

Motley Crews: Learning from Interdisciplinary Design Charrettes

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Academic environments can provide opportunities for students to learn collaboration, reveal its benefits and establish a culture of collective problem-solving. The 21st-century charrette model involves disciplines outside the fields of design and promotes the sharing of knowledge. This paper will consider the characteristics of successful collaborations by analyzing the development of interdisciplinary student charrettes at Drexel University over the past decade.

Students at Drexel are engaged in collaboration and civic engagement in professional settings prior to graduation. As a shared university value, civic engagement experiences educate students in problem-solving, understanding diversity, good citizenship, and leadership. We see the charrette as a unique academic model to span the needs of professional collaboration and civic engagement. Since 2008, Drexel University's Department of Architecture, Design & Urbanism has conducted six student design charrettes that we believe provide a model for encouraging both civic engagement and participation from a wide variety of disciplines.

Envisioned as an intense collaborative activity spanning three days, our charrettes are non-competitive and not given academic credit, but regularly attract the participation of 60-80 students including law, nursing, graphic design, engineering, and interior design majors. The charrettes have sometimes featured renowned guests from outside of the institution, intended to inspire and expose the students to other design perspectives and processes. In addition to a brief history of design charrettes at Drexel University, this paper discusses logistical issues and student experiences that characterize these events. We will then discuss charrette leadership and learning outcomes, and ways this charrette model may be successfully applied in other settings.

HISTORY AND INTRODUCTION

In 2007, faculty members of our University's Department of Architecture, Design, and Urbanism were searching for suitable candidates for the coming years' endowed lecture series. Various names were suggested, and particular enthusiasm was shown for inviting Cameron Sinclair, then the head of *Architecture for Humanity*. However, one faculty member cautioned that she had heard that Sinclair generally preferred more student interaction than was afforded by a single lecture. We decided to contact Sinclair to see if he would be interested in visiting us and what kind of format he would prefer.

Cameron Sinclair confirmed that he preferred interacting with students directly on a design project, and through our discussions with him, we developed the idea of a 3+ day charrette that would tackle the kind of design issues *Architecture for Humanity* encountered in their work around the world. Sinclair brought with him specific programs (mobile health units, school rooms, recreational facilities) for specific sites both abroad and within the city of Philadelphia. From his own experience with collaborative student design projects, he also recommended that we not limit the participation in the charrette to architecture, interiors and engineering students but welcome participation from across the campus.

This first charrette proved to be a phenomenal success and attracted one hundred students from a wide variety of majors, including graduate students in professional disciplines such as law and nursing. It also established a workable model for the interdisciplinary collaborative design that we maintained for all of our subsequent charrettes. In fact, many participants in our charrettes have described the experience as the most meaningful of their college career. We recognize the subjectivity of evidence and outcomes presented here, but we believe the lessons we've learned and our accumulation of experience could be of value to other institutions.

THE CHARRETTE ETHOS

The term "charrette" is historically defined as an individual exercise, and over the past decade, the term has evolved—reimagined as a way of addressing large-scale problems

collaboratively.¹ The evolution of the charrette follows trends in higher education, where collaborative leadership was one of the most commonly cited themes in a survey of student learning outcomes across 25 undergraduate accrediting bodies.²

Drexel University is widely known for its co-operative education model, and more recently, for its commitment to civic engagement. The pairing of these two core values necessitates unique models for student learning. Our university's student learning priorities highlight critical thinking skills and ethical reasoning, citing the use of "divergent and convergent thinking to generate novel and relevant ideas, strategies, approaches or products."³ Our students have exposure to professional collaboration and civic engagement prior to graduation. As a shared university value, civic engagement experiences educate students in problem-solving, understanding diversity, good citizenship, and leadership. We see the charrette as a unique endeavor to span the goals of collaboration and civic engagement within the university.

Over the past eleven years, Drexel University has conducted six student design charrettes. The successes vary based on the project resources, range of participants, issues addressed, and ultimately the pedagogical goals of the process. This paper will present the evolving methods for each charrette and recommendations that we believe could be applied to other design schools.

