

Beyond the Charrette: Crafting Community Through Full-Scale Prototyping

This paper makes a case for an alternative approach to community engagement and includes an example of a project recently started between our university Design-Build program, a local redevelopment foundation and the community that they are serving. Our goal is to facilitate a process for community engagement in design that introduces full-scale material and assembly prototyping as a generative force in community building. We advocate a bottom up process where the project and program is discovered from within rather than imposed from the outside. The work produced is speculative, and operates at the intimate scale of the detail rather than at the scale of the building, **suggesting** future events and fabrications rather than definitively setting them.

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BACKGROUND

Walnut Hills was one of the first suburban neighborhoods annexed to the city of Cincinnati in the 1850's, and prospered as streetcars connected the hilltop community with downtown Cincinnati.¹ The area remained vibrant until the 1940's and 50's, which ushered in a wave of suburban flight and subsequent neglect of properties that was typical of several urban areas in Cincinnati. In recent years, the city of Cincinnati has witnessed a renewed interest in the historic properties that comprise the areas surrounding the city's downtown area. The sheer quantity and high quality of intact 19th century architecture, coupled with affordable real estate costs, has attracted young people and empty nesters alike to re-invest in once-neglected neighborhoods. One potential pitfall of this particular condition is the wholesale gentrification of entire communities by private-sector development that is driven by profit rather than by urban, architectural, or community concerns and issues. The redevelopment of an area North of the city center known as Over-The-Rhine, (because of the canal that separated OTR from the business district that reminded German immigrants in the late 1800's of the Rhine river)² has been the subject of much scrutiny in the local press because of the lack of community involvement and the consequent displacement of local residents and businesses. Walnut Hills, in an attempt to gain the trust and support of local residents, has re-invigorated

the Walnut Hills Redevelopment Foundation (WHRF) to shepherd development in the blighted neighborhood through a grass roots approach, promoting incremental growth and active community participation for all new development.³ Although formed in the 1960's to address the growing poverty and crime and decline of properties in the neighborhood, the organization, under the new leadership of Kevin Wright, has gained momentum and has become a hub of positive change in the city. The organization sponsors several monthly civic events such as street fairs, biergartens, art fairs, community council meetings, etc. to bring together the diverse and changing demographic of Walnut Hills.

METROLAB

The University of Cincinnati is well known for their co-op program, where students alternate semesters of coursework with practice, equipping the students with exposure to contemporary office culture.⁴ While this kind of experiential learning plays a significant role in the students' education, many still lament the lack of connection to construction- both in the curriculum as well as in the field.⁵ To address this deficit, the school has offered several hands-on fabrication opportunities throughout the years in graduate elective courses, but due to the constantly shifting student population (students are in school for one semester, followed by a work semester, then school, etc.), projects have been small in scope and have lacked continuity in the curriculum. In 2012, the director of the school established a task force to implement Design-Build pedagogy as a core part of the curriculum. The intent was not simply to teach students about construction, but rather to introduce students to the unique and critical learning that occurs through a direct engagement with the materials and techniques of making. MetroLAB was formed as a program within the University's School of Architecture and Interior Design that combines students and faculty from the school, the college, and the University with local, national and international communities, developers, and stakeholders that support the infrastructure and development of the built environment. MetroLAB focuses on three pillars: learning through the process of making, applied design research, and community engagement.

PROJECT: FIVE POINTS ALLEY

The work presented here is the result of a six-month collaboration between the Walnut Hills Redevelopment Foundation and the University of Cincinnati School of Architecture and Interior Design MetroLAB. In January of 2014, the WHRF agreed to support a semester-long Design-Build studio that would investigate the programming and design of Five Points Alley, an interstitial space bounded by five historic alleys located in Walnut Hills.⁶ The area was overgrown with weeds and littered with garbage, and was generally viewed as an unsafe and undesirable space by residents. In 2013, the WHRF began a remarkable series of clean-ups of the space- the beginning of a slow transformation of a neglected urban space into a viable and delightful community amenity. In particular, the WHRF was interested in creative placemaking⁷ in the neighborhood through the appropriation of public space, seeing the Five Points Alley as one in a series of potentially active, flexible, and connective urban spaces that define Walnut Hills.

