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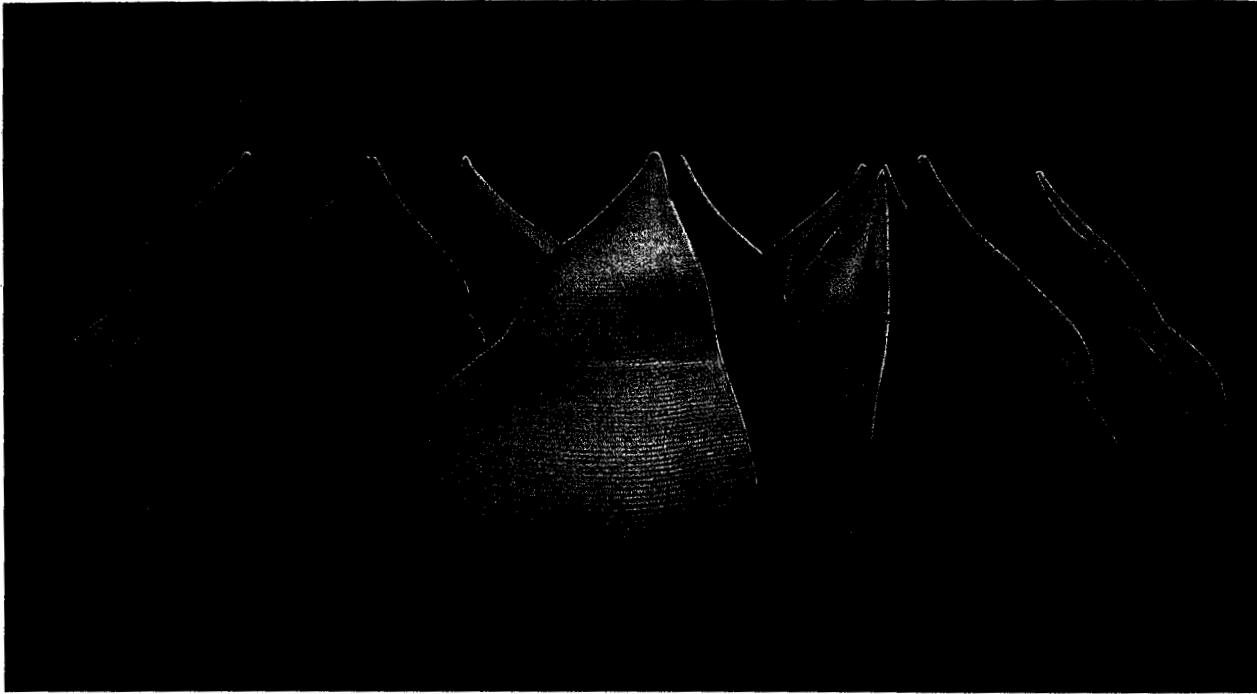
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**Alessi Project – Tea and Coffee Piazza (2000–3)**

Highest grade Aerospace Titanium Alloy (an alloy of Titanium with 6 parts Aluminium and 4 parts Vanadium) – the alloy is super-plastic formed in a process very similar to vacuum forming plastics. First two sheets of titanium are welded together along their edges and a gas valve is attached, forming an inflatable pocket between the two sheets. The sheets are placed in-between a two-part CNC machined tool made from a carbon material that can withstand incredibly high pressure and high temperature. The metal sheets are then heated in an oven in a vacuum comparable to outer space to avoid oxidation and imperfections from airborne molecules. The titanium reaches a plastic state at approximately 900 degrees Fahrenheit. When it reaches this plastic state, argon gas is blown in-between the sheets of metal and ignited. The resulting controlled explosion drives the very strong thin sheets of metal into the carbon moulds. In this way very strong thin sheets can be formed into complex curved shapes while capturing unprecedented detail from the mould. Each part is then robotically cut and welded. The metal is coated with a variable thickness molecular interference film – the depth of the coating changes the refracted colour of the metal creating spectral effects.

