2013 Academic Summit

Program Sponsors
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06.02.13
Above the Status Quo:
The Future of Design
Research and Education
SEGD Academic Summits

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Think more, design less.

SEGD exists to Educate, Connect, and Inspire the global, multidisciplinary community of professionals who plan, design, and build experiences that connect people to place.

SEGD Mission Statement
We wish to thank all our attendees, presenters, professionals, educators, and students for participating in the 2013 SEGD Academic Summit. This special program continues to examine and share new insights into design education advances. These important developments will ultimately enhance people’s experiences within the built environment. Each presenter’s topic provides clear evidence to the discipline’s depth of intellectual inquiry today.

Environmental Graphic Design (EGD) not only serves as an integral part of design education, but also as a collaborative interchange for university curricula. As expressed in its new mission statement, the Society for Environmental Graphic Design (SEGD) is committed to enriching and supporting continued academic development. Where once a key objective was to develop core skills, universities are now expanding and integrating their offerings with new EGD knowledge and methods. We hope this document will provide new insights and support your university and professional community in meeting the future challenges in design education.

Oscar Fernández
Chair, SEGD Academic Advisory Committee

Justin Molloy
SEGD Director of Education and Professional Development
Matthews Paint is the Lead Sponsor for SEGD Academic Programs.

The SEGD Academic Summit and Program book is sponsored by Big Apple Visual Group.
Abstract
Before students can undertake sophisticated environmental graphic design (EGD) projects, they must learn very basic skills in visualizing three-dimensional space, working in scale and "making things." Because these skills span traditional educational boundaries and departmental programs, they often fall between the cracks. This paper explains the design of an innovative interdisciplinary foundation program at FIT (Fashion Institute of Technology), a part of the State University of New York, which incorporates "learning by doing" and teaches skills that cross the disciplines.

The program contains the traditional components of an introductory Communication Design or Graphic Design program: typography, layout, color, computer skills, design history and a generous offering of liberal arts courses. In addition, the program concentrates on the following:
1) integrating three-dimensional visualization
2) incorporating the concept of "scale"
3) introducing "time" and "space" as part of visual language and design basics
4) strengthening presentation and professionalism
5) strengthening hand skills by "making things"

This program promotes critical thinking and is unique in that it is interdisciplinary in nature and scope, gradually introducing more complex concepts, while building skills that are not routinely addressed in a traditional fine art based foundation program. Students have the opportunity to acquire skills that are unique to and shared by four different BFA programs offered at FIT: Graphic Design, Advertising Design, Packaging Design and Visual Presentation and Exhibition Design (proposed).

The program graduated its first group of students in May 2013. Many are pursuing a BFA in one of the aforementioned programs.

Background & History
Stemming from conversations at an FIT school-wide retreat (2007) about a “common” foundation year at FIT, in 2008, faculty members from the departments of Communication Design (CD), Packaging Design (PK) and Visual Presentation and Exhibition Design (VPED), formed an Interdisciplinary Committee to conceptualize a lower division AAS Foundation that could prepare students entering the respective upper division BFA programs and better reflect the realities of the design professions. To bring the Interdisciplinary Committee’s vision to life, Communication Design, the traditional feeder for the AD, GD and the PK BFA’s, formed a departmental committee to revise its lower division AAS curriculum and create a truly interdisciplinary design foundation.

This foundation program has the appropriate combination of hand, technical and presentation skills balanced throughout the courses and aligns with the College’s Strategic Plan, to strengthen the Academic Core and promote critical thinking. It includes 24 credits of SUNY-required liberal arts to round out their education, creating a student who not only has design skills but also understands the relationship of design to the larger world.

Starting in the first semester, students have reading assignments and are expected to do both reflective and descriptive writing. The required introductory English class in the first semester teaches them basic techniques for both types of writing assignments. Textbooks are assigned for each class and the students use these texts as a foundation for their personal design library.

Communication Design Program
Note: We are presenting only courses that specifically support interdisciplinary education.

Year 1 Overview
The basic approach to the first year is to address the reality that students entering the program no longer “make” things as they grow up. Art classes, as well as shop and home economics classes, where students learn hand skills, have been cut back dramatically.
The current emphasis on technology in the secondary schools reinforces the separation of the mind and the hand. Comfort levels with professional software such as Adobe Creative Suite and Microsoft PowerPoint lull high school students into thinking they are “designing” finished work. Easy and fast access to myriad high quality images on the internet dulls their skills of observation and perception of detail. “Research” begins and ends with Google. The classes as basic drawing, perspective drawing and creating visual translations support the designer’s ability to quickly sketch ideas. The assignments are executed primarily in black and white as the students develop an understanding and appreciation for the possibilities of the applied image and design vocabulary. Some assemblage and paper construction are introduced to assist in the development of hand skills and discerning visual distinctions.

Capturing Creativity
As a contrast to Design Studio I, Capturing Creativity leads students through a series of inventive exercises in which the student realizes there are many different sources of inspiration for creativity. Daily documenting of experiences, posing questions and developing ideas are put into practice and examined. The skills of writing, drawing and critical evaluation are combined to emphasize their importance as part of the design process.

Semester 2: Relevant Courses
The goal of this semester is to build upon the skills and knowledge gained in the first semester. Projects become more concrete and less abstract. Design process is stressed using sketch models throughout design development and carried through to finished model or comp.

Design Studio II
Design Studio II focuses on working with three-dimensional objects and space. Projects move from abstract through practical as students learn to articulate their ideas visually as well as verbally. The first project is a free form dimensional collage that is an introduction to how working in three-dimensions shifts the focus and opens up new possibilities. Students create a composition in a “container” that represents a dream, a religion or a mystery. They explore how to create a vignette by exploiting depth to establish a visual hierarchy and using the outside as well as the inside of the container as a design element. The students are encouraged to push the design towards unexpected solutions and consider the viewer’s reaction.

The second project is a variation of the traditional exercise exploring how multiple planes create a form. Students cut out squares, circles, and triangles and put them on a bamboo skewer, creating simple sketch models. This technique allows them to easily and quickly experiment with how the placement and spacing of the shapes on the skewer controls the overall form that is generated. Students explore changes in size, alterations in rotation, geometric to organic, and adding a void. For their final model,
students choose their most successful sketch model and build it with illustration board, replacing the skewers with spacers. From this project they learn to limit the number of variables they introduce to a form, which builds upon the principles of simplicity that they learned about in Design Studio I.

With the next project (a variation of an assignment from the Visual Presentation and Exhibition Design department) students design a visual narrative, using their own photography that is mounted on panels in a room with specific dimensions. As the project progresses, they create several variations in a 1/2" = 1'-0" sketch model using Bristol board. They experiment with scale and placement of photos to tell their stories. They learn that color, size, direction of lines or shapes in a photo, or series of photos, can lead a viewer through a space or encourage them to turn a corner to explore.

A final 3/4" = 1'-0" final model of the room is made of foamcore. Students photograph this model at "eye level" with scale figures to illustrate the illusion of a real space. They learn to visualize the project at full scale and how the viewer will experience it.

In the end, they become empowered by completing this rigorous and foreign project that initially seemed quite daunting. They have sharpened their designer’s eye, paying attention to visual details as they move through their surroundings.

The semester ends with an extension of the room project, now referred to as an “installation” hypothetically on view for the public at a specified location. Students must translate the “essence” of their room design and narrative to an invitation and a street banner. The invitation uses innovative folds or “pop-ups” to reference the composition within the room. Designing the banner forces them to apply the imagery that they have developed for use in a 3D environment on a two-dimensional plane, reinforcing what they learned in Design Studio I. They study readability and legibility of typography in oversized work, and are continually encouraged to compare what they see on the computer screen and what they see at full scale, which helps them internalize what works and what doesn’t.

Visual Language
Students learn to break down a visual message to interpret and create graphic images and symbols that communicate meaningful information. References and reading material in visual rhetoric and semiotics as well as analysis of contemporary designers’ use of symbols and symbolic imagery are addressed. Projects include a high contrast, stylized symbol set and the creation of visual puns, a commonly used advertising technique. A basic “research” project is assigned in which students create a simple booklet or pdf presentation about symbols based on “observation” as research, in addition to library and internet sources. Students are encouraged to create their own themes, preferably based on personal experience. The goal is an understanding of the historical and cultural roots of symbols.

Year 1 Review
At the end of this first year, students are asked to bring in select projects from semester 1 and 2 for review by faculty and classmates. During this time, students reflect on what they have learned, make connections between assignments and realize how far they have progressed.

Year 2 Overview
The second year is a bridge from the introductory year of the Communication Design Foundation, with its abstract, theoretical approach, to the four BFA programs. Each profession is introduced in its respective course. Projects become more concrete and challenging, requiring the students to utilize the conceptual and technical skills they acquired during the first year, while incorporating “real world” content in industry-based assignments.

Semester 3: Relevant Courses
The third semester of the program is very unique to FIT. Students are introduced to four majors in four separate courses: Foundation in Graphic Design, Foundation in Advertising Design, Foundation in Packaging Design and Foundation in Visual Presentation and Exhibition Design. These are specialized classes taught by a faculty member from that program.

These classes are mixture of projects, lectures, field trips, guest lecturers and alumni visits, designed to provide exposure to the discipline. The faculty teaching these courses have experimented with using a common theme for the semester to reduce the amount of research a student must generate for each project. Themes extend beyond the student’s experience as a way to move them out of their comfort zone and encourage them to utilize research for ideas and design directions. Last semester’s theme was “science,” chosen to loosely coincide with the STEM efforts in America’s high schools. Faculty diversely interpreted this theme; topics included food science, human prostheses, wind power, the Mars Rover and a proposed high tech laboratory that floats on the ocean’s currents.

Students are encouraged to throw away assumptions, be original and work through assignments from concept to finished printed comprehensives and/or three-dimensional models. They are reminded to use skills, concepts and techniques from the previous two semesters and are expected to make group or individual presentations in each course, increasing their comfort level in this area.
“Foundation in” Courses

The projects in Foundation in Graphic Design include design of a logo and its applications for a fictitious company. They also design a complex printed promotional piece that reflects a unique visual identity for their company. From this exercise, the student begins to understand that a logo alone does not embody the brand of a product or service. In keeping with the three dimensional aspect of the program, they experiment with the materials and form of the printed piece.

The projects in Foundation in Visual Presentation and Exhibition Design include representing a brand in three dimensions, a table-top display unit and a larger scale kiosk project. The latter is a group project.

Students experience more complex communication issues working with full size forms. Concepts of scale are reinforced by making models and placing them in the environment around the college. The students are introduced to fabrication methods in the department’s workshop and they experience the process of collaboration when working on larger scale projects.

Foundation in Packaging Design provides three-dimensional projects at a smaller scale, and reinforces the concept of a brand. In Foundation in Advertising Design, students focus on developing concepts and presenting messages to the public, which can include applications in the environment, such as bus shelters, guerrilla advertising and of course, digital displays in Times Square.

Over the course of these three semesters, faculty work to reinforce design methodology in a studio setting. All courses stress observation, research and writing, the process of design, and verbal and visual presentations. In addition, students experience the interconnection between digital and hand skills.

Design History

To parallel the four Foundation courses, Design History expands the traditional content of graphic and advertising history to incorporate the history of packaging, environmental graphic design and exhibition design. Examples of cutting-edge contemporary design in all of those fields are presented and discussed as well. The course introduces important concepts, movements, artists and technologies that have shaped design in the past and are changing design in the early 21st Century. The students study design in context, the role of design as a reflection of culture as well as its ability to influence social change. While this is primarily a class to study visual history, they learn the vocabulary and research techniques to analyze and write about design, whether their own work or works by others. All of the assignments involve the integration of images and words to communicate an idea, whether it be written or spoken. Some of the assignments involve writing short, succinct paragraphs supporting their analysis of a design, idea or cultural touchstone so that students learn to write effectively. There are team projects and debates that foster peer to peer learning as well as encouraging students to develop their own definition of what constitutes “good” design. The class moves away from rote memorization to learning in context, encouraging individual thinking. The debates also sharpen their presentation skills, especially in terms of persuading an audience.

Semester 3 Review

At the end of semester 3, students are asked to bring in and display projects from the four foundation courses, just as they did at the end of semester 2. This time is used for reflection in terms of their progress and in relationship to the work done by other students. They can use this review to assess their strengths and solidify their decisions about which program to choose to earn their BFA. This final review also allows the faculty to see what has been done in other sections of the class and to compare notes.

Semester 4: Relevant Courses

This semester is the final one before a student graduates from the AAS program. The goal is for students to synthesize all of the concepts and skills they have learned over the previous three semesters.

The fourth semester features Capstone Design Studio. The first half of this course is devoted to a group project in which the students develop brand and design strategy. Guided by faculty, each group invents a fictitious forward thinking multifaceted company. The group then assigns the roles each student will assume over the course of the project and chooses a leader who is responsible for keeping the project moving and ensuring proper communication with the professor.

The project includes a research lesson with a librarian in the FIT Library. Each group writes a five to seven page creative brief, including concept boards, a basic analysis of the competition and a bibliography. They are asked to describe the company and what it produces, whether it is a product or service, based on library research. To help them understand today’s emerging business models, they must include information about the company’s involvement with the community and its sustainability practices. The design strategy for each company must include aspects from all three “foundation” courses from the previous semester: packaging, advertising and a three-dimensional component such as signage, displays or information panels. Graphic design is covered within
all of these components, and includes traditional print applications as well as ideas for smartphone apps, web sites or tablets.

The students learn the advantages and disadvantages of working in a group. This is a hard lesson to learn. Periodically, class discussion is about handling issues that arise. These are lessons they will use well into the future.

Presentation technique is stressed in this program to help students with communication skills and to build confidence. The group project culminates with a formal presentation to the class and invited guests from industry. The presentation consists of on-screen visuals and an assortment of comps and models unique to each project. Each student is expected to speak during the presentation.

The second and final project in this course is essentially the same as the first—students devise a fictitious company, develop a design strategy and design and apply a brand identity to it. The difference here is that students work individually on this project. They are expected to use all the skills learned previously as they continue to work through the end of the semester. This project is used for assessment purposes to gauge core competencies for graduates from the AAS program.