PROCESS

The community design charrette is a common tool for collaborative design, involving community stakeholders, residents, and professionals working together, "...a time-limited, multiparty design event organized to generate a collaboratively produced plan for a sustainable community".⁸ Charrettes are often important components in academic Design-Build courses, creating consensus and an agreed-upon direction for the project prior to the commencement of the work. This is a linear process,



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Figure 1: Five Points Alley clean-up



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Figure 2: Event poster and acrylic screens

where drawings and sketches are the discourse, and construction is derived from the accumulated abstractions. While it was clear in our early discussions about the project with the WHRF that consensus building and active participation by the community members were necessary, we remained skeptical about the efficacy of a process that ended with drawings of a completed project, ready to be simply willed into existence. As our own interests lie in the world of making, we proposed to address this gap between the imagined and the real by starting with an interactive exhibition in lieu of a traditional ideation charrette, in which the outcomes would be a tangible, constructed record of participation in the event. We hoped that by implementing actual prototypes as experiential and participatory tools, we might gain a different kind of insight from the participants, one that is the result of direct experience and phenomena and is constructed temporally. The goal was to receive quick and direct feedback through our observations and conversations with people actually engaged in the space and interacting with the work. A similar process would then extend over time through the construction and installation of a series of full-scale prototypes that could respond and adjust to the manifold discoveries made along the way- altering to fit. In this sense, the work could be understood as adaptable and responsive to changing needs and desires, rather than fixed and permanent.

To begin, the studio identified five categories of activities to frame the potential uses of the space. The terms were not meant to be definitive as a final designated program, but to encourage residents to imagine possibilities for appropriating the newly emerging space of Five Points Alley. The students created posters advertising the exhibition and distributed them throughout the neighborhood (see figure 2).

Connect: *How do we become neighbors?*

Exchange: *How do we live local?*

Learn: *How do we open our minds?*

Make: *How do we build a community?*

Play: *How do we have fun?*

Each activity was graphically paired with an icon that was distilled from architectural details in historic buildings throughout the neighborhood, which were then laser-cut from colored acrylic sheets to create tokens. The left-over colored acrylic panels from the tokens were mounted to frames and backlit to cast intricate colored shadows (figure 2), reinforcing the possibility that light could define space. Each category had a specific color and shape icon that was designated on five large precedent boards that showed examples of activities for each category (figure 3), with the corresponding acrylic tokens hanging by hand-made coiled wire hooks from a bottom rail. The students proposed that the participants in the event could register their interest and support of a particular activity by placing a token on a large custom chandelier constructed for the event. More than 100 people attended, each one “voting” their preferences for the five categories by filling the chandelier with 3 tokens of their choice. Students also set up a video booth similar to the **story-corps**⁹ project, where participants could leave a video record of their thoughts about Five Points Alley. After the event, students tabulated all of the data and compiled a video of the event and the results. Not surprisingly, there was a relatively even split between category votes, with Exchange and Play slightly edging out the other categories. In a sense, everyone wanted the public space to do everything - suggestions came in for such seemingly contradictory uses as playground, needle exchange, community tai chi, laundry-mat, and giant monopoly board. The WHRF sponsored a follow up exhibition, with the goal of sharing our findings with the community. We presented all of the “voting” information - along with the video- in the space, which

fostered several additional discussions about next steps. Without reducing the input to the lowest common denominator, we distilled several consistent appeals for the use of the alley space: maximum flexibility (play, music, dance, outdoor movies, biergartens, movable seating), the creation of some kind of infrastructure for exchange (pop-up retail, food venues, markets), and the introduction of lighting to demonstrate that the space was safe and belonged to the community.

