DOING THE RIGHT THINGS

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ABSTRACT

In John Tabita's essay "Doing Things Right versus Doing the Right Things," he discusses two different approaches in the business management world: tactical thinking and strategic thinking. This opens up an interesting debate between creating the vision and implementing the vision. He offers a fair argument for both approaches. They are beneficial to tackling a problem and fundamental to success in business. Yet there is a critical tension between a tactical thinker who tends to "do things right" and a strategic thinker who is inclined to "do the right things."

"If you do something 'right,' but it is the wrong thing to do, your efforts will be futile. Conversely, if you do the 'right thing,' but you do it wrong, you will also fail miserably" (Tabita 2011, n.p.). How can we apply this inquiry to architectural pedagogy? The current model of architectural program curricula is based on the tactical approach, predominantly skill-based design education. Therefore, the measure of success in architectural pedagogy of NAAB-accredited programs tends to be solutions for tackling a design problem. While the tactical thinking process is needed and essential, how can we implement the strategic thinking process into our current architecture curricula to promote the idea of "Doing the Right Things"?

The research paper is rooted in an upper-division special topics course, Data-Driven Research Methods, and will showcase two projects. The first, Spatial Network Analysis for Oklahoma City Streetcar, is focused on the infrastructure of the streetcar and its effects on the urban environment. The second project, Interactive Podium, uses embedded computing technology to create a visual platform for interaction between users. By developing diverse perspectives of the research process, the architecture curricula can nurture an effective decision-making process and proactively seek the "right things."

Keywords: Design Thinking, Tactical Thinking, Strategic Thinking, and Decision-Making Process

1. INTRODUCTION

Design thinking and its application are widely used in business, innovative education, emerging technologies, and other design-intensive disciplines. Design thinking may have slightly different foci and viewpoints in these various areas, but they share many similarities and complementary aspects. In architecture and architectural education, we have followed a largely traditional process in solving the design problem and maintaining the procedural aspects of design thinking. These positions have traditionally perceived design thinking as a linear process that requires decision-making within a predestined frame. How can we embark on a richer design thinking process?

We tend to believe that our type of thinking must be superior. Nevertheless, regardless of whether you are a strategic or a tactical thinker, you must come to realize that both types are critical to success. When it comes to strategic versus tactical planning, it is easy to fall into either/or thinking; that is, either strategic thinking is better or tactical thinking is better. The terms “tactics” and “strategy” originated as military terminology. They are two terms that are often used interchangeably in numerous contexts. Strategy is defined as an overarching plan or set of goals. Changing strategies is not a small task; it can be done but not quickly.

On the other hand, tactics are the specific actions or steps you undertake to accomplish your strategy. To achieve your goals and accomplish your plans, we need to view both the micro and the macro perspectives and how both fit together (Farnam Street 2018). Strategic thinking focuses on creating the vision, which is typically crucial to aspects of leadership. In contrast, tactical thinking is positioned for management that effectively implements the vision for goals and plans. Therefore, strategy and tactics are complementary. Then, how are these thinking types implemented in architectural education, and can they help us redefine design thinking?