**Conclusion/Contribution to the Field**

The FIT Communication Design Foundation AAS curriculum is an important step towards an interdisciplinary approach to design education that crosses the disciplinary boundaries and allows the students to think in multiple modalities. This curriculum approaches design as a creative process that synthesizes “thinking making doing.” The program more closely mirrors the professional world today where firms are expected to design a broad variety of components for a given project utilizing a variety of media. The demands of business and technology have blurred the divisions between disciplines, requiring practitioners to be comfortable working across those lines. The expectation is that the students will carry their experiences beyond the classroom and into the built world.

The program will produce designers who are able to utilize diverse knowledge and skills in order to work well in collaborative teams. Working in teams builds social skills that students will need working with other professionals to achieve their designs, a reality of large-scale projects. They get a healthy respect for what they don’t know and gain confidence with the skills they do have. They will understand the advantages of working with specialists, making them better clients.

“Learning by making” and working three-dimensionally doesn’t just help those professionals who choose to work as environmental graphic designers; all design work is strengthened by understanding visual communication in the built environment. Regardless of the choice of major, FIT Communication Design Foundation AAS students have a solid understanding of the fundamentals of work in three-dimensional space.
1 Dimensional Transition
DK Kim
2 Dimensional Collage
Lindsey Gaal
3 Banner Mockups
4 Visual Narrative
   Annie Yang
5 Visual Narrative
   Nathalie Ubaldegaray
Abstract
Design has undergone many changes over the past several decades. What was once a trade activity is now a practice based profession that has diversified into very distinct disciplines (Buchanan, 1998). Design disciplines have worked independently until recently, when interdisciplinary collaboration has become increasingly valuable. Studies have shown that collaborative efforts can produce new and original ideas not possible in a uni-disciplinary setting (Nelson, Wilson and Yen, 2009). Too often design education lags behind what is happening within the design profession and it is for this reason that this collaboration was initiated. The decision to plan the interdisciplinary collaboration came out of a discussion of the crossover of content topics within two courses in the Design Division at La Roche College. After additional conversations and planning, it was also driven by the desire to better integrate students and initiate them as co-creators.

Introduction
Design professionals are being asked more frequently to co-create with people from other design disciplines (Holston, 2011). In order to replicate this within the studio environment, one of the main objectives in this project was to initiate a collaboration between Graphic Design majors and Interior Design majors at La Roche College. The two courses that were brought together for this course were Design for Packaging and Environments, which is a major elective course in Graphic Design and Design Studio III, which is a required course for Interior Design.

This collaboration included these project-based studio courses working first on a “warm-up” project and then a multi-part project for the remainder of the semester. The combination of the two projects provided the opportunity to explore the challenges and successes of student interdisciplinary design problem solving, working together on ideation and execution through the schematic design phase of an interior design and graphic design collaborative project.

Format of the Class
Both classes met together for the first three weeks of the semester for close collaboration on the “warm-up” project. Collaborative meeting times for the second project were changed to meeting once a week in order to accommodate discipline specific feedback. Blackboard, an online classroom tool, was used for sharing materials for the course including course documents, articles of interest, recorded lectures with slides, as well as for communication of assignments and various announcements throughout the semester. Additionally, each student group was required to maintain a blog, which allowed them to share project research and progress with instructors, cohorts and the college community. The blog also served as a means to problem-solve; it facilitated communicating with one another in order to discuss issues with group dynamics and project obstacles.

Course Planning and Implementation
The two faculty members collaborated closely on writing projects including the project objectives, intended outcomes, process, milestones and deliverables, as well as creating the grading rubrics to set the criteria upon which student work would be evaluated. We spent significant time developing the plan for the courses before the semester began and then in advance of each class we would discuss the planned use of class time, assignments for the week and successes and failures from the previous week. The format of each class session was primarily for the instructors to review group work and provide feedback and guidance.

Introductory Project
Project Overview
The introductory project for the course was for PARK(ing) Day. For this project, students collaborated in small groups made up of two Interior Design and two Graphic Design students. Within a four-week time frame, students developed a concept based on research of a social issue, and then designed, planned and implemented a public temporary park on that
topic to fit within a parking space on the La Roche College campus. This project was in conjunction with PARK(ing) Day, an annual worldwide event where artists, designers and citizens transform metered parking spots into temporary public parks, to create public awareness for the importance of green spaces within our cities and neighborhoods.

**Objectives**

This project was intended to serve as a warm-up for the next part of the course and give students experience in working within their groups and designing for a temporary space. Through this project, students aimed to achieve the following objectives:

- Work within a team to develop a concept and design for a temporary space based on a topic to serve the purpose of educating/informing the public on that topic.
- Understand planning a three-dimensional space with a limited footprint and explore concepts of flow, containment and creating an experience within that space.
- Explore appropriate traditional and non-traditional materials used in the creation of environmental graphic design elements.
- Practice effective use of typography and visual images, photography and illustrations, in the structure of information for communication on three-dimensional surfaces.
- Practice effective use of space planning, material use and storytelling in the enculturation and structure of information for communication within the three-dimensional space.
- Understand and practice design methodologies for environmental graphic design and packaging, including sketching for three-dimensional design, working in scale to create elevations for dimensional forms and physical environments and building models (physical and digital) for developing dimensional design.

**Goals**

Students were to address the following in their design communication:

- Develop a strong concept that clearly communicates to the visitors of the park an idea or theme related to the chosen social issue topic.
- Use the park concept to inform the public on a social or environmental issue as well as on the value of spaces for community gathering.
- Communicate visually, and with narrative, the concept of their park.
- Implement an immersive and memorable park experience to educate the public and particularly the La Roche community.
- Design a giveaway piece for visitors to remember and continue to learn from the experience.
Process and Outcomes
In teams the students studied various social issues and then determined the potential approaches for their parking space parks. The groups worked collaboratively throughout the first four weeks of the semester for a final implemented park design that was hosted at La Roche College on the date of the international PARK(ing) day event.

All student teams worked together to address the form and function of the park, along with signage and environmental graphics explaining the concept and purpose of each group’s unique solution to the problem. The students were also required to create a giveaway for visitors of each park—a designed three-dimensional piece with communication related to the topic. Both disciplines addressed the various means of interaction and experiences the visitors had with the park as well as the materials, construction, communication and all pieces in the implementation of the project. This allowed all students to explore and practice the many aspects of the design process and execution, so that they were not limited to using only the skills within their own discipline. Students were provided a small budget to support purchasing materials for implementation of the project.

The final presentation of the project included an informational narrative for the park concept, perspectives, elevations and details of the designed elements of the system and documentation of the giveaway piece. Additionally, demonstration of the process by which students arrived at the chosen solution(s) was included along with the final photographs and summary of the results of the implemented park on PARK(ing) Day.

Semester-Long Project
Overview
This semester-long project introduced students to the concept of pop-up spaces, branded environments and design for product packaging, through the development of a pop-up branded space for ModCloth, an online retailer selling affordable independent designer women’s fashion. For this twelve-week project, students addressed the problems defined from a kickoff meeting with the client, ModCloth, related to the strategy and brand experience for a pop-up retail store.

Objectives
The primary objective of this project was to introduce students to the concept of pop-up spaces, branded environments and product packaging, through the development of a pop-up branded space for ModCloth.

Another significant purpose was to facilitate students’ understanding of, and ability for, collaboration across design disciplines. These young designers were introduced to a higher level of design problem solving through this collaboration. Holston (2011) identifies that, “The ability to collaborate, manage the increasing complexity of design problems, to design ‘in context’ to their target audiences, and be accountable for design decisions through measurement transforms designers from ‘makers of things’ to ‘design strategists’” (p.2).

Other objectives for the project included:

- Explore the language and client experience of ModCloth consumers.
- Identify differentiation of brand within environment from other “typical” bricks and mortar retailers.
- Explore appropriate traditional and non-traditional materials used in the creation of environmental graphic design elements.
- Practice effective use of typography and visual images, photography and illustrations, in the structure of information for communication on three-dimensional surfaces.
- Understand and practice design methodologies for environmental graphic design and packaging, including sketching for three-dimensional design, working in scale to create elevations for dimensional forms and physical environments and building models (physical and digital) for developing dimensional design.

Goals
Students were to address the following in their design communication:

- Create an immersive and memorable brand experience for ModCloth through this pop-up retail space.
- Communicate the ModCloth story and showcase their products.
- Provide an interactive experience for visitors to the space.
- Facilitate the creation of lasting relationships with new and existing customers.
- Communicate the brand essence and create a unique sense of place within the pop-up environment.

Process and Outcomes
The project began as a collaborative effort between the interior and graphic design students in determining the potential purposes for the pop-
up. Students were divided into the same groups as the previous project and began by collaborating on a concept and strategy for their project. The groups worked collaboratively throughout the semester to meet a series of presentation deadlines, working toward a final project, culminating in a final presentation at the end of the semester.

While the Interior Design students addressed the form and space of the popup, the Graphic Design students focused on how the brand could be translated graphically on the inside and outside of the space, as well as packaging and “take-away” materials related to the ModCloth products. Both disciplines addressed the various means of interaction and experiences the visitors have with the brand through the temporary retail experience.

To begin the project a kickoff session was held on location with the client, where students

Table: Process and Assigned Pieces for Comprehensive Design Package

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<td><strong>Part A: Design Concept</strong></td>
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<td>The first deliverable included documentation that explained the research and process of arriving at each group’s chosen concept direction. This included the process demonstration, creative brief and verbal concept solution, inspiration images, palette of visual design elements (color, type, materials, etc.), rough schematic sketches along with a narrative that demonstrated the design concept. This part of the process was a fully collaborative effort between all GD and ID students of the group. Each student was also required to indicate what part(s) they contributed toward the deliverable.</td>
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<tr>
<th>For Graphic Design Students</th>
<th>For Interior Design Students</th>
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<td><strong>Part B: Retail Graphics</strong></td>
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<td>The second deliverable for GD students in group included the design of all environmental graphic elements for the pop-up retail space—encompassing signage, wall-mounted, hanging and freestanding graphic elements and any other visual communication within the space. These elements were to be closely aligned with the original pop-up concept and coordinated with the space planning, merchandising and fixture solutions in development by the ID students in the group. This deliverable included further development of the palette of visual design elements, elevations and details of all proposed graphic elements. This deliverable was to be coordinated with the Part B deliverable of the ID students and presented together.</td>
<td><strong>Part B: Space Solution</strong></td>
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<td>The second deliverable for ID students in each group were the preliminary space studies (plans, sections, elevations, three dimensional sketches) including: traffic flow studies, fixturing layouts, merchandise exposure, adjacencies, form and organization for the retail pop-up environment. These were to be closely aligned with the original pop-up concept developed by the whole group and were coordinated with the signage, graphic elements and any other visual communication developed at the same time by the GD students in the group. The design of these items was a collaborative effort between all ID students within each group. This deliverable was to be coordinated with the Part B deliverable of the GD students and presented together.</td>
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| **Part C: Packaging** |
| The third deliverable for GD students included a packaging series for three products sold by ModCloth and included three different types of their products (i.e. a clothing item, an accessory and a home goods product). The packaging for each of the three products was to take on a form unique to the product but should visually and functionally work together as a system. Each GD student in the group designed their own series of three packaging pieces, so multiple solutions to the packaging were included in the final presentation. The deliverable for GD was to be coordinated with the Part C deliverable of the ID students and presented together. Ideally, the three packaged products would be incorporated into the design of the pop-up store so the products could be displayed within the space. |

| **Part C: Design Implementation** |
| The third deliverable for ID students was the final interior/architectural design implementation. This package addressed the style, appropriateness, color, finishes and materials, fixturing, lighting and merchandise presentation. Each ID student assumed specific roles in order to implement final design. Responsibilities of each student were identified at the start of the project and carried through in the final design implementation. Each ID student in the group was to present the work that they were responsible for. Coordination among ID students for final presentation was stressed as extremely important. The deliverable for ID was also to be coordinated with the Part C deliverable of the GD students and all work was to be presented as one cohesive project. |

At the beginning of the project, all research and preliminary idea generation was developed collaboratively by each student group. Groups then developed their solutions, while sharing the gathered research resources and providing constructive feedback and support to each other along the way.

Students employed an extensive idea generation process in the development of the design. All design elements, along with process documentation, were reviewed at various stages throughout the process during discussions and critiques for feedback and evaluation. The final presentation of the work demonstrated the group’s process, concept and execution of the design.

The final presentation of all parts of the project
included the following materials:

- Project research summary and Creative Brief (GD/ID)
- Creative idea generation documentation and sketches (GD/ID)
- Documentation of pop-up concept sketches
- Palette of colors, typography and a “kit of parts” for the developed brand (GD/ID)
- Floor plans and elevations of the pop-up space and structure (ID)
- Elevations and details for all environmental graphic design elements (GD)
- Full size samples of graphics and designed information (GD)
- Full size mock-up of designed packaging and studio photographs for all pieces (GD)
- Materials boards and other presentation boards that included informational narrative and demonstrated the process by which groups arrived at the chosen solutions for all design elements (GD/ID)

The final deliverable included a process book documenting all process and the design results developed through the project, as well as boards outlining the project results. Each group was given twenty minutes for their formal presentation of the work, which was open to all faculty and students of the Design Division and the ModCloth client representative.

Results and Discussion

The decision to plan the project for a required Interior Design III course for Interior Design students and the Design for Packaging and Environments elective course for Graphic Designers came out of a discussion of the possible crossover of content and topic in those two courses. There were definite successes and failures within the course, allowing the educators to grow and understand how to better the course for the future.

Vocabulary was a major communication barrier, as Pratt (2012) identifies, “...various academic disciplines use language in different ways, and the inability to use the same words consistently leads to challenges (p. 44).” Despite the challenges this collaboration was a natural fit because of the topics covered within each course. Interior Design III was focusing on retail design during this semester and bringing this course together with Design for Packaging and Environments made sense. The idea to collaborate was on the table for a while therefore the leap was made during the Fall 2012 semester.

The challenges within this course were found in one course being required and one course being an elective (main class was cross-listed across disciplines).

Time and dedication to work differed depending on the major course the student was enrolled in. Additionally, student’s enthusiasm in collaboration depleted as the semester went on. Students enrolled in courses as they were taught in the past and changing focus to collaboration between disciplines created discomfort, as this was not how the course was taught in the past. Student groups were assigned; therefore students not having control of the cohorts they worked with created an additional stress.