“A CHARRETTE IS ONLY AS GOOD AS WHAT HAPPENS AFTER IT’S OVER.”¹⁰

The pedagogy of the course was rooted in the direct engagement with the materials and techniques of construction. The use of conventional architectural drawings and even design processes were minimized in favor of working through the materials directly. This technique was difficult for many students to comprehend; as their world is increasingly driven by abstractions and images, the students had never really connected the design process with material consequence. In Michael Cadwell’s book, *Small Buildings*¹¹, he laments the lack of meaning in plans, sections, and elevations, as he no longer knew what the abstractions stood for, and yearns for what he calls “sensual knowledge” that embraces the tactile and the temporal. One of the first steps in the studio was to get all students familiar with the college’s fabrication shop- including getting certifications for welding, which armed the students with confidence and expertise. The work that followed the exhibition began as open-ended experiments, addressing both the intrinsic and extrinsic factors pertaining to the design and fabrication of material assemblies. Because the project had an extremely low budget, we looked for materials that were simply at hand, or readily available. Instead of moving from the general to the particular - from abstract idea to detail - the project started with material assemblies that have potential for use. Our scope was intentionally myopic, allowing the students time to reflect, experiment, and refine with actual materials. After a long process of starts and stops, failures, and misdirections, a series of prototypes began to emerge. The students were responsible for developing these prototypes as a group- the installations had to work both individually and collectively and have an appropriate “fit” with their context and with each other. Most importantly, the installations were all meant to be ephemeral.

1: PALLET SEATING

The WHRF planned a neighborhood street fair shortly after the start of the semester, and we decided that it would be the perfect venue to start our collaboration with the residents. We wanted to establish our role in the process of the transformation of the alley by staging an interactive demonstration that would create movable seating from wooden pallets- readily available and free- encouraging people to help construct benches that could be deployed throughout the site. Children were especially interested in the process as the students explained up-cycling principals to them as they helped assemble some of the benches. Several people actually wanted to purchase the benches, but were surprised to hear that the benches were going to find their way as the first in a series of amenities in Five Points Alley. The participants, and the students seemed proud of their shared accomplishments as they sat and enjoyed the street fair. This exercise was an important step for the students, as they immediately realized the significance of connecting material facts with design and process. Because the wood from the pallets was wildly variable in terms of condition, size, and thickness, we employed a strategy to use the end grain of the wood instead of the width, creating stronger composite surfaces and opportunities to introduce LED lighting within the thickness of the assembled surface itself. This material ethic was transformed through several iterations and became a source of inspiration for subsequent working prototypes.

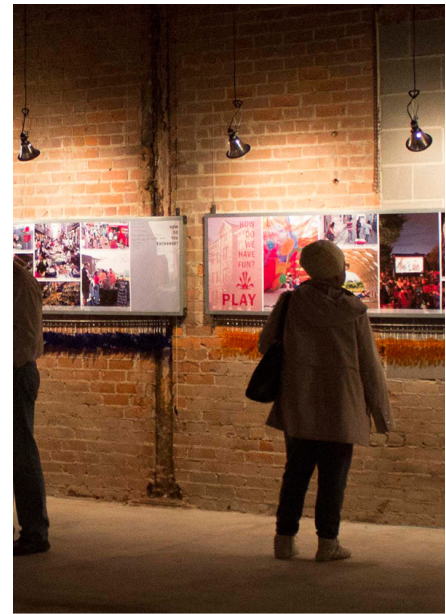


Figure 3: Precedent boards, tokens, and chandelier

2: ADAPTABLE MODULE

We capitalized on the recently acquired skill-set of welding by creating a modular frame composed of several welded steel angle and tube sections bolted together to form a three-dimensional space. Several mock-ups were constructed that examined the joints and corner conditions of the assembly to accommodate serial aggregation of the module. Also intended to serve as an armature for our material investigations, the module enabled students to design attachments, fittings, and moving parts directly on it. Many assemblies were tested, and many failed. While easy to imagine, the simple actions of hinging, closing and opening, and nesting were hard-fought battles for the students to articulate at full scale with actual materials. The constantly transforming module prototype demonstrated the very notion of maximum adaptability and flexibility that was also a driver for the use of the alley.



