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## Graduate Sessions 2: Greg Lynn

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graduate sessions



GREG

LYNN



SYRACUSE  
ARCHITECTURE

Greg Lynn

Graduate Session 02

10.26.05

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School Of Architecture  
Graduate Programs  
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Greg Lynn is the principal of Greg Lynn FÖRM and has lectured and taught internationally, as Professor at the Universität für Angewandte Kunst in Vienna, as Davenport Professor at Yale, and as studio professor at UCLA. He curated the exhibitions "Intricacy" (2003) at the ICA in Philadelphia, and "Intricate Surface" (2003) at the MAK in Vienna. He is the editor of *Folding in Architecture* (Architectural Design, 1993), the author of *Animate Form* (Princeton Architectural Press, 1998), and *Folds, Bodies, and Blobs: Collected Essays* (La Lettre Vole, 1998).

**Graduate Sessions** is a seminar series offering Syracuse Architecture graduate students the opportunity to engage leading scholars and practitioners in conversation and debate. The resulting pamphlets offer unique insights into the work of our guests as well as the ongoing concerns of our students and the graduate programs.



graduate session 02

JD: Greg Lynn's project, the Slavin House, is the subject of this year's Architect's Work exhibit. We're looking forward to talking about your recent work, as well as discussing some broad topics raised by your writings and projects of the last several years.

## I think theory is weaker now than it has been, and my generation has to take some responsibility for that.

TH: I'd like to begin by asking about your 1996 article, "In the Wake of the Avant-Garde," where you characterize architects like Rem Koolhaas and Peter Eisenman as simultaneously designers and theorists. Is their approach to theoretical practice still viable for today's young architects? How do you feel about applying theory to design?

GL: First, I think theory is weaker now than it has been, and my generation has to take some responsibility for that. Second, I don't think Eisenman and Koolhaas "apply" theory to design. Despite protestations by Peter, I think that he and a number of people of that generation are "critical architects" because they formulate an intellectual and cultural position that runs, not in parallel, but through their design work. Peter didn't go read Jacques Derrida and apply it to architecture. Unfortunately, there was a generation of theorists that tried to unravel his and others' work by approaching it that way. For years Peter was saying, "the trace and imprint, the trace and imprint." Then someone, probably Bernard Tschumi or Diana Agrest, told him that Derrida was writing about the trace and imprint. Suddenly Peter became a Derridean architect and everyone, including at moments himself, argued that he was ap-

## Architectural theory in the eighties and early nineties was probably never better or more interesting, but the pendulum has swung to the other extreme.

plying deconstruction to architecture. But when Derrida and Eisenman worked together on the project for La Villette, they couldn't even manage a conversation. Derrida wanted more benches because people need places to sit, while Peter talked about traces and imprints as an architectural vocabulary and design process. The gap between the architect's expertise in philosophy and the philosopher's expertise in architecture is vast, so that type of application rarely works. It requires mutual respect more than expertise. Fred Jameson is one of the few critics from outside the field who is able to move between architecture and philosophy. When I was a graduate student in the eighties, theory was just beginning to appeal to philosophy to broker discussions of design. Critics like Tony Vidler and Alan Colquhoun (who were at Princeton when I was there) gave Michael Graves, who was and is not a critical



architect, a theory to accompany his work. If I had to say what instigated the momentary proliferation and subsequent failure of architectural theory and critical practices, I would say it was Tony's and a number of people's efforts to give Graves a theoretical agenda because they wanted to see him become a significant architect. That set up an economy of architects looking to theorists to validate their work. That weakened both design and theory. My generation reacted very strongly to that. We wanted to theorize ourselves. I think my generation overreacted to the point of breaking dialogue with excellent theorists and focusing instead on intra-architectural issues of design technique. The colleagues that I'm closest to like Alejandro Zaera Polo and Jesse Rieser, who both are rigorously theoretical designers, rejected critical architecture in favor of a program-based, practical, discipline-specific discourse on performance and the diagrammatic. A larger cultural agenda was lost. Alejandro is a very curious example because his abdication of a broad intellectual agenda has led him to a position reminiscent of the postmodern advocacy of architecture parlante. Another reaction, with similar ambitions to reach a

Dozens of architects produce high quality, competent work of no lasting significance because of their lack of theory and self-awareness in the larger cultural field.



broader public, is Bob Somol's argument for "easy," dumber, less complicated modes of design and reception. Architectural theory in the eighties and early nineties was probably never better or more interesting, but the pendulum has swung to the other extreme. As a result of this reaction, I think, the practice of theory has never been worse than it is now.

