can be movement towards an integrated solution. So, our idea was to develop a broader context in our writings and publications that set up this framework. Looking back 20 years ago, we saw very little interest in sustainability in Singapore. There was the belief that energy solves the climate problem.

AVR *How did you translate the idea of eco-consciousness into practice?*

RH We had to smuggle in our design research by tagging the sustainable elements with additional attributes that were desired by the client. We argued ‘how nice would it be if your home had less air conditioning? It could be like a resort and you could really enjoy the garden!’ We had to frame questions in the right way so that the answers were positive.

NH *To what extent does the Singapore institutional framework facilitate your urban experiments?*

RH Singapore is one of the few places in the world that does have the integration of governmental departments, including a sense of a common mission to make these things happen. And once they happen here as a prototype, they are more likely to be adopted by other cities. I believe Singapore is difficult in many

# RATING CITIES

Sociable architecture and sustainable cities have now become the 21st century priorities, and building developments need to be assessed in terms of their contribution to social and environmental sustainability, as well as their economic viability.



ways and easier in some others. The high cost of land is actually really good for doing slightly experimental buildings. Because the investment in land cost is so high — it far exceeds the construction budget — the incremental cost of doing small experiments within the building budget adds little to the overall development budget. I think that is why there has been a flourishing of experimental buildings here. Singapore has a really challenging tropical climate for sustainability, because it has a very steady state condition that is slightly outside comfort levels. In Singapore, you cannot rely on a cool night to average out your temperature. You cannot dig a hole into the basement to use thermal cooling because the earth is of the same temperature as the air. Also there is very little wind and the sky is often overcast. There are big challenges to designing sustainable, comfortable and efficient buildings here.

AVR *The Future Cities Laboratory is constantly seeking to redefine the understanding of urbanisation to better address current urban problems. In your opinion, where are we now?*

RH People are moving to cities, and apparently, we have crossed the halfway point of urban/rural population. So I think we have maybe moved beyond urbanism; we now live in a hybrid virtual and real world where a wave of technology affects architecture and has swept over urbanism too. The danger is the disconnection that people feel from the world beyond the city. There's also a lack of relevance felt by people who have lived all their lives in the city to a wilderness area, for example. They don't know it or value it, so why would they protect it?

AVR *Does technology facilitate this hybrid condition?*

RH I see that the Anthropocene era could be the moment when wireless internet is available everywhere throughout the rainforests and wilderness areas; people would not have to move to the city to be urbanised. They would quite happily be posting Instagram of themselves with orangutans out in the rainforest. In the digital infrastructure era, people cluster around technology access as they used to cluster around water sources.

AVR *Your architectural and urban projects convey design principles for tropical cities. Could you elaborate on these principles that you distilled from your previous competition and design projects?*

RH We developed five measures for a new urban agenda (Figure 1), which we thought were missing in conversations with urban designers and developers. We named the first one Green Building Ratio (GBR). According to our calculation method our highest ratio so far is the 1100 per cent replacement of green spaces in our Oasia Hotel Downtown project. For us, this is a super exciting measure, since you can argue that one building can compensate for ten other buildings around it. For us, GBR ratios are something that should be known, tracked, even made mandatory, and cities need to compare, discuss and enforce green replacement as a key tool to stop vegetation from being lost as cities grow — Singapore authorities have again taken the lead in requiring at least 100 per cent green replacement rate. The potential of these new green areas to then start functioning as a habitat led us to an ecosystem school of thinking; plants perform many kinds of ecosystem services in terms of oxygen and carbon dioxide exchange, water storage and so on, but these green areas can do much more in terms of supporting animal and insect life, and preserving the biosphere.

NH *How do ecosystem services and related ecological-economic evaluation criteria inform your architectural designs?*

RH We are in the Anthropocene era, and in a funny way it is easier for cities to achieve protected ecosystems. Outside the cities, there isn't the sort of stakeholders and caretakers who might invest into or protect ecosystem services. But in the city, there are literally millions of stakeholders who are potential champions and protectors of nature, particularly if it is right in front of them. In Singapore, otters and people co-exist and many people love the otters and Instagram them, so they have a huge digital impact on the citizens. We all know what is up with the otters as we can follow them easily on social media. We think the idea of having designed ecosystems in the city is really interesting. Many traditional hunter gatherer tribes had protected sacred areas where hunting was taboo and these acted as a haven for wildlife and ensured their conservation, even in tough times of famine or drought. We need these kinds of protected havens more now than ever, and cities may have a big role. Cities are protected from wildfires, and from drought, in that there is a lot of wastewater from human activities. These qualities could be very important in future.

