

Kai, I just saw the cover art for the new Steve Howe album for the first time. It is absolutely stunning! Could you describe how it was created?

I'm glad you liked it, I sure had great fun with that project. It is obviously a true Roger Dean design, which was then transformed through a rather complex series of computer graphics "image processing". It's interesting to note that the day has come where one can create such artwork from start to finish on an individual desktop, even though it still takes about \$15,000 worth of equipment and a lot of experience to carry it off. Still, I'm thrilled with the possibilities, aside from the fact that the tiny size of a CD jewel box has all but killed serious cover art in the great tradition of Roger Dean. It is somewhat of a shock to see that miniscule reproduction. Compared to the glowing phosphors of a 20" 1000-line Trinitron it is quite a let-down to squint at a 12cm print version.

But it must be worse for Roger. The first time I saw "Blue Desert" [Ed: Roger Dean's cover painting for the first Anderson, Bruford, Wakeman, Howe album] was at Roger's house in Brighton : it measures 6 by 9 feet !

Now there is a difference from original to CD size. I would love to see the real thing.

Well you should. I can tell you that it is an amazing sight for any Dean aficionado. Incidentally the scary part was to see his little daughter Freyja play soccer against it!

You're kidding!

No I'm not. She was almost 3 then, cute as a button and quite energetic. I have a little girl myself, Isis, (and a little boy on the way), although it is a bit harder for her to vandalize a computer file- at least for now...

Roger is quite nonchalant with such things anyway. There are originals all over his house and on more than one occasion I've seen him having to make delicate fixes even to the all-time classic images. He was 'improving' Blue Desert even on the day of the gallery opening in L.A. , a somewhat disconcerting sight for the rest of us.

I'll say... Any more anecdotes? This is fun! Although I still want to hear more about your graphics as well.

Oh sure... Just on Blue Desert even: earlier this year we drove up Highway 1 to San Francisco, via Big Sur etc. with a Range Rover and a Cherokee, with Blue Desert strapped to the top of the Jeep! An Adrenaline provoking exercise reminiscent of 'Wages of Fear'. [Ed: the original to 'Sorcerer' with Nitro laden trucks in the jungle...] But Roger was quite cool. You realize that it has a price tag of about \$650,000 ! And well worth it, I might add.

Yeah, I heard about the show on Rodeo. A friend of mine was there and told me it was incredible. And he thought they were 'almost reasonable' - in fact he was certain some fanatic or a Japanese investor would just buy the lot !

You know it's funny you should say that, because that is Roger's worst fear! The show on Rodeo Drive happened last May and it was the first time ever that he had allowed the all-time classic images to be shown in a 'commercial' gallery. There were 27 pictures plus many sketches, probably close to \$10 million worth all in all. I mean, the 'killer' timeless masterpieces such as 'Relayer', 'Tales from Topographic Oceans', all the Asia canvases, they simply must be up there at the half a million mark. The whole art business is such a self-referential game of arbitrary numbers and skewed aesthetics- "it's a shame of a mockery of a sham" [Ed: he's quoting Woody Allen...] and if a bunch of flowers by a one-eared Dutch are worth \$50 million, god knows what they will pay for a Dean in a hundred years...

Definitely true. You kind of put that show together, didn't you?

Yes, and it was a very interesting experience. On one hand it was a tribute to technology from a wholly different angle: There were 19 iterations of the exhibition contracts and without Macintoshes, laser printers and fax machines between me, Roger and the gallery, it could never have been done in time. On the other hand, it was another lesson for us that we probably have to do everything ourselves to have it done right. The gallery, Triangle, simply didn't know how to handle this and even though the opening was packed, with TV crews and media, it was an invitation-only 'fine-arts' crowd. For example I had to rescue Chris Squire [Ed: bass player for Yes] out of the queue outside, where he was stuck since they didn't recognize him. That's silly! They had also really rushed the event to coincide with the opening of their Rodeo location and a lot of people and the print media never found out in time. Worse yet, the owner - obviously unbeknownst to us - had the law catch up with him for some strange conflagration three years earlier, which ended his career and took the gallery with him just days after the Opening. We transferred all the artwork into safe storage, so Roger was clear, but of course there were also a number of potential sales and numerous leads that dead-ended. Like I said, Roger always was afraid of 'losing' too many, rather than too few, so that this didn't faze him too much. One time one of the unpublished pieces went for a quarter million and you could tell it wasn't that easy for him to part with it.

There also is a new exhibition, right?

Yes, the "San Francisco Art Exchange" is currently showing them. The Opening coincided with the Oakland Yes date and was packed! There was a line forming hours before and while MTV was filming an interview segment it quickly grew to about 500. Roger ended up signing books and posters for the entire evening. People were happily shelling out \$150 for a signed copy of 'Magnetic Storm' or 'Views' [Ed: The two books by Roger Dean currently unpublished in the US. They are beautiful manifestations of his body of work].