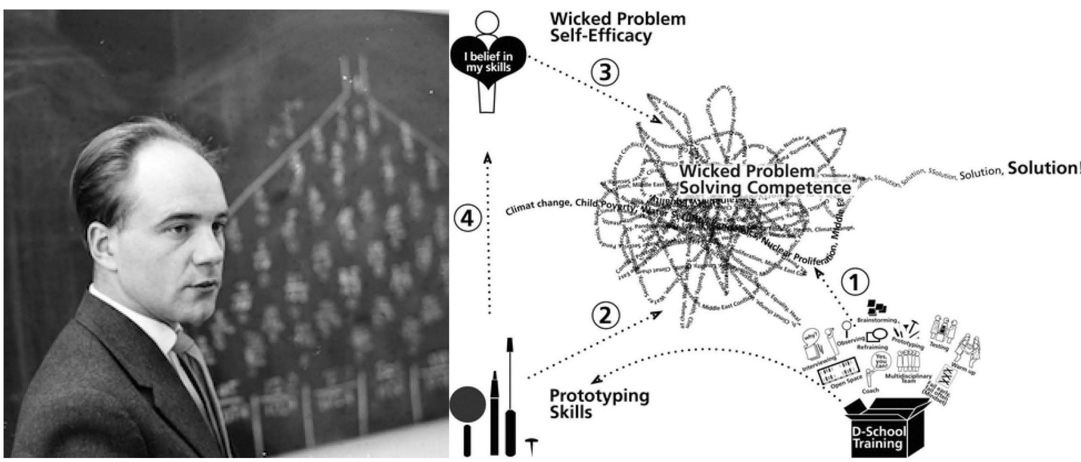

Figure 1: How prototyping helps solve wicked problems (Jobst and Meinel 2013)

In short, tactical thinking can be thought of as “doing things right,” while strategic thinking is “doing the right things.” Based on discussion between strategic and tactical thinkers, this research paper investigates how the design studio introduces the design thinking process via implementing tactical thinking and strategic thinking within studio projects and the overall framework of the studio. Design as a problem-solving endeavor has been the basis of studio education and NAAB’s student performance criteria. Its main focus is skill-based criteria, which puts a heavier emphasis on tactical training to achieve fundamental skill sets for conventional architects. It isn’t efficient to conduct any design studio while the students are lacking in skill sets. This works if it is a well-defined problem; conventional problem solving should be sufficient. But with this format, we overlook the uncertainty of future problems that we are frequently given: ill-defined problems, known as *wicked problems.* Horst Rittel, a design theorist known for coining the term “wicked problems,” described these in the mid-1960s as extremely complex and multidimensional problems (Rittel and Webber 1973) and wrote and spoke extensively about problem-solving in design (Figure 1).

Wicked problems are at the very heart of design thinking because it is precisely these complex and multidimensional problems that require a collaborative methodology that involves gaining a deep understanding of humans (Dam and Siang n.d.).

Perhaps not all design problems are *wicked*, and formulated decision-making processes are enough to maintain our domain of the design thinking process. But another question arises: why are successful businesses like Airbnb adapting design thinking as strategic thinking? In doing so, they explored not only the end users' experience, but also figured out how to iterate the solutions for future possibilities (Cross 2001, 49–55).

How can we teach and explore design thinking? In the history of design thinking, Buckminster Fuller aimed to create the "design science revolution," incorporating rational thought with science and technology, with a focus on architecture and engineering. Design science, as a discipline, began to take shape in the 1960s in an effort to solve problems created by the rapid advancement of technology. Fuller called for this revolution to overcome the human and environmental problems that he believed could not be solved by politics and economics (Cross 2001, 49–55).