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# THE STRUCTURE OF ORNAMENT

Greg Lynn

Conversation with Neil Leach

**NL** *Greg, I can sense a new direction in your work, a fascination with the question of ornament. How did this arise?*

**GL** Since my exposure to post-structuralist analysis of structure and ornament as a graduate student at Princeton University studying with Mark Wigley actually. But in fact, what would even predate that exposure was the summer I first worked for Peter Eisenman on the Frankfurt Biocentrum project. Mark was actually working as a designer for that project along with Thomas Leiser. That was where the Decon show was cooked up and the field was ripe with theories of ornament. Jennifer Bloomer was working at Georgia Tech and later at Iowa State on Sullivan. Catherine Ingraham was doing similar work at the SOM Foundation in Chicago. In fact, ornament was seen as one of the potential sites where Derridian thought would intersect with architectural theory. We can talk about this if it is interesting. I have always been a little tenacious when it comes to theorizing problems that do not reach fruition through textual work, by working them through the theorization of some design technique. Ornament was one of the major issues that I have always thought about.

Even earlier, I would say that the first architectural European tour I took as a freshman undergraduate student was led by Bob Doran who was a Secessionist and Art Nouveau freak. At that time I kept sneaking away to see Corb and Mies but spending three months touring ornamental surfaces at the turn of the century had an impact. The project I did with the painter Fabian Marcaccio at the Secession building also triggered my interest in ornamental surfaces.

Now, the non-autobiographical response . . . I do not want to realize surfaces that are smooth and featureless and so I try to exploit the tooling artifacts that the CNC machines leave on formwork and objects. This gives a highly decorative effect. So there was a forced confluence of the exploitation of a technological feature, the theorization of a design technique and a problem that was speculated on through textual rather than formal means that persisted as an interest.

**NL** *How would you reconcile this fascination about ornament with the period when you were writing and thinking about Deleuze? Any other architects inspired by Deleuze are concerned with questions of process rather than representation. Indeed discussion about ornament – or indeed beauty – has become somewhat taboo in certain circles.*

**GL** If one considers ornament as an applied decoration, then it would be thought of in opposition to process or organization. My recent interest in ornament (since we brought

a CNC machine into the office) comes primarily from the method of crafting surfaces using CNC technology. The process of converting a spline mesh surface into a tool path can generate a corrugated or corduroy-like pattern of tooling artifacts on surfaces. We are using this patterning technique from the fine scale of 1/32-inch lines on the superformed titanium Alessi coffee and tea sets to 1.5-inch lines for interior wall panels. The decoration emerges from both the design of the spline surfaces and the conversion into a continuous tool path. It is not applied but is intrinsic to the shape and mathematics of the surface, and in this way the ornament accentuates the formal qualities of the surface; like the pattern of an animal that intricately responds to the shape and structure of an animal's form. So, it is just about how the question is formed. If ornament is seen as applied decoration, as it has been seen since the invention of the decorative arts, then it would not be transformed by say, a Deleuzian sensibility. But if it is posed as a question of fused interacting processes (if it is, though intricately) then it is a primary concept for Deleuzian provocation. What is interesting is the attention that decoration received from the Derridians and the neglect it received by the Deleuzians. Ornament is a tar baby for representational analysis by a Derridian and it may be the limited success of these critics that led to the abandonment of the topic by our generation of theorists.

**NL** *Let's stick with the view of ornament as seen from the perspective of 'fused interacting processes'. Could we surmise that, if ornament can accentuate structural form, structure itself can be seen to contribute to the ornamental? In other words, do we need to allow our understanding of structure also to be 'transformed' by a Deleuzian sensibility?*

**GL** Yes, in the fusion both terms would be altered. In the Deleuzian sense of 'two-fold deterritorialization' each previously distinct category, in this case 'ornament' and 'structure', would have to open themselves up with some lack or deficiency to then allow the other term to reorganize it internally. So it is not just the expansion of structure into the field of ornament, or of ornament becoming structural, but rather a dependency on collaboration that transforms each category in some unforeseen and unprecedented way. An example would be the skin of the *Predator* project and subsequent interiors where we use the rippling of the tool paths as both ornament and stiffening, yet the logic of both systems is derived from the tooling by which they are each produced.

