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material. Thus force becomes a tool, an engine with which to influence and design things within a structural field.

So it wouldn't be a purified structure, and it isn't really about innovative structural design either. You would not arrive at the most efficient structure possible given a certain span, but it would be as efficient as it could be given that these other influences are included. A modernist structural designer would probably see what we were doing as impure and possibly irrational. We were trying to mix things that had been distinct realms within a modernist framework.

We created a catenary field and then influenced it by impinging on it from many directions with lines of force. The idea for the catenary field came from a suggestion made by our structural engineer Ysrael Seinuk. Antoni Gaudi used similar models in the design of the Sagrada Familia, but was working solely with gravity forces. Our situation, however was far more complex than Gaudi's. We had generated a rough geometrical model on the computer using the Alias modelling program. The problem we were facing was that the computer models we were working with were only crude approximations of structural behaviour. Physical catenary models have the advantage of being able to simultaneously compute geometry as well as structure with a high degree of precision. We

proceeded to construct a two metre long chain-model acted on by weights and pulleys. We pulled on the chains from a number of directions in order to get them to relate to the formal and organizational strategies of the building. This shaping resolved the organization of programmatic elements and the structural capacity of the field itself. The interesting part is that one would always be assured that any expression in this field is structurally sound. It is a material computation.

**Drexler, Duisberg:** Is it important to you that the process of the generation of form and the forces that influenced it can be read and understood in the final project?

RUR: That is a discussion we have had with Greg Lynn and Jeffrey Kipnis. It isn't so important for us to show the history of the project as a rational development. You know as well as I do that most of these are falsified histories anyway. The design is done and then a cosmetic history is presented which appears retrospectively as being rational. It is simply rhetoric to produce sanitized and rationalized histories, but it makes people feel better

That is not how our office works. The important thing to us would be to have those influences embodied in the project and not simply make them a way of arguing or of describ-

ing a process. We don't have to illustrate that. I guess that ultimately the most important thing would be the project in terms of its actual effects and not the history of its process.



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