

**Introduction to “Unfoldings: The Building Blocks of Living Neighbourhoods” with Christopher Alexander, President, Centre for Environmental Structure
Given by Michael Mehaffy, Research Associate and Co-Founder, Centre for Environmental Structure - Europe**

Some of us have been thinking for a very long time that New Urbanism could benefit from more exposure to Chris Alexander’s work on the process of creating form; and at the same time, we have thought that Chris, and those of us who are his collaborators, might also benefit from some of the advancements in “plugging in,” as Andres likes to say, into the “power grid” of conventional development, where, I think we can acknowledge, new urbanism has been more successful. I for one do think we all have a common political challenge, and fundamentally, a common cultural challenge, in the way we make things, and value things, in this civilization; and in the way we perceive the relationship between making and valuing. And so it seems to me that a collaborative approach to understanding how we tackle the particular challenge of making of our built environment, what we call “development”, is what this Congress is all about, and what this session is all about. So I think we need to get clear about some basic concepts.

And development, after all, is just another word for growth. So I think we have to ask, what is the nature of this growth? What is the nature of the growth that we want – that we love, that we find beautiful, that is enduring and in some sense “sustainable”? It seems evident enough that we have lots of growth that we don’t want. Lots of malignant growth, lots of destructive growth. Almost nobody seems to disagree with that, in spite of other huge disagreements that seem to be raging in our business. But how do we get a much better kind of growth -- the kind that repairs and heals and improves, that makes places better, instead of worse? How do we re-direct the creation of form, how do we feed it, what are the resources we use to do that, economically, and culturally? What are the “rules of the game,” so to speak, and how do we change those rules to create a more intelligent kind of growth, a more durable and more sustainable, and ultimately more human, kind of growth? And I think we are going to have to find more effective answers to these kinds of questions.

Our featured speaker has spent his career thinking about these questions, and coming up with some clearly remarkable answers – both in his writings, and in his buildings – and crucially, in the iteration between the two, which has been there from the beginning, in spite of his theoretical reputation.

In particular, he has always been occupied with the basic phenomenon of morphogenesis, the core act of creating form – and the question of how parts “go together” to make wholes, about which even at this late date we still apparently have some important things to learn.

And I think we are privileged to see another element of that very long career, that effort to solve a tough problem, emerging before us now; but more than that, he wants our help, our collaboration, to figure this thing out. So if you thought you were coming as observers, be warned that we’ve locked the doors: you’re now all active collaborators. So let me try to set the stage for this discussion.

Flash back to some 45 years ago, and the first great insight, contained in his PhD Thesis, Notes on the Synthesis of Form, which was very influential in the fields of information theory and computer-aided design, and architecture too of course. It noted that things go together, roughly speaking, in hierarchies – like the fingers on a hand, or the limbs of the body. But the “roughly speaking” is key. Because the hierarchies tend to overlap, and interesting and important things happen in those overlaps, and those roughnesses.

But the problem is, as his classic paper A City is Not A Tree showed, humans tend to think in hierarchies, and tend to design in hierarchies. And this can be disastrous for a natural structure like a city. So how do we overcome this problem? How do we develop tools to manage these overlapping, interactive, web-like structures? That was the basis of the next piece of work - the Pattern Language.

And this marvellous work has been astonishingly influential, is now perhaps the best-selling architectural treatise of all time, and spawned a new class of software, leading to innovations like The Sims and Wikipedia and many other things. And it was, of course, a major influence on The New Urbanism, and is used by many of us today.

It was, in effect, a method by which designers could overcome the limitations of hierarchical thinking, by inter-relating elements of the

human environment into an adaptive network. But instead of starting from scratch, these elements were themselves pre-existing clusters of elements in their own right – fragments, if you like, that could be re-combined in endless ways, much like pre-existing words, themselves assembled of letters, could be combined into endless linguistic structures. And he noted that traditional cultures have been doing something much like this already for millennia, and that this traditional practice is actually a very sophisticated and powerful kind of language for creating the built environment. More than that, it is an expression of the actual structure of things, the way things go together in space. In that sense, such a language is useful because it is open-ended, in just the way that life is open-ended.

But that wasn't enough; merely having the letters and the words was hardly enough to show you how to make beautiful structures. Somehow, you had to deal with the problem of process. What is the process by which this language is actually used effectively to create form? What are the steps one must go through?

And his search for the answer to that question took him on a 30-year odyssey into fundamental scientific and metaphysical questions about the nature of order itself.

And some of us believe the result of that work will be equally as important as the pattern language. Because whereas the pattern language is about the structure of things, and a kind of library of recombinable fragments of that structure, this new work is about the process of creating that structure. The library this time is of recombinable fragments of steps that tell you how to get from one stage of form to the next.