Geometry really is the fundamental vocabulary for architecture; it's the primary language of construction and organization.

WW: So is it wrong to incorporate theory with practice today?

GL: No. The premise of that question is wrong. There is no such thing as a merely practical practice. Suppose you had asked, "Is there a possibility for significant architecture without theory?" I would say no, never. Dozens of architects produce high quality, competent work of no lasting significance because of their lack of theory and self-awareness in the larger cultural field. Not only do all great architects write, they all are highly intelligent and articulate about art and architectural history, about the discipline in which they practice. Frank Lloyd Wright was a crackpot, but his crackpot theories were intimately connected to the work in a productive way.

By focusing on process we had missed  
the opportunity to theorize design with  
historical and disciplinary continuity.

TH: Where do you position yourself relative to this “overreaction,” and how do you react to it? In an interview with Michael Speaks you commented that working with Eisenman led you to the conclusion that “the project was no longer about writing a better post-structural script,” but rather, “to innovate the formal techniques that support the complexity of the script.”

GL: I just incriminated myself.

[LAUGHTER]

TH: My question is whether these new techniques actually arrive at a new script that departs from post-structuralism.

GL: I have always been interested in geometry and philosophers that focus on geometry. As an undergraduate, I read Derrida's introduction to [Edmund] Husserl's *Origin of Geometry* (I had known about Husserl because phenomenologists use him as a fountainhead) and I still use that text today. So the focus on post-structuralism in the eighties was a curiosity to me because I had a personal interest in that one text and I

What did I do? I didn't know how to design in the medium of animation software so I dynamically mapped the context. It was completely ridiculous now that I look back on it.

followed what everybody was doing with it at the time. Post-structuralist, particularly Derridean, theories of geometry are exhausted only because they treat geometry like language. In architecture, geometry plays symbolic and textual roles, but there are a lot of other roles too. Presently, I'm interested in geometry as not just symbolic form, but also in terms of construction, ornament, structure, general building organization and adjacency, and context. Geometry really is the fundamental vocabulary for architecture; it's the primary language of construction and organization. It's not that post-structuralism and post-modernism were wrong, they are just exhausted.

JS: You are interested in very complex geometries that are not easily legible in the ways that the underlying algebraic geometry of traditional architecture is. Can the calculus-based mathematics in your own work be evident in the final product?

GL: Do you know the proportion of this room in whole numbers?

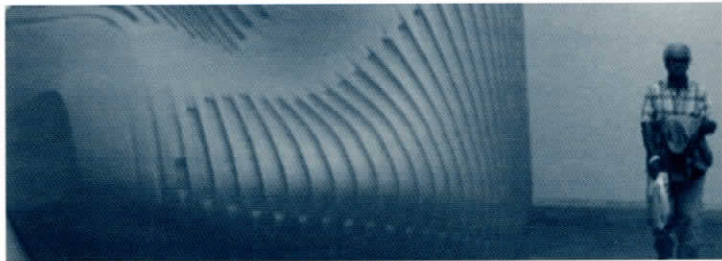
JS: With rectangles you can understand the proportion ...

GL: In terms of algebraic whole number dimensions? I'm trying to get at your question. Calculus is a more advanced form of mathematics than algebra. However, it subsumes algebra into its logic. In mathematics you cannot just throw out the old geometry when you innovate a new one. In architectural journalism, for some reason, one style needs to throw another style out. I prefer to use the term "advanced" not only because it comes from mathematics, but because it indicates the historical process of subsuming previous paradigms into new ones. For example, an oval is a more advanced form of a circle, an ellipse is multiple circles with multiple foci that you could see as being cut obliquely through a cylinder, which leads to a parabola which then advances to a catenoid and then on to a spline. Each step is a more advanced form, but you can always go back into simpler definitions or advance into more complex ones without catastrophic losses of information.

