Title: Re-Informative Design Media in Architectural Pedagogy

Conversation among different types of design media is critical in providing haptic feedback within the architectural design loop. We will examine the significance of reciprocal relationships among different dimensions of design media including 2D drawings, digital models and physical models in design process. We will discuss the characteristics and roles of these media for a better understanding of the integrated design process. We will focus on a design methodology that enables different design media including 2D drawings, digital models and physical model to inform each other in the design loop from the perspective of the haptic-cognitive design process. This integrative approach in which cross reference among different media complement each other would expand the conversation among design media, promoting gradual learning and discovery over the continuous process of design conceptualization, development, representation and fabrication. We would share the cases studies to show how reciprocal activity among different media drives the design process and outcomes.

As the second topic of our conversation, we would pay more attention to creating a fully integrated design loop of digital architecture, where the gap between form in the virtual model and physical model is generally larger than it was in the pre-digital era due to the difficulty of the externalization of challenging forms via traditional methods. The process and result of this digital architecture, characterized by a dynamic transformation of three-dimensional structure, are highly dependent on not only the designer's aesthetic sensibilities but also the designer's expertise in using digital technologies. Schools of architecture the world over introduced digital technologies to their curriculum with a focus on computer based visualization at the advent of digital architecture. They failed, however, to give the same attention to digital fabrication, limiting student's skills in exploring the quality of complex space to two-dimensional rendered perspectives on a computer screen. This imbalance between design computing and digital fabrication resulted in students having an incomplete mastery of digital architecture, which should the critical factor that incompletes the design loop aforementioned. We would emphasize the significance of digital fabrication for scaled physical models as not only representation tools but also a design tool in the digital design loop and then highlight the need for a balance between both areas in architectural education.

The third part of our conversation would propose a curricular structure that offers a balance of knowledge in both areas as a general pedagogical approach and effectively integrate it with design studios. Lastly, we will discuss the adaptive curricular structure to thrive post-pandemic for academic resilience.