**NL** *But the problem must remain the very refusal to discuss aesthetic questions within certain Deleuzian-inspired architectural circles, where most are happy to talk about 'processes' but not 'representation'. It is perhaps easy enough to accept a process-based logic of structuration being introduced into a representation-based logic of ornamentation (even though the very notion of ornamentation has become something of a taboo subject) in order to 'transform' and 'recognize' it internally. But how can we even describe a logic of ornamentation being introduced into a logic of structuration, when the very terms of reference for ornament - 'beauty', 'elegance' etc - have been suppressed?*

**BOTTOM Kleiburg transformation, Amsterdam (2000-4)**

The scheme is based on transformation rather than demolition and rebuilding. The design achieves diversity in both social and architectural arrangement based on the following assumptions: the reduction of public space; the multiplication of unit types and their grouping into bundles or homogeneous neighbourhoods, the concentration of public access to trunks of circulation and the design of public spaces so that the neighbourhoods have distinct identities. This is achieved through a mixture of elevator and escalator access and circulation paths supported by a series of over 150 uniquely shaped vertical steel trusses clad in a semi transparent steel fabric, hung from the existing concrete structure.

**GL** What is most interesting is the convergence of Deleuze with the computer. Very much like the discussion that we had in Graz a few days ago, the computer, like any new technology, is at first a de-skilling device and then later an enabling device. The explanation for an inattention to aesthetics, beauty and ornament perhaps, would be that theoretical discourse that thought of the problem of space 'machinically' could be perverted to compensate for a lack of aesthetic skill, given the new tools. I know that the first thing I did when I acquired the expensive hardware and software in the early nineties was that I used a dynamic model of an environment to animate a series of points across the site which were then lofted into surfaces and became the form of the project. This was not Deleuzian machinic design, it was unskilled use of the machine. I would never do something that mechanical now. The difference between the mechanical and the machinic is precisely aesthetics. The machinic implies a creative becoming that is a fusion of the expressive and the mechanical sensibilities. I would use exactly the same tools now but I have an intuition or sensibility for how to use them so that I can now work with, or even better in, the medium rather than at a distance through process. I had an argument with Michael Hensel (at the conference) where I tried to claim that in order to have an experiment or to do research one must have both a sufficiently developed expertise in the techniques and an acute theoretical or speculative model in order to judge the success of the outcome. What we architects have called experiments most other fields would call automatic art. I doubt that any of us could define research in the field of process architecture now, and I know that no one has made a claim at research for the last ten years. Everything was described as a pseudo-scientific experiment or mapping. It is only now, with the expertise in digital technology, that we could have a machinic moment in architecture, because now we have both process and expression. There is only one architect that I know of who is able to work machinically and that would be Karl Chu; his work is also the most jarringly algorithmic and staggeringly beautiful and decorative.

**NL** *Certain parallels seem to present themselves. The contemporary 'inattention to aesthetics, beauty and ornament' seems to echo the Modernist opposition to ornament in the writings of someone like Adolf Loos. And the Deleuzian call for a 'creative becoming that is a fusion of the machinic and the expressive' seems to echo Adorno's call (in his critique of Loos) for a more dialectical approach to the relationship between ornament and function. Do you see a connection between these two moments in architectural history, or do you see them as fundamentally different?*

**GL** I think that there is a fundamental difference, that is regarding the notion of Modernity. At the present moment, Modernism is a style promoted by everyone from Rem Koolhaas to Martha Stewart. It has the ability to carry both radical and conservative architectural and cultural messages. Without veering into another discussion entirely, I would say that there does not seem to be a viable Modern project at this time. Loos, Adorno and Corbusier were all working from the assumption that ornament, structure and form were all framed within the horizon of a Modern project that made a strong break from the nineteenth century. Today evolution and mutation are the calls of the day and a strong disjunctive break is not feasible. Radicality and difference have been inscribed within logics of buggery and assemblage by thinkers like Deleuze. History is now much more vulnerable to uses for which it was not intended. This is all courtesy of Postmodernism in its most banal architectural sense. After the decadence and nostalgia of the eighties architectural history has been opened up to unimaginable abuse by theorists and designers. Deleuze is able to make sense out of such a landscape in a way that Adorno cannot.