

# Digital Tools + Analog Methods: How is digital media evolving the way we teach, build, and practice in the Americas?

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## INTRODUCTION

The most evolved applications of digital media are still a collaboration of a digital tool – a device for drawing, modeling, animation, or optimization – and the analog methods of a designer (who refines, revises, and assesses a design process). How is this interface between designer and device evolving and influencing the rituals and mechanisms of building? How is it affecting what (and how) we teach in our schools of architecture? Are we, in fact, effecting change in the craft of building and in the process of design?

In the past decade, digital media has become central to a large number of design studios and young design practices around the world. While this conference aims to consider the broader definition of ‘American’ architecture, financial considerations unfortunately preclude the attendance of many South American architects and scholars. To offer a more complete overview of digital media in the Americas, a video exhibit showcasing the design and scholarship of twenty-one American architecture schools will complement the dialogue of this session. By combining this exhibition with a moderated panel discussion, this session aims to examine the current state of the digital art more broadly, while considering directions for future work. Through a selection of projects, including studio proposals, design research, and built work, we will consider a range of digital methods, tools, and techniques. These, in turn, will allow us to discover common threads in the academic and professional production of our various regions and contexts.

To examine the relationship between digital tool and analog designer requires two directions of inquiry. We must first ask where the digital tools of design are actually having an impact on what we make and how we make it: That digital tools permit

certain processes to be accomplished more quickly is obvious. But speed does not necessarily produce a shift either in the nature of those ideas, nor in the methods we use to explore and express them. A crude example of this is the use of the ‘archi-script’ font in architectural drawings: A traditional graphic convention is applied using digital means, but the lettering style remains a product of method, never intended to represent an ideal means of graphic communication. Taken further, most architectural firms now use CAD to compose drawings, few have truly re-examined the efficiency of their drawing methods, or the effectiveness of their graphic conventions. Even fewer have allowed new methods of representation to affect design thinking. Where is digital media affecting a reconsideration of what we draw? As 3D digital modeling continues to evolve, might these tools be applied to construction documentation and construction as well as to design presentations? This has become essential to Frank Gehry’s method of building: Might this same shift occur for smaller scale practice? How can the content of our drawings change to better communicate our design ideas now that our drawing tools have evolved?

Once we recognize where the digital and analog relationship might permit (or produce) change, what can we discern about the juncture of designer and device? For example, in shape grammar research scholars are developing computational algorithms to optimize the geometric organization and scale of buildings, but perhaps more importantly, to make specific pre-meditative decisions regarding which design characteristics should be optimized and in what order. These optimization tools are sometimes criticized for all the design issues they do not take into account. But the process of designing and testing these systems permits an examination of the design process that did not previously exist. Even by examining the shortcomings of these algorithms we may better observe where designers’ collective insight is most effectively applied. And, as these optimization tools evolve we may discover new economies in building. How much might we improve the quality of workforce housing if we could better optimize the use of building materials? As optimization tools improve, might a designer be freed to resolve those issues that, of necessity, remain a part of the analog world?

To examine the relationship between digital tools and analog designers we must consider both where digital tools are changing our working methods and where digital methods, in turn, might provide greater opportunities: Where should changing tools permit an elaboration of craft or complexity? Where should this evolution affect our social intentions for architecture? Are we using digital tools to solve significant problems? By taking stock of where we stand within this evolution we may gather insight from our common endeavors and a direction for future inquiry.

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