
ENGAGING DESIGN-BUILD PEDAGOGY

Christian Dagg,¹ Associate Professor and Head, daggchr@auburn.edu
School of Architecture, Planning and Landscape Architecture, Auburn University, Auburn, Alabama, USA

Hans E. Butzer,² Professor and Dean, butzer@ou.edu
Christopher C. Gibbs College of Architecture, University of Oklahoma, Norman, Oklahoma, USA

Francesco Cianfarani,³ Assistant Professor of Architecture, francesco.cianfarani@ou.edu
Christopher C. Gibbs College of Architecture, University of Oklahoma, Norman, Oklahoma, USA

Design-build pedagogy has become increasingly central over the last decades as a pivotal moment in the education of architecture students. The session “Engaging Design-Build Pedagogy,” chaired by Christian Dagg and Hans Butzer, discussed the main opportunities and questions that design-build educators face today.

While nearly every school aspires to incorporate design-build into its curriculum, it is not without controversy or risk. One of the most critical questions is: do design-build projects serve students, schools, or communities? Whether projects should aim for glamorous experimental forms or humble cost-effective and resourceful design is another point of contention. Who benefits from these various approaches and at what cost? Is it possible to develop a theoretically rigorous design-build curriculum? How should design-build programs balance economic constraints inherent to affordable housing, for example, with design aspirations? As these many questions suggest, despite decades of experience, design-build pedagogy is still an emerging and contested area of architectural curricula.

In the talk “Beyond the Build,” given on the first day of the session, Christopher Trumble presented a comprehensive investigation of these questions.⁴ Trumble’s contribution is grounded in years of teaching design-build practices, culminating with the delivery of “The Sonoran Pentapus,” a steel grid-shell pavilion, built adjacent to the University of Arizona College of Architecture, Planning and Landscape Architecture (CAPLA) building. As Trumble argues, design-build pedagogy is an experiential opportunity focused on a multitude of learning objectives, including education, pragmatism, and practice laboratory. Above all, Trumble stresses the importance of collaboration strategies to foster a successful design-build experience, such as meticulous design coordination and group evaluation.

Ted Cavanagh’s talk, “Theory and Design-Build,” is centered on the relationship between theory, research, and design-build.⁵ More specifically, Cavanagh’s contribution is focused on investigating how design-build courses can be framed as a more rigorous theoretical paradigm to generate new knowledge in the fields of technological innovation and social change. Cavanagh’s approach builds on a series of innovative live studios and full-scale applications at Dalhousie University, Nova Scotia, Canada. These studios focused on experimental construction systems, such as lamella and timbrel vaultings. His contribution stresses the importance of extending the “learning by doing” pedagogy to promote innovation in construction and expose design-build educators to perspectives offered by social theory.

Architectural pedagogy has often identified design-build practices as ideal opportunities for aiding communities in need. This community-centered approach is grounded in the pioneering work of Rural Studio at Auburn University, Newbern, Alabama. Since the beginning of the 1990s, Rural Studio has worked to improve the quality of life of depressed rural areas in West Alabama by implementing a series of small-format community pavilions and housing projects designed and built by a team of faculty and students. That experience continues today, as documented by Mackenzie Stagg and Emily McGlohn's paper, "Rural Studio and the Front Porch Initiative: The Opportunities and Challenges of Place-Based Research." Stagg and McGlohn's essay presents the latest Rural Studio activity by explaining in detail all the processes that involve students. By doing so, the authors delve into all the main aspects related to contemporary design-build culture and its strategic importance in community engagement. In addition, they discuss the "Front Porch Initiative." This ongoing place-based research project addresses problems of housing quality and affordability for rural communities in southeastern states. The project is identifying new opportunities for testing Rural Studio's pedagogical model in contexts other than Alabama and through a broader network of partners.

Echoing Rural Studio's approach, Felipe Mesa and Miguel Mesa bring to light a design-build experience developed at the Facultad de Arquitectura, Universidad Pontificia Bolivariana (UPB), Medellín, Colombia. Their paper, titled "Clouds of Wood: A Colombian Design-Build Experience," offers an exploration of the topic from the reality of the rural region of Medellín, documenting four years of design-build classes focused on collaborative construction. The authors identify in the design-build approach to architectural teaching the opportunity for better investigation of construction processes in studios. The design-build format identified by the authors was particularly successful in helping students explore tectonics and wood joinery. The Clouds of Wood project also helped students gain a deeper understanding of the relationships between communities' needs, management of limited financial and material resources, environmental aspects, construction, and performance.