JS: Let me try to clarify my original question: How is the process revealed in the final work?

What is curious is that every single issue that came up in that first weekend is a fundamental issue I have been working on with the computer for the last ten years.

GL: I think the work is the work. I wouldn't want somebody to deduce my process out of a building unless they were other architects or architecture students. Then process is an interesting topic. But to rely on that kind of indexical relationship to process is usually a sign of some kind of deficiency. An important lesson came in my time at Peter's office. I worked on the Cincinnati DAAP building which has a hallucinatory interior painted with hundreds of different colors and swatches. I remember Mike McInturf had to go around with numbers on pieces of masking tape so the painters could paint it. Harry Cobb came to the opening and read the building in an instant. He said, "Peter, you have invented a completely new aesthetic of decoration." I think Peter was shocked. I know I was shocked. We never thought about the project in terms of a concept or discourse of decoration. All we talked about was how the geometry translated into the pattern, which could be indexed back to a generative diagram. By focusing on process we had missed the opportunity to theorize design with histori-



cal and disciplinary continuity. We missed the much more sophisticated and interesting discourse of decoration that was possible.

JS: Your Embryological House is designed as a surface envelope which communicates with the surrounding landscape through various alterations in plan. Is there a way for a site to transform the building? Is this a two-way street?

### I would never use context as an alibi.

GL: That's a good question. I'll be autobiographical, because these things are always more fun if you're autobiographical. I have used computers for a long time. I remember I had a Commodore 64 where you would type in five lines, like: "Line 10 — "Hello, I'm typing on a computer." Line 20 — print." It would print the text and then record it on a cassette tape. My first computer sophisticated enough to do animation work was a used SGI from Grumman Aerospace. I installed a license of Wavefront and found myself with four days left before the Port Authority Bus Terminal competition was due. I thought, this will be fun; I'll see if I can design on a steep learning curve. I have never been more ham-fisted about design than I was at that moment: inexperienced, an amateur. What did I do? I didn't know how to design in the medium of animation



When I worked with Alessi they were asking me to design an art object, but I thought of it as a corporate branding exercise.

software so I dynamically mapped the context. It was completely ridiculous now that I look back on it. I mapped the site in terms of speeds of cars, pedestrians, and buses. I built a gradient model of forces to simulate all of that. I used all these precise, pseudo-scientific numbers, got information from the Port Authority about the number of buses per hour, and did all of that over a 24 hour period. The second day, I dropped a bunch of particles into the space and they made a pattern. I thought, this is a plausible organization for the site. The third day, I started extracting splines from the movement of the particles in the dynamic space of contextual forces and finally I lofted surfaces across the splines, which I knew how to do from other software. What did I find? All of my architectural surfaces were passing through each other in a confused knot. It was a nightmare to try to figure out what that would be architecturally. So, I lofted bent tubes and started to slice it up, vivisection it, and coarsely untangle this hairball of surfaces. I tried to make sure that I had surfaces that didn't pass through each other and self-intersect. What is curious is that every single issue that came up in that first weekend is a fundamental issue I have been working on with the computer for the last



ten years: self-intersecting surfaces (blebs that fold through themselves), bent tubular steel sections and their relationships to ruled surfaces, non-vertical structure, diagonal movement through a space. All that came out of using context as a generator. Do I think that is because 42nd Street and 8th Avenue was a magical place, the epicenter of all architectural innovation? No. The tools have a bias and a set of issues implicit in them, which, when they come in contact with architecture, generate specific problems: how things hit the ground, how things are structured, how you deal with material thickness when it comes to centerline geometry, issues of surface and façade. When they come in contact with automobile design or motion graphics, they generate other issues. But if you don't know the history of architecture, the problems, or the discipline, you can't use the tool, and while the context evokes a lot of those problems, it never provides the solution. I would never use context as an alibi. Context has certain latent potentials (or even laws, rules, and mandates) but the architect's job is to



react to them in a creative, innovative way. The same is true of the tools. Ten or twelve years ago, the tools were the generator in my work because I was more of an amateur.

