

Design-Build: Service Beyond Community

MACKENZIE GIBBENS

University of Nebraska-Lincoln

JASON GRIFFITHS

University of Nebraska-Lincoln

We're not just trying to help a community, but we're trying to deconstruct students' privilege. We're trying to get them to be better citizens, better community advocates, and to understand the complexity of urban areas.

—Thomas Dutton, Miami University

This paper attempts to define the nuances of community-based services within design-build, and look at service-learning through the lens of variety of program drivers and course aims, including construction experience and a critique of academia. It then looks in more detail at a case study of design-build that pairs service and forestry within the Pacific Northwest.

ORIGINS OF DESIGN-BUILD

John Ruskin was the first to implement construction and design-build type projects within the University in the 19th century. His students took part in a community service project by building a road through Ferry Hinksey, a marshland southwest of Oxford, England. This first project was tied directly to providing a service for the community. It may be interpreted that Ruskin's influence in the Arts and Crafts Movement in Britain during this time had an impact in his drive for community and social service, and therefore influences the inception of design-build in academia.¹

In the 20th century the first prominent and one of the most outspoken design-build programs was in the 1920s with the Bauhaus. Under Walter Gropius, students were reconnecting with the act of building and "re-established the critical relationship between the designer and the medium."² In the 1960s, design-build found its formal beginnings with Yale University. Yale began their first design-build under R. Buckminster Fuller, and later under Charles Moore, founded the Yale Building Project in 1967 and this is the model that we recognize as design-build today. The practice of design-build, therefore, grew directly from community activism and development.³ More recently, in the 1990s, design-build programs began to expand once again. This is possibly a response to intense theory being taught in many schools and the previous expansion of "paper architecture" in the 1980s. Many prominent design-build programs were established at this time, including the Neighborhood Design/Build Studio at the University of Washington and the Rural Studio

based out of Auburn University. Within today's design-build programs, the major themes that define them are construction, community service, and experimentation.⁴

MOTIVATIONS

At the core of almost all design-build programs is service. Through the lens of service, design-build programs are able to provide far-reaching experiences for students. The notable attributes that are discussed within the scope of this paper are construction experience and critique of academia. Other common drivers are awareness of place, collaborative skills, new methods of project delivery, and materials and materiality. The real-world classroom of design-build provides numerous opportunities for students within architectural education, and virtually all factors intersect within the pedagogy.⁵

SERVICE

Virtually every design-build program engages in service-learning; this paper attempts to define the nuances of these community based services, through a variety of program drivers and course aims. Through service-learning and community design, these studios have created opportunities for students and faculty to work with low-income communities that often lack resources for community development. Many communities are underserved by the design professions; through design-build and service-learning studios, students can have a lasting impact. This introduces students to alternative, democratic design practices and supports civic awareness and responsibility.⁶

As mentioned earlier, one of the earliest examples of design-build service is the Yale Building Project founded by Charles Moore. Its first project in 1967 was a community center in Appalachia. Today, this program builds a home each year for low-income families in New Haven, Connecticut. From the outset, the Yale Building Project aimed to be socially responsible and non-elitist. Other programs such as Auburn University's Rural Studio focus on a firm commitment to social justice and the philosophy that those who form the built environment have a duty to serve those who do not.⁷ The Rural Studio focuses on "outreach" by sending students to assist an underserved population in West Alabama's Black Belt region. As of spring 2016, Rural Studio has built more than 170 projects.⁸

The Rural Studio philosophy suggests that everyone, both rich and poor, deserves the benefit of good design.

—Rural Studio

Social justice as a construct encourages students and architects alike to take special consideration for the value of community, people, and the greater responsibilities entrusted to those that affect the built environment. Thomas Dutton from Miami University in Oxford, Ohio established the Over-the-Rhine Design/Build Studio in 1996 in an attempt to bring this idea of social justice to the forefront. His aim was to design and rehabilitate housing for residents in the Cincinnati neighborhood of Over-the-Rhine. This has since developed into The Miami University Center for Community Engagement, which opened in 2002.⁹

This kind of work sees architectural practice as based in an ethical commitment to others. And design-build serves as a rather potent means for manifesting this commitment as it results in real artifacts and shelters that people can see and touch.