4

Shortly after the first clean-ups of the alley, the WHRF began to sponsor monthly biergartens in the space. These events were heavily attended, featuring music, food, and a revolving sponsorship by local micro-breweries. The students recognized an opportunity to implement a module on the site that would support the biergarten sales and ticketing, which was previously accommodated by a few card tables. The students looked at how the module might move, fold, and expand to demarcate space and create multiple scenarios. Panels folded down to form a floor extension, another hinged up to create a canopy. One panel with multiple hinged connections could be arranged to provide vertical enclosure and variable-height horizontal surfaces. Another set of panels slid on tracks and pivoted, locking together to form a wall or stacking to open the space. The interior of the frame was used to store nested tables and chairs that could be removed and placed on the site during events, and then stacked and stored safely in the module until the next use. The table and chair design was an extension of the research using pallets, and a revision of the steel frame-to-panel relationships that were present in the module

Figure 4: module in closed and open positions

itself. The multi-layered module was internally light by small LED strips, lighting the translucent surfaces from within and performing as a site-scaled lantern when it was closed (see figure 4).

3: PERFORMANCE PLATFORMS

One of the suggestions elicited from the exhibition was for a space to accommodate performance. As a studio, we resisted the idea of a fixed, permanent stage as we felt that it contradicted the equally strong and consistent appeal for flexibility. During the first experiments with wooden pallets, we realized that we had access to an unlimited source of decent quality wood that required only minimal re-working. Coupled with the use of steel as a strong and easily-fabricated armature, the students created a modular platform that could be aggregated to accommodate a wide variety of performance needs. One significant feature of the platform assembly is the wide range of adjustability built into each module. Feet were crafted from steel angles and bar stock that were connected back to the sub-structure of the platform with large threaded rods, enabling the platforms to raise and lower and to accommodate sloping site conditions(see bottom of figure 5). The surface of the platform was flame treated (using a Japanese method called shou-sugi-ban) to help preserve the wood. Recessed LED lighting was attached to the undercarriage of the platforms, creating a wash of light below and slivers of light up through the burnt wood horizontal surfaces.

4: BROW

As the site slopes approximately 10 feet from end to end, we created a strategy for grading that created brows, or outcroppings of flat areas throughout the sloping site. As a result of experiments with pre-casting concrete and our continued use of steel in the project, the areas were contained by $\frac{1}{4}$ " thick steel plates and capped with thin glass fiber reinforced concrete benches. Six tons of crushed limestone were brought in to form the level surfaces contained by the brow. The steel plate retaining surfaces were allowed to patina naturally and lit from a row of LED strip lights that were recessed in a groove cast into the concrete bench (see top of figure 5).

5: STONE BENCH

Prior to our involvement with the site, Five Points Alley was a repository for several large, ornately carved limestone pieces from a demolished church. After the clean-ups, we deployed the large monoliths throughout the site as ad-hoc seating elements. As the stone pieces were highly variable and not entirely suitable for seating, we used some of them as anchors, building flat horizontal wood seating surfaces on top of them. The surfaces were integrally wired with LED lighting that cast light down onto the stone profiles and up through acrylic slots in the wood. 1" diameter steel anchor rods with a threaded adjustment were drilled into the stone and epoxied to support the bench seating surface (see middle of figure 5).

6: ALLEY LIGHTING

Defining space through light was a technique explored early in the process that was integrated into all of the prototypes. The existing brick-paved alleys were seen as dark, unsafe places by most residents, and to be avoided at night. The few spots of lighting in the alleys came from metal halide fixtures mounted high on some buildings, spreading an even, yet unappealing quality of light. Using the same 2" x 2" steel angles from the adaptable module and a continuous piano hinge, the students created linear steel light boxes that fit snugly at the intersection of the existing granite curb and the brick alley surfaces. 3000K LED lighting was used to cast a soft, warm light horizontally across the brick that lit the path of the alley at the scale of the person, not the building.

