In what way does parametric and computational technology allow designers to improve design and therefore the built environment? How can parametric design strategies be applied to evaluate and optimize building performance? These two posters illustrate several student projects from dFORM competition at University of Cincinnati (UC) to explore these questions. This competition is directed toward the improvement of an existing space. The UC Niehoff Studio has a large open space with twenty-five foot high ceilings. In its current state, the Studio fails to provide adequate acoustics for most events. In the spring semester of 2013, the dFORM competition called for a proposal to create a few large scale installations in the Niehoff Studio to optimize its acoustic performance. The challenge is to propose innovative, geometric forms that push the limits of design through the exploration of integral material strategies for digitally fabricated assemblies. At the end, twenty-three submissions were collected in the two categories including Suspended Installation and Wall Partitions. Funded by the University of Cincinnati, three winning projects were prototyped at a large scale.
In what way does parametric and computational technology allow designers to improve design and therefore the built environment? How the parametric design strategies can be applied to evaluate and optimize the building performance? How the digital fabrication can be used to materialize a complex system? These two posters illustrated several student projects from dFORM competition at University of Cincinnati (UC) to explore these questions.

In the spirit of all the exciting changes and upgrades that UC is undergoing, this competition is directed towards the improvement of an existing space. The UC Niehoff Studio, located at 2728 Short Vine has a large open space with 25 ft high ceilings. The studio is used for a variety of different events, ranging from small classes to over one hundred person lectures, and from concerts to one on one meeting. Considering the diverse nature of events occurring in the space, the acoustic requirements vary greatly on a daily basis. In its current state, the Studio fails to provide adequate acoustics for most events. It is too quiet when there is an intimate setting, and too loud when the crowd is large.

In the spring semester of 2013, the dFORM competition called for a proposal to create a few large scale installations in the Niehoff Studio to optimize its acoustic performance. The challenge is to propose innovative geometric forms that push the limits of design through the exploration of integral material strategies for digitally fabricated assemblies. How does parametric and generative design operate at different scales? How do inventive design and fabrication help to produce new forms of assembly? How do we engage parameters that affect environmental performance and human behavior? The proposals were required to exhibit the digital forms and the fabrication process. At the end, 23 submissions were collected in the two categories including Suspended installation and Wall Partitions. Funded by the University of Cincinnati, three winning projects were prototyped in a large scale.

dFORM, digital fabrication of responsive materials

ACKNOWLEDGEMENTS

Lead Faculty: Ming Tang, LEED AP, Assistant Professor, University of Cincinnati
Jury: Frank Russell, Ming Tang, Niccolo Boldrin, Ryan Scavnicky, Trish Kahler, Amy Danielsons
Winning Team: Sydney Brown, Prince Osemwengie, David Burgei, Matthew Stoll, Theresa Bort, AJ Suever, Mary Wischmeyer, Rebecca Doughty, Michael Haddy, John Mitros, Corey Thomas

More information about the competition is available at http://ming3d.com/dform