—Vincent B. Canizaro

CONSTRUCTION EXPERIENCE

The nature of design-build as a service-learning tool allows students and faculty alike to re-enter the world of construction and building. By working directly with community members, students are able to collaborate with those builders who are making architecture a reality – and during the course of the project, become one. A disconnect has formed between architect and builder. Architecture was once taught as the “mother of all arts” with direct learning and application of both design and construction as a master builder. Design-build serves to reclaim the disciplinary expertise given up for professional status. It is an opportunity to bridge the gap between designer and builder.¹⁰

The Design Workshop was conceived as a different kind of design-build program than those rooted in typical designer vs. builder dichotomies, which either decry the architect’s loss of connection to the material world, or their arrogance toward a perceived ‘underclass’.

—Peter Wheelwright, Parsons The New School for Design

Design-build gives students the opportunity to move out of the “studio vacuum” and work within the built environment. Not only are students given the opportunity to drive nails, they are also exposed to all of the factors that influence the making of a building, from environmental and technical to political and economic. When the design studio moves out of the classroom and toward a field experience approach, the student has the opportunity to be involved in all decision-making processes in relation to education. The traditional student versus teacher dichotomy is often broken down, as information gathering and decision-making are being done simultaneously, with all parties.¹¹

CRITIQUE OF ACADEMIA

It is common to find that programs and faculty are using service-learning and design-build studios as a tool to critique the state of architectural education. The first example we see of this rebellion against academia is

with Walter Gropius and the Bauhaus. This was a direct opposition to the Beaux-Arts methods, perceived as aesthetically driven, too theoretical, and inaccessible to the working class.¹²

Artists, let us at last break down the walls erected by our deforming academic training between the ‘arts’ and all of us become builders again! Let us together will, think out, create the idea of architecture.

—Walter Gropius, Bauhaus

Many of the arguments made against academia claim that there is a lack of reality found in many hypothetical studio projects.

Ghost lab is a critique of the current state of architectural education – of both the role of practice and of the academy in teaching the discipline of architecture. It is based on the view that these is but one world. Thinking and doing, the mind and the body are necessarily connected.

—Brian MacKay Lyons, Ghost Lab

In some veins of architecture pedagogy, there seems to be a movement towards a new technology at the expense of hands-on construction techniques. Architect Michael Green has been increasingly frustrated with architecture graduates who are so tied to abstraction that they have very little practical ability. This becomes problematic when the theoretically trained architects enter into the professional field where clients and physical buildings are not abstract. In order counteract this, Green created a non-profit institute in 2014 based out of Vancouver, British Columbia, named Design Build Research.¹³

Many students enter design school intending to positively contribute to social or environmental issues, but come out focusing on finding the shortest route to landing a magazine cover.

—Michael Green, Design Build Research

CASE STUDY: “EMERGE”

Considering service, construction experience, and the critique of academia, we may now investigate a current design-build case study that demonstrates all of these points. The aim of this project is to expand design-build learning to include advanced mass-timber construction with the practice of sustainable forestry. The program combines first-hand experience of Cross Laminated Timber (CLT) building technology with the design challenge of communicating knowledge of forestry production via a local tree farm’s educational outreach program.

“Emerge” is the third in a series of five design-build projects for the Bauman Tree Farm near Eugene, Oregon. Collectively, these projects will demonstrate diverse used of timber in a range of forestry settings. Each project will enhance direct learning of the farm’s education program through tactile, phenomenological, and special qualities of architecture. Through design-build, “Emerge” is able to integrate architecture with an ongoing discourse on contemporary forestry practices and changes in the construction industry. The project is the focus of a summer design-build studio that engages both undergraduate and graduate architecture students in the broader issues of timber production and processing within the Pacific Northwest. The location of the project is

aligned with the academic challenges of exposing students to emerging methods of mass timber construction – Cross Laminated Timber (CLT) in particular. The course includes study tours of lumber mills, namely D.R. Johnson in nearby Riddle, which is currently the sole CLT production facility in the US. These technical issues are complemented with knowledge of sustainable forestry practices from presentations by the non-profit organizations Oregon Forest Resources Institute (OFRI) and Forests Today & Forever (FTF), along with the forestry departments of Oregon State University.

