

Interview: BUILD Magazine

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A major characteristic of your working philosophy is the integration of other disciplines and sciences into the architectural work, introducing the latter into a far bigger framework. Could you elaborate on that a bit more? What are the main fields of interest outside the “traditional” architectural world from which you draw further knowledge, what are the aims?

I am actually torn on this subject because although I do believe that disciplinary crossovers are critical to architecture’s evolution, as I get older I am more and more convinced that architecture is a distinct form of knowledge. But I wouldn’t go so far, as some people do, to say that it is autonomous. I just believe in expertise, and that architecture gets weakened when it becomes a medium for reflecting the agendas of other disciplines. That’s why, when I talk about biology, I always make a point to use disciplinary terms and make disciplinary inventions. Otherwise it’s easy to fall into the trap of dealing with both biology and architecture as a dilettante. To some extent this was the problem with Deconstructivism, where architecture became a visual aid for linguistic philosophy, and frankly neither was being dealt with at a very high level.

That said, I am always browsing. I look at biology, of course, but also aerospace construction, medieval armor design, bio-mechanical technology, and so on. I like to draw in as much as possible for two reasons, one, because it helps you transgress ways of thinking about a thing, and two, because it helps the work resonate on a broader cultural level. I think architecture is sometimes too obtuse for the general public, so I always make a point of framing it in terms of paradigm shifts in other fields which they may be more familiar with.

One specific field you are dealing with and are referring to are phenomena that can be found in biological systems. What is the specific interest? In how far does this procedure and process ask for a whole new formal vocabulary in architecture?

Well first of all I think it’s important to mention biomorphism and biomimicry as two threads of discourse, both of which can be problematic if swallowed whole. Biomorphism can be degenerate when biological motifs are applied directly to buildings without transformation or engagement with non-visual issues. Biomimicry, on the other hand, suffers from an alignment with engineering and problem-solving, as in sustainability, and so it is often anti-productive for design. I think both of these strains of bio-architecture-- one which capitalizes on visual features, and the other which capitalizes on behaviors-- are somehow lacking on their own.

If you look at the way features and behaviors are intertwined in nature, things are really quite messy. Nature is filled with redundancies and mutations, some of which have purpose by chance, or gain purpose over time through refinement, others of which are simply excess. I

believe that in order to do anything productive inside architecture with biology, it's important to get beyond the dogmas towards what is really going on. One example of a dogma is the belief that nature always produces 'best of all possible' solutions through optimization-- this is nonsense! In fact organisms and ecologies are only 'good enough', meaning that although they do work, it is in a decidedly non-optimal way. The 'good enough' allows for things to exist which have no alibi in terms of efficiency, and is the key to the production of seductive beauty and diversity in nature. A great example of this is the hammerhead shark. The hammer mutation is not an adaptive solution: it actually impedes hunting and navigation despite popular myth that it operates like a submarine dive-plane. Humans love to attribute purpose to everything- it is a value system trickling down from our own instinctual fight for survival.

So what does the 'good enough' mean for architecture?

For one thing, this principle allows us to rethink the relationship between systems, associated with engineering, and ornament, associated with the arts. If behaviors and features are woven together in a more complex way, then categories can cross-over and produce new spatial effects. Instead of thinking in terms of layers of structure, services, and envelope, you can begin to imagine crossovers like structural color, radiant ornament, or luminescent vascular skin for example. Everything becomes composite and messy.

The name of your office Emergent is referring to the notion of "emergence". In how far does this notion gain meaning for your architectural and design work, especially for the development of (new) spatial qualities?

Emergence as a term within architecture has been around for 15 years, since Jeff Kipnis threw it on the table. The school of fish analogy was very enticing, and I became interested in the mechanics behind part-to-whole relationships, at least for a while. Today there are still people still working on this subject, intent on somehow cracking the code of emergence through advanced computation. It has reached a kind of fervor, where technique is promoted over outcomes and effect, which I consider to be much more important. It has become a kind of Holy Grail search, where computers will someday become powerful enough to create buildings in a magical poof of smoke. For architecture, this has meant a kind of suspension of the complexities of design practice and of the ability to frame the work in terms of contemporary culture.

