UG10: Vital Forces in Architecture

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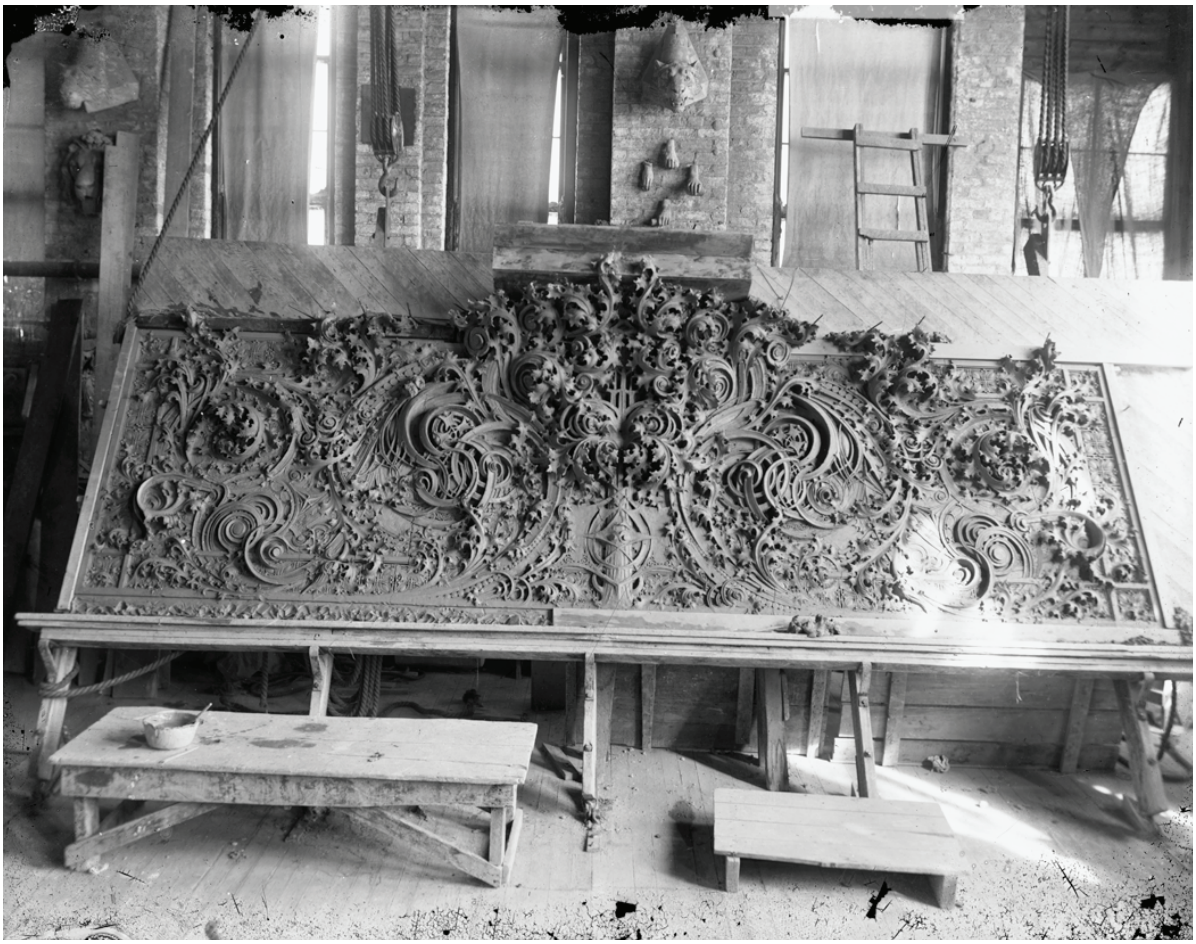
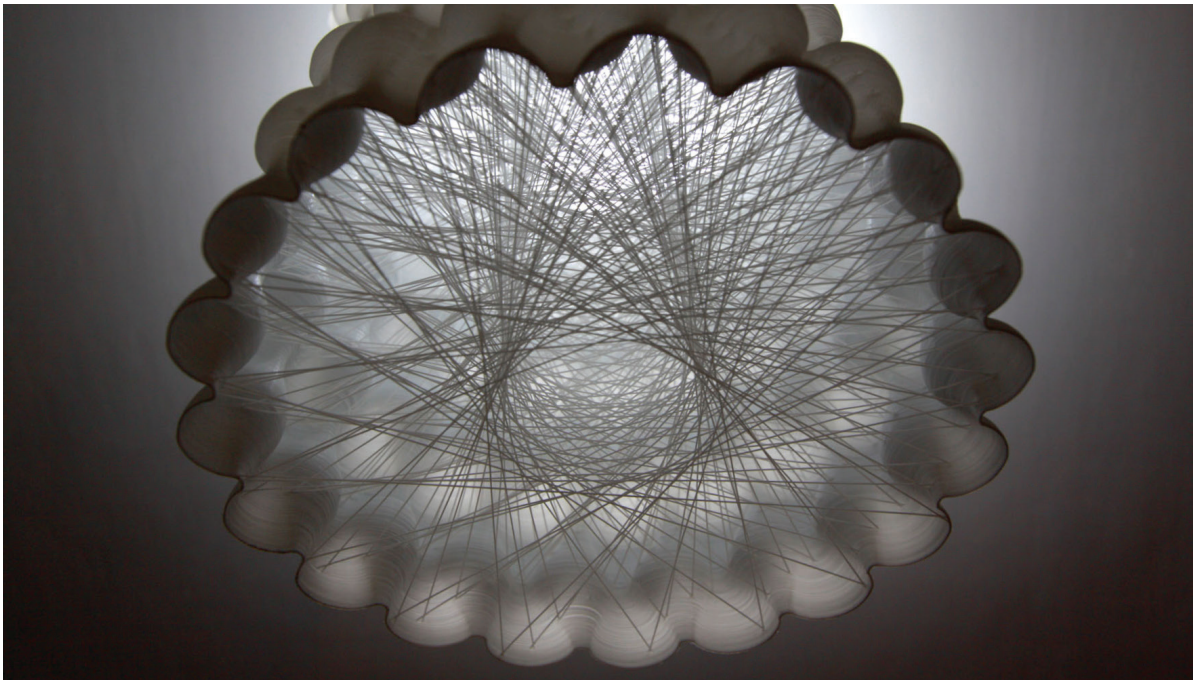
'Truth in art is the unity of a thing with itself: the outward rendered expressive of the inward: the soul made incarnate: the body instinct with spirit.' De Profundis, Oscar Wilde