As identified previously, vocabulary and communication were the biggest hurdles to overcome. It was amazing (from professor perspective) to see discontinuity amongst student groups, but when ideas were presented, students were saying the same thing—differently. There was a clear difference in the culture and work ethic of the two disciplines of students, based on their training, experience and backgrounds. This course provided an opportunity for the two to learn from each other and required each to have to understand how to collaborate with the other discipline. There were apparent differences in approach to the project, how each discipline defined concepts, and the stages of the design process that had to be learned and overcome. Interior Design students were stronger researchers and had a more rigorous process and intensity in their work ethic, where Graphic Design students brought more to the creative brainstorming process at the early stages of the process.

Toward the end of the semester the professors realized that too much content was incorporated into the course, making it a struggle to achieve wanted outcomes from students. The course was much more successful for the more advanced and more motivated students. The students who lacked enthusiasm and motivation for the project and the course did not seem to learn what was intended and did not get near the quality of results as the students who were fully engaged. The gap was larger than a more traditional studio class where each student works more independently on their own project.

Contribution to Field

Holston (2011) identifies that there are many advantages that collaborative work brings to a design project including an increased participant motivation, lessened resistance to change, a wider knowledge pool, fostering of trust and offering multiple solutions to a problem (p. 43). In this type of collaborative design studio course, students can begin to understand the value of the experience and may even be able to differentiate themselves through this experience when entering the professional practice. This not only benefits the student but also the firms who will be hiring them in the near future. This interdisciplinary
collaborative mentality will only make the students more prepared and heighten their potential in their chosen fields.

Implication of Theory and Practice
Collaboration between disciplines in the area of Environmental Graphic Design is vital, as every aspect of the field requires disciplines to work closely toward a common goal. Students do not often get opportunities to experience this interdisciplinary practice but instead move into professional practice and experience the challenge of communication of their own process and ideas to other disciplines. Being able to learn from mistakes while in an academic setting will put the best foot forward for the student while on the job, setting them apart from the cohorts who did not have similar experiences. Most student work within design studio courses focuses on the individual problem solving and development of their own ideas and solutions. The opportunity to collaborate does not typically occur until later in a students’ academic career, and then it is typically discipline specific (group projects).

This collaboration experiment contributed to the field of Environmental Graphic Design as an innovative interdisciplinary teaching method and collaborative approach to design education. It can serve as a model in its methods and provide lessons learned for other educators.

Some of these teachings include:

• Devising means to facilitate communication amongst the groups in and outside of the classroom.

• Realizing the potential benefit of bringing in more professional perspectives and other techniques to help students learn to take constructive criticism from multiple individuals and filter that to make the best decisions on their own or as a group.

• Providing emphasized context of the value of the collaboration experience so the students can get the most out of it and realize the lasting benefits at the conclusion of the class.

This project allowed students the opportunity to learn how another design discipline parallels or varies in process, approach and design solution results. Students were encouraged to share their process, find a common working vocabulary and to understand the similarities and differences between their own practice and that of their design counterparts. The students worked together to solve design problems, each sharing their own knowledge and strengths, experiencing the reality of the field and resulting in richer and more evolved design solutions.

As a major benefit for us as a design division, this collaboration was another step in bridging the divide between the two disciplines, which share the same educational environment and resources, yet do not create opportunities to collaborate often enough. We hope to find more of these occasions and connections within our disciplines so students get more chances to co-create, cross-pollinate and gain a deeper understanding of the practice of design.
Abstract
How we navigate the streets has changed radically over the past decade, thanks largely to new technologies. To take just one example, smart phones have made an ever widening array of maps and information available to the public, enabling new ways of seeing and experiencing the urban landscape. iPhones allow the street to become a museum without walls, support pop-up events, and enable the creation of thematic journeys.

While our modes of navigating streets have transformed, the streetscapes themselves have remained fundamentally unchanged. We still have traffic signs, phone booths, historical plaques, and bus stops that look and operate much the way they did twenty or even fifty years ago.

Why are our streets so slow to adapt? The time is ripe to reconsider how public infrastructure could operate and how it might transform the way we navigate and experience the public realm. Could there be alternative ways to access location-based information, beyond personal digital devices—ways that help make information more widely accessible to all and lower the digital divide? Could a public media infrastructure achieve secondary aims such as reducing carbon footprints and creating more habitable cities? How can the street itself learn from the open source, mobile platforms that characterize the latest turn of the digital revolution?

In this paper, I will use a recent competition, sponsored by the City of New York, to “Reinvent Payphones” as a springboard for discussion about the future of public communications infrastructure. The competition brief prompted participants to ask: “What should the payphone be in the age of mobile?” This paper will attempt to answer this question while also asking some broader questions about public infrastructure, public space, and the future of place-based communications technologies.

Smarter Sidewalks
For many of us, the sidewalk is simply a grey grid filling the space between the street and buildings, a bland stretch of concrete that is the ubiquitous mark of any urban landscape. But, the history of the sidewalk is a history of urban exchange. The sidewalk is the mediator between public and private zones, the buffer between different types of movement, an ephemeral and transient zone of public interaction.

The Greeks and Romans both had sidewalks, but sidewalks disappeared by medieval times, when carts and pedestrians intermingled. Sidewalks reappeared in the seventeenth and eighteenth centuries, and those of the nineteenth century were asphalt, just like the streets of today. (Loukaltou-Sideris 19) The intention of many of these early sidewalks was not that different than now: they facilitated mobility, segregated types of movement, and helped shield pedestrians against the dust from horses and carriages.

Questions over propriety emerged from the beginning: Were sidewalks and streets for locals or for outsiders? Sidewalks are a place where individual preferences continually compete with collective desires. Take, for example, this letter written from a resident of New York to the editors of The New York Times. The letter writer complains that “the badly paved and often filthy roadways are the only place to walk to and from the ferries or elevated road. Take Cortland Street any hour, great cases obstruct the sidewalks for hours...the path is ever crowded with pedestrians. Newsboys show their wares on empty cases driving the hurrying commuter to the mud. On the narrowest part of the sidewalk on Maiden Lane to air a cellar a coal hole is left open in the very center of the walk and a nine inch cage put over it. Every day someone falls over the obstruction and scores are diverted to the gutter.” This letter was published on June 4, 1903, yet none of the issues mentioned in it are foreign to contemporary residents of the city: the sidewalk is a place of congestion, negotiation, and attempted segregation, with varying degrees of success.

Furthermore, the materiality of the street and sidewalk has evolved along with citizens’ ideas about...
proper movement through urban spaces. Sidewalks are made from a range of materials representing both locally cheap and abundant materials, but also materials that best facilitate the speed of desired movement. Through this logic, early sidewalks were often made of better material than the street to encourage local travel while dissuading passage by outsiders. Early streets were generally supported by the adjacent owners, and their preferences regarding sidewalk use—whether it should serve travel by locals, visitors, commercial or residential use—was often a point of contention. (Loukaltou-Sideris 20)

Issues of congestion continue to plague New York’s newest sidewalk infrastructure. Take, for example, the bike sharing system just in the process of being rolled out. In the ongoing competition for sidewalk space, the newly installed bike pedestals have met a deluge of criticism, with some residents complaining that the pedestals are simply “corridors of trash and water.” (New York Times, 2013) Never mind that the bicycle stands provide necessary infrastructure for an innovative way to navigate the city: they are still competing for precious, and hotly contested, sidewalk space.

You may have also noticed, many of these systems run off the grid, powered, for example, by photovoltaics, making it somewhat mobile and independent, at least theoretically, from dependence on other infrastructural systems.

Additionally, a change that might not be quite as visible is that the information produced by civic infrastructure is becoming increasingly open to the public. Take a look, for example at the thousands of data sets available at the website of NYC Open Data https://nyc.opendata.socrata.com. In other words, the infrastructure that surrounds us physically, also is available, in a sense, in the digital world. And there is a growing chorus, from the Smart City movement, to Hackathons, to the Occupy Movement, telling us that the ecology between these two worlds will be primary in the re-formation of the urban landscape.

**Technology of the Street**

So while there is technology that is embedded in the street, and data connected to this, there is another macro level of information theoretically accessible to everyone who walks around with a PDA. Thus the conscious and unconscious agents of information are us. And as we create larger, deeper data networks, their trails will increasingly impact the way the streets are inhabited.

Take the Boston bombing, for example. As events unfolded, we saw that not only were the brothers being watched by surveillance videos, but they showed up in numerous videos taken by pedestrians, videos that are all time stamped and geo-tagged. Other recent events such as Occupy Wall Street have built on the ecology between physical and digital spaces. Personal digital devices and the software and apps they support—such as Twitter and Facebook—allowed large numbers of people to strategically occupy swaths of cities far removed from each other, pushing the boundaries and regulations governing the use of urban spaces, while forming part of a larger national, and even international network or community.

And then there is the aesthetic dimension of the street that I mentioned earlier. Increasingly, a virtual network of apps, maps, and walking tours, taking their cue from the work of artistic movements like Situationists, have reinvented the way we might experience the sidewalk. A few of these include Janette Kim’s Safari 7, Janet Cardiff’s walking tours of New York, and our project Museum of the Phantom City.

Each of these projects offer alternative visions of the city. Safari-7 offers podcast tours along the number 7 train in New York featuring a range of species in relationship to the urban ecology. Janet Cardiff’s tours blur the line between fact and fiction, allowing users to peer into dreamlike scenarios all while walking through Central Park. And our project, Museum of the Phantom City, allows users to see visionary but un-built architecture on the projects’ intended site.

And the realm of urban navigation software is expanding rapidly. Currently on the iTunes store, there are hundreds of maps and guides for various cities: 385 for Philadelphia, 812 for San Francisco, 687 for Los Angeles, and 2489 for New York. Each of these offers a distinct, and technologically mediated, new way to see and experience the city.

**Reinventing Payphones**

What does all this have to do with payphones—something that many of us probably think of as a nearly archaic technology of the last century,
something increasingly made obsolete precisely by the new technologies I’ve been discussing. In their brief for the Reinvent Payphones competition, New York City asked designers to reconsider the lowly payphone in the age of mobile.

Our response to the question posed by the brief was to reconcile two competing aims: to pack as much function into a single device as possible and to reduce the phone booth’s footprint. Our idea was to try and pack “everything”—meaning all kinds of functionality, from communication to sustainability to wayfinding—into “nothing.” That “nothing” took the form of a 6”-wide interactive strip that folds up from the sidewalk. The proposal works within the existing 5 foot x 5 foot sidewalk grid and has two main components: The first component is flush with the ground, and contains a combined sensor and display with storm runoff storage below. The second component is vertical and functions as a touch-screen, Wi-Fi hub, energy source, and a charging station, as well as providing several other performances. In short, it is a location-tethered smart-phone.

The bent form is shaped by considerations of accessibility, viewing angle, and optimal solar exposure for a photovoltaic power source. A curb-cut bleeds storm water into storage cells, dissipating it into existing soil. Sidewalk space is freed, while the invisible space below the space is put to work. The horizontal and vertical strips can exist independently or in conjunction. Under ideal conditions they are charged by PVs and also have backup systems—that is, hardwiring and batteries. Thinrastructure is self-sustaining and can go off-grid when infrastructure fails. Hermetically sealed units can be swapped, repaired, and upgraded.

The user interface is concentrated on the front panel and includes touch screen, camera, and sound inputs. The screen vertically scrolls, accommodating a range of user heights. On the side are a credit card swipe, speaker, and charger. Built on the Android platform, existing apps are white listed by NYC. New ones would be developed by third party vendors. NYC’s urban specific apps could be accessed by an increasingly diverse range of public users: think of it as a 21st-century library without walls. While the smart sidewalk can function as a stand-alone device, it also networks, charges, and augments existing mobile devices. The 6”-wide ground strip both conveys and gathers information. Like a vehicular road counter, Smart Sidewalks passively tallies every wheelchair, child, and jogger 24/7, feeding information back to the City, to help it better address the needs of users. New York will be a sentient city.

Using a single color for the web portal—coordinating the sidewalk bands and the vertical interface—allows the city to use a variety of schemes that will differentiate neighborhoods on one day, denote flood zone locations, and celebrate a Subway Series. This offers bold, free information for all, while other specific services would be available for a time-based fee.

This massive nodal network senses wind speed, rain fall, temperature, and foot traffic with unprecedented granularity. In emergencies, Smart Sidewalks guides citizens away from danger to higher ground. As a publicly accessible database, information gathered from the streets of NY will stand to fundamentally reshape the city. With a single curb cut and a thin strip of technology NYC prepares for a changing climate, gives maximum functionality to the technological savvy, and lowers the digital divide.

Beyond our own proposal, a few common themes emerged in the six selected winners: touch screens, WiFi, emergency functions, a self-sufficient, off-the-grid energy supply. While these might not seem revolutionary, they seem to take a distinctly new approach from all other street infrastructure. The phone of tomorrow will be multifunctional and ecological. In other words, it will key in to the way the city is as well as the way it might change. One of the most interesting winners was Wind Chimes, which was designed by students from Cooper Union and the NYU ITP School. The project was fundamentally a miniature weather station that would allow micro-climatic data to be stored and shared. This is interesting because the payphone becomes as useful when it is being unused as when it is used—and it leverages the fact that it doesn’t ever move.

**Future Streetscapes**

So what are the lessons we might learn about sidewalks, and how might we think about them differently in the future? A place to begin, I believe, is to look at the biggest issues of our day: we use too many resources, we’re reducing biodiversity across the planet, we’re plagued by inequality that includes disparate access to technology. One could argue that the answer is right beneath our feet—and that rethinking the sidewalks might offer a key to addressing these and other issues.

Crowd sourcing information about the city and its users is the other huge area that our infrastructures could support and take advantage of. Data collection and analysis methods that, it’s important to note, are careful to respect user privacy, offer a way to potentially connect latent desires with the realities of the street. During the recent NYC Ideas Festival, projects such as the Lowline and Pluspool were voted on and resources were channeled accordingly, allowing users to have a direct and immediate impact on the public event.
And projects like David Benjamin and Natalie Jeremijenko’s Amphibious architecture set up similarly unique dialogues. This project, in the words of the designers, “is a floating installation in New York waterways that glows and blinks to provide an interface between life above water and life below.” The project establishes a network of communication among and about fish, water quality, and visitors walking by the East River. Such projects hint at a new dynamic in the city where we might not just speak with each other, but we might also find new ways of engaging previously hidden ecologies.

