SNOOP DOGG IS IN THE HOUSE

Architect Jan Henrik Hansen has discovered a way of transforming music into three-dimensional structures. He calls the result "Form Follows Funk," and he uses it as inspiration for his architectural designs. But can't a lot more be done with it? And what does Kraftwerk's music actually look like?

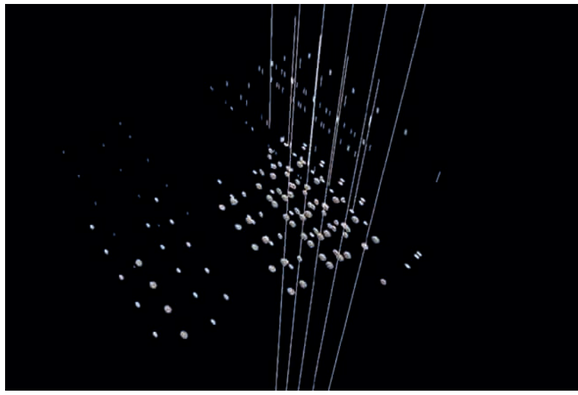
In Zurich in the summer of 2000, a drumbeat thuds endlessly through a student apartment. Two young men crouch among assorted electronics and stare at a monitor. Suddenly, spherical images appear – some big, others smaller. The more the beat goes on, the more images materialize. Jan Henrik Hansen and Christian Patron smile. They've done it. *On screen is an exact representation of the drumbeat in three-dimensional space. It's music you can see.*

To Hansen, the mass of scattered spheres is a dream come true. The architect and drummer has been working on combining sound and images for a long time, drawing pencil sketches whose abstract, repetitive forms look like rhythms and designing shelf units reminiscent of sound waves frozen in time.

But it wasn't until just before completing his architecture degree that it actually happened. Hansen was sitting at home in front of his computers, an architectural program with 3-D models open on one monitor, on the other a sequencing application converting music into digital data. Looking from one monitor to the other, Hansen examined the spaces, then the music. Two forms of expression, described in the same language: ones and zeroes. *"What if I brought them together?" he thought.*

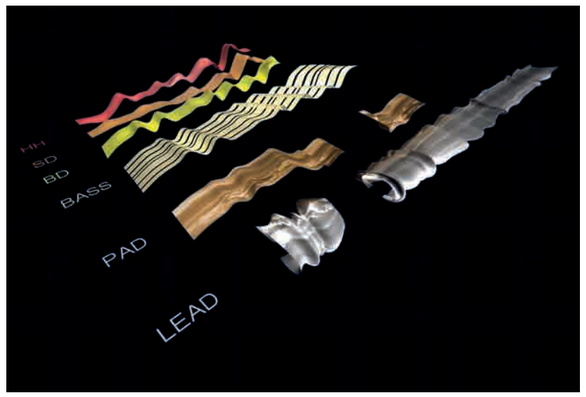
Christian Patron

Jan Henrik Hansen
Photo Susanne Voellm



A world premiere: the first drumbeat translated into three-dimensional space.

Hansen then visits his friend Christian Patron in Munich, who is busy doing his doctorate at the Virtual Reality Lab. One evening over a beer, he tells him about his idea of translating music into three-dimensional forms, concluding with the words, "But I don't think it's possible." Patron takes a long draft of his drink. "I do." Later he visits Hansen in Zurich. In only two days, he succeeds in linking the sound software with the architectural application: the first small spheres appear. Hansen and Patron call the new method "OneSense" and begin to make more and more pieces of music visible.

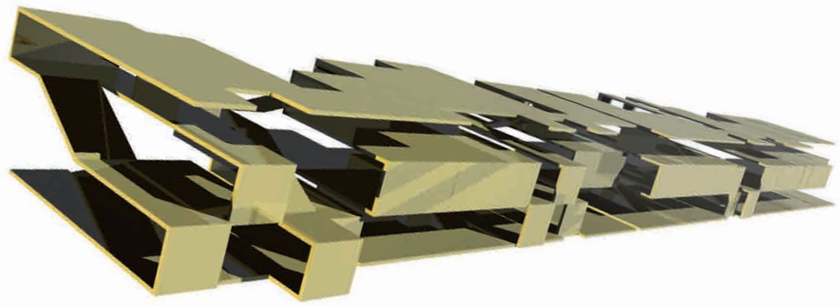


At first, the young architect used the discovery above all as an inspiration for his work at his architect's office, Whist. *He calls it "Form Follows Funk," an evolution of the famous "form follows function"* made popular by American architect Louis Sullivan at the end of the 19th century. The first project Hansen worked on can be found in the Zurich restaurant Forum Bar, where he and his colleagues designed a wall made of walnut, which bears vertical grooves of different widths and depths. "It's a translation of song lyrics into bar codes – if you translate it back, there's something written there,"