Northwestern Terra Cotta Company model for the Carson Pirie Scott and Company Store, Chicago, IL. Circa 1899. Richard Nickel Archive, Ryerson and Burnham Archives, The Art Institute of Chicago. Image File# 201006_101116-001.

UG10 will continue to work as a unit, with a focus on learning through making and place. Engaging with digital tools and material experimentation is our modus operandi. As a sub-theme this year, we would like you to consider the idea of liveliness of architecture. Buildings are often made from inorganic matter, and yet design features can have sensations drawn out of us like living beings. If we think of buildings as an assembly of materials balanced in equilibrium, does it necessarily mean that the forces at work simply cancel each other out? Or, does this embodied energy emanate to its inhabitants, spatial experiences that demand active responses and not acquiescence? If buildings can speak, it is possible that immediate contexts play a key role? The life of buildings from conception to inhabitation is intimately linked to geography, economic climate, political agency, cultural and technological shifts. These are all material currents that influence the way we design, build and dwell. Art Nouveau in architecture, particularly in France, is interesting in this regard, where buildings were literally designed as living beings transformed with forces from within. More importantly, these mineral expressions in plant forms on the surfaces of building were designed to signal the arrival of new materiality and modern technology. The finely articulated design character was overflowing with confidence in science and rationalism, against doubt and cultural pessimism of the time.

