

Gatemaker

or "The Aspen
Summit"
1997

Greg Bryant

In March of 1997, I attended a small meeting in Aspen with world-changing ambitions.

Leading up to this meeting, Christopher Alexander & I worked for three intense months in Chichester, an ancient town in the south of England. We aimed to create a very different breed of CAD tool: one that helps people design *with feeling*.



Arguably, the resulting computer tool has more *feeling* than any other program, ever written. I say it without much qualification, only because we *intentionally pursued* that property. *Feeling*. In a *program*. I'm not aware of anyone else even *trying* to do this. I've been in the computer industry for decades, and I can't imagine anyone single-mindedly trying to make an application more *alive*, in order to make the user more *alive*, and more *whole*. Such language doesn't sit easily in either a standard technical specification or a flashy multimedia pitch. We just don't talk that way, or venture into that territory, in computer-land.

For this project, I was the programmer, computing theorist, and representative of, and interface to, the computer world. Because Christopher Alexander was just doing his regular work, focussing people's energy on building *in harmony with* the structure of living things. His mission has little to do with the goals of programmers, but it has indirectly effected them profoundly since the 1960's. He tries to explain his approach in his new books, his *magnum opus*, his soon-to-be-published-for-decades and *finally* here, *The Nature of Order*. Everyone has to read it. It will change the world. Eventually.

Our product was a *delicate* computer application, but it fulfilled its mission -- a computer tool *with* life, leading people to *create* things with life.

We had three months to accomplish this. We just made our deadline, and flew to Aspen to present the results to our sponsor, Bill Joy. Bill lives and works in Aspen, far from the madness and bureaucracy of the multi-billion dollar Silicon Valley company he co-founded, *Sun Microsystems*. When his very nice friend, rock musician Peter Gabriel, joined us, it became a kind of a *salon*. So we all hung out, and chatted about the nature of the universe, for about a week.

Chris & I met with our business manager on the way to Aspen, an understandably nervous John Seamster, who was moonlighting from his job as a senior exec at Borland. The three of us were the core of CES Computing, as we called our company. Bill Joy had gathered his current posse: a kinda-grumpy poet-programmer named Richard Gabriel (I don't think he'll mind being the antagonist of this tale -- he'd appreciate the structural requirement); Aspen Smallworks' upbeat business manager, Mike Clary; programmer Emily Suter and Smallworks' coordinator Susan Stambaugh. This was the smallest corporate office I'd ever seen, but we were still *far* outnumbered! Here's a photo of the Smallworks crew from around that time. [Ah, please note, Bill Joy has since left Sun. And joined KP.]

Day 1

Everyone was anxious to see what we had. We called it *Gatemaker*.

The program guides the user through 17 steps. Their result is a design for a gate which has *life*. The design *unfolds* on a photograph ... each step *adding* to the harmony of the photo, and the previous steps.

Still, people needed a little guidance for *Gatemaker* to work properly. I ushered Bill Joy and Peter Gabriel through the program, and the results were quite pleasant.



The result of Peter Gabriel's session with Gatemaker.

It worked! We were *very* excited. I thought "*they've got it! They've seen it!*" In their eyes I'd seen a glimmer of recognition, albeit through a somewhat uncomfortable layer of cognition. But it was very apparent to me that they could *express* themselves with this thing -- differently, and more deeply, than with any program they'd seen before. Even Mike Clary, who did the first few steps too casually, perhaps not thinking he should be involved, eventually found it compelling.

A key element was the *sequence*. It was polished and deep, and evoked the right decisions at the right time, from the important major issues to the smallest details. Seventeen steps to make a beautiful gate.

Just as important -- everything in the program was built to support the natural, living qualities revealed by the sequence. The physical context of the work encourages people to use feeling as a *guiding tool*.

Later, as we sat around the office, Peter Gabriel said, in that hard-to-place trans-atlantic accent of his, "I'll probably sound like an old hippy ... I guess because I *am* one ... But it was a very *Zen* experience... '*Man*'."