explains Hansen. Three quotes, to be precise, all from funk tracks. The lines "Most of all we need the funk" and "Everything is on the one" are from funk legend George Clinton, while the third, a longer section of lyrics, is by the band Osiris.

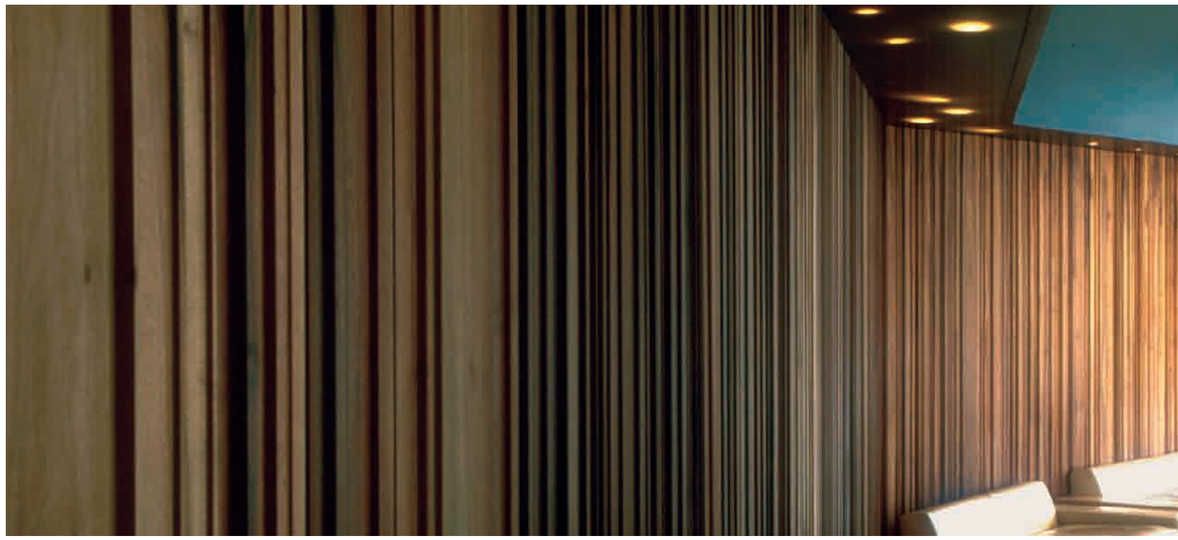
Form Follows Funk has given rise to a number of other projects. Whist is currently planning two single-family homes whose facades are translations of musical inspirations. *Most of the designs, however, still exist only as models on the computer* – a series of futuristic apartment buildings ranging boldly along a stretch of Seychelles coast, for example. To produce them, Hansen took a sequence of bass, beat and hi-hat and transformed it into a loop. Will the design ever be turned into buildings? Hansen is optimistic. "I'm flying to the Seychelles soon. There's a lady there who is very excited about our designs." Apparently the influential daughter of a major landowner hopes to build a resort with 16 guest apartments. The bungalows are to be flexibly divisible and linkable: the musical techniques of sequencing and sampling, translated into architecture.