Gee, do they still have any? I wouldn't mind getting one myself.

Well, you should call the S.F. Art Exchange, they are on Geary. Just ask them. There were also some posters and there will probably be limited serigraphs later this year. Then up from that there are pencil sketches such as the ones for Asia's Astra for just a few thousand, even original color gouaches seen in Magnetic Storm for under \$20K. I don't know if they still have those.

Then from there you get into older album covers, such as Uriah Heep's (Ken Hensley once had that one). Did you know that incorporates an actual butterfly wing? It's fun to see such details on the originals...

Sounds like it. Any other little secrets?

Each and every one has something special, really. What surprises you is often the scale, with some like Tales smaller than expected, not much larger than the double LP size, while others such as Astra much larger than that. There are also very interesting multi-layer details to be found, with details, trees, etc. pasted into complex backgrounds. On something like Yesterdays you can readily see the cuts. Roger is quite unabashed about the multi-media nature and indeed there would be nothing gained from a purist all-oil-traditionalist approach. 'Technique follows Appropriateness'. Roger is often dismayed to find so many would-be connoisseurs staring at his canvases with their noses practically touching them. "For gods sake, what do you

expect to find there? That one is 5 feet across- you should be at least that far back..." he'd say... Interestingly enough, he regards many of them not as paintings, but rather as "colorized drawings", specifically pieces such as the Asia Sea Dragon. Only the later images on large canvases including the Freyja's Castle, Blue Desert and Union are really paintings in the true sense of the word.

He is a staunch believer in the necessity of technique and mastery of the tools, often criticizing fellow artists for short changing that fundamental hand-to-eye coordination. On the other hand, having observed him often in the actual act of "magic", which is the creation of a Dean original, it becomes painfully obvious that even in a simple pencil sketch there is something altogether transcending mere acute movements or precision lines- the way the angles form and the curves join up is just "right" with him and that is as idiosyncratically Dean as claiming the Grand Canyon to look "natural". In fact we share an acute interest in such phenomena as Fractals and Chaos, as well as fossils, shells, minerals - all expressions of a particular "true" algorithm, whether in nature or mathematics.

To get back to the Steve Howe cover, how did all that come about? And how did you get started in computer graphics? I understand you are also involved on the musical side?

You sure ask a lot of questions for a guy from Bakersfield...[Ed: Actually San Bernardino!] Well, here is the short version of a very long story... How far back do you want me to go?

Go ahead, start at the very beginning. We can always use smaller type.

[Chuckle].., you may be about to include magnifiers with every issue. Well, I actually started in electronic music, in the early seventies in Germany, where I was born and raised. I bought one of the very first ARP 2600s, imported via Holland with English manuals at the staggering price of DM12,000. Everybody declared me positively nuts and I proceeded to spend months on end locked in the eternal night of my room trying to figure out from the ground up just what made it all work. I had studied Classical Piano up to the Conservatory level, until I felt thoroughly constrained by the pedantics and small-minded literalism with accent on repeats and drills. Soon I began composing my own pieces and added the synthesizer, a Farfisa (which I had seen on the back cover of Pink Floyd's Ummagumma) as well as a Revox A-77, all pretty classic stuff.

Over two years my attendance records got worse and worse, while the compositions grew and gained complexity and the sound patches became downright unwieldy. My favorite strings took 24 patchcords, including some of my "secret" Output-to-Output feedback loops. Some of the sounds could still cut it even today...

Is that what you won the Clio for?

Well, that is a bit later in the game, the worldwide spots for the Star Trek movie. Another fun project. From the confines of my room to the studios of L.A. it was still a long way, though.

At this point I must mention my partners without whom I couldn't have done any of this! Martin Schmitt went to school with me since we were 10 years old and we have been through several lifetimes worth of stuff since. He's absolutely brilliant in so many areas. We went to one of those German 'Gymnasium' schools, not a gym, but rather a kind of junior college, all boys, for nine years. They cram a ridiculous curriculum down your throat from German, French, English, Latin to Calculus, Physics etc. We hated it and even though in hindsight we have a decent general education it is the missed potential and stupid route memorizing for tests that rubbed us the wrong way. We were passionate about philosophy or aesthetics, but nobody really wanted to engage in a discussion...So we became the rebels, in the back of the class, writing, you know, 'serious treatises' on the troubles of the world as we knew it. I still have some of that in me somehow and certainly writing hundreds of pages was very instrumental in focusing, learning to express thoughts, interact and debate...And we developed a wicked sense of humor, too. God there are gobs of inside jokes... I began to draw little cartoon figures called 'Schnuffis', too. Still do them now.