These energetic tendencies of Art Nouveau can be traced back to the Arts and Craft movement originating in England, whose proponents set out very clear aims. First, expression in design that are true to materials, with clear focus on the natural qualities of the materials. Second, emphasis on articulation of design, clearly exposed as a language in accordance to processes of construction and craftsmanship. Third, distinct references to the vernacular, local and traditional values specific to a place. Our main questions are: how relevant are these objectives today; and how can we employ them in architecture today? With the rise of parametric design and digital fabrication, architecture is evolving into an eco-system of codes. These codes can be interlinked to inform each other through the use of structural and environmental simulation, as well as material behaviour. Similar to the empirical process that was key to the evolution of the cathedrals, design of building components can optimize themselves using an accelerated digital process. If buildings become self-optimizing codes and cranes become 3d printers, what will be the role of the client, architect, engineers, quantity surveyors, project managers and the contractor in the near future? Which vital forces will drive and infuse the human-less codes? In relation to questions of aesthetic and tradition, will these forces be implicit to the systems by nature?



Cloud Capsules by Mamou-Mani (with Andrei Jipa), 2014, a light-scattering 3D printed structure generated with the open-source plugin Silkworm for Grasshopper3D.

'Maker Movement' are enabling young designers to learn how to collaborate with other designers and work with machines directly to materialise their ideas. Open-source and parametric online platforms are accelerating this process, turning each contributor into an active node of a much larger and ever-growing system. Design, engineering and fabrication processes are merging, giving birth to a new kind of digital polymath role which replaces the different related professions. Graphic design, product design, fashion, construction, automotive, art, we are witnessing a worldwide revolution in which the creative output will have no precedent, fuelled by the optimism behind what is currently being described as the third industrial revolution. Creative studios, mini factories and open workshops, dotted around London's Borough of Tower Hamlets and Hackney form an energetic and dynamic part of east London. This area of London has been declared 'maker's new breeding ground' by Timeout magazine September 2015. One year on, a lot has happened but most importantly in this context, the UK has voted to leave the European union. Aa a movement the maker culture champions collaboration and diversity. Brexit is a blow to the existing momentum, but the maker community is defiant. Your proposal will be about the communication of this positive message through the production of an event as a built and drawn project sited in the vicinity of Here East Project in Queen Elizabeth Olympic Park.

Project 1

Lifting the spirit: a part built and part drawn architecture based initially on one cubic metre of material of your choice. This initial part of your design is set up for you to learn and explore possibilities of digital design and fabrication methods (additive and subtractive manufacturing technique or both) suitable to your material study. This built element becomes the foundation of your drawn counterparts. We would like you to be inventive in the realm of digital design, which demands a systematic and rigorous approach. We encourage students to look at the internal and external forces of the project, its interaction with people and environmental factors such as wind and light and how to express the project and its code in drawings within or around the built piece itself. The aim is an uplifting one and the beginning of your event and proposal in Project 2.

In between Project 1 and Project 2, we will travel to New York city on our field trip. The objective of the trip is for you to continue your research objectively in a different context. We will study buildings, models and drawings of proponents in organic architecture movement, including Frederick Law Olmsted, Henry Hobson Richardson, Louis Sullivan and Frank Lloyd Wright. Their stance on natural forces in their work, including Central Park in New York, will provide clear insight for your ensuing design project. In New York, archivist of Avery library of Columbia University, Pamela Casey and architectural historian of Barnard Collage, Ralph Ghoche will join us for a tour of the Avery Archive and viewing of rare materials including drawings, photographs and books on the subject of our research. In addition, we will explore studios of computational designers and manufacturers to explore how the 'maker movement' has also taken hold in the 'Big Apple',

Project 2

Lifting the structure: a finished and finally incomplete architecture is a further investigation into the notion of part versus whole, components versus prototypes, fragment versus unity. We would like you to consider internal and external forces imparting your building design and structure. With abstract and concrete parameters, how can we go beyond the general tendency of architecture being reduced to only a surface, a mere skin? Your site will be located in the vicinity of Here East Project in east London and the aim is to develop your research and new skills into a building proposal with keen interest in materiality, space and all of the vital forces that shape us as architects and the community which we serve. Your project should not simply an object devoid of context like a pavilion and should maximize the use inexpensive materials, playing with standard materials as well as bespoke components. The building can act as an event celebrating the rise of the 'Makers Movement' therefore the fabrication process must inform both the programme and the design.