I personally have veered away from this path in my work because I think that you lose too much information when everything in an architectural problem has to be processed through an algorithm. Inputs are forced to become quantitative or otherwise abstract in order to be able to be computed, so it is not surprising that outputs are also anemic. I think it is much more productive to re-consider emergence in disciplinary terms, such as through re-combinations of architectural technology and aesthetics, where the whole might exceed the sum of the parts, but it doesn't have to look like a school of fish... That analogy actually needs to be killed at this point.

Maybe a good replacement-- if we are going to stay underwater-- would be the blood-comb jellyfish. The blood-comb is a creature that co-evolved out of two distinct species with distinct DNA: a transparent jellyfish, and a colony of bioluminescent bacteria. Attached to the

vibrating combs of the jellyfish, the bacteria produce a kaleidoscopic color and light effect, which disguises the jelly from its deep-water predators. This is an irreducible emergent effect which is produced through the interweaving of discrete systems... sounds like architecture to me.

In a sense, being based on the principles mentioned before, your work seems to oscillate between the exploration of evolutionary mechanisms and a decidedly anti-deterministic approach, which – leaving the traditional notions of symbolism, readability and maybe also functionalism behind – might lead to a new freedom in the development of architectural systems. How are you dealing with complexity and with the transformation of complexity into form?

Yes that's a good reading of my work. To put it another way, I am consciously straddling science and culture. It's actually become kind of a liability for me in academic circles which I find funny. There are such hardened camps now: you are either a bottom-up researcher or a top-down designer; you either experiment with means, or you design towards ends. A crossover term I like is 'messy computation'-- it is open-ended enough to allow you to be a designer but also capitalizes on the advantages of recursion and agency. Nothing is taboo that way. You pick and choose the right tool for the job, and more importantly, create custom workflows which jump around between techniques. It's a patchwork of scripting, modeling, painting, and engineering, which I find very convenient, and happily, free of ideology.

How would you judge the relation between theory and practical work? How can the newly gained knowledge be transferred into specific, physical buildings, especially with a view to "a more integrated future" as mentioned in your working philosophy?

I'm not really sure what theory is anymore, or that it's still useful to say there is a gap between theory and practice. There was definitely theory in the 80's and 90's, but now, theoretical discourse seems to be pretty thin. What I do see is a mismatch between extremely intricate formal sensibilities and a socio-economic environment that won't support them. It's forcing a lot of great architects to work at the scale of product design and interiors, if they are so lucky. But there are a lot of people working on solutions for this dilemma, especially on applications of superplastic materials such as fiber-composites, glass-reinforced concrete, polycarbonates, and impregnated membranes. And I do believe that architectural sensibilities always precede the ability to realize them, so it's just a matter of time before things align.

One thing I am personally invested in is a radical redefinition of the way we build. Current contractual structures are based on the micro-specialization of craft and the atomization of liability. True integration of any kind is going to require buildings that are 'chunked' rather than layered. By this I mean that you might begin to assemble buildings out of large components which have skin, structure, mechanical systems, and lighting already embedded in them. As long as we keep building out of stick and sheet material, using a hundred different sub-contractors, architecture will never be able to reach a higher order of organizational complexity.

In how far does your work reflect on a vision of urbanity? How do you introduce the notion of the “social”, maybe even political in your research and design? Would you expect – or ask for – a re-definition of the architect’s self-perception and tasks or even visions in the near future?

I love cities, but I have to say, I’m skeptical of „urban design“. I see so many mistakes being made, especially when capital is privileged over spatial concerns, but also when designers approach the problem as if it were just a really big building. In China, we see the worst of American city planning beginning to appear-- wide streets, huge building setbacks, mono-functional districting-- and it drives me insane. And it will be hard for them to reverse once they’ve begun down that path. To bring this back around to emergence, I think the best cities are medieval cities. I don’t mean this in a sentimental way. Medieval cities grew through messy organic accretion, they were bounded rather than sprawling, they were relatively free of organizational ideologies, and they allowed for the local inventiveness of builders. Their bottom-up evolution resulted in all kinds of wonderful excesses and wild spatial conditions which, for example, I notice every time I go to Venice.

One thing we shouldn’t forget is that zoning and building codes-- which are responsible for a lot of the spatial and cultural atrophy in American cities-- are only about a century old. Still, we can only change them if we de-link them from a one-to-one relationship with capital and consumer protection. If we can do that, even in small ways, we may be able to re-make our cities into three-dimensional spaces of intensity and delight.