But more down to earth, we can certainly learn a lesson from Janette Sadik-Khan, the innovative, and sometimes controversial, Transportation Commissioner of New York City who has chipped away at what has typically been a slow, bureaucratic process. In implementing a range of test strategies, she has truly used New York as a test bed for new ways of inhabiting the street. Often using simple means such as street graphics, movable furniture, or plantings, she has allowed the public to test and judge a wide range of prototypical strategies that have then been replicated and recalibrated.

In her essay, “Making Cities Work,” Sadik-Khan argues that “you can change a city at minimal expense and bring vibrant, healthy green spaces to communities across a city in close to real time.” There are many metrics here that suggest a radical way of rethinking our sidewalks: in other words, how can our sidewalks be leveraged as a testing ground for new ways of thinking, new types of exchanges? Just as cities like New York and San Francisco have rolled out experiments using the sidewalk as temporary lounging, dining, and park areas, we might also think of other useful experiments in street design and planning that are not only pedestrian centric, but are environmentally sensitive, ecologically minded, and that take full advantage of the functional, as well as aesthetic potentials offered by new media technologies.

Streets comprise one of the largest network systems of our urban infrastructures. They exert a powerful, and often invisible, influence on the operations, character, and experience of cities. It is high time that we start to reimagine them.
Environmental Graphic Design:
Changing the Perceptions of Divided Communities through Cultural and Social Connectivity

Andy Schwanbeck

Abstract
This project explores the value that environmental graphic design elements can create to help promote and improve the perceptions of a neighborhood within a segregated urban landscape.

Urban segregation occurs when a city’s diversities create perceived barriers around concentrated clusters of social groups. When these divisions are extreme enough, communities become shut off from the rest of the city and often fall into a perpetual cycle of struggle and degradation. Research has shown that the success of a neighborhood rests in its ability to connect with other neighborhoods and economies throughout a city. It also demonstrates that cross-participation enhances the overall capacity of a community to operate both socially and economically. In a segregated city, there is an opportunity to use environmental graphic design elements to help improve the perceptions of a divided neighborhood and reconnect it to the greater city population.

During this research, a case-study project was developed with the neighborhood East Liberty, located in Pittsburgh, Pennsylvania. Historically a thriving neighborhood, East Liberty has been plagued by over two decades of neglect and failed renewal efforts. Despite recent development efforts, many locals still avoid this area. This case study uses a combination of research tactics and design prototypes to produce elements that attempt to improve the experience of East Liberty and create more positive perceptions surrounding this area.

The results from this project measured a significant improvement to the negative perceptions of East Liberty and demonstrated the potential to entice more people to visit and participate within this neighborhood.

Introduction
In almost every city in the world, there is a certain level of geographic segregation between the different cultural groups who occupy it. It’s a natural phenomenon that’s rooted in the history of how cities were first formed. Such diversities typically enhance the overall quality of life for those in a city. However in other cases, such diversities can build barriers throughout a city. These barriers are built by the perceived cultural and economic differences between social groups. When these barriers become extreme enough, their separation can cause economics to plunge and neighborhoods to fall into urban decay. Research has shown that the more cross-participation a city has between its communities, the better it will be able to operate both socially and economically (Stern and Seifert, 2008, p.2). In order for cities to collectively progress into the future, segregated neighborhoods must become more integrated with the rest of the city.

To re-connect segregated neighborhoods a number of development efforts need to happen. Commercial and retail corridors need to be revitalized, crime and violence must be addressed and other infrastructure elements like traffic control and public transportation may need improved. But development alone is not enough. What needs to coincide with development is a communication process between the neighborhood’s different social groups and the rest of the city. Both the perceptions of a place and of the cultures that occupy it need to be changed. Development can take care of the environmental elements but it cannot change the perceptions of the people who live there. This study suggests that there is an opportunity for design to communicate a positive identity of the people and culture that occupy these neighborhoods and help to reconnect such areas with the rest of the city again.

This project analyzes a framework for implementing design elements that can promote the cultural, historical, and economical connectivity of a city. It explores storytelling, interpretive visuals, and placemaking tools as means to give a meaningful identity to a segregated neighborhood. As part of this
exploration, a case study was performed on a portion of the city of Pittsburgh, a large metropolitan area with a rich industrial history. Pittsburgh currently ranks amongst the top 20 most segregated cities within the United States (United States, 2010). This case study develops a plan that focuses on understanding how these visual elements can help combat the perception issues surrounding segregated neighborhoods.

Kevin Lynch said that Environmental Images are a two-way exchange — “the environment suggests distinctions and relations and the viewer with great adaptability selects, organizes and endows with meaning what he sees” (Lynch, 1960, p.6). When considering the vast collection of reasons that a neighborhood becomes segregated; economic despair, ethnic separation, failed revitalization efforts—ultimately it is the image that each place represents outward to the rest of the city that informs how it is perceived and represented in the greater city makeup.

The Role of Environmental Graphic Design
Cities are filled with signals, both architectural and other, that help inform communication between the environment and those who interact with it. Signs and maps help to direct people to nearby destinations while address numbers work to identify buildings in a larger urban framework. Public art communicates the unique characteristics of an environment and other pageantry elements pave the way for distinct neighborhood identifications. These visuals along with many others, make up the field of Environmental Graphic Design. Environmental Graphic Design, or EGD as it is commonly referred to, is a design discipline that concerns itself with three specific components of a place: identification, in order to distinguish it from other places; navigation, so that each place can be found in the context of its surroundings; and interpretation, sharing information about the environment that describes its context in the broader scope of society. Together these components work to enhance the environmental image of a place and evoke a “sense of home” that helps achieve a positive feeling of emotional security (Lynch, 1960, p.4).

There are a number of services that environmental graphic design can provide that will help raise the overall perception of a neighborhood. Robert Fleming describes environmental graphics as being capable “of humanizing the essential elements of a cityscape” (Fleming, 2007, p. 21). However in order for this to happen, much care must be given to understanding the specific and unique qualities of a place. Applying a one-size fits all design approach can lead to a blanketed feeling of sameness that dulls an environment with a sense of anonymity. In order to avoid this, extended efforts must be made through research and community engagement. Ruedi Baur exclaims that, “In a world where everything is tending towards resemblance, the extraordinary — or at least the appropriately different — is acquiring great value. Creating places that are unique, unreplicable, and therefore contextualized could be the great challenge for towns and cities of our times” (Mollerup, 2005, p.304). Recently, new strategies have enabled designers of all disciplines to take a more human centered approach with their work and focus more on the experiences design can create. Andrew Blauvelt of Design Observer writes that, “Lately, I’ve sensed that we’re in a third phase of modern design, what I sometimes call its ‘ethnographic turn.’ We’ve seen periods of great formal experimentation, exploding the visual vocabulary of modernism. We’ve seen periods focused on the meaning-making of design, its content, symbolism, and narrative potential. For me, this new phase is preoccupied with design’s effects, beyond its status as an object, and beyond the ‘authorship’ or intentions of designers” (Blauvelt, 2007). The notion of research in design commonly refers to a focused investigation that informs the action of design. This investigation tends to be very qualitative focusing on uncovering the “why” behind a design problem. Quite often these research tactics are centered around the strategy of Ethnography.

Ethnography is a “research method based on observing people in their natural environment rather than in a formal research setting” (Blauvelt, 2007).
Its goal is to understand a phenomenon through the perspective of the actual community being studied. For example, to understand why a neighborhood is highly segregated, a researcher would need to understand the culture of the people who live in the area. Factors such as the physical infrastructure, the beliefs of those who live in it as opposed to those who do not, its history and its range of citizens, would be just a few of the key elements to realize. This type of research can inform all aspects of the design process: everything from understanding the appropriate construction materials for a sign element to realizing the ability to create effective messages that communicates to the intended audience.

Research and Design Process
This project began with a very basic problem in mind - How can EGD and its power to communicate information, make a difference in a segregated city? The city of Pittsburgh was chosen as an area to explore this idea further. Its status as a working class, rust-belt city, demonstrated it to be the perfect archetype for countless other cities across the country. Furthermore, it is ranked as the 15th most segregated city in the United States (United States, 2010). Before beginning any detailed research, multiple city visits were made to explore the different neighborhoods of Pittsburgh. Field notes were used to capture the details of these environments. In addition, primary areas of interest were observed and documented through photo documentation. Using Kevin Lynch's five elements of the city, basic maps were constructed to diagram physical structure and basic environmental characteristics of various neighborhoods. Through conducting this research along with studying census demographics, a focus area of Pittsburgh was determined for this study. After some consideration, the neighborhood East Liberty was chosen for the concentration of this work. Its rich history and troubled reputation, alongside a current redevelopment effort, made the neighborhood the perfect example for testing this project further.

The research strategy for this case study was created to include a mix of both primary and secondary research tactics. Literature reviews showed the most potential to understand Pittsburgh’s history, the number of issues surrounding segregation, and the precedent for what existing design projects could bring to this problem. For primary research, surveys, interviews and a prototype test experiment were chosen. Each of these tactics offered a different benefit to the research: surveys answered broadly to overarching project questions, interviews allowed for a deeper engagement where more specific information could be learned, and the prototype test provided an outlet for very specific and contextual feedback of design prototypes. In addition, self-observation and photo documentation were used for further analysis of the existing environment in East Liberty. Careful consideration was given to choose a variety of sources and engage participants with various tactics to ensure as much triangulation to this research as possible.

Primary research helped to discover the basis of the perceived barriers that divide East Liberty and what truly fuels its negative perceptions. This information also helped to establish a framework for where the opportunities were for design interventions, and what areas of the experience of East Liberty needed improvement the most.

Observational Notetaking and Visual Anthropology
Throughout the course of investigating East Liberty, note taking was used to record observations of the neighborhood. Much of the information recorded provided a context for the many conversations that came later in the research process. The existing characteristics of the neighborhood and its inhabitants were thoroughly documented. It was noted that the area is still very much under development, and that newly developed clusters exist directly adjacent to areas of neglect. Signs of history in the architectural details of building facades and street furniture were evident, but mostly appeared neglected, foreshadowed by a lingering sense of struggle.

Self-Ethnography
Through this tactic, a number of events throughout Pittsburgh were attended to gain a better perspective on how different community practices can bring together a diverse group of people. Experiences such as First Friday gallery nights, public art scavenger hunts and pop up retail events all demonstrated that an interesting mix of people could be brought together and experience a neighborhood through some kind of universal connection usually made with art and culture. These various experiences helped solidify concepts for different forms of engagement that could be applied in East Liberty.

Survey
A survey was developed to better understand the attitudes and behaviors towards Pittsburgh’s neighborhood divisions. Both city and suburb residents were asked to participate in two nearly identical surveys. Each group was asked to express their general opinion of East Liberty as positive, negative or no opinion. Nearly 50% of residents in the suburbs responded as negative, while only 30% of city residents replied negative. The survey also uncovered...
general facts like 79% of residents living in the suburbs said that they visit the city primarily for entertainment and that nearly 60% of city residents replied that they have felt unwelcome in a Pittsburgh area neighborhood.

**Interviews**

Interviews with East Liberty residents and community organizations helped to establish the sense of pride that locals have for their neighborhood. Whether old or young, new or longtime resident, everyone who was interviewed spoke with enthusiasm for where they lived. However there were varying opinions of uncertainty for the future of the neighborhood. When asked, “how do you think the rest of Pittsburgh views East Liberty,” a participant answered, “I know that they look at it as a downtrodden section. But they hear a lot of up and coming things about it. My step-mom is from a small town 45 minutes from here, she knew it as trashy, and the reason why is that there was a huge section 8 complex. That’s why it was perceived that way and thats how she still thinks of it, and the people who don’t experience it day-to-day, that’s how they still think of it. But you know you can’t judge a neighborhood by who’s standing at the bus stops when you drive past, and again that’s a huge perception issue with East Liberty.” Interviews with suburban residents helped to establish that lack of exposure to the neighborhood was the primary issue for their negative perceptions. Most of their notions of East Liberty were formed by either word of mouth, or distant judgments made from very limited experiences. For instance, one participant suggested that “I’ve always heard it was a bad neighborhood in the city. I’ve never really been to it, but just based on what I’ve heard, I probably won’t. Not until I hear more positive things anyway, there’s just no point. There’s plenty of other nice places in the city to visit.”

**Synthesis**

In this stage, all of the information gathered from the previous research was analyzed and distilled into information frameworks that summarized the findings. These frameworks were used to identify design criteria and locate opportunities for design solutions. They also worked to make the overall findings more accessible. This enabled the research to articulate a concise value for design that demonstrated it as a viable option to project stakeholders.

**The 5E’s Experience Model**

The 5E’s experience model was used to illustrate what the experience of visiting East Liberty was like. The 5E’s stand for Entice, Enter, Engage, Exit and Extend. The data was informed from the previously discussed research tactics. The goal of the 5E’s model is to plot out the existing experience of visiting East Liberty and compare that to the potential change that elements from this study might bring to it. Each stage of the experience is rated for its effectiveness on a scale of one through five, and potential weaknesses in the experience were identified for further analysis.
Personas

In order to summarize all that was learned from the surveys and the interviews, personas were developed that embodied the various groups who engage with East Liberty. A persona is a fabricated archetype of an end user that identifies their motivations, expectations and goals (Visocky O’Grady, 2006, p.72). Three personas were developed for both visitors and East Liberty residents. Each persona has a small written summary along with a How, Think, Do model (example shown below). The How, Think, Do model was used to show how this persona forms their perceptions of East Liberty, what they think about East Liberty, and what they do in East Liberty. From that chart, basic criteria were developed to try to best meet each of these persona’s needs and work to change their perceptions of the neighborhood.