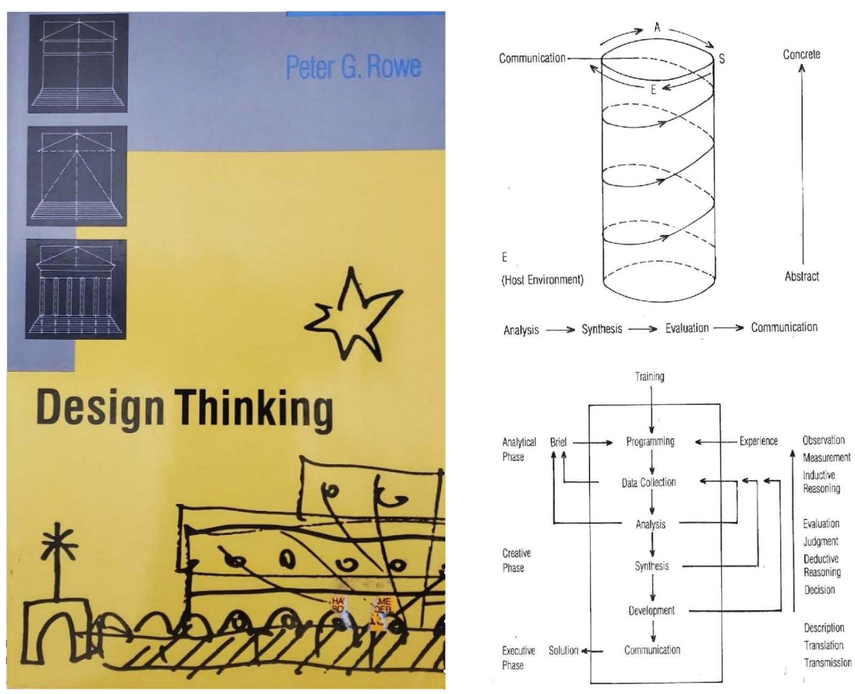

Figure 2: An iconic model of a design process (top right) and Archer's model of stages in a design process (bottom right) (Rowe 1987)

In the 1980s, Peter Rowe describes in his book *Design Thinking* that these problems have no definitive formulation but become fully defined through the design process (Figure 2). Additional questions feed a continuum of reformulation. There is no explicit basis for the termination of a problem-solving activity. His book *Design Thinking* provides procedures for solving problems as particular manifestations of an underlying structure of inquiry common to all designing. Rowe seeks to define the intellectual activity of designing both as rational inquiry, governed by guiding principles and constraints, and as a matter of the conviction and impulse by which design principles are invented and applied (Rowe 1987). Rowe describes his work as “an attempt to fashion a generalized portrait of design thinking. A principal aim will be to account for the underlying structure and focus of inquiry directly associated with those rather private moments of ‘seeking out,’ on the part of designers, for the purpose of inventing or creating buildings and urban artifacts” (Dam and Siang n.d.).

1.1 Doing Things Right

This studio promoted design as a proactive, interactive, and intellectual activity of creating and making. As such, students were challenged to pursue a unique approach to design problems instead of following prescribed design processes. Providing a sequential project assignment emphasized the critical thinking process and encouraged them to develop an autonomous design methodology. This pedagogical approach conveys a unique opportunity for the expansion of the design thinking process through a rigorous investigation of making. To achieve this goal, the studio asks “What if?” instead of stating “This is.” This open-ended environment enhanced students’ learning experience and the development of tactical thinking.

First, the studio began the design exploration by investigating the concept of autonomy and the culture of reuse (Figure 3). In the article “Critical Architecture: Between Culture and Form,” Michael Hays describes the advantage of autonomous forms for reuse, noting the availability of their parts and processes to be recombined. As our culture strives to create things of lasting value and usefulness, we as designers must become masters in the art of transformation (Hays 1984). Students were challenged to generate autonomous forms to “discover” a new function. This argument for autonomy requires an alternative to the design thinking process. The multiplicity of possible architectural forms was contingent on the students’ research; they had no relationship to a preconceived function. The design process was shifted from a static functional exercise to a pathway of discovering new possibilities, from tectonic contingencies to the autonomy possible in figurative form making.

Through the design process of transformation, students generated their conceptual forms of exploration to “discover” a new design (and thinking) process. This encouraged thinking about how they could interpret and change the view to find a completely new form. As a nonlinear process, students worked through various studies, moving beyond a simple reapplication to transform their selection into an entirely new object. Any functional uses proposed derived from the unique forms created, thereby applying the mantra *function follows form*.

Figure 3: Autonomous Architectural Form (OSU School of Architecture ARCH3216_raSTUDIO)

After many initial studies, the project was developed and presented as a physical model and series of drawings in a portfolio format (Figure 4). This was followed by discussion about the development of chosen studies, speculating on a new function (or functions) for the object. Various dialogues were conducted: What might the new object look like in its new application(s)? Could it be applied at various scales for entirely different uses? In *The Function of Form*, Moussavi acknowledged that the function of structure explores the production of singular affects through systems that relate form and content and their capacity to produce a variety of forms. “The research presented aims to move architectural experiments away from [mechanistic] notions of systems for re-producing forms, to [mechanic] notions of systems that determine how parts of an architectural problem interrelate and multiply” (Moussavi 2009, 12).