But it all really started when my father died in a plane crash in a Russian Iljuschin. I became rather serious and 'introverted' at 13, writing a lot. My mom sent me to Canada on vacation in '73, I went three years in a row, once with Martin in '74. That clinched it! We saw such a different "world", the endless vistas, the unbelievably blue skies. We met lot's of people who had build their own houses and lived entirely different lives than we were accustomed to. We camped out at a lake with swimming turtles, spend days at the World Expo and came back changed forever. We saw a movie in Paris once, "La Vallee, The Valley Obscured by Clouds" music by Pink Floyd... It had that line it : "There is no way back from knowledge"

Hm, that's good one. I've seen that album, never heard of the picture..

Yeah, it's a bit obscure (chuckle). Lot's of those... Do you know "Aguirre, the Wrath of God"? One of Roger's favorite's as well. He loves the opening track on 'Obscured' by Floyd, too... Just saw the "Aguirre" soundtrack is out on CD, by Popol Vuh, a group from Berlin named after the Mayan bible. It needs the narration from the movie though to really work, I find.

Those things were terribly influential at the time, too. We went hitchhiking to London and Paris and Berlin, watching strange movies, listening to Tales and Relayer, reading books we brought back from Canada, like the first Whole Earth Catalog...and slowly the highly unusual almost 'subversive' plan began to gel: Let's do a trip around the world, with a caravan of busses ...Find out where we really wanted to live and build a house!

For weeks we'd pass little notes in class like "gotta get the hell out of here..." I'd leave the house in the morning and we'd meet secretly in the philosophy section of the big library. Afternoons we sat in the 'Tea House' with stacks of Visa applications and Immunization codes for little tiny countries on the way.

That's about when I met Barbara Freistuhler, and 16 years later with 1.5 kids we're probably closer than ever. It was all quite romantic, us against the system, escape the big prison kind of thing...

So, so did you go?

Well, in the middle of all this I had applied to a yearlong exemption from the mandatory draft, prepared by a an

Emigration lawyer. And while we were busily planning the trip & recruiting friends, I forgot all about it. Went to their "all day evaluation" convinced it had nothing to do with me, really and treated it s a big I.Q. test, a challenge.

Uh, oh, I can see it coming..

Maybe I should have, too., but I still had this open trusty belief in goodwill at the time. What happened was quite horrific for me: The army sent me a little package: "Dear Kai, congratulations to your lovely evaluation, you are in the elite bomber pilot squadron in the Netherlands now! Here's the ticket, be there in three weeks..." They claimed they didn't receive my exemption 'in time', meaning they let it sit somewhere for 4 months and then said, "Oh darn it, you missed the deadline, but never mind, go do your basic training and re-apply from within the army, and we'll let you go, no problem...Sorry..."

Yeah sure...What a nightmare!

You bet. The trip was down the tubes and I had just days to make up my mind what to do. I sold everything I owned, convinced Barbara and Martin to leave - he was lucky, missed the draft by a few months - and August 76 we left. I had tried to gain time, told them I was sick and if you can believe this- hours after I left a huge Army truck ambulance pulls up to get me... And they showed up on that exact days each year for ten years! In the end my mother knew them by name and they'd come in drink Cognac and look at pictures of me in L.A...

It's a funny old world, isn't it. That kind of thing can make you pretty cynical.

What was plan B then? Where did you end up?

The other other operation (chuckle) [Ed: must be an inside joke], if you can picture us leaving home together with everything we owned in a backpack and

maybe a thousand bucks a piece, flying to New York..quite an adventure.

Interestingly enough there was one of the first copies of Views [Roger Dean's first book] in that backpack, too. and years later I wrote him a letter to the address printed in that German copy of the book- and he got it, too...

Ah so that's how you met Roger Dean?

But that was many years later. At first we lived in NYC for a short while, but the rats on the 15th floor of the YMCA whispered "get the hell out of here..."we took the 'Grey Rabbit', a bunch of hippies converted Greyhound busses to all-matresses. We never had been or since into drugs of any kind, so that whole journey was an utterly strange experience. I wrote a long article about it in a German political satire magazine called "Par Tone". But I was never paid and that shed a dubious light on any journalistic aspirations.

So we lived half a year in San Francisco, get this: on the corner of Haight and Ashbury, without realizing then what that really meant. With dwindling savings but a desperate urge to keep 'time' to ourselves we opted for the low overhead route: got a flat with seven rooms and rented out five to end up with minus ten bucks rent..

A Hells Angels biker, macrobiotic monks, we had them all. And we learned English with everything from Annie Hall to Monty Python to Blazing Saddles, some say that explains a lot! Barbara canned fruit and cooked up the most amazing concoctions on a \$60 budget. It may sound rather 'low', but at the time it felt great, even 'romantic'. Martin bought a huge brown 1950 Dodge StepVan and he spent weeks in a CoOp garage putting in an engine, trans, clutch... He is remarkably good with cars. Over the years we've had about 30 different ones, XKE Jags, a Mini, a 928, an old Cadillac 'boat', BMW, and a great Mercedes 6.3, to the Aston Martin, which he raced at the Baja 1000 in Mexico (and did very well, too..)