Outcome of Synthesis

The outcome of the synthesis phase was a summary of all research findings and a list of criteria to guide the design development. The generated criteria for this case study was as follows:

- Engage visitors beyond the typical destinations of restaurants and commercial retail
- Create a narrative that can break down perceptions of inequality—racial, economic, and cultural
- Create a welcoming identity that entices visitors to enter and explore
- Celebrate neighborhood differences while creating a feeling of connection to the rest of the city
- Create a variety of ways for different personalities to form their own attachments through open ended storytelling and a variety of experiences
- Bridge the culture of old to the culture of new
- Be specific to the history of the neighborhood and help inform visitors about where they live and its significance in shaping the city of Pittsburgh

East Liberty Case Study

Producing a test that provided a measure of success to the initial problem statement was the most important element of this study. To do this, an experience needed to be created where participants with different backgrounds and viewpoints could engage with East Liberty through the aid of various design elements and validate whether or not those elements had any impact on their experience. If successful, that validation would be integral to articulating the value for further exploration of this theory. If not, questioning the research and design of the experiment could also lead to other explorations, or it could prove the ineffectiveness of this theory and stop someone else from investing time and resources in it. Either way, testing was crucial to provide closure to this study.

The concepts for this case-study were developed around the idea of creating a self guided neighborhood walk. A self-guided walk provided an open framework for various communication tools to be applied to. It also allowed for a comfortable experience for participants to visit the neighborhood and feel open to experience it in any way that felt natural for them. In addition, it created a system that anyone could discover while in East Liberty and use to explore the neighborhood further.

The various design elements created for the neighborhood walk were created by referring to the 5E’s experience model which identified the phases of experiencing East Liberty that design could impact most.

 Beth

“I stay pretty busy with the kids. I love to get them out and involved in as many as activities as I can, especially in the summer.”

Beth lives in the nearby suburb area of Washington, PA. She is a stay at home mom with a three-year-old daughter. During the week she is engaged in many different volunteer activities and in addition takes her children to activity centers and various excursions throughout the city.

How

Word of Mouth
Local News
Her husband who works in the city

Think

Believes the neighborhood unsafe
Feels unwelcome
Interested only because of a few restaurants and retail locations

Do

Currently she has only visited the neighborhood to dine at a high-end restaurant
She has also driven through it on occasion
Entice

To entice participants to come to East Liberty, an online website was established. The website created a crucial line of communication between planning and the research participants. It also became the home base for all of the important information regarding the study. The website also became a useful promotional tool. The about section pointed out all of the information relevant to the study such as what it was trying to do, and why participation was important, while the main blog offered a venue to speak about the interesting qualities of East Liberty through the “you might not have known” posts. Here, various tips about the history and current interests of East Liberty were leaked out prior to the event in order to increase excitement for visiting the neighborhood.

Engage

Multiple components were created to foster a more memorable engagement with East Liberty. A simple sign family was designed to provide directional orientation and additional interpretive information about the environment. The first step in this design process was to establish the route of the walking tour. From there, a simple loop was mapped out that traveled throughout the commercial corridor of the neighborhood. The path was pre-tested before the case-study test to ensure it was easy enough to follow.

To help designate the route of the loop, an overall mapping exercise located all possible locations of interest. Secondary research complimented this effort to learn more about the most significant sites. The decision to feature five primary destinations was made based on their interest and proximity to the downtown corridor. The remaining destinations were identified on the directional signage and wayfinding map.

A simple orientation sign was made to provide additional accessibility to the neighborhood. Many of the principles evolved by Joel Katz in the Walk Philadelphia sign system were used to develop this map. The design was simplified as much as possible in order to be easily and quickly understood. It also utilizes a heads up orientation and a rolling map feature to provide for an optimal user interaction.

The bulk of this experience relied on an effective system of interpretive sign elements. These elements carried the responsibility of engaging visitors and informing them of the unique and positive character of East Liberty. A system of different markers was designed to point out landmarks and share information about the neighborhood. Secondary research was used to extract the content for these signs. The primary interpretive marker was created to give site-specific information about a landmark. Its layout features a contextual photograph that

<table>
<thead>
<tr>
<th>Entice</th>
<th>Online Application</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Share information about the neighborhood</td>
</tr>
<tr>
<td></td>
<td>Link to East Liberty Facebook page</td>
</tr>
</tbody>
</table>

| Enter | Show map that points out destinations and shows user comments |

<table>
<thead>
<tr>
<th>Engage</th>
<th>Directional &amp; Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provide orientation and direction to destinations throughout the neighborhood</td>
</tr>
<tr>
<td></td>
<td>Engage participants through a variety of interpretive pieces</td>
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</tbody>
</table>

| Exit | Encourage self exploration |

<table>
<thead>
<tr>
<th>Extend</th>
<th>Participatory Engagement</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Create a memorable experience that allows participants to share their feelings and influence the future course of development in E.L.</td>
</tr>
</tbody>
</table>

Above: Project identity and walking tour path with destinations and landmarks

Above: Opportunities for design
enhanced the main story, along with a sidebar area to provide additional written information.

A printed brochure was designed for the participants to use during the experience. The brochure featured an overall map of East Liberty with step-by-step instructions to follow the walking tour. In addition, the map highlighted a complete list of local destinations to allow participants to set off on their own exploration. It also provided a brief summary of the history of the neighborhood, along with a neighborhood scavenger hunt. The concept for the brochure was to add an additional level of comfort to the experience by providing users another element to help them navigate the tour and feel more at ease with the area.

A local coffee shop, Zeke’s, agreed to help participate in this study. Adding a business to the walking tour gave visitors a comfortable spot to take a break from the experience and get something warm to drink. Zeke’s became a destination on the tour when they agreed to allow the timeline element to be hung in their shop. Here, users stepped in from outside, had a drink, and found themselves in a comfortable setting to engage with the timeline. Zeke’s also contributed coupons to participants for discounted coffee and contributed a good bit of neighborhood character to the experience.

Extend
After finishing, users were asked to return to the website and view the “What I Love about East Liberty” page. Here participants were urged to share their thoughts about East Liberty and spark the conversation for what the identity of the neighborhood should become. This act allowed for an extension of the experience and also provided a way to help to entice new participants to visit East Liberty.

Prototype Test Results
When the participants returned, they were asked to fill out the second portion of their survey discussing any change in their feelings towards the neighborhood. Small discussions about the experience also provided additional information. Most participants were eager to share their varied comments: “I don’t really care about how nice the neighborhood was, if its crap now, then I’m not going feel like it’s worthwhile,” or “That was fun! It was really interesting to learn about the history of the area, it definitely made me want to come back again.” The test results provided an overall support for the statements in this study validating the argument for further exploration. Overall, 65% of the participants answered that their experience in the experiment improved their overall perceptions of East Liberty. That statistic became even more significant when observing that nearly 70% of participants rated their overall opinion of East Liberty before this experience to be somewhere between very poor and just OK. In addition, 50% of the participants replied that they would be likely, or very likely to return to East Liberty again. All of the elements in the design concepts were rated valuable to the experience. The interpretive signage received the most support, but many also noted that they enjoyed the opportunity to...
engage with a local business. Other comments that followed the survey were, “seeing the before and after images helped to influence my opinion on how much potential the area has,” and that “the news gives a negative view of the area, walking around today was great, there are lots of new businesses and things to check out, I would love to come back more.”

**Implications**
The research presented in this paper demonstrated support for the theory that environmental graphic design, along with other visual communication elements, can be used to improve the perceptions of a developing neighborhood. The results in this study depicted a 65% improvement in the perception of East Liberty. Furthermore they articulated the value in pursuing this research further in both East Liberty and other similar neighborhoods across the country.

In spite of that, there was a bias to these results. If the label of a “research experiment” was removed from this study, and no participants were actively recruited for testing, would these tools yield the same results? Could they entice random people to go to a neighborhood they thought badly of? How would someone rate the experience if they didn’t know what was being tested? These will be crucial answers to seek in future iterations of this research.

It can be said with certainty that the prototypes in this project did not achieve success alone. Much of the redevelopment in East Liberty also created a positive impact on this experience. Looking to the future, this development will also play an important role in attracting more people to the neighborhood. As East Liberty continues to re-invent itself, there is a strong opportunity to use these concepts alongside other development efforts to continue to improve the perception of the neighborhood.

It also remains to be seen what the long-term effects of improving a neighborhood’s perception will be. It is apparent that it does break down some perceived barriers to a place, thereby making it inherently more integrated with the rest of the city. But what does that integration lead to? Stern and Seifert argue in their paper, “From Creative Economy to Creative Society,” that an increase in cross-community participation will lead to a more economic and culturally inclusive society. Their research declares that “cultural engagement fosters the collective capacity of people, especially in low-wealth communities” (Stern and Seifert, 2008, p.5). It is also unknown if an improved perception of a place can lead to a better appreciation for its current people and culture. If so, can that impact redevelopment efforts to work harder at preservation and integration over replacement? This test was one small experiment designed to validate further exploration.

In the future, it is suggested that the following measures are taken to continue to develop these ideas:

- **Design a more integrated communication system** that crafts specific narratives directed to the personas developed in this case-study. Conduct multiple prototype tests that allow these elements to circulate for longer durations of time in order to understand whether or not they can randomly entice individuals to explore the neighborhood further. These tests should feel more natural, removing as much of the previously discussed bias as possible, and engage more participants.
- **Develop a measurement for how effective these elements are in encouraging deeper exploration of local commercial areas and analyze the positive effects they have on the long-term qualities and development of a neighborhood.**
- **Develop implementation plans that work to determine what characteristics an environment should have in order for these tools to be present.**
- **Design a full neighborhood system that works to connect a larger area of one or more neighborhoods together.**
- **Produce additional case-studies that continue to communicate the value of this research to other segregated cities.**

In conclusion, this research indicates that much promise lies ahead in future explorations of this theory. Simple foam-backed paper signs along with a basic walking tour and a cup of coffee created a 65% improvement in the perception of East Liberty. That alone shows promise for future research. If more time and energy are spent on developing these ideas further, the results shown here can only be magnified to greater levels in the future iterations of this work.
References


Chang, Candy. Carnegie Mellon University, Pittsburgh. 27 March 2012

C&G Partners. “Shared Memories/Nuestros Vecindarios Y Sus Memorias.”


Above: Project Website: Extension of East Liberty - “What I love”

Right: Primary Interpretive Plaque: Pointing out the historic East Liberty Presbyterian Church.
Summary of findings made through environmental observations in East Liberty.

1. Landscape
2. Current Development
3. Urban Decay
4. Retail
5. Public Art
6. Cultural
Abstract
When following directional signs through a new area, how much do people actually learn about the environment around them? How could you design directional signs to help people learn more? This study examines how the design of directional signs influences spatial learning, by presenting information in different spatial perspectives.

Three sign types were evaluated: Separate (directional arrows, with roads and towns on different signs), Combined (simple arrow diagrams of the intersection, with roads and towns on one sign), and Cartographic (a highly simplified map). Participants viewed a sequence of signs as if driving through a fictional environment, making turn choices according to assigned goals, and then completed a mapping task. After a second sign viewing, this time without turn decisions, participants repeated the mapping task.

For the first mapping task, participants who viewed the Cartographic signs produced more accurate maps than those viewing the Separate or Combined signs. These results suggest that guide signs with simple maps can help people incidentally learn about the spatial configuration of the environment. There was no significant difference between groups for the second mapping task, which suggests that when people are aware that they will be tested, sign type does not affect how much they can learn.

This study not only has implications for the design of directional signs, but is also an example of linking research in spatial cognition with wayfinding as a design discipline. Carried out as an undergraduate thesis, this study is evidence of an effective interdisciplinary approach to design education.

Methodology
Sign Type Design
Based on background research, I created three types of directional signs to test the impact of perspective on spatial learning: Separate, Combined, and Cartographic.

I used guidelines for U.S. highway signage, the Manual on Uniform Traffic Control Devices (MUTCD), as a foundation, paired with examples of existing guide signs around the world. To guide users’ turn decisions, these traditional signs provide simple directional arrows next to town names or under road shields. The signs followed the standard sequence according to the MUTCD standards: warn driver of an upcoming decision point, present destination options and then present route options, provide route confirmation, and then provide distance signs to upcoming destinations on the route.

The Separate sign type serves as the control group, as it most closely resembles the regulations and recommendations in the MUTCD. The town and road options are shown on signs that are separated in space and time. The viewer first sees the set of town-directions and then the set of road directions before making their turn decision. The confirmation information presented to the viewer after the turn decision also presents road information and town/distance information separately in space and time. Thus, it may be challenging to use these signs to learn spatial relationships between roads and towns because of the separation.

The Cartographic signs were designed with the goal of helping users learn the spatial configuration of the landscape during travel. My approach to this design problem was to incorporate simple maps into the guide sides to not only point people in the right direction, but also provide them a simple map of the adjacent towns and roads. The Cartographic signs presented town and road information on a single sign, and showed topological relationships between towns and roads pictorially.

The Combined sign type was designed as an intermediate control group. Like the Cartographic signs, this type removed the temporal separation of road and town information by placing both kinds of information on one sign. These signs did not, however, show topological relationships between towns and roads pictorially. Instead, the signs showed a schematic representation of only the junction, while the road number, road direction, and town information were presented as a list clustered beyond each road arrow. By including this intermediate sign type, I hoped to understand whether combining road and town information on one sign or presenting it pictorially has a greater effect on spatial learning.
Experimental Design

To evaluate the impact of the three sign types on spatial learning, I developed an experiment to measure how well people could learn the layout of an environment from viewing directional signs alone. Participants viewed one of the three sign types, with approximately equal distribution between sign type groups.

Within the presentation, participants viewed a series of signs as if driving through a fictional environment. They were instructed to travel to particular goals, consisting of a target town and a specific road to take there. At each junction, the presentation displayed the turn options available (e.g. 'left' and 'right,' with an arrow for each), paused to allow participants to circle a turn choice on a paper form, and then resumed with a click of the mouse. Participants' turn decisions served as a measure of the functional equivalency of the three sign types—whether the signs support immediate wayfinding. Additionally, this task kept participants focused on choosing the correct turn direction, thus distracting them from thinking about the overall spatial configuration of the environment.

Participants then completed an unanticipated mapping task to show their understanding of the layout of roads and towns. Provided with an 11x14-inch whiteboard, a dry-erase marker, and magnetic labels of all roads and towns, they had 6 minutes to construct a map of the environment they had experienced in the presentation. Participants were told that there was no need to use all of the town and road labels provided—if they were uncertain about any features, they could leave them off the map.