In the second sequence of design assignments, we attempted to redefine the problem-solving process in design. This, organically, alludes to the practice of architecture as “problematic,” which is not correct and ultimately precarious. While a problem is an obstacle that involves doubt, uncertainty, and obscurity, it has inherited negative connotations that contradict the positive and prophetic nature of architecture. The question that remains is: if architecture is not solving problems, what is it accomplishing? The answer is: architecture answers questions! It is this simple. However, to answer a question properly and precisely, the question needs to be well stated and defined in every aspect. After investigating autonomous form and transformative design process, the studio challenged students to again reenvision the architectural form as an architectonic intervention. This suggests that architecture can interfere at one state of architectural being and cause a transformation that ultimately leads to a meaningful architectural interposition.

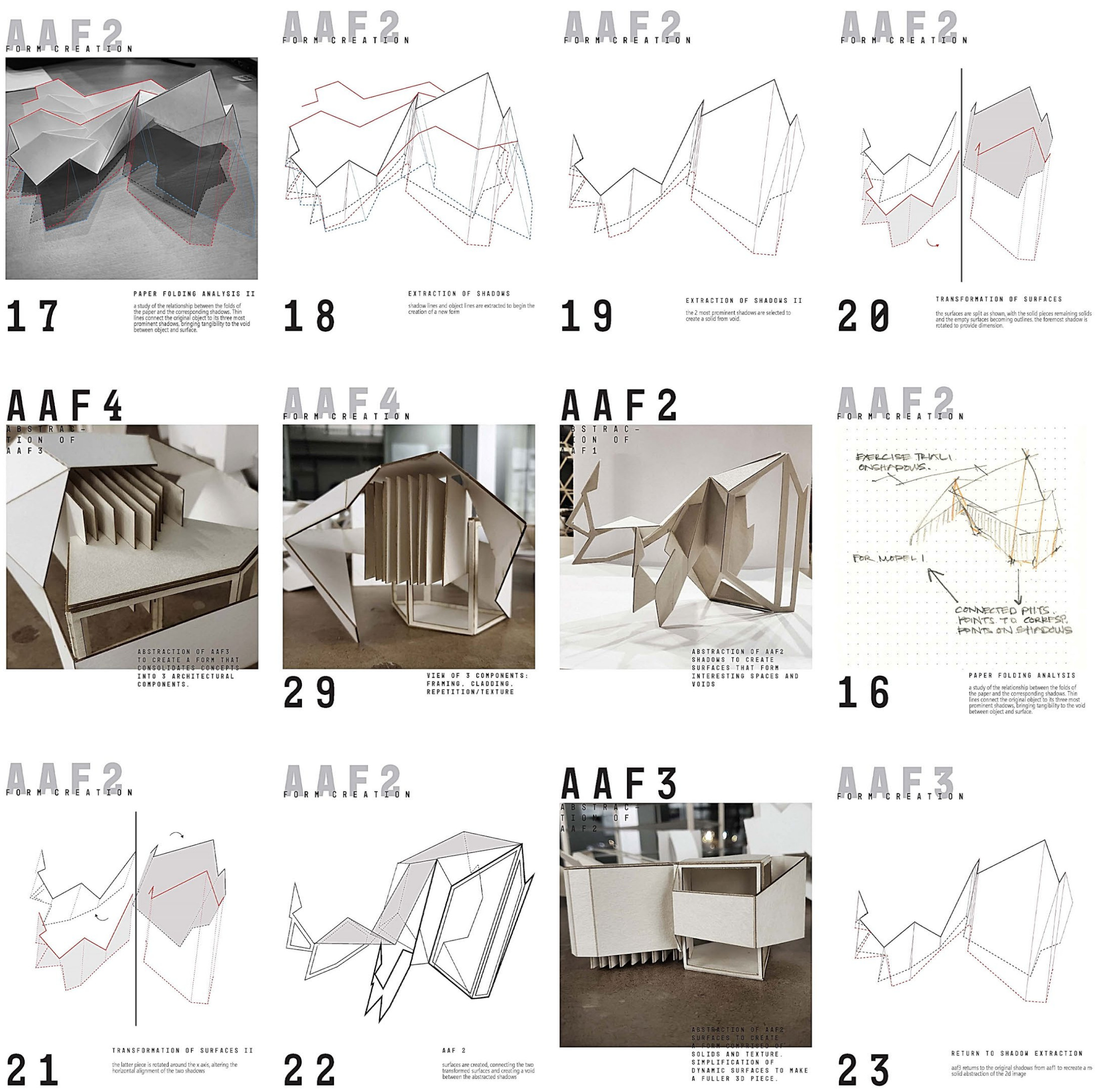

Figure 4: Autonomous Architectural Form (OSU School of Architecture ARCH3216_raSTUDIO and Emily Tran)

1.2 Doing the Right Things

This project is rooted in an upper-division special topics course, Data-Driven Research Methods. It showcases how strategic thinking is implemented and focused on creating the vision. The project, Spatial Network Analysis for Oklahoma City Streetcar, is focused on the infrastructure of the streetcar and its effects on the urban environment. Instead of being given a problem, the project is proactively seeking the problem, based in this case on Geographic Information System (GIS) data. In our problem seeking, we examined issues of accessibility, walkability, and pedestrian and vehicular movement by using computational analytic methods. The research understands the city via the flow of spatial data and its analysis applications. The research project simulated the growth of the city and analyzed it by looking at urban patterns. To identify the vision, several fundamental questions arose: In what ways do elements of urban form begin to affect an urban network? Are there other urban phenomena that contribute to forming an urban network?