TIMELINE OF DREXEL UNIVERSITY DESIGN CHARRETTES

2008: Led by Cameron Sinclair, Architecture for Humanity. *Considered health and educational facilities in selected locations across the globe.*

2009: "Urban Oasis". Led by faculty committee. *Addressed access, outreach, community involvement, and renewal for vacant lots in Philadelphia.*

2010: "Urban Connection". Led by faculty committee. *Focused on making public transportation more appealing through the design of bus shelters and graphics.*

2011: "Paths Portals & Places: Re-Thinking the Redacted Campus". Led by faculty committee and campus master-planning firm Goody Clancy. *Engaged issues of landscape, open space, place-making, and circulation on Drexel University's main campus.*⁴

2017: "Communal Landscapes: Think Local. Design Local." Led by Craig Dykers and Elaine Molinar, Snøhetta. *Addressed sites along a main artery connecting Drexel University to surrounding neighborhoods.*

2019: "Re-Imagining Streets as Pedestrian Spaces". Led by Lim Hyeung-Nam and Roh Eun-Joo, Studio GAON. *Proposed the*

closing of select single blocks to normal traffic in various parts of Philadelphia.

Through our experience of facilitating these charrettes, we have developed a set of logistics and best practices which we outline here. After deciding on the broad topic of the charrette approximately 9-12 months in advance, we move on to a faculty-led process of project development. This is a collaborative effort not only for the students but within the department. We establish a core charrette committee with a chair or two co-chairs and an additional 2-3 faculty members and distribute the work amongst the group. We call upon our broader departmental and college faculty to assist with preparations as well as for particular complementary disciplinary expertise. During the actual event, we also rely upon faculty participation to supervise the event and offer feedback to the students working on the projects.

Once we settle on a topic, the charrette committee prepares a budget and works to secure funding, typically in the range of \$15,000-20,000. For several of our charrettes, we have utilized a college-level funding grant, which has allowed us to bring in high-profile international design figures to lead the event. Beyond lodging and lecture fees for the charrette leaders, the budget goes primarily towards food for the event, printing expenses, drawing, and model building materials. The committee typically seeks donations of food and supplies from local businesses and sponsorships from local industry professionals.

The committee works for the duration of the fall term on identifying key source material and developing the specific outlines of the charrette project to be undertaken. In the early winter, we begin to focus our efforts on marketing and recruitment. We pair with our faculty in the Graphic Design program to develop a graphic identity and publicity for the project, including posters, web graphics, and project logos. [Fig. 1] For recruitment, we distribute flyers widely across campus through physical and digital means, relying on established personal relationships and colleagues to assist us in these efforts. We have found that personally introducing the charrette in our classrooms greatly assists in our recruitment effort. We also encourage faculty to allow their students some leeway on deadlines owing to their participation in this event.

We develop a website for each charrette. These sites have an integrated online registration process for students to gather information on the charrette and sign up. On this website, we provide supplemental project materials, including pertinent readings, videos, and a more detailed outline of the event's schedule.⁵ We usually set a final registration deadline approximately a week before the event, with a target enrollment of about 60 students. We are able to accommodate more students, but 60 has generally been a comfortable number for ensuring adequate team diversity, ample faculty resources to attend to the group, and a manageable number of projects to review at the end of the charrette.

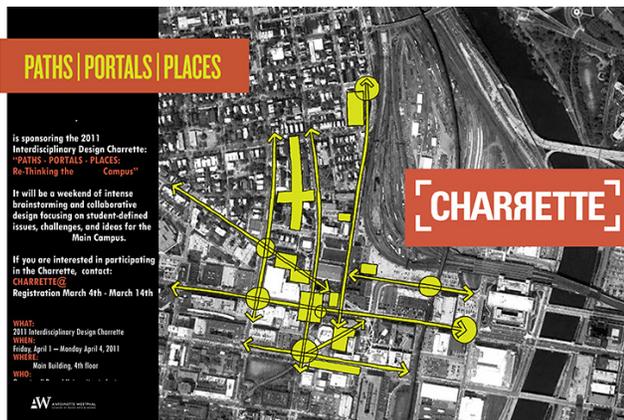


Figure 1. Poster Design for 2011 Charrette; "Paths Portals and Places"

Once registration closes, we divide the students into teams of approximately 6-8 students. Within these groups, we try to maintain a balance of lower-level and upper-level students, as well as a relatively equal distribution of majors. This ensures that each team has a variety of skills and perspectives, and at least three disciplines working together. Most charrette participants are from Architecture and Interior Design, which we use to anchor the groups with 3-4 of these students before populating the teams with students from other majors. We find that providing a core of several architecture and design students keeps each team on a relatively level playing field in terms of design skillsets revolving around ideation, sketching, modeling, rendering, and presentation. The team members from other disciplines extend the range of skillsets and perspectives which contribute to the experience for all involved.