You guys are pretty entertaining! I had no idea. Glad I didn't stop you...

Well, early on we couldn't afford much, so he became amazingly adept at finding great buys. And after a year or so he'd trade up.

To go back, we wanted to travel in that van through the western states to look for a piece of land and build a house. Well we got stuck in L.A. with gobs of amazing little stories. I'm skipping a few dozen of them now...

I started a digital design company with Martin called Prototype Systems and we invented a really neat waveform generator. It digitally scanned banks of sliders which you could set to any of the typical VCO waves like sine, triangle, square, but also to an infinite number of other ones - and in real-time no less, with polyphonic time-division multiplexing. That led also to our first involvement with computer music and graphics, where I wrote an early 3-D display. Fairlight gave me a system to implement a true rotation perspective version of their sound display, except I wanted a real frequency versus amplitude versus time display in a rotatable cube, not the cheap slices of wavetables that they ended up with. But it was a good stepping stone.

Where in time are we now?

That was 1982, but before the whole computer story we juggled so many other irons in the fire. At an AES show back in '77 I saw a device called a Sennheiser Vocoder, which created incredible sound effects. As luck would have it, there was Dr. Sennheiser himself and the manual for the box was completely German. For the next couple of years I

was the specialist for the machine. I ended up writing documents, making demo records even teaching details of sound effects at the university in San Diego.

I worked on projects from Devo to Dracula movies, Kenny Loggins to Keith Emerson, Joni Mitchell with Weather Report. I made 18 records, sound effects for the Disney library, The Black Hole and then I even won that Clio for the Star Trek movie.

You won a Clio? Interesting. With the vocoder?

Yeah, we sold quite a few as well, at \$18,000 a piece. Herbie Hancock, Stevie Wonder, Patrick Moraz... Well Patrick was fun: we spent an hour in the locked room jamming away and I got him all excited about the possibilities, then he went to Switzerland - and bought it there at half the price... Can't blame him, but I lost my \$4000 commission. That day I took Herbie Hancock over to the very first Synclavier and he was 'scared shitless' of the computer keyboard and terminal. What fun... In the end I sold my own machine including all my synthesizers to Neil Young.

Neil Young? That must have been that Trans album, right?

Yeah, that's it. He owns thousands of acres in the mountains south of San Francisco and on one fateful day I installed the machines in his studio up there and then continued with a meeting at Corvus Systems to look for a computer for serious graphics and that's when DDD started.

I really can't possibly tell you even just half the stuff that happened- it was a whirlwind...

Why did you leave the music gig anyway?

The main reason why I left the music arena really was that 'client' relationship. It just drove me nuts to mix something so close to my heart as music with simply 'paying the rent' and while you sit in these

leather couches in the most expensive studios in the world you get frustrated because it's their project on their time, their creativity and you just can't really meddle with it. I remember a session with Keith Emerson, I sat at the grand piano at the Village Recorder and he came in behind me and listened for a while, then he sat down and played something that made me just cringe. What a unique style! Brilliant. My all time favorites probably include his 3rd Brandenburger with The Nice and the first cut of Manhattan Concertos- The Dreamer. Both much too unknown - these are modern classics.

It was quite cute. We spent five days at A&M in the Joni Mitchell sessions for Mingus, with Herbie and Jaco Pastorius. Nice...Lot's of weird little memories like that.

I would have loved to be there. Joni Mitchell has such a great voice.

Yes, we'll always remember her rehearsals with just a 12 string. I picked up "Ladies of the Canyon" in London and loved it...

What about that Prototype Systems thing, then?

Ahh, the ups and downs... Funny thing was that we lived in this little house in Hollywood and after a year and a half our landlord comes by and says "out of 400 apartments you guys are the only ones who pay every month on the dot three days early. I just had to see who the hell this is!". See, naive as we were, we just thought that's what you're supposed to do... That guy, Jack, was an amazing character. He'd written some books, made lots of money and went into real estate. And he was a total gadget freak. When he came by he saw my Arp 2600s, one with a flipped cabinet, stacked 6 feet high...a hundred cords, he got quite into it. He heard we do design and invited us to his house to build him a special triple TV set with unified remote. And we did...

He had this amazing mansion off the Subset strip in the hills and they were constantly shooting Playboy layouts there, very strange. He also taught me the game of GO, a real passion of mine, although I very rarely even meet someone who knows how to play it...Martin is sort of too peaceful in nature to really get into it and we don't much like to compete in such a way any more either. One mellows after all these years and we have more and more come to complement each others strength and weaknesses, including Barbara. With such a tight group there are always two to bang the one that got a little out of line over the head...It's quite a team.

I sure never heard of a set-up like that. Makes you wonder about the nuclear family as a lame concept...