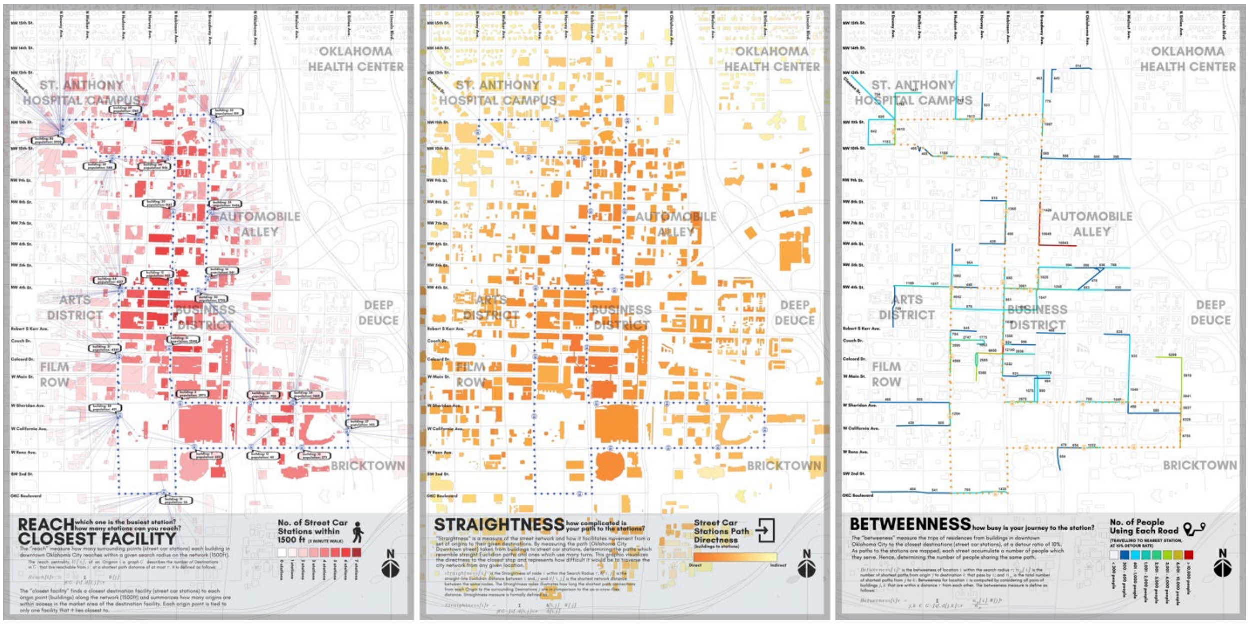

Figure 5: REACH/CLOSEST FACILITY ANALYSIS (Left): This diagram shows "Reach Analysis," how many stops users can reach from any given building, and "Closest Facility Analysis," which measures the service area of each stop. STRAIGHTNESS (Middle): This diagram shows "Straightness" as an accessibility measurement, which represents how complicated a user's path is to the nearest streetcar stop. Faded colors indicate several turns required to reach a user's destination, which shows relationships between the coverage of the streetcar and the daytime working population. Most businesses and commercial destinations are within walking distance. Beyond the scale of commercial use areas, the streetcar seems to have little impact, compared to existing bus routes with more extensive and wider-reaching coverage areas. BETWEENNESS ANALYSIS (Right): This diagram shows "Betweenness Analysis," which measures the congestion of each street. This diagram illustrates "How busy is your journey to the streetcar stops?" from users' perspective. Also, it reveals how service areas can be more disbursed evenly across the cityscape and could serve greater population via future expansion.

(OSU School of Architecture ARCH4100 UNA by Seung Ra)

In cities where growth rate is rapid, transportation systems pose a challenge. How does spatial structuring of the city influence it? Is the analysis valuable? If so, why and who could benefit from its application? How could those factors begin to affect the analysis interpreted by the network analysis? Simultaneously, it established tangible information on how many surrounding destinations could be reached from the location within a given network radius, based on the types of destinations: transit, businesses, and residences. Three entities were used in the research reports: balancing different uses and the urban landscape, commuter flow and gravitational force, and socioeconomic dynamics. This simulation, Urban Topological Analysis and Accessibility, proposed ecological remediation of existing urban areas and reexamined the current course of urban renewal strategies for Oklahoma City Streetcar (Figure 5).