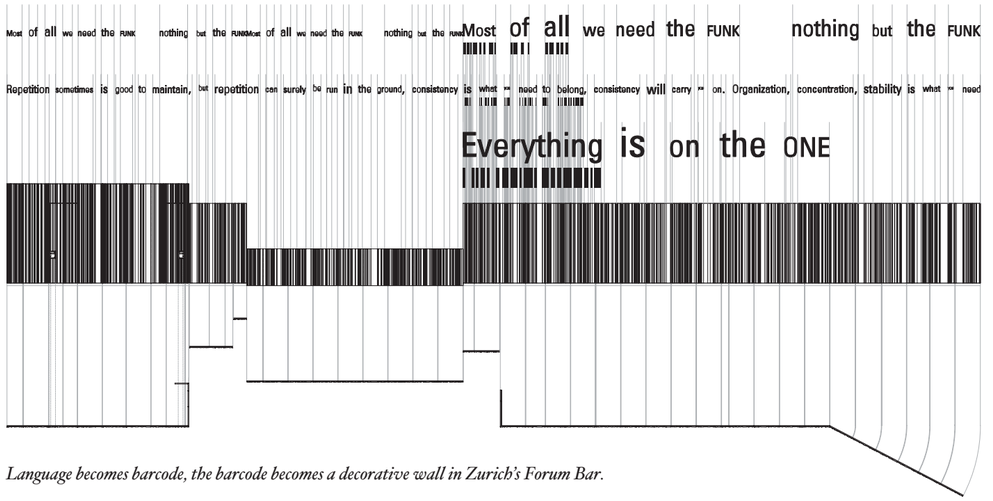
Working with OneSense is not a set technical procedure, however, but a creative process: "The magic is in the translation," says Hansen. *"Pure chaos can come out, or something that makes sense,* depending on how I set the regulator." The software functions like a parallel interpreter: while he plays on the keyboard, it generates the associated spatial scenarios. A "creative act in real time" is what Hansen calls this simultaneous production of musical and visual output.



Sound under construction: the translation of a simple drumbeat becomes...

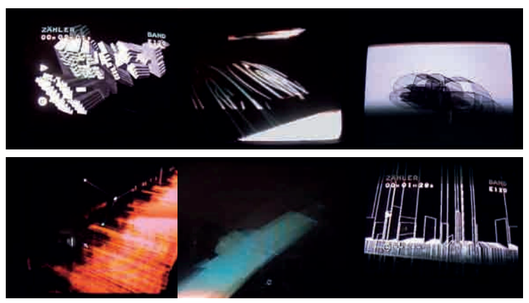
...a bold design for 16 guest houses on the Seychelles.





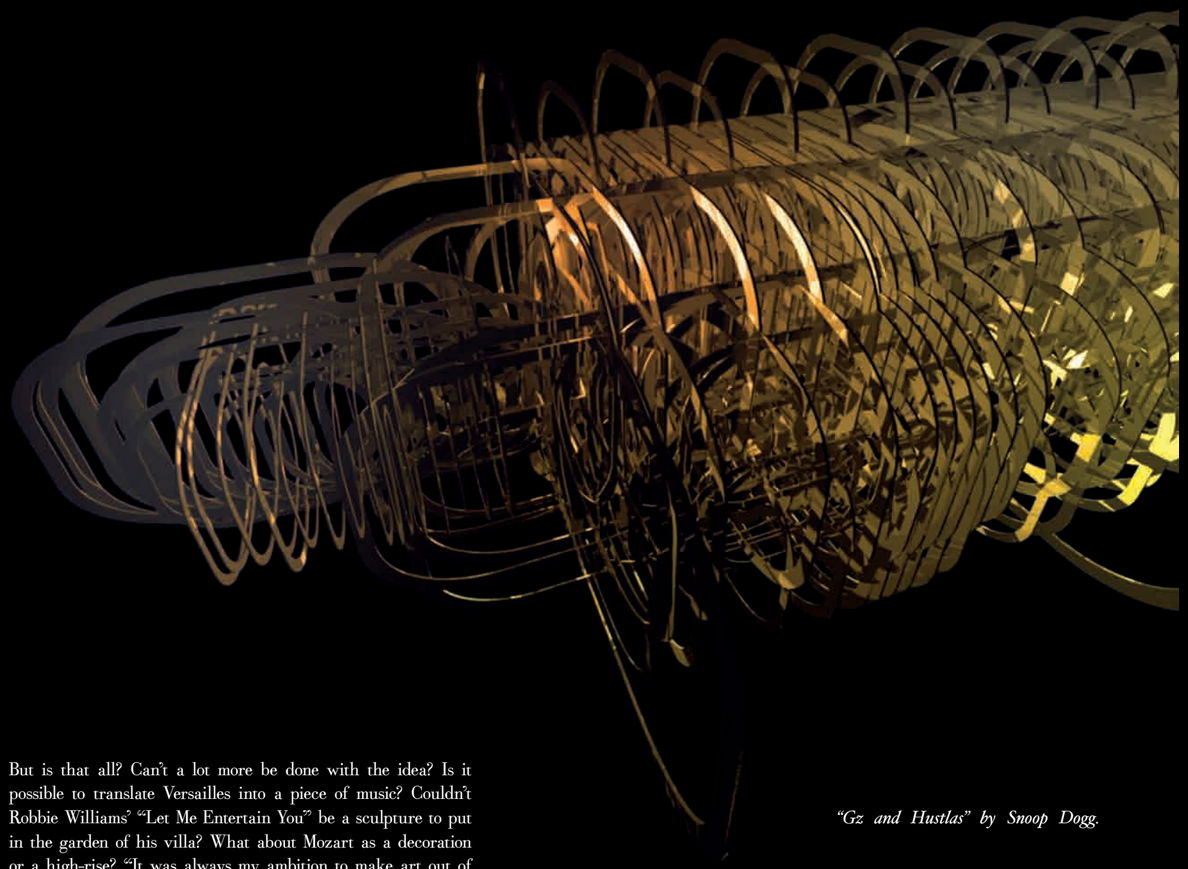
Language becomes barcode, the barcode becomes a decorative wall in Zurich's Forum Bar.

