Averaging Mies

Drawing 1
An exercise in finding the perfect box, this heuristic device was developed to analyze a set of seminal architectural projects. The plans for Mies van der Rohe’s clear-span structures (some built, some unbuilt) are overlaid about a common corner, revealing similarities and differences in size, proportion, and meter. The dimensions of the building modules are then averaged. These projects exhibit Mies’ notion of the Modernist ideal of “universal space”: horizontal spatial continuity. If Mies’ project was to find the ideal geometry for this idealized condition, averaging his various structural spans is an attempt to find that geometry on the architect’s own terms. The result is an “average module,” the basic building block of the ideal box.
1. Farnsworth House, Plano (1945)
2. 50 x 50 foot Houses, Project (1950-1)
3. Cantor Drive-in Restaurant, Indianapolis (1952)
5. Bacardi Office Building, Santiago de Cuba (1967)
7. National Theater, Mannheim (1982-3)
Drawing 2
The principle of cambering is the design of curvature into a structural element so that it deflects into the ideal form when loaded. The ideal form, in the context of a “perfect” clear-span structure, would be the horizontal beam, but in Mies’ National Gallery in Berlin, another factor is taken into consideration: as this scale drawing shows, there is a camber built into the center and edge beams of the museum so that they are perceived to be perfectly flat but in fact are not. That is, even under normal gravity load, a slight curvature is still present though the beams seem to be absolutely horizontal to the naked eye.