Figure 4: Autonomous Architectural Form
(OSU School of Architecture ARCH3216_raSTUDIO and Emily Tran)

1.3 Block Generative Modeling

As an example of the application of strategic thinking, urban form was investigated by reviewing selected areas within the streetcar route to see how the streetcar shapes and influences elements of a city block. We used a generative modeling tool, "DeCodingSpaces Toolbox for Grasshopper," to look at the speculative quality of block development around southern portions of the city (DeCodingSpaces n.d.). Block Generative Modeling enabled us to study a speculative transformation of those areas directly adjacent to the streetcar. Utilizing computational urban analysis tools, we actively searched for various options of theoretical development of downtown OKC to see how we could maximize the streetcar and public transit to encourage development and improve mobility in the city (Figure 6). By doing so, we provided visions of how downtown OKC might grow into the future. This installment does not aim to provide extreme detail. It is strictly a general idea, based on the information provided by the OKC Planning Commission, our own knowledge of Oklahoma City, and software to thoroughly control and rapidly produce urban streets and masses. By manipulating block floor area ratio (FAR) and designated block heights, the project generated random results with control methods. We began by increasing the density of the southern downtown area, as it is currently severely underdeveloped. The varying density with alternative zoning provides valuable clues to potential applications of these patterns to envision future development (Chakrabarti 2013, 34–87).

