



Frei Otto soap bubble model (top left), Antonio Gaudi gravity model (bottom left), Miguel Fisac fabric form concrete wall (right)

Weighted Transparency: Literal and Phenomenal

SPRING 2020, OPTION STUDIO

VISITING ASSOCIATE PROFESSOR NAOMI FRANGOS

"As soon as we adventure on the paths of the physicist, we learn to weigh and to measure, to deal with time and space and mass and their related concepts, and to find more and more our knowledge expressed and our needs satisfied through the concept of number, as in the dreams and visions of Plato and Pythagoras; for modern chemistry would have gladdened the hearts of those great philosophic dreamers."

On Growth and Form, D'Arcy Wentworth Thompson

Today's maker architect is such a dreamt physicist. What is at stake is the ability to balance critical form-finding informed by the behavior of matter itself with the rigor of precision afforded by computational thinking. This studio transposes ideas of cross-disciplinarity in design, art, science, engineering and material studies pioneered by our forerunner master-builders into built prototypes by studying varying degrees of literal and phenomenal transparency achieved through notions of weight. Working primarily with a combination of plaster/concrete and glass/porcelain, juxtapositions are provoked between solid and void, heavy and light, opaque and transparent, smooth and textured, volume and surface. How can the actual weight of a material affect its sense of mass? How can mass capture the *phenomena* of weightlessness? How can physical material properties dictate *appearances* beyond optical transparency? Using dynamic matter/flexible formwork (i.e. salt, sand, gravel, fabric), suspended/submerged and compression/expansion systems, weight plays a major role in deriving methods of fabrication and determining experiential qualities of made artifacts. The studio will begin with theoretical readings on transparency and research on material properties to develop key concepts to study. By performing small-scale serial material experiments blending analog/digital technologies, proof of concept will be tested through internal forces inherent to matter and the external force of gravity to reveal possible geometric inversions, positions and spatial orientations in systemic investigations of parts to whole. Final models will be installed as a collective exhibition that can be read simultaneously as two kinds of luminous spatial structures: an inhabitable tower and a skylight detail, engaging our possible perceptions of and relationships to scale. Field trips to Corning Museum of Glass will occur sometime during the week of February 17–20 and may also occur again later in the semester.