The thought has occurred to me. Of course it doesn't seem strange to us at all. Martin, as the most eligible bachelor in town might have some trouble explaining the scenario sometimes. I mean, 'roommate' sure doesn't do this justice, you know. He's still looking, had some close calls, just not quite right. But you know how it is. Could happen any second, especially when you're NOT looking...

How did you know? That's how I got married, too.

See... Well, we built the Tri-Tel, took a lot longer than we thought, but he liked how we stuck with it and when he needed a new computer he let us consult, too. We visited the world's first computer store, Dick Heyser's in Santa Monica, with little Altairs and MITS and Cromemco's, playing Spacewar and Chess...

Cool. You go way back in computers, huh.

Yeah, it was fairly early. We bought our first machine then, an 8K Compucolor and wrote our first BASIC program

that night : recursive loops drawing 3-D distorted space curves, kind of like Chaos - a field of interest especially for Martin years later. Roger loves that too, Fractals, Julia sets, etc....Some of the textures in Yes logos were fractal based.

Back then we got Jack the brand new Alpha Micro and saved him tens of thousands over the Wang he had considered. In turn he gave us this great big space rent-free, about 1400 sqft, no windows, used to a huge garage for an apartment building. We called it the "Lab", put in wooden walls: a hardware area, power tools and bench, a pottery room with wheel and big gas kiln for Barbi, my music room with the synths and vocoder, a library with thousands of mags - we bought entire collections used for nickels...Scientific American since '35, Electronics since '38....-

Great! Lend me some back issues!

...and a huge desk with the computer and chips. And ah yes, a nice old pool table. That was HQ for Prototype Systems, ca. 79-81. That's where we designed the waveform generator and made up a few dozen circuit boards, initially etching the boards ourselves, too. Jeez, the crap we went through. The ups and downs...

The suspense is killing me, what happened?

The whole Lab was partially underground in the hills and one day I sat there soldering away and suddenly I feel water at my ankles: the heavy rainfall had so saturated the earth behind the wall that it literally came through the cracks and flooded the whole place.

Shit! Could you plug it up?

No way.. it was everywhere, we lost thousands of magazines, all the ICs got wet, the carpets drenched...We saved the expensive stuff, but it was

never the same afterwards. The smell of rotten fabric lingered and the knowledge that it could happen somewhere along the huge wall any time again gave it that last psychological nail in the coffin.

We decided it was time to make a radical cut, a new phase, onwards with the original plan: build a house.

Pretty daring thing to do really.

Decisive, yes, but we can talk ourselves into rather dramatic changes. I guess we had learned the hard way how to do it and that it can be very rewarding, too.

So Jack helped us get a start in real estate: we bought a house from him on the edge of Beverly Hills. The idea was he'd get us in easy, we'd convert the garage to a bedroom, fix it up and share any profits. Martin got seriously into Architecture, drawing up huge blueprints for the building department, supervising Jack's crew of 6 Mexicans to build a neat master... Like I said, multi talented that guy. We couldn't have done any of this without him, then again, without Barbara it would have all fallen apart, too. Truly synergistic...

Hey, call that somethin' and you got a movement

I'm not much for movements, an aversion against organized religion and the like...still, I know what you mean....

Anyway, in '82 there was a serious fascination with computer graphics and in researching how to get into that we met Carl Rosendahl, who was just setting up Pacific Data Images. They were in a little room, not a single picture yet, I still have a business card which looks as jaggy as a MacPlus screen font....Today of course they are the pre-eminent CG SFX house anywhere. Beautiful images, with a sense of humor, too. You must have seen them: the new morphing of that cubed head or the Entertainment Tonight logo, T2 stuff, etc...

Didn't know the name, but, sure, I've seen that

Well, PDI had the same machine we were interested in, a Chromatics. So, at first we thought we would go a similar road as PDI: custom software, sell the output. But my problem with that was specifically a repeat of this client set-up: they come in with their stupid little commercials of a bunch of hamburgers dancing and it has to be the way they like it and done yesterday for a zero budget...it really went against my grain.

What did you do instead, then?

We hardly had time to contemplate all this. We had just sold that first house, interest rate was 21%, what a nightmare, and moved up Sunset Plaza into the Hollywood Hills. Carefree without worries sitting on a cushion of funds, in a little stilted shoebox above the lights of L.A., the brandnew MTV blaring on an early Projection TV...it was a nice clean canvas to start something new. Then it all hit the fan.

I remember the meeting with Mark Hahn at Corvus, we hit it off very well. He had this idea of a multiplayer game on a network, kind of early VR, with a 2-D maze and trading etc. We both got really absorbed by the possibilities. He had the machines and the money, but absolutely no time and for us it was the other way around. We said, well, let us try to mock this up...so he lent us a Concept and Martin and I wrote the single player game in 10 days, our first Pascal program, too.

We generated a 3-D view of the maze, multiple rooms, footsteps and explosions, etc. etc. We'd work in shifts and tried to outdo each other, leaving some new surprise at the

end of the day for the other to discover... Mark too had good fun with that and gave us another machine two hard disks, etc, and we revved up.