One group of people knows exactly what he means by this. "Synesthetes," a term derived from the Greek word for "parallel perception," are people who, when stimulated in one of their senses, also experience sensations in another. Approximtely one in 500 people is capable of "colored hearing," for instance, when listening to music, such a person will see colors and shapes in front of his or her eyes. Anyone who listens to Aphex Twin's "Xtal" and sees something like a low, slowly rotating dark cylinder while luminous streaks pass by and lemon-colored rays flash across the field of view is very probably a synesthete. Drawn-out tubes, nested levels, rows of drops and spheres – it is astonishing how similar the 3-D constructs are to those described by synesthetes. But what exactly is the difference between that and the visual effects produced by Windows Media Player or Apple iTunes? "These applications create rough two-dimensional equivalents of audio frequencies and illustrate them – fleeting pictures are produced, but nothing spatial. Our 3-D notations, on the other hand, can be "built," and the music can also be reconstructed. They are a new form of musical notation, since the translation works in both directions." Hansen and his



Forms from another world: OneSense at work.

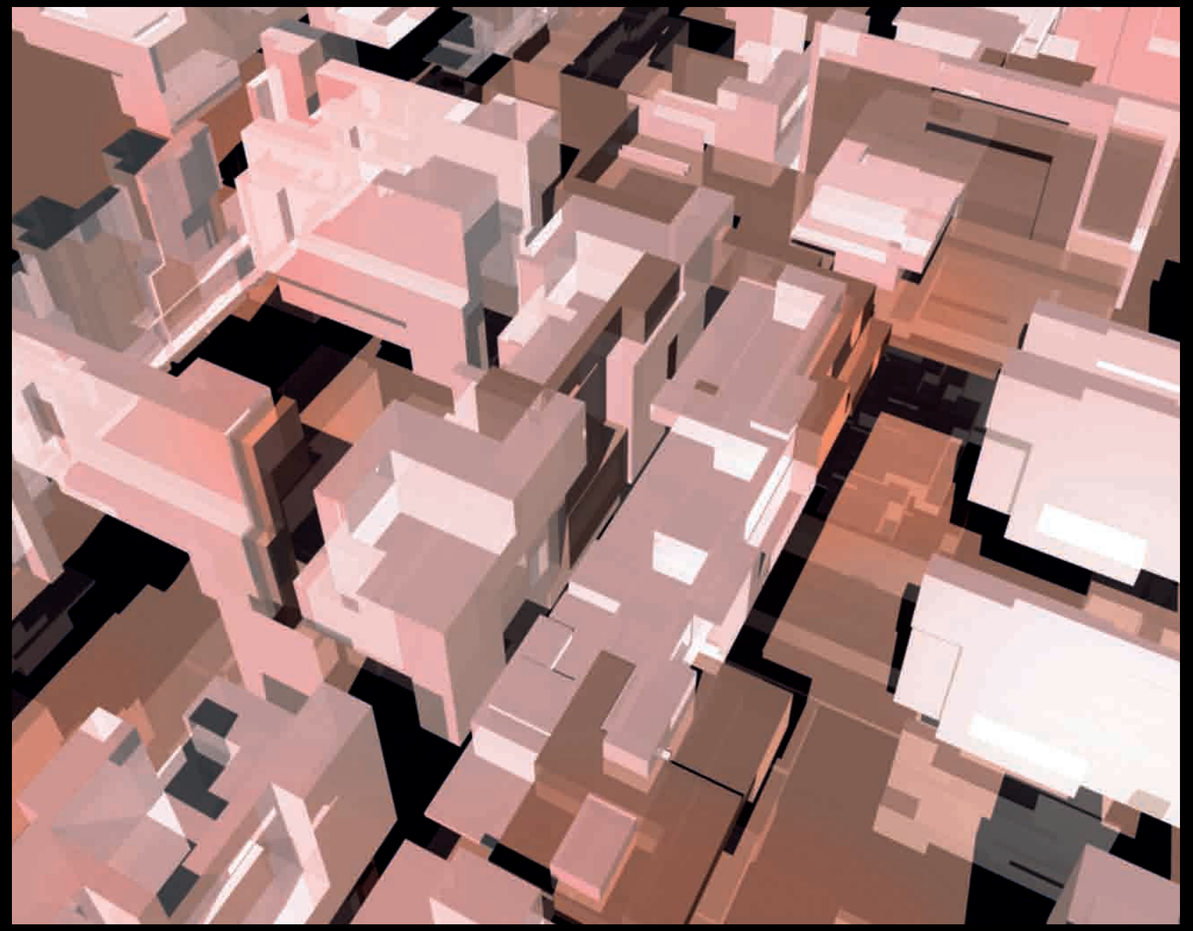
companions undertook a new, ambitious project especially for Hekmag. They translated three milestones in musical history that could hardly be more diverse: four measures of a Mozart piano sonata in C major, a section of Kraftwerk's "Autobahn," and part of the Snoop Dogg classic "Gz and Hustlas." The results are extraordinary: *Mozart's sonata becomes a green worm, Kraftwerk's "Autobahn" becomes an urban grid and the Snoop Dogg piece turns into an object resembling a spacecraft.*

