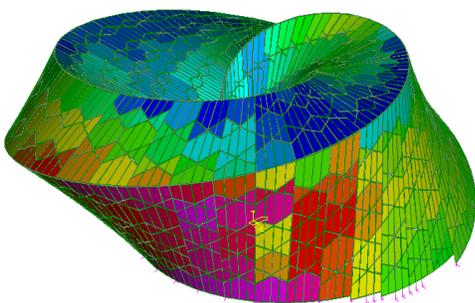
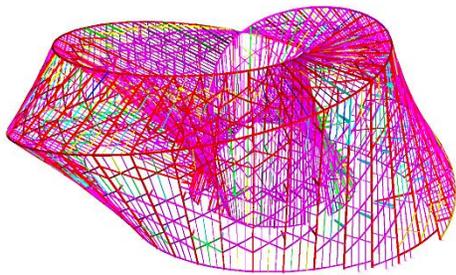
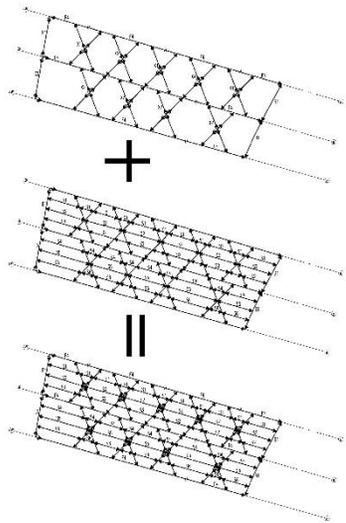
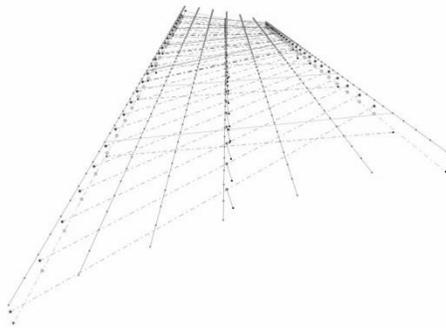


Sustainable Façade System



[Premise] Interoperability and integration between design, analysis and execution in architectural practice allow building façade systems to be increasingly complex and non-standard. As customized building façade systems increase in contemporary buildings, it is important to adopt the integrated design process that aids problem solving and design-making on façade design and execution.

[Context] The pre-use phase and the use phase of a building accounts for 90% of building life cycle energy. There is an opportunity for research and improvements from building facades to achieve more sustainable built environment. It is important to minimize embodied energy of façade systems and to fully integrate them with building environmental systems to achieve overall building energy efficiency.

[Skill/Outcomes] The course addresses general principles and theoretical framework that affect the ecological sustainability of a building façade system. The course specifically focuses on façade design, materials, and performance optimization of a façade system. Students will gain façade design and technical knowledge of a sustainable façade system by integrating performance based design, assembly drawings and physical models.

[Methodology]

The course will meet once per week, consisting of seminar and lab session as necessary. The seminar focuses on glass façade systems in the area of façade typologies, façade performance, materials, and system details and assembly.

Students will work collectively to familiarize key terminologies and theoretical framework on sustainable façade systems, establish strategies for analysis and sustainable matrix, develop façade system details, and finally execute a sustainable façade system. Contributing to the group work, each student will learn deeper expertise on each topic through individual assignment and research work, which will develop through lab actives, discussion & debate, in-class presentations and model making.

[Grading]

| | |
|---------------------------------------|-----|
| Class attendance and participation | 20% |
| Pin-up 1 | 20% |
| Pin-up 2 | 20% |
| Façade research report, Final project | 40% |

[Textbook]

Lovell, Jenny. *Building Envelopes: An Integrated Approach*. Basel, New Jersey: Princeton Architectural Press, 2010.