Within a month we were quite at home on the machine, designing custom fonts, graphic routines...

It does sound like Virtual Reality for multiple players...Does it still exist?

Not really, although the VR angle is lingering around with us. What happened is that each player was supposed to see the others on his screen as he navigates around, broadcasting to all others the information. The network built into the Concept though was apparently not able to handle that at first and they told as it would take them a few weeks to change drivers. So in the mean time Martin re-wrote the early rotating cube display programs and I played around with one of the first electronic pen tablets. Within 3 months we had some really neat programs: He could draw nested cubes to generate 3-D barcharts, the way we had seen it in 'bigtime' programs such as ISSCO's Disspla, which at the time cost about \$70,000, we called that DDD Graph.

I had written a large program I called DDD Paint, pretty much like MacPaint, but almost two years earlier, '82. It had literally hundreds of functions, with a ridiculous user interface, though, basically just for my own use and enjoyment. Some really interesting functions even that I've still not seen since then. Picture Undo, trail playback of brush strokes, Video Feedback patterns...

Video Feedback sounds hot

Yeah, it was quite cool...(Chuckle) you define an area on the screen and copy it to the current mouse location, then if you drag that copy into the original area it will modify the source area, which will be copied again, which modifies itself again, and so on,

quite akin to a camera pointing at its own image in another monitor or the infinite recursion of standing between two mirrors.

Since this was a just a 68000 and black and white the realtime feedback was limited to about 2 inches square, but it swirled around with strange patterns, which you could save as custom fills, a lot more interactive than the edit pattern bit by bit.. It literally felt like mixing a grey shade on a palette...There were lot of others, too.

Anyway, while waiting for Corvus we had basically come up with dozens of very interesting images in a slideshow program and since they wanted to show off the fact that the Concept can do graphics, but had very little actual software, we figure they might like this stuff.

So we locked ourselves in a room at Corvus, used one of the first laser printers and plastered the walls full of pictures, had two machines running slideshow, including a rotating 3-D bar display of their sales forecast and called the top brass...Pushed them in the room with the lights off, said Merry Christmas and left for the cafeteria...

They must have loved all your pictures

You bet, finally a way to show off the Concept. So we went to Comdex in 82 and Martin and I were manning the booth the entire time, beleaguered by crowds. Hundreds of business cards, press galore... John Markoff and John Dvorak saw it and declared it the hit of the show, Dvorak even put our phone number into his famous InfoWorld column: the phone rang off the hook for weeks...

And then it somehow hit us

What?

That there is gold in them thar hills... We asked Corvus if they wanted to add our stuff as 'demos' to each machine and they agreed. We figured if it were real software it would probably cost hundreds, so we asked for \$10 a piece, Paint and Graph. The thing is that Corvus at the time didn't know about the Mac and the IBM and they were forecasting first 1,000 a month, then 2 and 3 and 5 and so on. So we asked them for 5,000 copies each - our first hundred grand - and they could buy the source for the same amount later.

That's serious money

Amazingly it was a very happy chain: we got a big check, they got a 95% discount price, their dealers could demonstrate the unique abilities of the Concept and the end-user got something for free! Smiles all around...

And the proverbial chandelier went up in our heads with an angelic choir sound: Tadaaaaa.

Within a year, mostly based on contacts from the first Comdex and a little later a full story on us in Infoworld, we repeated this scenario. Victor sold 8,000 a month, gave us serious money to write a new version for the 8088 chip. First rewrite, better program, took the money and we bought a big house up in the mountains between Malibu and Topanga. Bye bye shoebox...

Then Honeywell signed a deal twice as big: shipped us a secret new Unix machine, still in sheetmetal. Rewrite for Unix, 2-D, 3-D and Paint with mouse. For graphics support all they said is "here is the starting address of video memory..." Martin wrote everything from scratch, plotpoint drawline, polygons, 3-D matrices, etc. He got more amazing all the time.

We built a whole computer addition to the house, got more machines, phone lines and fax, got to be a real company. Then the Epson story- man!

What happened?

One day the president of Epson Japan had us as a must-

see on his tour of the US. I guess they expected another small software house in an industrial park... Well, we live more in 'the country', only a few miles from the Pacific, but straight up to 2500 feet. There are dear up here, coyotes, owls even mountain lions.

So at 9 am they were coming up the winding little canyon road and out get four Japanese guys, three pale green and one with a big grin : he introduced himself as an ex -racecar driver...[chuckle]

We had about a dozen machines glowing with graphs Barbara made a great Japanese lunch and after 5 hours of demos and brainstorming the President said he would now sign an international contract and he read every line out loud. Martin and I were just pinching each other...

That one was for 100,000 copies bundled with an announced new machines, which became the Qx 10 line. We had to totally re-write it all again for MS-Dos, without any graphics libraries (again), but we did it...