The range of learning opportunities implied in community engagement projects such as the Clouds of Wood is extensively explored by Michelle Pannone's contribution, titled "Agency in the Education of an Architect: Models of Engagement toward Empowering Students." The paper presents an alternative format for design studio courses and documents Pannone's Applied Digital Media class at the Marywood University School of Architecture, Scranton, Pennsylvania. Pannone's pedagogy emphasizes the cross-disciplinary predisposition of contemporary design-build classes. In this class, the author introduces students to environmental psychology to facilitate the understanding of clients' needs and expectations. Students are asked to organize and manage events of participatory planning so that the class is enriched with opportunities for social interaction and collaboration with local stakeholders. Pannone's work demonstrates the importance of active learning to help students value collaboration as a key ingredient in meaningful and socially responsible design processes.

As a final exploration of the relationship between design-build classes and community engagement, the section concludes with David Beach's paper, "Developing Intent and Application through Virtual Design-Build." The paper focuses on a virtual design-build class experience for the Hammons School of Architecture students at Drury University, Springfield, Missouri. It documents Beach's ongoing endeavors to integrate a digital representation class into a community-based project. Beach's class aims to expand the didactic opportunities provided by a precedent design study into the creation of 3D-printed

toys and virtual reality models for young patients at the Montefiore pediatric wing “The CHIL Zone” in the Bronx. In this class, students are focused on creating constructed toys and virtual models for a real client. Similarly, they are also exposed to the use of VR as a tool for the management of patients’ pain. Beach’s contribution is central for this section because it interprets design-build as an opportunity to explore the tectonics of buildings and objects through digital modeling. Additionally, it demonstrates the chance to transform a virtual representation class into design-build opportunities by clearly connecting students to the needs of clients.

The variety and richness of these essays illustrate the difficulty of defining trending methodologies in contemporary design-build pedagogy. However, the outcomes presented here stress a common scope of design-build teaching: thinking and making cannot be disjointed when implementing a collaborative and socially driven work of architecture. As architectural curricula are increasingly focused on supporting community needs and public agendas, design-build projects become the preferred context for exposing students to broader ways of practicing architecture.

Note: You may view a selection of “Engaging Design-Build Pedagogy” paper presentations online here: <https://youtu.be/oYzeSO4FEhU>

Session Papers

- p. 126 “Rural Studio and the Front Porch Initiative: The Opportunities and Challenges of Place-Based Research” (Mackenzie Stagg and Emily McGlohn, Auburn University)
- p. 139 "CLOUDS OF WOOD: A Columbian Design-Build Experience" (Felipe Mesa, Arizona State University, and Miguel Mesa, Universidad Pontificia Bolivariana)
- p. 154 “Agency in the Education of an Architect: Models of Engagement Toward Empowering Students” (Michelle Pannone, Marywood University)
- p. 166 "Developing Intent and Application Through Virtual Design-Build" (David Beach, Drury University)

Not all authors submitted papers for inclusion in the conference proceedings; below are additional papers accepted into this session.

“Beyond the Build” (Christopher Trumble, University of Arizona)

“Theory and Design-Build” (Ted Cavanagh, Dalhousie University)

"Design-Build as a Scholarship (Three Case Studies)" (Aaron Jones, Lawrence Technological University)

"Design-Build Studio: Empowerment to Confront Stereotypes" (Derya Uzal, MEF University - Istanbul, and Ahmet Sezgin, MEF University - Istanbul)

"Design-Build’s Intangible Learning Outcomes: Developing Soft Skills" (Milagros Zingoni, Arizona State University, and Magnus Feil, Arizona State University)

"Empowerment, Access, and Equity: Lessons from a Required Foundation Design-Build Studio" (Nick Senske, Iowa State University)

¹ Dagg served as co-chair of this session.

² Butzer served as co-chair of this session.

³ Cianfarani is sole author of this session introduction.

⁴ The talk is available on the Gibbs College of Architecture YouTube Channel:

<https://www.youtube.com/watch?v=oYzeS04FEhU>, from min. 4:50.

⁵ Cavanagh's talk is available here: <https://www.youtube.com/watch?v=oYzeS04FEhU>, from min. 32:15.