...if you wanted to do mass-produced, one-of-a-kind products, whether it's toothbrushes or cars, you would talk to architects.

JL: The tea set you did for Alessi raises other issues regarding technology in architectural design. Your interest in industrial design processes has been very productive and generative for your thinking about architecture, but is architecture as fashionable, disposable, and subject to trends as industrial products? Are you thinking of architecture in that way?

GL: I think you can't help but entertain those kinds of ideas when you bounce back and forth. Alessi has a strategy to use architects to reinvigorate their brand. Based on the chemistry between the architects and the company, they take certain designers and move them into commercial products. When I worked with Alessi they were asking me to design an art object, but I thought of it as a corporate branding exercise. It used to be, if you wanted polished stainless steel, you thought of Alessi. Now they are producing cute plastic things. Why not

go back to metal but in a new way? I wanted to do an innovative metal object, a super-formed thing. I knew that Gary Nemchuck was in Southern California doing everything from architecture to aircraft, so I brought aerospace metal technologies to Alessi. Good product designers bring themselves to a company in a way that produces synergy. One of my best friends is Ross Lovegrove and I'm friendly with Karim Rashid; I'm a fan of their work. Both are loyal and ruthless about who they work with and how they work with them. They are intimate with manufacturing and often bring new processes to the companies they design for, and they work for one company differently than they work for another. They know how to deliver a design that fits with a corporate brand, and how to make products and market them through a brand. They know what the brand stands for historically and what potential value it has for new products and materials. So it's really not about the product in the end; it's about a relationship with an entire company and its history of design.

## The problem of being both fashionable and timeless is a dilemma for architects.

WV: The projects we've discussed —Alessi, the Embryological House, the Port Authority Bus Terminal— cover a wide range of scales. Do the smaller scale projects inform the larger scale projects?

GL: Yeah, sure. For example, the Artist Space Installation developed uses for laser cutting and rapid prototyping. The Predator project I did with Fabian [Marcaccio] explored textured surfaces, vacuum forming, and digital printing. That project actually bought me the CNC mill we have in the office and taught everybody in my office how to use it. Exhibitions help me learn to build a big thing on a low budget without contractors, structural engineers, and consultants. Installations are also opportunities to address spatial atmosphere. In the MAK exhibition, I really wanted to produce an ambience around the work that would make you see the work in a new way. One-third of the objects were models of projects; one-third were live animals in custom made tanks and cases; and one-third were objects from the permanent collection at the MAK (we literally went through every object), because I wanted to make



an explicit connection between my work and the Art Nouveau and Jugendstil. We also went to the Tiergarten Schönbrunn Zoo (the first zoo in Europe) to look at animals. We worked with the people that make gondola windshields and built a big tank for bioluminescent moon jellyfish. We lined the room with live blue morpho butterflies. We put a dozen poison dart frogs in a case. We tried to make nature look artificial. I was successful with the jellyfish because twice journalists asked me, "So what software are those rendered with?" But I'm not looking at nature because I want to make a building look like a frog; I'm trying to do a building with a relationship between geometry and patterns that change intricately with the form. Look at the spots on the frog: the spots get smaller at the joints because all of these crotches and folds in the surface are where the pattern diffuses and changes. When I do exhibitions, I'm always thinking selfishly. But I'm not thinking, "How can I build something at a bigger scale?" I'm thinking about how to get into a dialogue with an audience on a more profound level. I try to test certain intuitions about space and see if there is an attraction with the general public. It's the same with the product design work.

I started to think about product branding and identity and how that connects with architecture at the level of technology as well as mass produced "uniqueness."