The aims of this program are:

1. Produce a building as a focal point for the educational program run by the Bauman Tree Farm and by extension, the initiatives of OFRI, FTF, and other charities associated with the promotion of sustainable forestry in Oregon
2. Provide architecture students with firsthand experience of CLT/engineered lumber construction technology
3. Work collaboratively with D.R. Johnson Lumber and Roseburg Lumber in active promotion of the creative use of engineered lumber in architecture
4. Produce a micro-dwelling for visiting academic or non-profit organization and industry sponsors

EMERGE: SERVICE

The service component of this project is based on the connection between sustainable forestry and the built environment. The understanding of this relationship has grown through an ongoing educational program established by Forests Today & Forever (FTF). Each year 1500-2000 people, the majority of which as middle school students, experience the Bauman Tree Farm via physical demonstrations of sustainable timber construction.

Forests Today & Forever promotes forest stewardship through education. Our programs for youth and adults are experiential, using working tree farms and other management forests in Lane and Linn counties. We seek to connect people to Oregon’s forests, and instill an appreciation and understanding of forest management.

—Forests Today & Forever Mission & Values

1. FTF values promoting awareness about the region’s forests through experiential and field-based learning opportunities for youth and adults.
2. FTF values working forests as an important influence in the region’s past, present and future.
3. FTF values sustainable forest practices, simultaneously meeting economic and community needs, while protecting the health and biodiversity of the forest ecosystem.
4. FTF values making connections between forests and how people depend on the resources that forests provide to our community, such as jobs and the products people use every day.

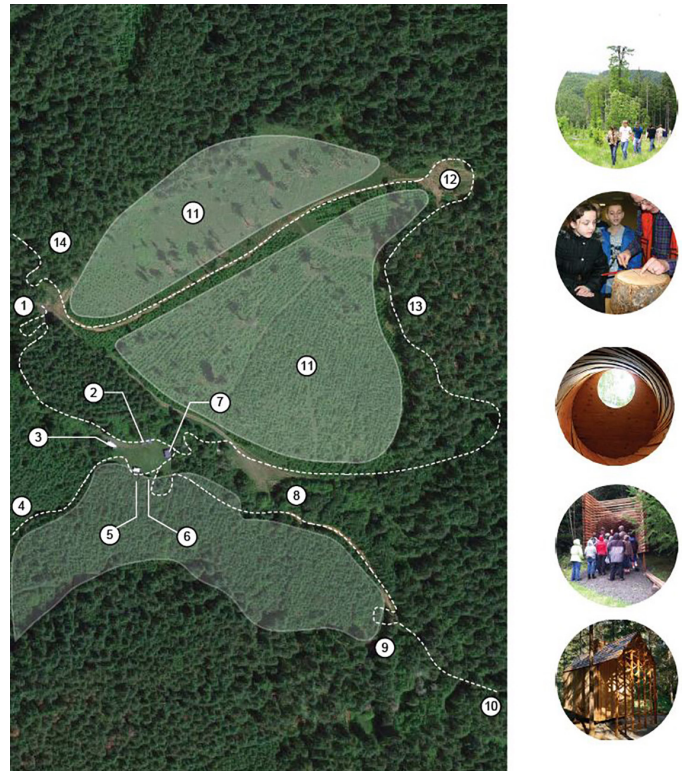


Figure 1: Bauman Tree Farm - Educational Service Landscape



Figure 2: Forests Today & Forever - “Forest Field Days: engages middle school students and teachers, promoting awareness of forest management.