One main logistical issue we have identified revolves around how we keep students engaged and involved for the duration of the event. The answer we have found is . . . FOOD. We serve students three meals a day and have a large number of snacks and drinks available around the clock. This ensures that students do not need to leave the event to eat and we have found that this not only keeps morale up but also encourages cross-pollination of ideas across teams at mealtimes. This is a major line item of our charrette budget, but we consider it essential to the success of the event. In 2019, with the charrette leaders from South Korea, we used food as a way of bridging culture, bringing in a Korean food truck for the kickoff event.

We ask that students devote Thursday evening to an introductory lecture. We then kick off the charrette the following evening with a panel discussion of experts on the topic. Students work all day on Saturday and Sunday. Monday is reserved for final printing and any last-minute model adjustments. On Monday evening we have a public exhibition and review of the projects as well as a closing reception. The public review usually includes members of the local community and experts on the selected topic. The charrette occurs during our regular course term, but we try to schedule it during the first few weeks of classes before student workload becomes overwhelming.

Interdisciplinary collaboration has emerged as a fundamental goal in academic settings, yet students do not often have the chance to engage in this way in their educational experiences. This can be particularly true for architecture students housed in first professional degree programs. Given the very structured curricula and required disciplinary coursework, these students do not often have substantial opportunities to meaningfully interact and collaborate with students outside of their discipline. Our design charrettes are invested in cultivating a very diverse array of students to participate and collaborate. Our Architecture program is housed within a dynamic College of Media Arts and Design, which is also home to Interior Design, Fashion Design, Graphic Design, Digital Media, Music Industry, Dance, Design Research, Product Design, and Urban Strategy. Our charrettes typically draw students from these areas, as well as the social science, nursing, and engineering programs of our University.

STUDENT EXPERIENCES AND FEEDBACK

Perhaps the most valuable criteria for evaluating success of the charrette is student participation and response. We collected feedback in various formats to learn from each charrette. Participant responses include formalized anonymous written exit surveys, video interviews, and informal conversations with individual students.

In 2017 we conducted a formal survey that received 43 responses representing over half the number of students that participated. The responses were overwhelmingly positive concerning the structure and mission of the charrette. For instance, we asked, "How much do you feel you learned about working in teams?" the average survey result was 4.21 on a five-point scale.⁶ The survey also revealed that there needs to be a variety of forms of recruiting participants. No single format stood out when we look at how students heard about the charrette. The results were well-balanced between word-of-mouth from peers or faculty members, physical posters around campus, emails, and other digital media announcements.

When asked, "What part of the charrette did you enjoy the most?" one student responded, "working with people in different majors and seeing how they go through the whole design process." Other students reacted similarly, citing collaboration, diversity, teamwork, multi-disciplinary and integrated design processes as the aspect of the charrette to be the most enjoyable. Students also mentioned the interaction with charrette leaders and community residents as positive experiences.

We also learned from negative feedback. Many students pointed to the substantial time commitment required by the charrette. Others described the too-frequent and unorganized feedback from instructors or critics as unproductive. In the absence of assigned critics, teams may get conflicting feedback. In future charrettes, even if there is no assigned advisor to a team, we

may structure the critique rotation in a way that allows more organized interactions with the teams.

The interviews captured on video were also a great resource; they provided a platform for longer, more natural narratives from the students. They also allowed the interviewee to react to the students with follow-up questions. When asked which aspect of the charrette they enjoyed most, one student responded:

The most enjoyable thing has been teamwork with people outside my field. I mean, design, process—so much of it is conversational. You can't have an idea alone; most of the time it's about different perspectives and different experiences coming together and synthesizing those half-thoughts into real concepts. And being able to do that with someone that has none of the training or the classwork that I have done is really exciting because they're bringing a totally different spin on bringing these ideas together.