The fact was, we had tapped into *that stuff*. To do so, even a little, with a *program*, seemed miraculous. This was *very* clear on the first day, and we adjourned elated.

Day two

There was a small seed of unraveling planted the first day, however.

At 10,000 lines, this was one of the first big *Java* applications, outside Sun, that Bill Joy (who had elevated Java from Sun's labs) had ever seen. So, after the Gatemaker experience settled, for a minute, his technical curiosity popped up, and he began to ask how I'd made use of the structures and libraries he'd helped to shape. I showed him the code. I was using the Java interrupt structure to drive an event loop. That was how it *had* to be used, to gain enough control over the system graphics. I copied this from examples that came with Microsoft's J++ design environment. He grumbled a bit at that. He had a *thing* about Java, of course. He'd nurtured it inside of Sun, and Mike Clary had made a thousand business deals to make it pervasive and successful. At the time of this meeting, it was the big technology news of the moment, because applets in web browsers were kinda neat. I told Joy that the Java book, which he and Gosling published, was terrible ... something he seemed embarrassed about enough already. But, proudly displayed on the wall of one of the empty offices at Smallworks was a letter signed by Bill Gates: Microsoft's license to Java ... anyway, Java was their last big project. We were their current potentially-big project. JINI was to be their next big one (and JXTA after that), and they talked about their JINI proposal quite a bit. I was given a Java coffee mug as a gift ...

So ... *huh?* What happened?! Run-of-the-mill tech-industry talk began to *creep insidiously* into the conversation, distracting attention

from one of the most humane achievements in computing! We'd shown people a new kind of flower ... which was then forgotten, and destroyed by flashy bulldozers.

This clash of cultures was killing me. It was my job to bridge the gap between Chris's work and computing. Chris had *no* interest in helping the computing industry. But he suspected I was right to attempt an alliance with it. It was OK by Chris *only as long* as it didn't warp the original, truly *important* intent -- to help people recognize good structure, pour out their positive feeling, and build a better world.

I didn't want to help computing either, particularly. But I'm an industry veteran, so my personal justification went like this -- if you could bring life to *computing*, about as money-driven, dead and intangible a field as could be imagined, then *that* could help bring life to the world.

To help bridge the gap, I then presented this essay (after all, as I said, it was a *salon*). And I explained the process Chris and I went through.

Chris said very little on this day. He was trying to figure out what kind of crowd I'd gotten him into.

I said that the program, while just 10,000 lines long, was the distilled remainder of about 100,000 lines of functioning code. 90% had been thrown away -- small experiments that didn't add to the life-enhancing effect we were after.

Peter Gabriel began to make a point, which he felt was important ... but which was hard to express exactly, at least in such a way that Chris accepted it. I think he first said it like "it's ... very *direct*. It makes me squirm a bit, and it makes me wish I could escape temporarily, and read up on what I'm supposed to do at that point, and maybe look at some examples, and other people's work ..." Although the comment didn't take, Peter would try again later.

Day three

Well, overnight, Dick Gabriel decided to write an essay, attacking my essay, and expressing disappointment at the "trivial functionality" of our program. This essay is lost (well, I'm sure he has it somewhere) but it essentially pointed to some very large engineering projects that used incremental growth. His Hillside Group people, the ones using design patterns, were certainly familiar with incremental growth -- one of their number, Kent Beck, was about to found another movement called "extreme programming", which was essentially based on fast feedback, deep context, constant examination of quality, and small steps. Dick wasn't saying that I was *wrong* ... just that I wasn't making *new points*. I countered that applying this method *to enhance the feeling* and the *wholeness* of a user's work and experience was new, and that if we believed this stuff to be *important* in a strangled world, we had to pay attention.

During the meeting, Chris didn't say much, again, and I was getting nervous that *he* wasn't sure that what *I* was saying was getting

through to them. Or that it even *could*. This made me a lot less aggressive in responding to Dick. After Aspen, Chris and I put our heads together, and sent this letter to Bill Joy, reemphasizing the kernel of life in *Gatemaker*.

But while this battle was going on, we all wanted to have fun. Peter went off snowboarding a few times, and came back refreshed. He was in Aspen to relax and write music. We had excellent meals everywhere, on Sun's tab.

