Diagramming

LARS SPUYBROEK interviewed by CHO IM SIK

~ *Cho Im Sik: In the last 10 or 15 years, there has been an important shift away from all kinds of preliminary techniques like sketching and modelling towards diagramming-developing non-visual drawing techniques that are based not on optical abstractions of later-to-be-realised forms but on informational visualisation techniques that place themselves at the interior of a process instead of the exterior of a sensed form. Can you explain a bit more about the technique itself?*

> **Spuybroek:** Diagramming is indeed the most important innovation in architecture of the last 10 to 15 years. And it is not clear yet what it means, not at all. I think, on a techno-cultural level, diagramming means a move towards metadesign. Metadesign already happens a lot in graphic design and industrial design, and it basically means designing with 'templates': others can use the template to design an actual product. Designing the way of designing itself. There is a metadesign for a Nike shoe, for a Swatch watch, for a Renault Megane etc. It is a network of relations that make the thing the thing without actually designing it. It is an informational system. It is a networked system of decisions. Basically it means a whole opening up of designing One Thing to a whole family or Range of Things. Later, in the close future, we can design our own shoes, our clothes, our cars, our own chairs (like we now can design our own web sites) and the question of "How?" is answered by diagramming and metadesign. You would buy the template of a certain design family, a style, of let's say BMW, and then design your 'own' thing – don't forget this design family can be as complex as is suggested by branding and lifestyling, you could have a BMW template for a chair or a watch or a car etc.

Probably most of these interactions will happen on the Internet. You would make your own variations, and of course these variations would happen within this digitised continuum, meaning that the information of your own design would immediately be transmittable to a production machine that assembles all the parts, and sends it over to your house…

In my diagramming techniques I use flexible interactive systems, I have different names for them, none of which has really satisfied me: flexigrams, haptograms, kinetograms, even awarograms, but I also like Brian Massumi's "biogram". 'Flexible' because they are not rigid, they don't know just one solution, 'interactive' because all are connected into one system: one parameter changes everything. I'm trying to move architecture in the direction of systems theory. The old sketch method would go like this: first you look at the parts (rooms, stairs, entrance etc. etc.) then you try to take a look at the whole; this is most often done by very old tools like the grid, the box, or the axis. Then the designwork is the difficult 'shaking up' of these two viewpoints (concentrating on a part/trying to see the overview): bringing them as close as possible, trying to close the gap between the whole and its parts – a very old philosophical problem... That is how we learned it at school.

What I do is building a machine, almost always in the computer, what one should call a 'virtual whole', a matrix, a geometric system where all relations are set but not fixed, and then all the information is processed over time. Sometimes in an animation, sometimes in a machine-like procedure of interlocking steps, like a series of algorithms. The whole is like a matrix: it's a system of relations and if one changes one thing, the rest changes too. In the sketching technique one would be working at one part, and the rest doesn't change with it. If I start sketching a certain room, or the staircase, the rest doesn't change with it, right? In my machines it does, all drawing pencils are interactively bound together. First in an abstract system of lines, then later during the process it becomes more and more clear what these lines can be.

~ *How then do your diagrams (so-called "strings and springs" model) respond to these 'undetermined' movements of a body in architecture, the movements that weren't in the program?*

> **Spuybroek:** Basically what I do with the diagrams is relate flexibility to movement. Flexibility is translated into movement and movement into flexibility. Philosophically that is very tricky: qualitative changes of kind become related to quantitative changes of degree. So, the presupposed movement of people, their potential movement is abstracted into the language of architecture, and that abstract movement loops back and relates again to people's movement. Of course I use the lines (the "strings") to read the program, the crystals of behaviour, but I also use them to read through the program, to make new connections where possible. So, what I do is read the tendency of human bodies to change their mind, to be aware of more then just their momentary intentions; I read their tendency to be flexible directly into architecture. Let's give an example.

I used a "strings and springs" model for the V2_Lab here in Rotterdam. It is a simple model of five parallel lines. These lines are a reading of the existing building and also of the main orientation of the program. Now, all the movements in the building are 'put in' that machine: around the table, around the doors, coming in, leaving etc. All these movements act upon the lines as forces, and because the lines have material properties in the computer (like rubber), they start twisting, vibrating, and all movements interact with each other. In a longitudinally oriented system (five lines) we get lateral bending, sideways orientations (waveform curvature of the five lines). Then the lines are 'read through' the program as