You're quite sure you want to get into it this deep,huh

Well, I figure those that are interested are interested and the rest we lost a long time ago.

Nicely put. I'll zoom forward a bit...

DDD Software was successful beyond our wildest dreams, we sold licenses to probably hundreds of thousands of copies since 82. Actually we even did it in the face of some serious adversity as well. Corvus was steamrolled by the IBM and Mac, Victor went bankrupt, Honeywell changed plans and killed the Unix machine, and Epson decided not to sell software after their dealers complained. So we also lost untold millions in a way. But I really can't complain...

In 85 we decided that it would be nice to have a real company, because we obviously didn't want to have employees come up the mountain. It was also getting a bit lame for Martin to write printer drivers. So in 85 we got Three D Graphics together, with an actual President, 26 investors, a whole floor of offices in a building in Pacific Palisades...

Now we were able to bring out actual retail packages and since then we have developed version after version, with different names and prices, and still today it is rather strange to go down to the office and walk around among a couple dozen people, some of which you may have never seen before. First we tried to publish a new version ourselves, we called it "Perspective" and it won Best Graphics Software by PC Magazine in 86 (the award on stage was given to Martin and me by none other than Dvorak, too...) and numerous others. We then got an offer by Boeing we just couldn't refuse and let them have the worldwide exclusive. "Boeing Graph" got some very nice reviews and for years we were plastered all over the screens in every computer magazine. I have "Byte"s with 20 little post-it tags marking one of our pictures in just one issue. Toshiba had huge billboards with it, TV ads, still today I find my graphs lingering around. The list of users was fun too. Lot's of scientists at NASA and universities, Porsche Design used it, the White House, etc. etc. Good fun...

You know, now that you say that I think I know the picture on those Toshiba portable ads, too. You did that, huh...

See, that happened to us a lot. I mean we must have sold past ten million dollars worth all in all and yet few people know who we are. Today there are 3-D graphs in Wings and Lotus and Excel, but we literally every one of those is more or less based on our early stuff. Mind you, we didn't invent the notion of 3-D charts, but we were the first on PCs with it and we defined a long list of standards that seem obvious now. Gridlines and a base, 3-D text, realtime rotation...

You can bet their programmers had good long meetings checking out what Boeing Graph could do. Some of those companies even courted us for a long time, in hindsight just long enough to hear about all our 'secrets' and then parted ways. Boeing of course suddenly decided they have to stick to building planes and closed 8 divisions, as being one hapless victim. As usual, they paid and everything, but an enormous potential was lost too. That even happen twice more since with even larger players...

In some other lifetime we may have had a bit more luck on that front and we'd be Microsoft now, but I guess I wasn't cut out to be Bill Gates, and neither is Martin.

Is Three D still active now?

We still have a large ownership in Three D Graphics, but more and more we need to fade out of the day to day operations into research for future products. We both put in easily the full 40 hours, at times twice that as you only can for your own company, but in-between I still find lots of other hats to wear as well.

They are bigger than ever and we are just now getting ready to ship the new generation after almost 3 years of development, first quarter next year. Can't say who the publisher is, but it should create quite a stir.

And it will be Macintosh, Windows and after that other platforms, too.

To close the loop a bit, when the first serious success hit we bought the house and a couple years later our broker told us about a site before it came on the market: an incredible 11 acre site, with two hill tops on it, 180 degree

ocean view, the entire S.F. valley around to the westside, Downtown, in the distance. One of the very last private sites like that.

Gee, you must take me up there some day

No problem... We were then finally where we wanted to be all along: building our own house from scratch. Of course it's not that easy to move a pencil with three hands, metaphorically speaking.

And it was then, in the middle of that early design phase, that I sent out a letter to Roger, really just as a lark. I considered at the time to write a new version of my Paint program, in color with airbrushes etc., and figured that he would be the ultimate Beta user for it.

I had no idea if he was into computers or not, or what he was up to, or if that address was at all valid...

So I wrote about some of this and that, and took the old Yes logo and vectorized it into Perspective and drew an infinite plane tiled with logos, something you can't do on a canvas no matter how patient you are. Just to illustrate the point about new kinds of tools, complementing traditional ones.

He sent back a telegram with three words: Yes, Send More...and I did. Soon we spoke on the phone and a few weeks later he came out to see us.

Well, you must have hit it off somehow. He must get mail by the ton!

Quite likely. I don't quite remember what ultimately peaked his attention. Probably the fact that we were looking to build the house and had a nice site was important. He sent me Magnetic Storm and in there it became very clear that he was deeply into architecture.

Right that first night he said, "I hope you don't mind" - in the English beyond-the-planet-of-the-ultra-

politenes style , “but I made a little sketch of a house for that site...” and he plunked a 6 foot plan onto the kitchen table.

Unbelievable! You lucky bastards!