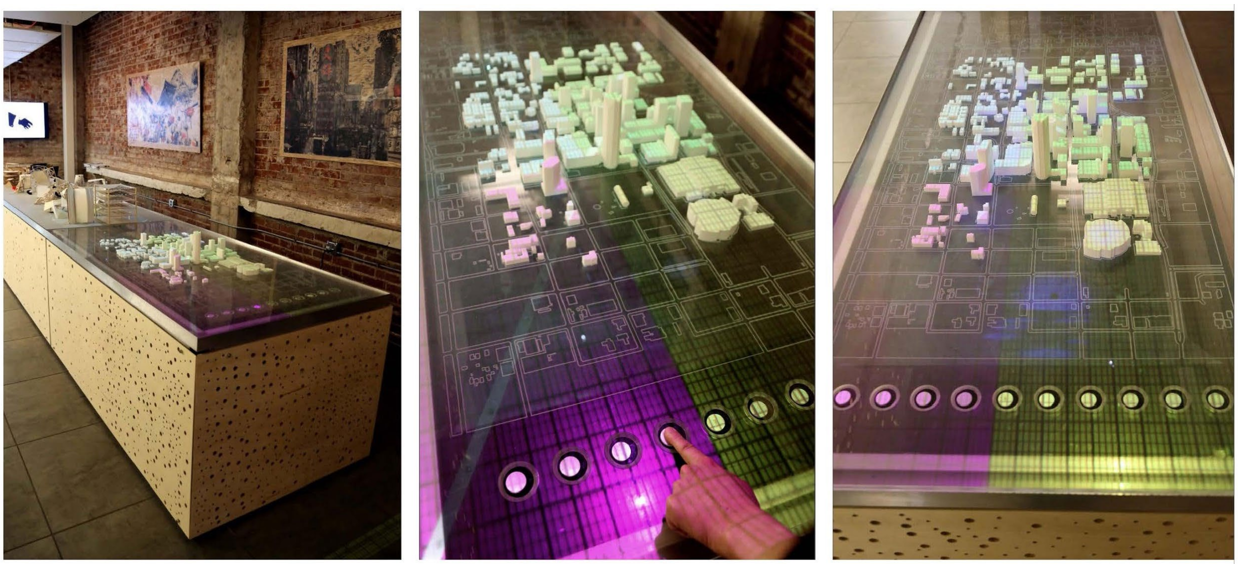

Figure 7: Interactive Podium (OSU School of Architecture ARCH4100 UNA by Seung Ra)

To explore broader solutions and achieve faster feedback, it is critical to design an effective way of interacting not only within the team but also with the community. In response to this need, the proposed research grant Interactive Podium was awarded by the Office of the Vice President for Research at Oklahoma State University (Figure 7). This project provided an interactive and responsive tool for mixed users (in this case, community members, architects, planners, and city officials). It also delivered an optimal solution for improving the communication methods, interactivity of the project team, and competent involvement of the community. Interactive Podium uses embedded computing technology to create a visual platform for interaction between users. By developing diverse perspectives of the research process, the architecture program curricula can nurture an effective decision-making process and proactively seek the "right things." The outcome of the project was fabricated as a physical podium to visually communicate the design and decision-making process for experts and nonexpert stakeholders in the early stages of planning and design projects. The podium's interactivity offers an effective teaching tool for a wide number of disciplines, from architecture, engineering, geography, interior design, urban economics, and beyond. Naturally, the project is an interdisciplinary research and teaching tool, allowing users to spatially visualize possibilities as well as graphically represent various data sets (Kirk 2019, 157–60, 332–34).

2. CONCLUSIONS

In conclusion, many architects and educators refer to architecture as a problem-solving process. This alludes to the practice of architecture as "problematic," which is not correct and ultimately leads to limited solutions. Certainly, a problem is an obstacle that involves doubt, uncertainty, and obscurity, but architecture answers these challenges. However, to answer a question properly and precisely, the question needs to be well stated and well defined. The focus of architectural education must be to cultivate more thought-provoking future designers. Architecture educators have discussed for quite some time how future generations will shape the position of the profession, weighing professional readiness. However, in uncertain times such as these, we are faced with many unknowns. By necessity we must continue to pioneer how we address the design process. Whether doing the right things or doing things right, architectural education also needs to evaluate where we stand and how we contribute to humanity.

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