given by the client: table, corridor, wall, room etc. So, all the lines give a bit of profile to each of these elements. And because they were connected in the 'rubber' model they also end up connected in the end product made of wood: the table merges with the corridor, one edge gives a clear 'table' definition, the other edge a clear 'corridor' definition, but in between we get a form that is neither or both… It is a movement that is now abstract, an architectural movement, a qualitative change, a morphing of table into corridor, and vice versa. You see? The implied movement of people, the working, the walking, is mapped on to the architectural elements themselves, through a flexible set of lines where it creates a language of movement first, a flexibility of use and form between given architectural element (table, corridor) that is then actualised by different possible movements of people. In the real it means people walk up the table, or they drink their tea there; it's informal behaviour, connected to formal behaviour, more loose, more free. It's an architecture that not only articulates planned and foreseen behaviour (working at table, walking through corridor), it also stimulates unforeseen behaviour. Unforeseen in the sense that it is still related to 'work', it isn't "accidental behaviour", like murder, as Tschumi's famous example goes…

~ *How does using diagrams at the start of the process differ in the result, compared with the conventional means of process?*

> **Spuybroek:** Normally we architects put the lines where the walls are, no? When we sketch, we sketch the positioning of material elements, not where the movement is, because we presuppose the movement between the walls, not in them. Trying to be a bit more clear, I'd say that I'm not using the movement of people to design my walls, that would be the old 'streamlining' technique of the 1930s… I'm not 'rounding off', no; I'm looking for the structural capacities of movement, the ordering capacities. Now, in my technique that means the movement doesn't go into the continuous black lines of the walls, but into the dotted lines of the ordering system, the black lines are – later in the process – derived from these. Movement is related to order first, and then to structure.

I think the diagram is the best way of instrumentalising 'inspiration', while it is completely opposed to inspiration. Inspiration is vague, subjective; it often happens through visual methods, like clippings from magazines, recollection of a memory, seeing a vision etc. I think it is completely 'legitimate' to use that visual information. I'm not trying to have everybody use only rational and transparent tools. What I'm against is being un-precise with that information. One should have a conceptualised approach for the whole of the process, not do something subjective here, and something objective there. A systems approach is much more coherent, it recognises the design process as a series of actions upon visual means.

When does something become architecture? When does architecture enter the design process? That is the most important question in any design process. Can you start with an image, the image of a face, of a crowd, or a dog, or a group of trees in the mist, and end up with a building? Of course you can (although I wouldn't recommend such an impressionist method), but only by contraction, by contracting information out of it that has the potential of becoming something else, not the picture of something, but the internal, organisational

structure of something else. Finding this vector, constructing this vector-towards-something-else, can only be done by diagramming, by seeing structure and architecture beyond image and before one 'sees' actual buildings. It is a professional way of dealing with this moment of 'blindness': being in-between one's contraction of the world, and one's expression of something new. Basically you go from image (memory) to image (new building) through abstraction, and this abstraction should never be completely lost. Now, there are very simple forms of diagramming, like using visual imagery, towards more complex ones like gathering data and graphing techniques, towards very complex algorithmic techniques. In the end, what counts is "what can the diagram do for you?".

~ *What can the diagram do for you?*

> **Spuybroek:** Mostly diagrams are 'read'. That means mostly, often, their abstract capacities are left in the building as traces in language. This seems logical, as the abstract capacities of architecture are typical food for the mind. Walking through a Palladio villa doesn't make any sense if you don't know music and early harmonic systems. The two most important diagrammatic architects today, Rem Koolhaas and Peter Eisenman, still see the diagrammatic capacity of architecture too much as something of language. The architecture of architecture – as I tried to explain in the notion of metadesign – is in their case still a property of language. A concept to them is a sentence, an explanation. Cultural criticism in the case of Koolhaas, criticality in the case of Eisenman. My diagrams are more 'sensed', they are more 'felt' than 'read', they are felt in the day-to-day decisions and hesitations we experience. Basically my architecture deals with consciousness and awareness, of how the experience of being there, in this uninterrupted stream of presence is constructed. I'm extremely interested in this continuous 'thickening' of the now, of the present. With Rem Koolhaas and Peter Eisenman the real has already happened, the architecture understands it, deals with it, through language, and serves this view to the inhabitant, user, whatever its name is; it is always consumed afterwards. He or she just re-experiences the real as it was already foreseen in the diagram. However, I think the diagram is something that should exactly be placed between the world-as-imagined and the world-as-experienced and therefore stop before it becomes language. I know this makes my work also very vulnerable, because it can only be sensed, but hardly discussed.