After completing the first mapping task, participants repeated the same sign viewing. This time, however, participants were not required to make turn decisions. The presentation did not pause at junctions, though it still included goals and the appropriate turn direction at each junction. Without the distraction of making turn choices, and because they were now aware of the means of evaluation, participants were able to focus their attention on learning the spatial configuration of the environment during the presentation. Participants then completed the mapping task a second time.

Because the second mapping task was not unexpected, it measured the intentional learning that is possible with the different sign types. The first mapping task, in contrast, measured incidental learning, because participants weren’t actively trying to construct a mental map of the area in anticipation of being evaluated.

Analysis and Results

Because highway driving is constrained to a network of roads and towns, I scored participants’ maps primarily based on their topological accuracy. A composite score was calculated for each map, based on the percentage of correct road-road, town-town, and road-town connections.

In the first mapping task, participants viewing the Cartographic signs showed a significantly better understanding of the connectivity of roads and towns than those viewing the other two sign types (Separate: t(32)=-2.768, P=0.009; Combined: t(31)=-2.246, P=0.032). There was no significant difference between the Separate and Combined groups for the first mapping task (t(29)=-0.526, P=0.603). The histogram shows the distribution of participants’ topological accuracy scores.

Above: Cartographic signs: simple maps show adjacent towns and roads
accuracy scores by sign type viewed. These results suggest that simple maps on signs can help people learn about the layout of their environment incidentally during travel. Combining road and town information on a single sign showed no significant impact on spatial learning unless the information was presented in the survey perspective of a map.

In the second mapping task, there were no significant differences in map accuracy between any of the sign type groups. In other words, when people are actively trying to construct a mental map, the sign type doesn’t significantly impact performance. In practice, however, intentional learning from directional signs is much less common than incidental learning. So while the results of the second mapping task are interesting to note, they are less relevant to the practice of designing wayfinding signage.

Survey knowledge has been considered a higher level of spatial knowledge in part, because it allows for more flexible future route planning, including the ability to find new routes and shortcuts through the environment (Golledge, 1999). Survey knowledge is often associated with route knowledge based on a progression of learning, where knowledge of individual routes through an area becomes interconnected and eventually helps construct a survey understanding of the area (Golledge, 1999; MacEachren, 1992). Yet, there is also evidence suggesting alternatives to this progression—that survey information, including directions and distances, can in fact be acquired early on in a person’s exposure to an environment (Ishikawa and Montello, 2006; Montello, 1998).

Navigational aids may convey spatial information in a route or survey perspective, or some combination of the two. These differences may affect the amount of cognitive effort required to wayfind. Traditional directional signs or verbal directions convey information in a route perspective and directly instruct the user’s turn actions to reach a destination (Freksa, 1999; Hölscher et al., 2005; Raubal, 2001). In contrast, traditional maps generally require the user to translate the given information from a survey to a route perspective—from spatial configuration to individual turn actions (Freksa, 1999; Münzer et al., 2006; Shelton and McNamara, 2004).

**Contributions of the Current Study**

My results suggest that information design can influence people’s spatial learning. All of the sign designs helped participants choose correct turns while navigating a network. The Cartographic signs, which put simple maps on the signs to present town and road information pictorially, appear to have improved participants’ ability to passively learn about spatial configurations when compared with participants who used signs that either separated spatial information in time or presented spatial information together in time but not pictorially. While I found that the impact of design fades as experience with a place and attention to learning increase, my research highlights the potential role of design to improve incidental learning of spatial configurations by people guided by signs through an unfamiliar environment.

The relative differences in learning between the three sign type groups also offer some insight regarding design decisions that facilitate spatial learning. The Cartographic sign expressed two decisions: (1) incorporate road and town information on a single sign to minimize the split attention effect and (2) present information about topological relationships pictorially. The Combined signs only did the former, and the Separate signs did neither. I found
a greater difference in topological accuracy between the Combined and Cartographic groups than between the Separate and Combined groups. This suggests that presenting road and town information on the same sign may not facilitate spatial learning unless the sign pictorially shows topological relationships in the form of a map.

**Implications of Theory and Practice**

Although there is already a solid body of research that informs the design of wayfinding guidance (e.g., evaluating typeface legibility), this study is an example of how cognitive research methods can be used to help create more effective signage.

Recent research has revealed that people don’t construct a mental map of their environment when using turn-by-turn navigational guidance like in-car GPS and smartphones. Wayfinding designers have the ability to counteract this trend and support spatial awareness, and cognitive research methods can help to identify effective design patterns towards this aim. One such pattern, as demonstrated in this study, is to provide travelers with quick glimpses of the layout of the area, in the form of simple maps on directional signs.

In particular, a cognitive approach to wayfinding design can help encourage a longer-term approach to navigational guidance. Signs can go beyond simply guiding travelers from one place to the next every time they need to take a certain route. If designers can create signs that actually teach users about the layout of their environment, eventually people will be able to travel that route more independently, and learn shortcuts and new routes within the area.

**Practice**

Although I used U.S. highway signage as the foundation for my signs, the practice of incorporating maps into guide signs applies to many other contexts beyond the highway. In fact, it is much more feasible to design wayfinding signs with maps for pedestrians, because sign viewing time is more flexible, allowing for more complex information. From urban bicycle routes to public transportation, the possibilities are endless. The uniting theme is a long-term, holistic approach to wayfinding guidance—not just getting people to their destinations, but also helping them learn about the environment along the way.

There are indeed many examples of map-like elements already being used. However, relative to the presence of verbal signs with simple directional arrows, cartographic signs are few and far between. Thus, while verbal signs have been highly evaluated and regulated in terms of organization, color, complexity, etc., there is much research yet to be done on the practice of incorporating simple maps on signs. As a result, there is still little guidance on how complex of a map could be presented for different modes of travel so as to not overwhelm the user. Further experimentation, both in practice and in research, will help to develop design guidelines for the most effective cartographic signs in various contexts.

**Education**

Finally, based on my first-hand experience with this project, I can strongly advocate for this interdisciplinary approach to independent academic work. By connecting the practice of wayfinding design with cognitive research, I was able to identify a potentially effective design pattern and then...
carry out an experiment to test my predictions. This comprehensive approach to design education is unusual and challenging, but far more rewarding in the long run. I was forced to look beyond aesthetics and legibility in signage design, to better understand both how people perceive spatial information as well as how to most effectively present spatial information.

References


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2 Turn Action & Configuration

3 Students undertaking a mapping task experiment—intentional learning

4 Educational Implications
Abstract
Environmental Graphic Design faces complex challenges in addressing the need to understand how human experience unfolds within environments across the dimensions of time and space. Ecological Psychology deals with similar challenges, and the endeavors for both disciplines become more complex as technological systems embedded in environments provide new possibilities for multiple types of information exchanges. The new methodological approaches of Ecological Psychology can provide a framework that addresses the complexities and idiosyncrasies of environmental context in which these communication exchanges take place, and provide guidelines for optimizing the interaction at a systems level. Ecological Psychology provides principles that can guide design in creating communication systems that reflect an understanding of the complex self-organization, mutual coupling, and fluctuations and disruptions of flow that characterize the dynamic interactions between users and their environments. This collaboration has the potential to not only strengthen efforts in creating communication systems that support efficient navigation of spaces, but establish aesthetic experiences of place and context.

Introduction
The unique challenge of Environmental Graphic Design comes from its focus on place, and the necessity of understanding the construction of meaning that comes from the relationship between communication and context. As new technological methods for communication emerge that allow information and interaction to be further embedded in physical spaces and feedback loops become intertwined, it is no longer possible to consider pieces of a design solution in isolation from one another. And so this leaves Environmental Graphic Design at an advantage, having already focused on developing solutions with an understanding of optimal communication within the complexity of context.

The field of Ecological Psychology takes on a similar challenge, exploring human behavior as it emerges through interactions with the environment. The founder of Ecological Psychology, James Gibson, introduced the idea of affordances, a concept that has been put to use in design ever since it was popularized by Donald Norman’s book, The Design of Everyday Things. The way design conceptualizes affordances has shifted since Norman’s first book, and there have also been transformations in the methodologies utilized in Ecological Psychology to investigate the ways in which users are coupled with their environment. The changes in both disciplines are motivated by an effort to create a framework that more effectively captures the complexity of human behavior in context; and it is from the similarities between these changes that emerges the opportunity and need for interdisciplinary collaboration.

The Behavioral Dynamics Approach
The field of design has continued to explore new research methodologies to address the increasing opportunities for interaction that are afforded by the proliferation of technology in everyday life. In Living with Complexity, Donald Norman explains that a barrier to designing technological communication systems is that “technology doesn’t understand us”; the logic of machines is imposed on people, who don’t work by the same rules (Norman, 6). Clarisse Sieckenius deSouza in The Semiotic Engineering for Human Computer Interaction further elaborates this problem, claiming that there are “Human Meanings” and “Computer Meanings” (Norman, 28). In the process of designing a technological system to be responsive to human interaction, a design tool often employed to guide the assignment of meaning to symbols is the conceptual model: the designer’s understanding of the user’s underlying belief structure (Norman, 34). Conceptual models fall short when it comes to orchestrating communication that is flexible and robust, failing to capture the idiosyncrasies of everyday activities and respond to novel situations and unforeseen errors. When these types of models are employed, it is a struggle to articulate guidelines and rules into generalizable principles (deSouza, 32). Ecological Psychology has developed new methodologies for experimentally investigating
affordances, most notably through the work of Michael Richardson and William Warren. Termed Behavioral Dynamics, the approach uses dynamic systems to describe the exchanges that emerge between individuals, other agents and their environments (Warren 358). The theoretical framework defines users and the environment as a pair of dynamical systems that are coupled mechanically and informationally through the sensory field. They are mutually coupled, in the sense that one is not subservient to the other, and they simultaneously define and constrain one another. Their interactions give rise to Behavioral Dynamics, self-organized emergent patterns of temporal and spatial coordination between agents and the environment. This dynamic coupling emerges in order to stabilize behavior towards achieving a goal for a given task. The temporal and spatial coordination is constrained by physical structures, biomechanics of the body, and perceptual information provided about the time-specific states of the agent in the environment.

The Behavioral Dynamics approach provides a powerful theoretical language for characterizing the morphology of behavior. It has inspired experimental investigations that attempt to describe how everyday goal-directed tasks such as clearing a table or loading a dishwasher with a spouse or family member requires movement coordination that gives rise to and is affected by environmental constraints and designated action roles. More experimentally controllable versions of everyday tasks are created, and parameters of the task context are then manipulated to reveal how these environmental constraints influence the motion trajectories and coordination patterns over the course of the interaction timespan. Results of these studies have demonstrated the spontaneous emergence of dynamic patterns of coordinated movement, which are then captured using dynamical models.

These models of the agent-environment systems express the process of the interaction, providing a new set of parameters to understand and manipulate in order to optimize communication as it unfolds across time and space—without the use of a formal symbolic system or a conceptual model. The key aspect of this methodology is that it does not focus on identifying specific features or properties of objects or situations.
in order to construct a decontextualized description of an individual’s thoughts or actions. The goal is to identify the parameters that modulate the interactions between components of a task within a specific environment as the interaction unfolds. 

**Designing Across Spatial and Temporal Dimensions**

In her book, Clarisse Sieckenius de Souza identifies the need for an epistemic tool that is not specific to one design problem but can help increase the designer’s general understanding (de Souza, 32). Ecological Psychology can provide those “epistemic tools,” tools that Environmental Graphic Design is in a special position to make use of, as the discipline is defined by its ability to understand how experiences emerge across the dimensions of time and space. The complexities that arise from the addition of these dimensions does not necessitate a simple adaptation of a design tool sufficient for the creation of objects or isolated visuals. It demands the recognition of the challenges of Environmental Graphic Design and the use of epistemic approaches that reflect an understanding of the emergent nature of visual communication as it unfolds throughout the experience of a space.

Here I will focus on three ways in which Ecological Psychology describes the interaction between agents and the environment that are useful in approaching the design of environmental communication systems: self-organization, mutual-coupling, and the fluctuations and disruptions of flow.

**The Self-Organization of Communication Systems**

The communication exchanges that make up an environment such as an international airport, exist across a wide range of different users with different task goals within one architectural space. As users navigate through this space, information is distributed across a range of heterogeneous technologies in order to mobilize individuals as well as coordinate the collective efforts of user groups. Paul Dourish and Genevieve Bell in *Divining a Digital Future* explain how mobility cannot be thought of as “simply getting from point A to point B.” (Dourish/Bell, 97) Users encounter many different forms of physical and virtual information that guide their interaction. When and how this information is encountered and utilized by users and the way it intersects with the architecture, airport procedures, government regulations, artificial agents and other occupants of the space constitute a complex communication infrastructure. Dourish and Bell describe these infrastructures as “unevenly distributed and unevenly available,” “continually in flux,” creating “messiness” (Dourish/Bell, 96).

The “messiness” that Bell and Dourish describe is the process of self-organization. Communication systems in spaces like airports have designated structures that impose order on the way information is exchanged, but these systems continually fluctuate at both the local and systems levels to adapt to the demands of specific goals and activities. This aspect is inherent to the Behavioral Dynamics approach, which accepts the “messiness” of self-organization as an epistemic reality. The most fruitful methodological approach is to describe this self-organization by focusing on the parameters and interactive principles from which stable behavior emerges. Environmental Graphic Design and Ecological Psychology can collaborate to investigate how these emergent patterns evolve across time, and apply this understanding to successfully facilitate the ongoing interaction between users and embedded communication systems where multiple agents and components exchange information through various mediums across different scales of time and space.

**Mutual-coupling and the Meaning of Symbols**

Describing the nature of these multiple information exchanges between users and the environment requires an understanding of how elements of perceptual experience come to have meanings to users. How do we come to interpret and understand the visuals, the sounds, and the actions that are meant to convey certain messages? Environmental communication systems in spaces like an airport must use symbols to answer questions like “Where am I?” “Where should I go?” and “What can I do?” There are physical variables that can answer these questions – geographic coordinates that specify a user’s location at the check-in counter, another set of coordinates for where their gate is located, and information such as the number of pounds a checked bag can weigh. The answers to these questions can change as a user moves throughout the environment; they can be closer or further away from the location of their gate, at a certain point they can’t wear shoes, they can choose to walk or stand on the moving sidewalk. The experience of the navigation of space exists within a spatial and temporal structure as an emergent property that arises from interactions with the objects, people, and the symbolic communications that make up the environment.