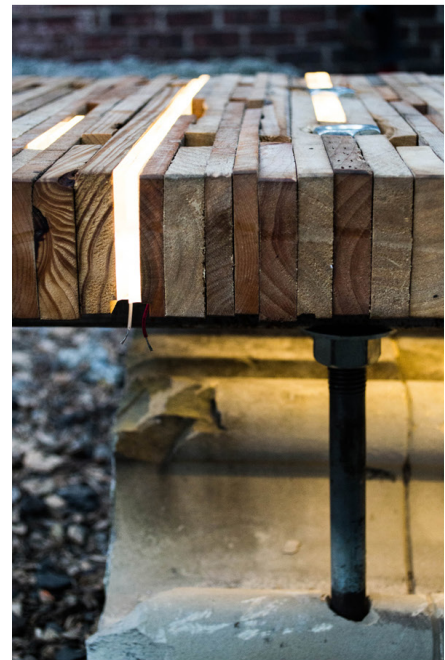


Figure 5: Details

CONCLUSION

The production of the studio was constantly updated throughout the summer. Prototypes would appear, change locations, multiply, and tested for fit by the users of the space. Monthly events programmed in the alley served as informal openings, where new layers of work could be introduced and evaluated. At the close of the summer semester, the school hosted an exhibition, inviting members of the community, students and faculty, and local business owners to experience the space at night (because of the nature of the earlier events throughout the year, they were all held during the day). The lighting transformed the space, literally and figuratively illuminating the sum of the work produced over the last several months. The space was now truly activated, and was the result of an accumulation of spatial and architectural definition. This slow technique seemed to connect everyone with the space and it's purpose - enlisting memory and a shared sense of ownership.

“ ...the way to true architectural empathy is through an understanding of weight, material, and assembly. That the way to form is through material. That an appropriate response to context is not imitation or decorative nostalgia, not a geometry abstracted from it's surroundings, not the adaptation of principles adapted from local vernacular, not even the sensitivity to a larger set of ideas that may have regional associations, but is rather a site-based understanding of the totality of history. In short, that the way to a spiritual understanding of a building is through a constructional understanding.”¹²

— Ed Ford

ENDNOTES:

1. <http://www.walnuthillsrf.org/history>
2. <http://en.wikipedia.org/wiki/Over-the-Rhine>.
3. <http://www.walnuthillsrf.org/about>
4. <http://www.uc.edu/propractice/uccoop.html>
5. The undergraduate curriculum at the University of Cincinnati currently requires only one construction course for the Bachelors of Science in architecture. The graduate program has instituted two co-requisite courses that address construction and technology (also taught by Professors Boling and Zaretsky) through case studies and the design of a medium-scale building that demonstrates construction ethic and the integration of building systems.
6. The semester long Spring studio was followed by an additional semester-long studio in the Summer, both taught by Professor Boling.
7. Markusen, Ann and Anne Gadwa. 2010. Creative Placemaking, Washington, DC: Mayors' Institute on City Design and the National Endowment for the Arts, October, 2010.
8. Condon, Patrick M. 2008. Design Charrettes for Sustainable Communities. Washington Dc: Island Press.
9. <http://storycorps.org/about/>

The students took turns interviewing the participants, and captured several hours of video, ranging from stream-of-consciousness to highly insightful suggestions for making the space work. This experience was instrumental for the students to understand the history and diverse interests and motives of the community members.
10. Condon, p. 112.
11. Cadwell, Michael. 1996. Pamphlet Architecture 17: Small Buildings. Princeton Architectural Press. p. 5.
12. Ford, Edward R. 2009. Five Houses, Ten Details. Princeton Architectural Press. p. 26.