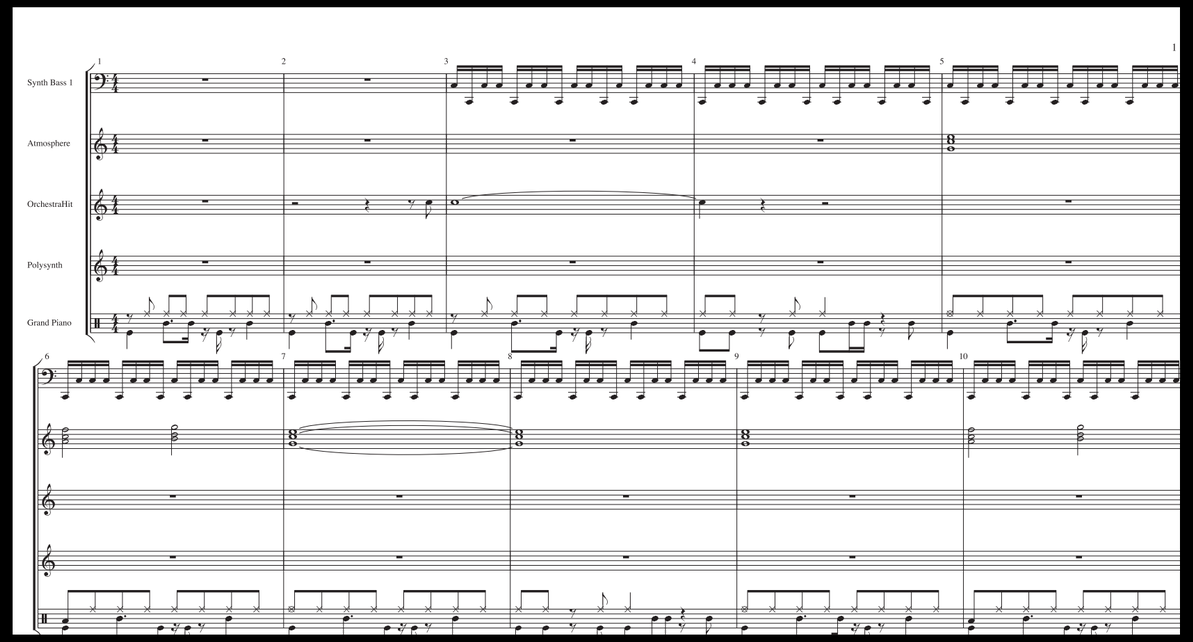


"Gz and Hustlas" by Snoop Dogg.