Behavioral Dynamics describes the ways in which users are mutually coupled to their environment with respect to physical variables and structures in the sensory field. But understanding how symbols are interpreted and used requires an understanding of how aspects of visuals and symbols convey meaning by way of social or cultural convention. The question “Where am I?” must be answered with an
understanding of historical and cultural specificities of behavior related to the use and interpretation of the symbols used to convey that information. The patterns of motor and sensory coordination necessary to successfully navigate an environment must be synchronized with the patterns of cultural and social behavior that guide the interpretation of symbols within that space. Behavioral Dynamics describes this motor and sensory coordination, and the same mutual coupling approach can be applied by designers to understand how users come to interpret the more abstract communicative content of symbols. The use of symbols is dependent upon the ways in which they affect user behavior, and the behavior of users is both governed by and contributes to the construction of their meaning. The Behavioral Dynamic approach of mutual coupling embodies this recursiveness; it provides a tool for describing the emergent nature of meaning and the process of their use, because it is only through their use that symbols become meaningful.

**Fluctuations and Disruptions of Flow**

As users become coupled with communications systems and objects in the environment, and engage with information to stabilize behavior to accomplish different tasks, the manner in which they are coupled to that information changes. In constructing a communication system Environmental Graphic Design must establish the coupling of users to the visuals and information in the environment, and maintain that coupling across time and space. The contributions of Behavioral Dynamics as described so far have been primarily instrumental, facilitating the successful coordination of action and communication of meaning. But the mutual coupling that establishes the meaning of symbolic communications not only has practical implications but also contributes to the communicative aesthetic. The way designers disrupt, fluctuate and maintain the flow of this coupling of the user to the environment can be thought of as the orchestration of the aesthetic experience of a space.

Ecological Psychology has a history of drawing inspiration from Martin Heidegger in describing the manner in which users are coupled with aspects of the environment, more recently through the efforts of Anthony Chemero, Dobrimir G. Dotov, and Lin Nie. In “A Demonstration of the Transition from Ready-to-Hand to Unready-to-Hand” they describe how Heidegger believed that human behavior was primarily “absorbed, skillful engagement with entities in the world”, and environmental influences can cause disruptions in this engagement. Heidegger distinguishes between three modes of coupling with the environment: “ready-to-hand”, “unready-to-hand”, and “present-at-hand.” Ready-to-hand is when we are skillfully engaging with the world and do not exercise explicit awareness of the properties of objects we are engaged with. If we are using a hammer, we do not notice its size, color or shape. Unready-to-hand is when our skillful coupling with the world is temporarily disturbed, we become aware of the properties of the hammer, nails and board that are interfering with its functionality. Our coupling with the environment is characterized by frustration and explicit awareness of the details of our activity. Present-at-hand is when we are not engaged in a task but are focused on considering the specific properties of objects; the hammer is no longer a tool but merely an object with various properties.

Understanding these different modes can provide ways to conceptualize how communication systems can be constructed to facilitate and disrupt the flow with which users are mutually coupled to the environment. Paul Dourish in *Where the Action Is* explains how in our engagement with objects, both the ready-to-hand and present-at-hand modes are critical; there is a need for ways to transition between them in our use of physical tools as well as abstract entities (139). As users navigate through a space, they instigate different patterns of engagement with objects, other users, technological systems, and abstract communicative symbols. Heidegger’s ready-to-hand defines a type of coupling marked by efficiency and the unconscious, unready-to-hand by frustration, and present-at-hand by the appreciation of specific properties of the environment with which we are engaged.

These distinctions can provide ways for Environmental Graphic Design to approach the management of the mutual coupling of users and communication systems. Answering the question “Where am I?” in geographical, physical terms addresses the need for efficiency in navigation of a space for which Heidegger’s ready-to-hand coupling would seem the most appropriate. But the additional challenge of constructing environmental communication systems is answering the question “Where am I?” with more abstract meaning, understanding location as part of a narrative instead of geographic coordinates. Doing so may require transitions to present-at-hand, where there is a conscious awareness of features and properties. This is the exciting challenge of Environmental Graphic Design. The experience of a space depends on the orchestration of how and when communicative meanings emerge as a salient aspect of our experience or operate to support the completion of tasks unbeknownst to our explicit conscious attention. “Bumping into” the communication infrastructure
can be thought of as the disruption of the mutual coupling that establishes a flow of the experience of a space. Ensuring that this manner of mutual coupling is disrupted or established at the right moments, facilitating and obscuring the conscious experiences of different aspects of communication systems can be a way for Environmental Graphic Design to ensure efficient navigation while orchestrating a pleasant aesthetic experience.

Establishing a Dialogue with Complexity

Just like with the epistemic approach, the interdisciplinary “messiness” is important. Both design and ecological psychology at their best are refinements of everyday thinking that necessitate the application of thoughtful rigor and disciplined imagination. Psychology is in the position to invest in an extensive and disciplined description of human behavior, while design can provide expertise in harnessing the complexities of real-world contexts as well as knowledge of the latest commercial technologies. Studying the individual components is manageable and the methodologies are well defined; but the most exciting discoveries come from bringing forth an understanding of the complex fuzziness of problems at the systems level. The endeavors of these disciplines can be combined to build robust interactive principles that guide the optimization of communication systems that can adapt to the idiosyncrasies of everyday contexts. The goal of this interdisciplinary collaboration is not to control or simplify interactions, but establish a dialogue with the mutual coupling of users to place and context—designing new ways to manipulate and communicate information in our exchanges with the environment and others.

References:


Bardas de Baile, a form of vernacular design that utilizes large-format sign painting in public spaces to advertise music concerts in central Mexico.
Abstract
Commercial storefronts play a vital role in signposting and broadcasting the cultural identity of the urban landscape. Storefront signs address basic commercial communication needs such as naming and stating the type of business, marking the location, advertising services, and attracting customers. But they also fulfill a more important need: expressing the characteristics of a given culture, and defining how that culture is represented visually. They add flavor and authenticity. They let us know, culturally and geographically, where we are.

How a culture is perceived is largely determined by how it is presented. As cultural readers and interpreters, we look for signs and symbols to help us make sense of the space around us. In an ethnic urban landscape, commercial storefront signs are powerful coded symbols that communicate a wealth of cultural information. Sign painting has traditionally been the most common and effective means of conveying that information. In the past, such signs would have been hand-painted. However, since the introduction of plastic materials, and with the dominance of digital technologies, traditional sign painting has declined in popularity, especially in major commercial centers, where it is rarely, if ever, seen. But in many ethnic areas, sign painting has managed to survive as a vernacular form of design that operates on the margins of professional design practice.

This project examines the “membrane” that separates vernacular and professional graphic design, by investigating a particular form of indigenous hand-painted murals that advertise folk music concerts in rural Mexico. These typographic murals, or bardas de baile, are a form of what in Mexico are called rótulos, or commercial hand-painted signs. These signs cover the walls of cemeteries, empty plots of land, abandoned houses, sides of ledges, and other unclaimed public spaces, becoming an integral part of the physical and cultural landscape of rural Mexico. They also constitute a form of branding for the types of music they advertise.

Traveling by car through central Mexico, and implementing an ethnographic approach, I conducted interviews with rotulistas to research their sources, their way of life, and their work practices, and completed a thorough photographic documentation of the different styles and venues for these music murals. My research on this particular form of sign making revealed the ways in which vernacular design operates and relates to its context, thus providing important information about the characteristics and methods of sign painting, as well as the ways in which a particular visual culture—in this case bardas de baile—becomes the chosen mode of representation, and how it is then imitated and spread by other rotulistas, creating an ironic, handmade kind of mass production.

To further my understanding of the traditional process of the rotulistas, and of sign painting in general, I researched the typefaces that have historically and traditionally been used for sign painting. Applying an experimental and iterative approach, I then made typographic studies utilizing analog methods such as screen printing and painting on canvas. These techniques allowed me to experience and understand the process of sign painting and the relationship between the means, the medium, and the form.

The second part of my research explored the visual translation of hand-painted signs into the language of digital sign making. I conducted visual audits of representative examples of storefronts in San Diego, California, chosen for its cultural diversity.
and numerous locations where ethnic and vernacular design merge with professionally branded solutions. A selection of small businesses along University Avenue and San Ysidro Boulevard were used as models for design development and prototyping.

With the purpose of establishing a reliable framework to explore the possibilities and limitations of digital sign making, as well as the available materials and production costs, I surveyed five local sign-making businesses whose services I will be using for the production of prototypes. Due to cost and ubiquity of use, I will be working with the following techniques and materials: laser-cut vinyl (mid-grade, standard color, and CMYK printed); CMYK printing on Sintra board; printed vinyl on Coroplast board; laser-cut vinyl on acrylic for back-lit boxes; and back-printed acrylic.

The parameters used for the design explorations replicate those that I found being applied by regular commercial sign makers: the use of system or free fonts found online; basic color palettes; eye-catching effects such as gradations and shadowing; and the integration of environmental elements such as wall surfaces and architectural fixtures.

**Contribution to the Field**

Signs are complex objects that involve various disciplines—advertising, industrial and graphic design, and architecture. They rely on patterns of form, material, proportion, ornamentation, and symbol to convey meaning to their users. Each of a sign’s elements, alone and together, has the potential to convey complex, abstract ideas to those who use them.

Until the 1950s, signs were primarily hand-lettered by skilled sign painters who operated as a guild and whose skills and rules were passed on from masters to apprentices. Even though their means were limited to brushes and paint, and the designs relied on basic patterns of form and shape, each sign was conceived and fabricated within a specific cultural framework, thus giving businesses uniqueness and authenticity.

Since that time, storefront signs have undergone major change, and sign painting has dramatically declined as a result of increased corporatization and uniformity. With the rise of big-box stores and retail warehouses, the independent trader has become an endangered species. As their economic prospects dwindle, so do the prospects of the traditional sign painter, who in the past would have been hired to adorn those independent shops and stores with hand-painted logos and images.

In addition, the modern-day use of plastic substrates and digital technologies has transformed the world of the humble sign writer into a vast sign-making industry. In the 1970s, the arrival of these new materials and technologies coincided with the growth of chain stores and franchises whose identity required repetition, consistency, and affordability over the artisanal craftsmanship of hand-rendered signs, thus making them obsolete on a large scale.

The tradition that once cemented the bond between the sign maker and the community has been lost, due to the fact that the new sign-making shops were owned and operated not by craftsmen but by technicians. As a result, traditional sign painting has virtually disappeared, and the craftsmen have been replaced by technicians who produce cheap default-designed signage to meet the needs of increasingly cost-driven businesses. A key impact of this transformation is that vinyl lettering has become the new vernacular.

In recent years, gentrification has radically changed the landscape of many ethnic neighborhoods, due to an increase in both public and private sector attempts to revitalize aging and long-ignored areas. In spite of its benefits, this process has hampered the economic reintegration of existing local commercial establishments that serve as nodes of community interaction. The vision of civic leaders, businessmen, and planners—that these areas would become visually unified, sanitized, and safe environments attractive to both high-end national chains and their customers—has been in most cases only partially accomplished. In reality, gentrification today has resulted in a hybrid mix of retail businesses that sell cheap goods to a diverse crowd of low-to-middle-income shoppers among big-box retailers and national chains, and who remain unable to match the visual impact, consistency, and reliability of the big brands. These small local businesses solve their communication and marketing needs by contracting the services of sign shops that offer generic designs and improvised solutions at affordable prices, but that fail to attract the new...
incoming residents, thus perpetuating economic and racial segregation.

My field research showed that the businesses that trusted commercial sign makers to design their storefronts lacked the differentiation and quality necessary to compete with the established brands and chain businesses that now populate ethnic urban pockets. As with the hand-painted signs, the new digitally produced signs are mostly typographic, and unlike sign painting, the typefaces used—system typefaces offered on PC (mostly) and Mac platforms—have no connection to the language of the tool that produces them. The color palettes are mostly primary and limited to those available by default, and the materials used lack the dimension and materiality of paint.

The significance of this project resides largely in the premise that hand-painted signs have an intrinsic potential to impart culture-specific characteristics to the branding and presentation of small ethnic businesses, through an authentic yet credible voice expressing that these businesses are run by real people and are free of corporate uniformity.

Through the design and production of a series of prototypes that explore the possibilities and the limitations of digital sign-making technologies and plastic materials, this body of work aims to expand the range of design solutions available to small business owners by translating the cultural visual language of hand-painted signs into culturally sensitive and commercially competitive solutions.

**Implications of Theory and Practice**

The Bauhaus movement and the International typographic style provided the principles upon which contemporary graphic design has been based. The practice and education of this discipline have been largely based on the ideal of a universal design style where designers are considered conduits for information, clarity, and order. These principles were essential to developing graphic design as a tool for democracy when the access to information and the elevation of aesthetic and functional qualities in mass production were paramount. Although the context and technology in which today’s graphic designers practice have changed dramatically, the paradigm of a universal language of graphic design form remains the same. In this era of digital global communications, free-trade agreements, and corporate expansion, graphic design has asserted itself as a powerful tool for instituting the presence of corporations through a universal style that consistently applies strict guidelines to visual standards. The uniformity this practice has brought to visual culture has led to the eradication of vernacular forms of graphic design that

until recently were repositories of cultural identity, history, and tradition.

In urban America, the traditional hand-painted lettering on storefront business signs has been replaced by digital sign-making technology. Small businesses in ethnic neighborhoods that consistently used hand-painted signs to communicate their culture-specific characteristics, now use the services of digital sign-making shops that provide generic and improvised solutions that do not convey their attributes, benefits, and cultural references. While these new technologies have given graphic designers more options to create impactful displays and to standardize the quality of reproduction in branding, they have also sanitized the urban landscape by creating visual and cultural uniformity.

Graphic design inherited from Modernism the practice of radically changing existing solutions rather than enhancing them—a “before” and “after” approach that particularly disregards lay or vernacular forms of design. This project, and its method, suggest a design approach that incorporated the existing and the commonplace. Moreover, it embraces mass production and the democratization of design where craftsmanship has shifted from a “hands-on” activity to possessing the knowledge and the access to technology, as is the case with contemporary digital sign makers. Consequently, the value of the proposed design solutions is not based on originality or authorship, but on expanding the limits of digital fabrication techniques with solutions that have the potential of being reproduced by the average sign shop technician and accessed by small businesses with the intent of bringing back their cultural identity and voice.