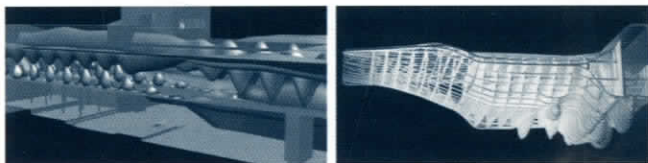
WV: In your essay "Calculated Variations," you write that envelopes described by calculus are "marked by variegation, undulation, and rhythmic change" as well as a "high degree of continuity." How do you isolate issues to explore in such complex and multiple conditions? How do you know when you've achieved what you set out to do?

GL: Projects always lead from one idea to another, and because I'm young, I always treat each project as a discrete set of problems. When I was working on the Embryological House, I made a flip comment to a group of students hoping one of them would take up the challenge: "If you would just focus on one thing, for instance, how to put a window in a doubly curved spline surface, then your career is set." After I said that I realized I'd better figure out how to put apertures in spline surfaces, rather than punching holes in them. I gave myself the problem of going from a house with no openings to a house with, not an infinite, but an endless number of openings, all with the same geometry. A by-product of that study was the question, "How do you do an infinite number of equally

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## The problem with the one and the many also got me into product design.

good objects?" The question is not, "How do you know when you have the right solution?" Instead, you can ask, "How can you have a million perfect solutions within one design effort rather than one perfect solution within a collection of deficient solutions?" The Embryological House was about aperture and the problem of the one and the many. I'm still working on those problems, and they're still developing. But basically the approaches of offsetting or shredding are the two ways I do windows. The problem with the one and the many also got me into product design. It's a philosophical idea that I knew some thing about and thought would have an impact on architecture because architects need to have a consistent signature; not just for people, but for themselves. Architects rarely produce an identical copy of a building. In architecture we have an





ethic that we do things that are supposed to be timeless; they should be unique but shouldn't be too fashionable because if they are, then they can't be timeless. The problem of being both fashionable and timeless is a dilemma for architects. But curiously enough, industrial designers also tend to think in classics: "How do I do a chair that is going to be popular for 50 years?" But then they knock out hundreds of thousands of classic chairs. With buildings, you finish one and move to the next. It's always different than the last one. Architects have a lot to offer to industrial design. For example, someone at or advising Volvo had seen the Embryological House and invited me (and [Sanford] Kwinter, Johan Bettum, and others) to a conference. They said, "Take a tour of our factory, you can see that all of our machines are on wheels now and there is no assembly line." They didn't do cars one after another; every car was a different model, moving around this plant. They had the manufacturing technology to make every single car different, but because of crash testing, marketing, advertising, they were hesitant to do it. Their biggest stumbling block was their

Industrial design suddenly got interesting for me. I could be an expert in this field without knowing anything about it. I started to think about product branding and identity and how that connects with architecture...

## People can work as experts in their own fields but still are connected with other fields through their expertise...

designers, not the engineers and not the means of production. They were in super crisis mode. On top of the problem of infinite variation was the fact that they had just started using Spline software. Volvo knew I could use Alias, and so they asked what I thought of their new designs. I thought every single Volvo looked terrible. Sanford, who is a Volvo driver, said, "These guys are foolish. They owned the brand of the car that is a box, and now they look like lumpy Toyotas." He was already reactionary against technology, but when he went to Volvo he became ultra reactionary. He began to believe that you can't think when you use it. The Volvo visit had a big effect on us but in different ways. So, Volvo thought they needed car architects at every dealership. In actuality, nobody wants to design their own shoe online, let alone design their own car. People are not yet interested in interacting with design like that; they just want things that are unique. But Volvo thought a car architect could say: "Hi, tell me about yourself, what do you need in a car, what are your aspirations," and then translate that into a set of working drawings that would be sent to a factory. Every single car could be different at fundamental levels, even dimensional levels of geometry. Volvo asked



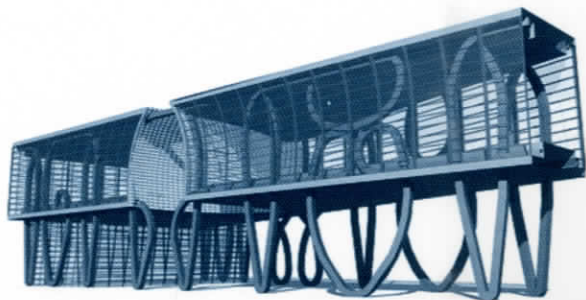
me how they could do this. I was flattered that our field was the field you would come to for this problem; if you wanted to do mass-produced, one-of-a-kind products, whether it's toothbrushes or cars, you would talk to architects. Industrial design suddenly got interesting for me. I could be an expert in this field without knowing anything about it. I started to think about product branding and identity and how that connects with architecture at the level of technology as well as mass produced "uniqueness."