While the written surveys could provide honest insights due to the anonymity, the video interviews allowed us to obtain more nuanced responses. In the future, we plan to employ similar multi-platform evaluation techniques.

LEADING THE CHARRETTE

The intensive timeframe of a charrette magnifies the effect of a leader or leaders on the character of each event. In the context of a typical design studio, a single studio critic may guide a dozen students over many weeks of design. Time, in this sense, allows for iteration and consistency, whereas an accelerated group design charrette re-calibrates the typical student/critic interaction.

In 2009, the committee took a step forward in prescribing the brief and reframed subsequent charrettes around sites in Philadelphia. This pivotal shift from the year before was twofold. It became clear that students needed a more immediate understanding of place, and the consideration of local sites aligned with an explicit mission of the university to be one of the most civically engaged in the nation. The following two charrettes were led internally by the faculty and in turn, a set of curricular requirements were established for future charrettes. Local sites, civic causes, and program briefs that were accessible to non-architecture students (non-building centric) became integral elements to the success and identity of a Drexel University charrette.

In 2017, another shift occurred to once again engage well-known designers in the charrette. Craig Dykers and Elaine Molinar of Snøhetta were integral in drafting the design brief and selecting appropriate sites within the community that aligned with their work and the core values of the charrette. Dykers and Molinar participated in site visits and phone calls with the committee and community members in the summer of 2016 to establish their connection to place. Perhaps most impactful, the personal charisma of Dykers and Molinar was a driving force of the event.

The first night of the charrette was intensely and intentionally packed with activities. [Fig. 2] A group of eighty people, including students, community members, faculty, and alumni, walked together to the sites, discussed the role of design at each place, and afterward engaged in an image-based game to elicit immediate and intuitive responses to place. The conclusion of the charrette was equally visceral as Dykers led a large public group in chanting, "What can you do? I can do anything!" [Fig. 3] This process and these experiences were unique to the leaders of that particular year and defined the character of that specific charrette.

Another well-regarded partnership, Lim Hyeung-Nam and Roh Eun-Joo of Studio GAON from South Korea, led the charrette in 2019. But unlike Snøhetta they were not able to visit Philadelphia prior to the event and did not speak English, though a Korean translator participated with them on the lecture and charrette. In response, the committee saw an opportunity to shift the balance by adjusting some logistical elements. In this case, the selection of sites and drafting of the program brief was done largely by the committee. However, there was a recognition of Studio GAON's focus on design narrative, and their use of freehand drawing as a critical form of inquiry and communication. Drawing, then, became the medium of the charrette. For



Figure 2. 2017 Charrette Site Visit. Image Credit: William Mangold.

example, tables were lined with paper to foster a natural and communal connection to drawing. [Fig. 4]

As outlined above, we have found that an assessment of the leaders' potential level of engagement and even their personality is vital to developing an enriching charrette. As one of the goals of the charrette is to expose students to diverse approaches to design and design thinking, having a flexible process that responds to the leadership of a charrette bolsters its potential for impact.



Figure 3. 2017 Charrette Finale. Image Credit: William Mangold.

DESIGN CHARRETTE OUTCOMES

The final required presentation for each charrette team included a pinup presentation of process work, drawings, and models. This allowed for a familiar and standardized organization of the students' work, as well as a format for public presentation and discussion of the projects. The design work represented in the drawings and models of these pinups has largely been preliminary, with an emphasis on conveying the essence of proposed places and experiences. As design and presentation tools have advanced, so has the sophistication of the work produced. Work in the first charrette (2008) was largely analog with some computer-generated graphics. The most recent charrette included digital 3D-modeling work and hybrid digital rendering. [Fig. 5] However, most charrette facilitators have emphasized the quality and speed of sketching and modeling by hand.

Each student team strives to stand out through the creation of compelling designs. The overall emphasis on cooperation over competition, however, tends to promote an atmosphere of congeniality and a sharing of information and resources between teams. Because of pre-charrette planning to unify the format and agenda of each charrette, the overall work of the teams tend to demonstrate a relatively high level of cohesion. The ideas proposed by each student team, though developed independently during the charrette, have correspondence and overlap that allow for greater dialogue.