Took about, oh, 3 seconds, for us to look at it and each other and nod “Yep, that’s it. Search’s over...” It was absolutely beautiful! All round shapes, modular Dean blobs, but ‘designed’ blobs. “True” shapes.

Similar to the house in Views?

Yes and no, the basic technique is Gunnite, shot concrete, with which you can create free-form designs that are sound-proof, fire-proof, earthquake safe, energy efficient, cheap, easy and fast to build...It’s really quite a concept.

The suite in Views is smaller in scale and merely a fiberglass mockup. This would be much less cavernous dungeony, the windows are much larger, and we’d have over a hundred of them. Once can finish it inside and out with any texture or color, smooth white, or earthy sandstone or like the Disneyland Matterhorn, which is Gunnite, as is the entire San Diego Zoo and most of L.A.’s swimming pools as well.

Oh cool,well that should show the strength then

Exactly, the egg like shape is obviously intrinsically strong, although we still will have to prove that to the building department.

Actually, the reason why it’s not standing there now is that we first ran into a 3 year road block in the form of the Coastal Commission, trying to prevent building this area up too much. In a way we agree, living up here for 8 years now. We don’t like speculative developers coming in either. But this is a little different. In a way we are restoring the mountain top, which was dozed flat about 20 years ago and looks barren. Also we are taking particular care about integrating the architecture with the landscape, too.

Well if they knew Dean, how could they have any doubts anyway

Trouble is of course they don’t. It took forever to draw up all the plans, get the water, power, earth, soil report, earthquake test, drilling, septic, blablabla before we could even apply, then they meet every few months and we got an initial negative ‘staff recommendation’.

So we build a new model, did aerial photos of the site and constructed a scale mountain with the house site, showing that on almost 500,000 sqft of land a 10,000 sqft structure is not out of line at all.

In the end, we compromised on a smaller size, less height on the upper pad portion, lots of trees, etc. and with models we actually got a lot of them to like it. They voted 11:1 in favor.

The other problem was and still is that this being built from molds, which are done by Roger in England. This means that the first one is probably 5 times the cost of the second or third... and early on we decided it would be a waste not to build several at once. So we founded Curved Space as a home for the designs and as a company to take on other projects such as the large hotels and amusement parks seen in Magnetic Storm.

So that is Curved Space, I always wondered.

Another point is the financial side, we paid serious amounts to develop, prepare, do the plans and models and just to keep the site for all these years. Also we missed a number of chances to get to the non-liquid assets we have in Three-D, such as with that Boeing deal. With any more luck, or less bad luck we would have had multi million dollar stock to finance this outright.

Somewhere there must be investors begging to get in on this. I mean to work with Roger Dean on this architecture could be a whole new movement!

You like those movements, don’t you (chuckle)...

But I agree. It’s just that to really promote this and go after such investors is simply a matter of time and dedication. Martin and I have been so wrapped up with nurturing our company and Roger has so many other projects in the air that there simply wasn’t enough concentrated time yet.

We did have some interesting close calls. Like the time we were invited to Vegas by Siegfried and Roy. Roy is a Dean fan and they have an unusual house... That was pretty cool, backstage with the tigers and later at their house. We got along with them very well, actually. Of course then the Mirage thing kept them rather pre-occupied, to say the least. But who knows...

Man you guys have all the luck...Siegfried and Roy! Did you figure out the tricks?

We were in the audience up front and backstage after. So, no, we were just a s flabbergasted. But even more fun were the stories they had to tell, like the one were they met the pope...

Well, you had to be there, kind hard to retell. We also related rather well as ‘ex-Germans’, expatriates.

There is an investor in Curved Space now, a very nice guy named Henk Rogers. He found the original “Tetris” in Russia. That’s also the current VR project that I’m not supposed to talk about yet. Hush, hush....

Virtual Dean Reality.. I wanna know so badly! Any little hints?

I’ll ask Roger, maybe I’ll get back to you on that. Roger would probably like to move up here, too, at least on a half year basis, but that’s not quite so easy with his family and all. He, too has a little girl, Freyja,4 and his wife Mandy is an artist as well. So to up root

all the ties in Brighton is not an easy feat. As it is he's here quite a bit. Probably been here 7 or 8 times since we started. And somehow some day we'll get this little village built! We are determined...

Judging from all the other thing that happened in 15 years, I'm sure you'll make it happen. We didn't talk about the cover itself hardly at all, of course.

See, now, I told you this was going to get out of hand!

I don't regret that though. Honestly, you should sell that as a script, man. Cool movie, get Spielberg to do it. Happy end an' all..

Hey hey, slowly! We are barely half done here! God knows what we can do in the next 30 years...

That's where we left it some time in March or April this year. There wasn't even a mention of the real Photoshop activities, AOL, CD ROMs, filters or any number of the good events of the last few months.

Gotta have something to reminisce about during the millennium.

Best wishes to you all... Kai

Postscriptum >