The building industry is so far ahead of the design industry, you just can't even believe it.

JD: What is your approach to interdisciplinary work? Is architecture's relationship to other fields one of reciprocity, or is there no longer a distinction between disciplines? Are you equalizing the design fields?

If you know your field, and you know the construction industry, you can build crazy stuff for exactly the same budget as you build a box.

GL: At a personal and professional level, I like to hang out with specialists. I think there is more discourse between designers in different design fields than there has been at any time of my professional life. In the thirties and forties there was also a lot of dialogue between fields about similar problems, but now digital technology, at least initially, leads a lot of fields to work on the same problems. People can work as experts in their own fields but still are connected with other fields through their expertise in software. Someone like Peter Schroeder at Cal Tech is known to anybody that is doing intensive modeling in architecture, film, automobile, or product design as the person you go to for subdivision surface modeling. Designers all know Bob Aish at MicroStation. That level of connectivity happens around technical problems, but it actually highlights bigger cultural commonalities. Again, the tools are very cultural. Somebody doesn't invent a Blob moduler unless there was some cultural reason to do it and that ends up rippling through all kinds of different fields in different ways. But it is important to know the differences.



In the end, it's the labor that is  
super-expensive.

JD: Well, do you see this as a part of building the Greg Lynn brand identity?

Greg: Definitely. Every architect needs to do furniture and spoons. Peter Arnell told me, "if you don't have a spoon, you're not an architect."

[LAUGHTER]

Jamie: Let's move back to buildings and building scale. Do you see your work driving innovation in the building industry? Can your work be built now or does the industry need to catch up?

Greg: No, they are way, way ahead of designers. The building industry is so far ahead of the design industry, you just can't even believe it. Steel, cladding, curtain walls, finished carpentry, that stuff is super sophisticated. When we did our church pews, I said let's make all our pews different; let's see how much it would cost. So we called all these pew suppliers and they said, "We don't actually make the pews, we just distribute them. There are these guys in Arkansas that make them for

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us." Those guys had used technology to put all the pew manufacturers out of business. They said, "No problem. We'll make every pew different. If you give us a G code, there's no labor involved." If you talk to these people in the way that they want to be talked to, you literally can do anything. But you can't just make a shape and say "Can you build that for me?" Then you are an amateur. But if you know your field, and you know the construction industry, you can build crazy stuff for exactly the same budget as you build a box. Frank [Gehry] is doing it, Thom Mayne is doing it. A firm like Frank's understood early that you don't need to wait around for somebody to solve your problems. If you can make a proposal, you can make things happen. I'm very interested in articulation and tectonics and seams and joints and connections and assembly, and that's what the industry knows how to do. We just did a little single family house with 350 sheets of drawings, which shocked all the contractors. But once you get them into it, it's not a big deal. It's affordable. [continued on back cover]

In the end, it's labor that is super-expensive. For me, an office like Gehry's is really the model. They internalized everything, even their software. They want control over the software because if they are going to be delivering a set of documents that is 100% digital, they want to take the liability. They want to control that information, and control the stream of production. They are going to be experts; they are the state-of-the-art in those areas, but I don't think they ever invented anything new in construction. They just figured out how to hook it all up and bring it under one umbrella. So yes, construction is way, way ahead of design. Always has been. Even for Mies. He looked around and said, "Steel is pretty sophisticated. Let's figure out how to design a good steel building." He didn't say, "I heard of this stuff called steel; has anybody ever heard of it and can we set up a way to make a steel building?"

The building industry is so far ahead of the design industry, you just can't even believe it.