Our University is committed to substantial civic engagement. The 2017 charrette was seen as particularly successful in the way it intentionally engaged the communities directly adjacent

to the university campus. The initial planning and subsequent student outreach prioritized the involvement of local residents. The 2019 charrette made less effort to engage specific communities but received a higher level of publicity, including a full spread write-up in the Philadelphia Inquirer and social media documentation. Civic engagement of earlier charrettes revolved around topical issues that brought students into dialogue with local experts.

From the outset of each charrette, it was understood that the designs would not be realized in any kind of built form. In doing these charrettes, we have three main aims:

A chance for students to work collaboratively in interdisciplinary teams

Students tackle a significant local and/or contemporary issue

Exposure to outside perspectives in the design process

While the timeline of each charrette is accelerated, and it is understood that the projects are only speculative, there is a lot of work and dialogue generated in the process. It is seen as an entry point for students into deeper opportunities for engagement, and a chance to develop skills for future forms of collaboration. Questions remain as to how to enhance the pre-charrette process, including more substantive research on the part of the students. We want to heighten student understanding of the issues at stake through community engagement methods, site analysis, and program evaluation. We also continue to consider how charrettes may have an impact



Figure 4. 2019 Charrette Team Critique. Image Credit: Wiliam Mangold.

beyond the intensive weekend of work (and how that impact might be evaluated).

CONCLUSION: REFLECTIONS AND LESSONS LEARNED

We believe the Drexel University Charrette provides a model for interdisciplinary, collaborative, and non-competitive design projects. The structure and programs employed by the charrettes and the opportunity to work with students they might not ordinarily encounter in the course their normal school activities enhanced student participation and satisfaction. Advertising widely across the campus, we attract students that are eager to work on projects that satisfy their desire to work on socially meaningful projects. Contrary to many popular accounts that describe today's students as detached and disinterested, we discovered they were anxious to tackle seemingly intractable issues around economic and environmental inequality.

We arrange the students into teams to balance out different levels of experience and expertise and repeatedly emphasize that every student has the ability to make meaningful recommendations concerning design and program. Unlike the traditional charrette, ours are non-competitive and offer no credit or personal advancement. What we do offer is the opportunity to work intensively with their peers on projects that seek to address issues they consider crucial to the world they occupy. Their participation is completely voluntary, and their willingness to commit to the many hours involved is evidence of the great value our students find in this collaborative charrette model.

Following the initial charrette led by Cameron Sinclair, we created charrettes with guest leaders but also ones led by our own faculty. We found that the latter offers a much more economical model with an equally valuable learning experience. External leaders can, however, bring expertise, reputations, and novelty that generate student excitement. In every case, a different program was created that responded to pressing issues relevant to our location and allowed students to study specific real sites in the city. Obviously, the choice of appropriate external and internal charrette leaders is paramount. Leaders must be eager to work with students and be effective speakers and designers willing to commit to the hours necessary to get to know and motivate the students over the charrette's 3+ day duration.

Community representation and involvement were sometimes difficult to obtain as our charrettes were always focused on their educational value to the student participants rather than the creation of schemes or designs that might actually be created. However, when it has been possible, interactions between residents of a neighborhood with the charrette students have been both positive but also highly instructive of the kinds of consultations necessary for effective community interventions.

Given the commitment of time and resources, we conclude that offering a charrette is best done every two or three years. Annual charrettes led to faculty fatigue, and student interest also declined with such frequency. Finally, providing food is especially critical for sustaining the student's energy level, preventing "melt" (as students may not return after going out