~ *It is understood that the computer is used in your conceptual process, leading a complete shift from Euclidean geometry to topology, from tectonics to textile, from object to process, from crystalline space to the undulating field or medium. You have mentioned, even, the necessity of computer-aided conceptualisation and computer-aided manufacturing. What do you think is the future potential of this too?*

> **Spuybroek:** It is the future per se; there is no other future. But architects have to learn to deal with it conceptually. They always thought it was 'just a tool', a means to something else: architecture. This is a complete misunderstanding of a) what computing is, and b) what technology is. There are no innocent tools; there is no tool that is separated from its

purpose. Tools make us think differently, and, even more important, feel and wish for differently. Machines are social fields; technologies are countries we live in. You cannot 'do' computer and not 'think' computer. Every master/slave relationship is always reversible. Let's not forget that a lot of the design tools we use in architecture without the computer, like copying, rotating, aligning etc. are basically early, primitive computer tools. Bernard Cache said: "the compass and the ruler are very simple computers", which means we have always used computers. Computers, we should always realise that, are steering devices, they are vehicles in a sense. They can only enter the world as a world of processes, of interactions, where dynamics and structuring are not understood as opposites. In a time and world where we can truly think complexity, we shouldn't deny ourselves an architecture of the complex. We don't have to constantly run back into the arms of Mamma Reduction anymore, because we cannot cope with the troubles of life. Minimalism is fatal. Since the fifties we have had new views in mathematics, physics and biology, in cybernetics and information theory, all based on calculation. Turing machines, genetic algorithms, chaos, fractalisation, fuzzy logic etc. etc. – Where is architecture in all this? To me – to sum it all up – it is absolutely irresponsible to keep on throwing cubes into the world (a geometrical language of 3,000 years ago!) in a time where we have mathematics and physics dealing with processes, time and complexity.

~ *Realising or materialising the image of freedom can't be an image on the wall or a hole in the floor. Then how can we be connected to the unseen? How can the unforeseen happen?*

> **Spuybroek:** You maybe know there is this beautiful concept of potentiality, which is the old word for virtuality, which states that nothing can happen if there isn't first the potential for it to happen. It's a concept from Aristotle, differentiating between mathematical possibilities ("mere possibilities") and real or physical possibilities. Somehow we have to connect – as architects – the abstraction of space, this memorising of events that have already happened, to the reality of time, to the continuous flow of events. Strangely enough this continuity is given (there are no 'bad times' for events), but not the actual content of the events. We know things will happen, even at a certain pace, but not always what. So space has to become a tool in this whole production of the 'what'. I'm very interested in how architecture can help in increasing this dimension of tension and potentiality. You know, that is my whole problem of seeing consciousness as intentionality; it thinks that consciousness is something like seeing, that locking on to an object in space with your eyes is the same as thinking, as being mentally engaged with the now and the near future, of being alive, of being open to what happens or could happen. Being conscious, being aware, being fully engaged in the now, doesn't mean you lock on to the future as an object. Architecture can only help this openness of mind with an architecture of connectivity, of topology, of the continuous. For too long architecture was a tool to control life by seeing events as the repetition of older events, and every new event was an 'accident', something acting against the 'substance' of architecture. The new doesn't come from the future, it comes from the past, that is what potentiality is, it is a mating of old existing events patterning into tendencies, an unfolding of events.

~ *Because an important aspect of architecture is its materiality, and most matter usually resists rapid transformation, how does liquid architecture go beyond the "moment of freeze"?*

> **Spuybroek:** What is of course very important in my work is the difference between architecture and building, between the organisation of something and its material structure. I've tried to allude to that with my reference to the "continuous black lines" and the "dotted lines". That I'm interested in movement doesn't mean I'd like buildings to move around... That means there are architectures that go far beyond buildings; the architecture of a text, of a political plan, but also the architecture of a book. And of course diagrams do exactly that, they make all these architectures communicate, and with computers that can even be done much better. Because I'm interested in movement and change I'm interested in systems that are created and structured by change, for instance, liquid fluid systems. Now, 'liquid architecture' is a paradox, because the architecture can be liquid but the building is solid, or as I said before: The building should be static, but the architecture should never be at rest. But it doesn't mean that one can use every movement (of water, or whatever), freeze it in an instant like a photograph, and then build it – that would be the craziest distinction between concept and structure, no? That's why I'm moving more and more in the direction of 'material diagramming'. Movement has to become structural; movement has to be structurally absorbed into a system. In all these diagramming techniques that I use, you see that the more flexibility is leaving the system the more structure is gained. That is why I'm resisting both the concept of 'datascape' and pure 'animate form', though both Winy Maas and Greg Lynn are good friends. With the first, information enters a preset form (often a cube); with the second all information is directly materialised as a form. I work much more with interaction between information and form. Basically I'm only interested in the structuring, the patterning effect in-between the two. That's why I tend towards iterative processes, stepwise methodologies, because every time the form is changed it absorbs the information differently. It's a slow process of hardening, from architecture to building... In the end all the movement that was in the first diagram is separated in abstract movement in the architecture and real movement of bodies and minds.