Bill gave us books about genetic algorithms, and we had *many* discussions he clearly enjoyed, about fractals, evolutionary theory, wholeness, art ... and architecture. It turned out that the Smallworks office had been designed using Chris's book *A Pattern Language*. We went to have a meal with the Smallworks architect, and his Aspen developer friends, who'd worked with Chris before, on some building projects.

We talked at length about *choices and structure* and *freedom and restriction* in design -- how too many choices could lead to apathy or senselessness or no expression at all. We talked about this in the context of poetry (iambic pentameter is restrictive yet liberating); music (Peter said he was a drummer first, and rhythmic structure gives him the freedom to compose melodies); strategy (my thoughts about community organizing, karate and OODA loops); we talked about the synergy between structure and entropy; about how the large and small scale of the cosmos relates to living organisms. It was a lot of fun.

But under all this, the *subtext*, to use an *au courant* phrase of the time, was our need to secure funding ... we were *completely* out of money. We'd spent every penny. As it turned out, SmallWorks had a finite budget ... and Bill and Mike thought it would be nearly impossible to sell this to Sun's management. So I turned on my "enthusiastic possibilities" machine: possibilities for computing products, direct ways of changing the world for the better, etc. With an emphasis on aspects of our work which could resolve the fundamental problems in computing.

None of this really interested Chris. He wanted a budget for "CES Computing", as we were calling our group at the time. He wanted to create this very different, new breed of CAD tool, for changing the *built* environment. Bill suggested he could hook us up with his venture capital friend, John Doerr. At this time, before the full brunt of the Internet boom, VC's still had a pretty poor reputation among people trying to be independent, so we didn't exactly jump on this opportunity. Now, I think that was a mistake. Not a philosophical mistake, but a practical one. Certainly investors can warp a groups' mission, but they can also compel a group to meet its goals. John Doerr definitely has more of the latter reputation.

In any case, we needed to know the scale of the project we were considering, so I spent hours and hours in Aspen putting together a programming plan & estimate, with Mike and Dick aiming critiques over my shoulder. Chris & John put together a business plan & budget. But it all turned out to be just an exercise.

Day four

Our final meal was lunch at *Explore* Bistro in Aspen. I remember talking to Peter about all kinds of green community projects I'd been involved in. Especially in transportation (I co-founded the first carsharing group in the US, and the first Bike Center). He enjoyed this and was of course very excited about transportation, as many English are. He told me he'd always wanted to make a "Witte Boat", similar to Amsterdam's Witte Bike program, on the river near his studio in Bath -- a kind of free boat which people could take to and from the city.

Then he thought of another thing -- he'd always wanted a little portable office -- not a laptop or a computer gadget, but a little closet in which he could work, where he could keep computers, books, notes and instruments -- and which he could ship around, on a plane or train or truck, to anyplace he goes ...

Susan, a very pragmatic and outspoken person, said "*only a rich man would have a vision like that!*" Peter, who is very empathetic and down-to-earth, took her seriously, and became lost in thought. I jumped in, inventing an *ad hoc*, somewhat-equivalent great bicycle transportation scheme. It's funny, but what Peter was after is a pretty common dream in computing -- centralizing work. Taking it with you. It's where the notebook computer and the Palm Pilot came from. I'd worked on a similar project years before, and my dotcom-boom invention, *Workspot*, was very much like this ...

But I'm being self-indulgent. We all parted, good company. Mike & Bill helped Chris with a grant, to finish his book. I bumped into Bill Joy at Stanford, when he was warning people about nanotechnology, during the Internet boom in Palo Alto, and he teased me for being part of Palo Alto's start-up craze. Chris and I, with our squad of employees, volunteers, donors, launched patternlanguage.com at about the same time.

More soon.



Postprandial photo of Peter Gabriel and Christopher Alexander, at the Explore Bistro, a nice bookstore and veggie restaurant in a restored Victorian in downtown Aspen.



The long final night -- Christopher Alexander & John Seamster work on our business proposal.