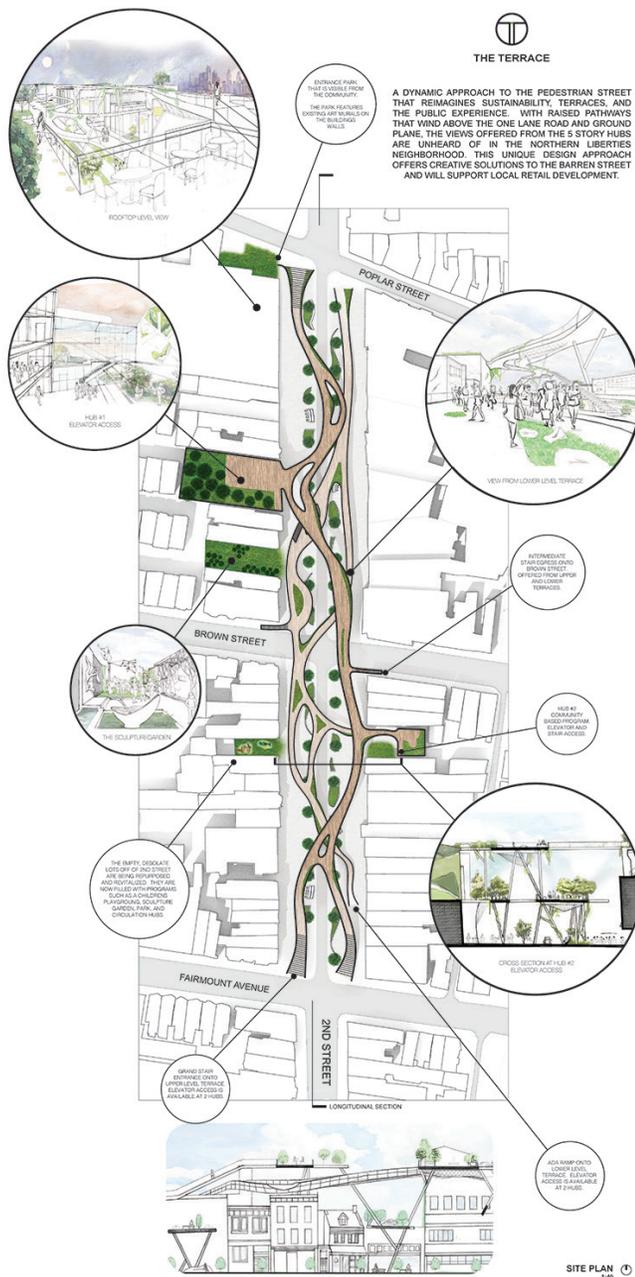


Figure 5. 2019 Charrette; Site Plan. Image Credit: Team 1: Amanda Cohen, Kaity Chen, Fritha Elizabeth Francis, Ian Bucci, Riham Dib, Emily Grigsby, Lindsay Bedford Eunbi Kim, Grace Marcolina

to eat), and for creating an atmosphere of sharing and cooperation. Charrettes, like armies, run on their stomachs.

We believe interdisciplinary collaboration is the most significant learning opportunity for the students participating in the charrette. Their immersion in an intense team experience without the stresses associated with graded class assignments allows for both freedom of design and cultivates meaningful personal interactions. The charrette also had the unexpected consequence of creating greater collaboration and cohesion

among the faculty participants. While our time is usually consumed by individual teaching assignments and research, the charrette allowed us to commit to projects that represented the department as a whole and created a legacy event recognized across the university.

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ENDNOTES

1. Willis, Dan. "Are Charrettes Old School." *Harvard Design Magazine* 33 (2010).
2. Drechsler Sharp, Marybeth, Susan R. Komives, and Justin Fincher. "Learning outcomes in academic disciplines: Identifying common ground." *Journal of Student Affairs Research and Practice* 48, no. 4 (2011): 481-50
3. <https://drexel.edu/provost/assessment/outcomes/dslp/> (accessed June 17, 2019).
4. *Due to accreditation and a degree of faculty fatigue, the committee requested that the 2012 charrette be postponed. Subsequently the Department of Architecture, Design & Urbanism was relocated to the new URBN Center building, and due to this reconfiguration of the department, the next charrette occurred in 2017 and is now being implemented on a biennial basis.*
5. *One issue we have been unable to resolve is the tendency of many students to ignore this material in advance of the charrette, in spite of the fact that it provided a rich resource of precedent and inspiration.*
6. *72% of the respondents also responded that they thought the team size was just right with team sizes ranging from 6-8, with only one student finding that the team was too small.*