5. FTF values presenting messages that are science-based, respect the complexity of forest resource issues, and are sensitive to diverse experiences and viewpoints.¹⁴

These influences are arranged around the main activity of design-build teaching which occupies the students in full-time making and hands-on production. In a short period they are exposed to all stages of architecture from concept design to final completion under the prevailing ethos of “learning by doing.”

EMERGE: CONCEPT

It was clear from the outset that the project would have very strict time limitations, with only three weeks on site, and required as much conceptual preparation as possible in advance. “Emerge” is the conceptual framework developed to demonstrate the project’s relationship to the context of forestry production in the Pacific Northwest. This framework provides a way of visualizing the transition of wood from its natural state through the incremental procedures by which it is transformed into a lumber product. These transitions then narrate the assimilation of that product on into architecture and, in this case, back to the forest.



Figure 3: “Emerge” section perspective demonstrating possible user interaction and programming.

This framework can be directly understood by the modeling of the gable-end screens and the lightwell – both of which establish a pattern that commutes a chaotic, or natural, state through to delineated order by applying geometric transformations in sequence that then lead to partially processed elements of the tree. The juxtaposition of these elements against the forest is intended to mesh, and even disappear when seen from various positions, into the forest backdrop. In this way, the building is intended to reveal, at a glance, the events that sustainable forestry production undergoes to achieve a cognizant consumption from tree to architecture.

These visual cues are intended to facilitate the service learning aspect of the scheme via the spatial, material, and visual experiences of the building.

“Emerge” is designed to hold small gatherings of teachers and students who are attending the tree farm’s education program. The building is part of a series of stations around the farm that introduce various themes of forestry preservation and production. Emerge is placed within the forest to draw visitor into contact with, new growth, old growth, the conservation easement and other aspects of the proximate woodland. The interior can be occupied in different permutations by arranging or storing CLT sitting blocks and a floor/table in desired arrangements depending upon the occasion.

EMERGE: REGIONALISM AND HISTORY

An important factor in community service is the connection with community development. For this reason, we look to Riddle, Oregon. The



Figure 4: “Emerge” lightwell demonstrates the conceptual framework, illustrating the project’s relationship to the context of forestry production in the Pacific Northwest.



Figure 5: "Emerge" near completion.

town of Riddle in southern Oregon is the home of the company D.R. Johnson. This has become the first lumber mill in the United States to produce architectural grade CLT. In 2016 they installed a Hundegger PBA automated component and joinery machine for engineered lumber. For my architects and schools within this region, D.R. Johnson's choices are symptomatic of an emerging regionalism based on the manipulation of mass timber that will arguably make it the center of architectural innovation for a coming generation. This paper suggests that these events constitute a broad service learning content that has focused the program of the building in a particular way. The service learning connects directly to the community by propagating sustainable forestry, local industry and architecture within the region.

CONCLUSION

From its origin with John Ruskin at Oxford to today's Rural Studio with Auburn University, the core of design-build has been community service. Beyond community service, many University faculty aim to educate students on the concept of social justice and the philosophy that those who form the built environment have a duty to serve those who do not. As a result, many design-build projects work for those who are underserved by the design professions. This introduces students to alternative, democratic design practices and supports civic awareness and responsibility.

By looking at case studies of design-build projects, including "Emerge", it is clear that Universities and academia recognize a need for social service within the design fields. "Emerge" demonstrates a contemporary image of what design-build can be and an expanded vision of service in the design fields. "Emerge" has been able to engage with a vast number of individuals within the Pacific Northwest through public programs, but it also brings larger issues to light. Not only are visitors informed about sustainable forestry, but also educated about natural resources and the larger impact of wellness within any community, not just their own. Within this, the imperative of engineered lumber and mass-timber technology becomes an influencing factor within design education. "Emerge" is working to move beyond today's scope of design-build pedagogy and bring a new understanding of what service can mean in design academia.

ENDNOTES

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