

## IDEAS Case Study Summary May 2-4, 2011

*The changing dynamic between owners, architects, engineers and contractors.* At the Autodesk IDEAS event of May 2-4, leaders and technologists who shape the design, construction and management of the built environment gathered for a lively and interactive conversation about trends in the industry. Presentations and case study discussions focused on the role of ideas, decisions and realization in design and construction, and the shifting power balance between these three critical elements.

*What is power and how does its nature and application affect the lifecycle of the built environment?* Max Weber defined power as “The probability that an actor in a social relationship will be in a position to carry out his own will despite resistance”.<sup>1</sup> From Hannah Arendt, we learned that “Power corresponds to the human ability not just to act, but to act in concert.”<sup>2</sup> And John Kenneth Galbraith described three instruments for the exercise of power – personality, property or wealth, and organization.<sup>3</sup>

The IDEAS Case provided a framework to explore the social, technological and behavioral issues connected with innovation and improvement in the built environment. Three case segments - a first scenario focusing on Ideas, a second on Decisions, and a third on Realization - considered how these valuable contributions are positioned in design and construction processes for today with implications for tomorrow.

### Segment #1: Power of the Idea

A panel discussion among practitioners Chris Luebke and Christopher Sharples was facilitated by Phil Bernstein. The panelists provoked the audience to consider the source of the idea and its power to drive the success of design and construction projects. Is an idea that ephemeral thing which is before the mind? A suggested course of action? A concept?

An idea can be powerful, such as the idea of “zero net energy” – a building that produces enough energy to satisfy its needs for consumption. An idea can define aspiration or a set of values. In case study groups, participants discussed the first problem – developing a design for a compelling, visionary, zero net energy museum on the site of the SF Museum of Fine Arts. Case groups were charged with the specific design problem, and were asked to reflect on the source and sources of power for the ideas under discussion.

- The language used to describe an idea has a strong impact on our ability to articulate and solve the problem.
- Idea-generation hinges on formulating a series of questions.
- An idea pipeline can enrich a project, provide clients with innovation.
- Defending, communicating, enthusing about an idea have a large influence on its power, longevity.

### Segment #2: Power of the Decision

A second panel discussion featured Renée Tietjen and Howard Ashcraft, facilitated by Robert Middlebrooks. These panelists brought the owner perspective into a discussion about how decisions are made. The client imagines a new future and challenges the entire

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<sup>1</sup> Nye, J. S. (2011). The future of power. New York, PublicAffairs  
Reference to the original - Weber, M., A. M. Henderson, et al. (1947). The theory of social and economic organization. New York,, Oxford University Press.

<sup>2</sup> Arendt, H. (1970). On violence. New York,, Harcourt.

<sup>3</sup> Galbraith, J. K. (1983). The anatomy of power. Boston, Houghton Mifflin.

project team to envision a solution which meets requirements across the entire building lifecycle. This begins with a focus on the mission of the owner and occupants that the building will serve. Sufficient time to clarify goals and objects and transparency of the decision-making process are instrumental in achieving client aspirations. The second case study segment focused on a difficult decision which had to be made on the museum project. Groups assessed the value of laying groundwork from project inception and anticipating the need to support decision-making at difficult moments. Powerful decisions require timely access to relevant information, to build insight and support achievement of objectives.

- Decisions are like sausages – complex, aggregations of information, directed from the top.
- Having a broad sense of the organization's direction gives individuals the conviction to decide, to act.
- The consequences of a decision need to be well-understood, we need to know what that decision will mean for the organization and its mission, but we often aren't able to fully enumerate and predict these consequences in practice.
- We need to move from the typical Design > Construct > Operate paradigm to a new model considering the full lifecycle, supplying the right solutions and the right time and place.

### Segment #3: Power of Realization

Dan Russell and Jason Bredbury served as panelists for the third discussion, facilitated by Mark Strassman. As projects move into construction, power balance shifts to the ability to bring a concept into physical reality, to move from design intent to construction detail. Access to the insights of building information modeling by the expanded design and construction team raises questions about the appropriateness of information and level of detail at each stage of the project lifecycle. In the gap between design and construction, or idea and realization, lies a gray area which requires exploration, definition and clarification of ownership. The final segment asked case study groups to address the problem of cost-overruns associated with a unique design element. To work around the constraints and find a cost effective solution which met the design intent, teams considered risk factors and alternative methods associated with custom fabrication. The power of realization is the power of effectiveness and creativity in the resolution of complex physical problems and supply chain issues.

- How teams interact to resolve the real world problems of realization is the issue, not technology.
- Affecting change is painful, and with IPD and other collaborative models the boundaries between roles are blurring.
- To achieve productivity, we need to create truly collaborative teams and get people involved early, invest the time we need to plan.
- We can learn from other industries, from lean models.

### Lessons Learned, Observations

- To achieve true collaboration and improved effectiveness in our industry, we will have to overcome the tradition of adversarial interaction, and be willing to scale legal and liability walls. We have to UNtrain ourselves and overcome fear of change.
- This goes beyond having an open mind about sharing information and data, but also working to respect the contributions, or the powers, of each professional contributor across domain boundaries and specializations.
- Collaboration will require improved competency, for each group to "speak the language" of the others, and for better knowledge and technical implementation of "standards" which enable communication and exchange.
- The issues of power translate into questions about how each contribution to the building lifecycle will be valued.

The case discussion concluded, asking all participants to consider how the changing power balance of ideas, decisions and realization will affect our industry, our professions, our companies, as the design and construction industry continues to evolve and transform in the face of economic constraints, innovative technology, and new business models and opportunities for collaboration.