Education, Design and Practice – Understanding skills in a Complex World

• Paper / Proposal Title:
Light and Building Skins in Beginning Design

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• Abstract (300 words):
Architecture students are often introduced to environmental aspects of the projects in senior years, while based on contemporary practice, there is a need to shift this knowledge to the beginning design. Lighting and energy modeling literacy is of significant value, to better prepare students to find solutions for sustainability and ecological issues for the contemporary workplace. Architecture students will also have an impact on making well-lit spaces, which will result in the well-being of people.

This paper provided a course outline to incorporate lighting education in the curriculum, accompanied by examples of student’s work in light analysis and building skin ideas. Students’ projects were collected from elective courses, focused on building skins.

The lighting analysis course introduced students to the concepts of illuminance quantity and quality, daylight autonomy, glare, dynamic shading and artificial light. In the advanced course, students were asked to design an innovative building skin based on different iterations. This article explored light analysis in teaching, and assignments in the beginning design. The observation of students’ projects in design studios demonstrated changes in design decisions based on understandings of light and energy.
• Author(s) Biography (200 words each):

I received my PhD in Design from North Carolina State University in 2015, where I contributed as Research Assistant at the Building Systems Integration Lab. My research was focused on Improving Daylight in Atrium Buildings, developed under the supervision of Dr. Jianxin Hu. Having my background in Architecture, I was graduated from MS in Architecture Studies from Massachusetts Institute of Technology (MIT) in 2011. Beyond this dissertation, my research interests include:
- Daylight Modeling and Simulation
- Environmental Technology
- Healthy Built Environments