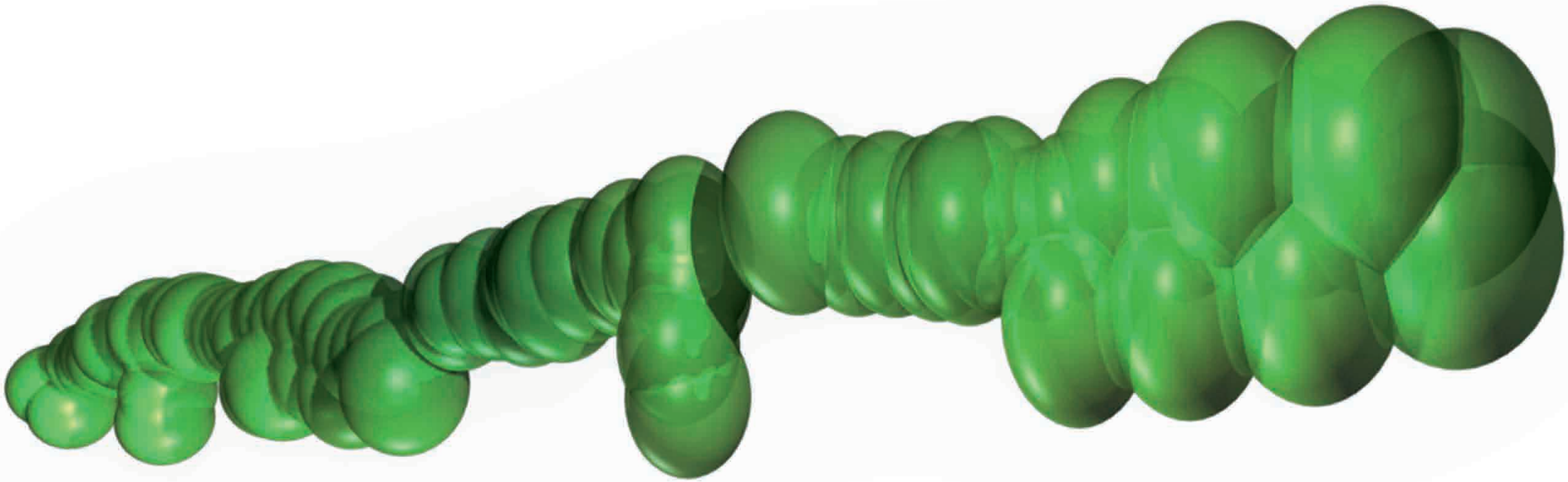
But is that all? Can't a lot more be done with the idea? Is it possible to translate Versailles into a piece of music? Couldn't Robbie Williams' "Let Me Entertain You" be a sculpture to put in the garden of his villa? What about Mozart as a decoration or a high-rise? "It was always my ambition to make art out of it," he says, but because of the breadth of opportunities, he has remained focused on what has been closest – architecture.

That, however, is all about to change. Last year, Hansen worked as an assistant at the world-famous *Eidgenössische Technische Hochschule* in Zurich, in their Department of Digital

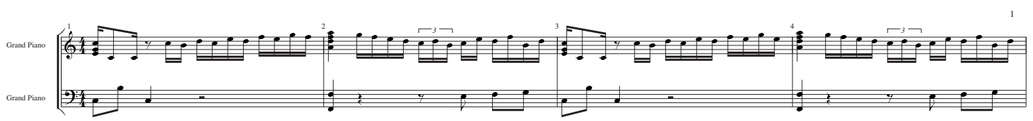




Kraftwerk's "Autobahn" as a futuristic city: "The magic lies in the translation".



Biomorphic object: four stanzas from Mozart's Piano Sonata in C major.



Production. There they have a giant robot that produces three-dimensional printouts. As if by magic, the machine sculpts an exact replica of a form defined by computer from a block of material. It was there that Hansen came a step closer to transforming his virtual 3-D models into prototypes you can touch. *In 2006, he plans to turn some initial notations "into physical reality" using digital tools.* The procedure is expensive and time-consuming, which is why output will be limited at first. But at some point he hopes to mount an exhibition containing a whole range of materialized "musical sculptures." And who knows – perhaps Snoop Dogg will drop by and order himself a whole house.

Text Chris Knipping
Drafts and Renderings by Jan Henrik Hansen/ WHIST (www.whist.ch)