NH *And how do you integrate these into an urban project?*

RH Once you have all this greenery, you start to work in systems rather than as isolated pockets. How can you connect them? In the future maybe the city will start generating its own rain if we can induce a cycle of transpiration microclimate and hydrology into the design of the city. So this sort of performative ecosystem measure could be really interesting. We decided to put a score in there as well. The full score of this performative ecosystem measure means that you have a new ecosystem that can be as complex as the site would have had before the city was built. I do not like a scoring system where you can easily achieve 100 per cent. Instead we felt it was important to have measures where 100 per cent was not a relative, but an absolute score: if you achieve 100 per cent we would be in a kind of unspoiled paradise! So we graded it from simple green to green that can support animals, flying animals, crawling animals and then just sort of add diversity until it reaches something that would be fantastic—the equivalent of an untouched wilderness in diversity and productivity—coexisting with the city.

AVR *A city is made of people as well as architecture. How would you include social aspects as important values in dense places like Singapore?*

RH Our next measure is Civic Generosity Index (CGI). We start off by asking ‘if you were to characterise a building like a person, what would its character be?’ Would it be someone that was a fine, upstanding citizen? Or would it be like a psychopath, just grabbing things? A few years ago, a study analysed corporations as if they were people and found that most corporations behaved like psychopaths. And we thought—actually most buildings behave like that too. We believe that having a CGI score would help encourage the development of buildings that behave like good citizens. If we are aiming for the city as a sustainable system, buildings need to start acting like civil-minded people—the kind who separate their waste, don’t disturb their neighbours, offer someone a drink of water or a place to sit—and in return this would make the city—the community of buildings—a more generous and civil place to live in.

AVR *Civic generosity could also translate into benefits for the community. How can you include this to make Singapore’s public spaces more attractive to the community?*

RH There is the Community Plot Ratio (CPR). This is in response to developers who are always trying to eliminate as much as possible the common space; this is a ratio in contrast to pure productive space. Urban planners have accepted developer efficiency of net-to-gross efficiency as a good thing; it sounds good but it is really bad for the community, and it makes density bad. Once the community plot ratio is tracked, planners can use the Community Plot Ratio data to tune up exactly how much community space is necessary for a high amenity and convivial environment. It is surprising how little is known about this, so even measuring it would be a huge advance. Once you can say—this area feels good, it has a ratio of X, so we should aim for that in this new masterplan and it would be very high amenity, I think you would have great community buy-in. Within our project SkyVille@Dawson we had over 100 per cent of community plot ratio. When you are there, it feels like a place that is very civic and community-based.

NH *The ideas of civic generosity and community plot ratio put a strong focus on ‘public space’. How do you enhance the existing cultural spaces in Singapore?*

RH Our last measure is the Self Sufficiency Index (SSI). Singapore particularly makes you think about this aspect, because the city has no hinterland. Singapore is very fragile; it has to import almost all of its food, energy and some of its water. An ideal situation for Singapore—to achieve complete security—would be to shrink its food, energy and water footprint to the size of the island. If you want the city to do that, you need to track how each component—each building performs in terms of self-sufficiency. You could then compensate for the missing parts through infrastructure, common areas and public spaces. It’s not enough to aim for LEED Platinum rating if your design is nowhere near self-sufficient and still relies on having a big footprint somewhere else. LEED is relative—buildings that are doing better than other buildings—but our measure is absolute and gives an indication of how far we are from achieving the ultimate aim of self sufficiency.

AVR *Can you be sure that your architecture lives up to these high aims and expectations?*

RH Many of our own project scores are terrible from a self-sufficiency point of view. Yet, we were sick of our buildings being solely judged by their elegant



sculptural form when that is really not what they were about. We wanted to create a beautiful environment yet address environmental issues at the same time. In our practice, we challenge ourselves based on our way of understanding buildings and we challenge other architects as well by asking ‘How well does your building perform against these critical measures?’

NH *So you came up with the CPR, CGI and SSI criteria to assess and validate your design practice in the Singapore context?*

RH Yes. We realised that buildings in themselves cannot achieve all of these aims and what is difficult is that it is necessary to rethink and redesign the city as well—a very complex process. Urban design necessarily involves the political process as the government needs to balance the cost and benefit of adopting additional socio-ecological measures. These tools, however, are quite simple and easy to implement and administer, yet they lock in very important objectives and values, which makes them quite powerful.

NH *Do you aim to redesign the city of the future by introducing a way to assess or value parameters such as self-sufficiency or civic generosity?*

RH Yes. Some of our measures could be market driven, others might have to adhere to governmental requirements, but if the assessments are done and the results are to be made public, it would be very interesting to see how they could affect the development of the city. Would cities that score higher be better places to live? I suspect so. Since cities have become very competitive and if Singapore were to adopt, for instance, the community plot ratio, I suspect many other cities would quickly follow suit. If we value quality of life, we need to measure the factors that contribute to this.

NH *Very inspiring. Thank you so much for this interview!*