Alexander began with this question: how does nature create the astonishing richness of living forms we see all around us? What process does it use, and how can we learn from it? And he draws on insights from many fields, including embryology, physics and others. And he comes to one central conclusion: nature does not use a “plan” in the usual sense, but rather, it acts to transform an existing whole into a new whole. In doing so, it preserves the structure of the earlier whole, but it often amplifies and deepens it in some important way. We can see that process very clearly in the biological patterns of evolution – but we can also see it in our own built history – in the structure-preserving transformations of the Piazza San Marco in Venice

over 1,000 years, for example, where at every step, the whole was maintained. At no point was the piazza entirely bulldozed and rebuilt according to some architect's bold new vision. It was rather a continuous evolution, with human plans as disciplined parts of this kind of "dance of the centuries."

But the steps of this "dance" can appear deceptively simple and humble – much as the letters of Shakespeare might seem deceptively simple, and you might wonder how you could create something so rich from such modest parts. So, too, in the process of creating form, as we see all over in nature, the steps can seem exceedingly simple and modest. But the key is in how they combine, how they multiply in repetition -- much like the way two colors of putty will mix surprisingly quickly after just a few repeated folds, or the way a marvellous animal shape can result from just a few relatively simple steps of folding paper in Origami.

And it turns out that this is very much how forms develop in embryology, through this kind of "unfolding" process. This is a key to understanding what biologists call "adaptive morphogenesis," the creation of richly articulated, differentiated, living structure.

This was a major revelation for Alexander. It was not lost on him that humans do things this way too, and have done it for millennia. We just aren't conscious of it today, and we haven't incorporated it into our design methodologies. Instead we've adopted a more primitive methodology, based on templates and "blueprints" – little fully-developed models of reality, which tend to impose rigid artificial aspects on that reality, instead of adapting to it to the very fine degree that nature requires.

And he saw that even the pattern language was guilty of this defect. If people used the language to come up with a design, planned in advance, without a careful generative process for adapting the form, then the form simply wouldn't have that living quality that was needed, and that was achieved by previous generations across so many cultures. The reform of our unsustainable modern processes of morphogenesis was still incomplete.

And by the way, the same critique applies to the work of New Urbanism, and he has made that critique and I'm sure will continue to make it – just as he has made it of his own earlier work. That is, like

the Pattern Language, New Urbanism does a much better job of tapping into the traditional patterns that successfully adapted to human need in the past, and that are fairly universal. So that's very important. But the last critical link of adaptation is missing – it's still an imported template, though a more sophisticated one. It is rightly vulnerable to being criticized as a “simulacrum” – something that is not truly and fully adapted to its true context. And that has the effect of being disquieting, and troublesome to even ordinary non-architects. And of course some architects make a lot of hay with this, and claim that New Urbanism is not “of its time” and so on. That of course obscures the horror of what they themselves would do instead; but it is a real issue, and one that I suggest we must take very seriously, as we go forward, and seek to make our work better.

So here we are, with the opportunity to collaborate on this work, and to implement it. We want to talk about creating a workable new technology that puts into effect these insights about adaptive morphogenesis, and about this very promising and exciting new entity called an “unfolding”. How are we to take this forward into current technology? How can we create a new kind of code based upon this insight – a new kind of “generative” code? Logically speaking, the ought to be possible. But what that will actually require is a massive ongoing undertaking, quite possibly requiring the assistance of everyone in this room, and many more.

I hope you got a copy of the handout, which will explain more about this notion of an “unfolding”. And I know that Chris will talk about it in more detail. But let me end by quoting from the last section:

An unfolding is by its nature personal, and requires human input and human feeling from the people doing the work, as an essential part of its contribution to the formation of the environment. ...I believe these unfoldings, for this reason, come finally, very much closer to the framework of engagement with people which first set me on this architectural path, almost fifty years ago. I believe that at last, I may have found a way -- the simplest of all -- of engaging people's feelings - - all people's feelings -- in the process of building, in such a way as to undo the results of mechanical, and mechanical-mental oppression -- which we have all suffered, through nobody's fault, during this last age of the two hundred years from 1800 to 2000.

So this is a very exciting prospect, that we are witnessing the culmination of a lifetime's work, and work that goes to some of the core challenges of our own time. Because after all, it's time for all of us to stop re-arranging deckchairs on the Titanic, and ask some fundamental questions about the direction we're headed. We're all full stakeholders in this project, and so I hope you'll see yourselves as real collaborators in this work and its implementation.

For me this highlights another historic dimension of Chris' work – maybe the most revolutionary aspect of all - which is to demonstrate that value is not some “mere” psychological construct, but is a reality that is immanent in the structure of things. Value is just as real as is structure, and indeed there is no real structure without value, without matter being “something that matters”, as Whitehead put it. This is not just an epistemological observation about the limits of what we know; it is an ontological observation, about the nature of reality itself. And he has not merely asserted this connection, as so many philosophers have before him, going back to Bergson, Whitehead and many others. He has demonstrated it through his work. And this has created a basis for whole new classes of design in many other fields. It has, really, begun to redefine what it is to “design”.

But aside from these obvious influence in so many fields, I think it is the immediate intuitive recognition of this quality that gives his work -- his writing, and his built work -- its power, and its moving effect upon so many people.

So please join me in welcoming Chris Alexander.