This project poses questions about the relationship between the means, the medium, and the process of design. In sign painting, the physical nature of the tool directly and readily generates a particular type of form and determines the process of creating it, as do the digital means and their plastic-based mediums, although in the latter, the materiality is lost. By reproducing the language and the material effects of sign painting in the digitally produced prototypes that result from this project, meaning is constructed from actual (three-dimensional, plastic) and implied (visual references to sign painting) materiality through an amalgam of substrates and processes that occupy the intersection of the contemporary and the traditional.

Design plays an important role in the economic health of businesses and in the way consumers perceive them. In relation to this particular project, the expectation from small ethnic businesses is that
of authenticity, humanity, and uniqueness, all which are communicated, or not, by the style in which they are rendered. Even though sign painters work within well-defined boundaries and build upon tradition, their solutions respond to the specific needs of the business owners and the expectations of a particular community rather than to generic designs that lack differentiation and specificity. But going beyond nostalgia, and considering that traditions are flexible, the pride and knowledge behind the craft of sign painting can inform and expand the possibilities of new digital tools through inventive approaches that originate from a thorough familiarity with the tools, processes, and materials on both sides. My intention is not to bring back a tradition, unchanged, into our contemporary urban context, or to establish set rules for the do’s and don’ts of sign making. Rather, my goal is to provide a set of models and to identify general design principles that have the potential of being adopted as a new tradition that brings together craft, technology, and cultural differentiation.

References
2013 SEGD
Global Design Awards
Student Projects
As part of their Environmental Graphic Design course in Andalou University’s Graphic Design Masters Program, Ceyda Artun and Dilek Erdogan were challenged to transform the school’s Fine Arts Faculty Canteen into “something more inspirational, interactive, and educational.”

Working with Assistant Professor Melike Tasçioglu, Artun and Erdogan decided to create the Fake Art Museum. Their idea was to encourage students to create reproductions of famous art works and exhibit them in a fun environment. “We wanted the canteen to live with the students, and become a tradition of the faculty.”

The designers spruced up the canteen by painting walls and brickwork, creating new seating areas in front of the canteen’s windows, replacing old tables with modern ones, and adding a large picnic table for group work. To make the idea of contributing to the museum inviting, they created an eclectic collection of fake frames that were reproduced in vinyl and mounted on the walls. A column in the middle of the space is used for a graphic providing information about the Fake Art Museum concept and the famous artworks students can choose to recreate. Interpretive information about the artworks is presented in a formal way, but students are encourage to personalize the presentation with their signatures.

SEGD Jury Comments

“Fake’ not ‘faux’—love it. I imagine the canteen is now the place to go for good food and lively debates.”

“The project team was very resourceful in creating a slightly provocative installation that invites contributions by visitors. The exhibition is in itself a frame to be activated and populated by the creativity of students who use the space.”

“From the name to the final collaborative installation, this design says ‘fun.’ The faux salon style collection of roughly drawn picture frames invites participation by the students in this dining space, and results in a lasting impression enjoyed by all.”

Additional Student Award Project Credits appear on page 56.
The fourth-semester class of the Fashion Institute of Technology’s associates degree program developed the Barbie Play with Fashion exhibition as part of a design competition to create fashions, interior designs, jewelry, photos, films, and visual displays for Barbie and Ken. The partnership with Mattel Inc. was also aimed at reinvigorating the Barbie brand to reflect greater fashion and design sophistication in the toy’s audience. Finalists in the competition developed their designs into a two-story, multimedia exhibition held in the lobby of FIT’s Fred P. Pomerantz Art and Design Center in Manhattan.

The 600-square-foot exhibition was in place for four months and attracted more than 10,000 unique visitors. The 36 students in the fourth-semester class developed the design for the exhibition through a rigorous process beginning with analysis of design, market, and brand trends and small-group exploration of various design concepts. From these concepts, a group strategy was developed and students took on responsibility for graphic identity, object display, digital media, wayfinding, and interpretive elements.

Sponsoring fabricators, material suppliers, and printers educated the students on construction techniques incorporated into the exhibition. The exhibition project was a successful balance of student exploration and design, multidisciplinary collaboration, and the fostering of showmanship meant to bring the excitement of the runway and New York’s Fashion Week to a diverse audience. The exhibition also deftly shows how designers are influenced by both the confluence of play and mass fashion culture.

SEGD Jury Comments

“A highly successful exhibition design executed by a group of fourth-semester students in five design majors. I’ve seen it and enjoyed its humor and competence.”

“The exhibition title says it all: “The Pink Issue.” The iconic doll brand is delightfully brought to life in this small-scale exhibition. I particularly liked how the broad variety of elements used in 2D and 3D installations were all held together by color, pattern, and form that so well reflected all that is Barbie. The fact that this was a group project suggests a unified student vision to create something exceptional.”

“Mirroring the collaborative nature of the exhibition design process, the FIT students produced an attractively layered exhibition that takes advantage of site conditions. The exhibition effectively extends to the building’s exterior and into the height of its atrium with large environmental graphics.”

Additional Student Award Project Credits appear on page 56.
Barbie

THE PINK ISSUE

26 WINNERS
5 ART & DESIGN MAJORS
ONE BIG SHOW!

GET THE LOOK

WHAT'S NEW

Fashion design

WHAT'S NEW

Fashion design

WHAT'S NEW

Fashion design

WHAT'S NEW

Fashion design

WHAT'S NEW

Fashion design

WHAT'S NEW

Fashion design
Fake Art Museum

**Client:** Anadolu University  
**Location:** Fine Arts Faculty Canteen, Anadolu University, Eskişehir, Turkey  
**Budget:** $6,000  
**Project Area:** 140m²  
**Open Date:** May 2012  

**Fabrication:** Anadolu University Faculty of Fine Arts (paint supplies); Eskişehir/Duygu Reklam (vinyl window films); Xerox Print Center, Eskişehir/Duygu Reklam (vinyl frames); Tek Ofis Mobilya (tables and chairs); KYS Chairs (bar stools)  
**Photos:** Ceyda Artun and Dilek Erdoğan

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Barbie Play with Fashion

**Client:** Fashion Institute of Technology and Mattel  
**Location:** New York  
**Budget:** $60,000 and in-kind contributions  
**Project Area:** 1,250 sq. ft.  
**Open Date:** May 8 through September 3, 2012  

**Design:** Fashion Institute of Technology Visual Presentation & Exhibition Design students  
**Fabrication:** Michael Eudy, Jason Mitja (technical advisors); Sheila Manion Artz (graphic advisor); FIT museum fabrication staff (installation of modular components); students in interior design, photography, fashion, and jewelry (props, models, and display objects); VPED students (implementation of all systems and graphics); Octanorm (modular and structural systems); iZone (phenolic signs and labels); Applied Image (vinyl and Sintra graphics printing); ColorEdge (foam core and window vinyl graphics printing); Urban Sign (acrylic elements)
Presenter
Biographies
Nicole Bieak Kreidler, Ph.D., is an Associate Professor and Chair of the Interior Design Program at La Roche College in Pittsburgh, Pennsylvania. She enjoys the challenges of working interdisciplinarily and has been teaching and furthering her research across several disciplines for the past 15 years. Dr. Kreidler received her Ph.D. from Auburn University in Consumer Affairs, with a focus on Consumer Behavior. Dr. Kreidler’s main area of research is in green consumerism, where she focuses on attributes within the interior environment that influence green consumption practices. Her other research interests are: aesthetics and service environments, aesthetics and branding, consumer behavior and responsible consumption. In addition to Nicole’s research endeavors, she also teaches and chairs the Interior Design Program at La Roche College in Pittsburgh. There, she teaches studios based on sustainability and social design. She enjoys engaging students’ creativity as it merges with the realities of today’s world. Nicole continually strives to push her students to think of solutions to everyday problems through design.

Outside of teaching and research, Nicole enjoys burning the candle from both ends as she is also a busy mom of three very energetic children and one hairless dog formally named Mr. Chickenbuttmontezumacookieface or Ezra for short.

Nicole Bieak Kreidler

Ceyda Artun received her BA in Communication and Design at Bilkent University. At her BA studies she focused on making animations and video works. After having several internships at some ad agencies and MTV Turkey she entered the MFA in Graphic Design program at Anadolu University. There she focused mostly on illustrations and tried to find alternative solutions to computer based design. She is working on her thesis about “Technological Developments Effect on Graphic Design.” Now she is studying at University of Porto’s masters program in Graphic Design through the Erasmus program. 

Ceyda Artun

Leslie Blum, Assistant Professor, is currently the assistant chair of the Communication Design Department at FIT. Along with her administrative duties, she teaches design history and a foundation studio in the AAS Foundation program and environmental graphic design in the GD BFA program.

Leslie Blum

Patricia Cué is a graphic designer whose life and work oscillates between the U.S. and Mexico. She completed her graphic design studies at the Universidad Iberoamericana in Mexico and at the Basel School of Design in Switzerland. Cué is assistant professor at San Diego State University where she teaches branding and environmental graphic design. Through her work she explores how design shapes cultural identity, drawing inspiration from the tradition, colors, and textures in vernacular forms of design. Her work has been featured in Voice AIGA Cross-Cultural Design, Fahrenheit Contemporary Art, TM Typographische Monatsblätter, and more recently in the TV documentary series Sensacional de Diseño Mexicano produced and broadcasted by Once TV Mexico. Her book Mexican Wall Painting: Bardas de Baile will be published in August 2013 by Ghost & Company.

Patricia Cué
Dilek Erdogan was born in Bilecik, Turkey. She received her Bachelor of Fine Arts degree in Graphic Design in 2008 at Anadolu University, School of Fine Arts and Design in Eskişehir. She took courses in printing, photography, packaging design, illustration, interactive design, web design and typography education.

Dilek Erdoğan worked for Open Education Faculty of Anadolu University as graphic designer and illustrator between the years of 2008 and 2010. Since 2010, she has been working as a designer at Anadolu University. She earned an MFA in Graphic Design of Fine Arts Faculty of Anadolu University in 2011. She is continuing her education. Her recent works are on the subject of typographic design.

Miranda Hall is an Assistant Professor of Graphic Design at La Roche College in Pittsburgh, Pennsylvania. In her fifteen-year graphic design career Miranda has worked on a broad range of projects including environmental graphics and wayfinding, exhibits, marketing, web and interactive design. She gravitated toward Environmental Graphic Design during her graduate studies at Kent State University. She then worked in an exhibition design firm and eventually landed at an architectural design firm, Cannon Design, within an Environmental Graphic Design specialty group. As an educator she emphasizes the value of collaborative design and working across media and disciplines to be a more strategic and holistic designer.

Outside of her teaching and professional work she serves on the board of Partners In Development, a non-profit organization working in rural Zambia. She also co-owns and operates a letterpress shop, Big Press Little Press, where she creates art prints, novelty items and specialized design work.

Emma Pawlukojc received a BA in Art & Art History at Binghamton University before going back to school in 2010 to study Visual Presentation and Exhibition Design at the Fashion Institute of Technology. While in school she gained exceptional insight and experience interning for both RPG and Jes Gordon/Proper Fun, as well as participating in the DIFFA Dinning by Design event and the DDi Student Window Challenge at Saks Fifth Avenue. Soon after graduation Emma joined the Tiffany & Co Creative Visual Merchandising team as Design Coordinator. She is a key player in the team that is responsible for the creation and execution of all window, vitrine, event, and jewelry presentation creatives that roll out world wide for the luxury brand.
**Brett Snyder** is a principal of Cheng+Snyder, an experimental architecture studio based in Oakland, California and an Assistant Professor of Design at the University of California, Davis. Snyder works at and researches the intersection of architecture, media, and graphics with a particular interest in urban spaces. Snyder’s award winning work has been exhibited internationally including the 2012 Venice Architecture Biennale. Recent projects include Smart Sidewalks, a winning entry to the NYC Reinvent Payphones competition; Museum of the Phantom City, an architectural iPhone app to view visionary but un-built architecture; and S.Alt City, an interactive building mural in Syracuse, New York. Snyder’s experience spans disciplines from working on large urban scale architecture projects to intimate size objects to interactive experiences.

**Michaela Skiles** approaches environmental graphic design from a diverse background spanning geography, environmental studies, planning, and architecture. She is particularly interested in the connections between cognitive research and the design of transportation infrastructure and navigational aids, especially for non-motorized and public transportation. Since graduating from Middlebury College in 2012, she has been working at LandWorks, a multidisciplinary landscape architecture, planning, and wayfinding design firm in Vermont. Michaela is now returning to her hometown of Portland, Oregon, and teaming up with a fellow Middlebury Geography graduate to found Lox Cartography, offering custom mapmaking, graphics, and GIS solutions.

**Ashley Walton** is currently pursuing her Masters in Ecological Psychology at the University of Cincinnati. As an undergraduate she received a Digital Design Bachelors of Science from UC’s School of Design, Art, Architecture, and Planning as well as a Bachelors of Interdisciplinary Studies in Cognitive Science.

Her work experience includes a number of Interactive applications for clients including Kansas University and Cincinnati Children’s Hospital. Her focus and passion is developing innovative methodologies for interdisciplinary research, having collaborated with engineers on development projects in India, instructional designers to develop educational iPad applications, and clinical psychologists in co-creating self management tools for sickle-cell patients.

**Andy Schwanbeck** currently works as a freelance designer specializing in environmental graphics, website design, and design research. In his seven-year career he has worked in a variety of design disciplines and has served as an adjunct faculty member for American University and Kent State University.

Andy’s varied background has enabled him to have a diverse career in design. Upon earning his degree in industrial design, he worked briefly as a product designer for a small firm in Lyon, France. His ongoing interest in graphic design led him to his career in environmental graphic design. Most recently, he has earned his MFA in Visual Communication Design from Kent State University. His recent work has taken on a strategic research-based approach where he explores the role of design to solve various social issues. He also enjoys success as a co-owner of a small letterpress printing business, Big Press Little Press.
EGD Core Competencies
Our purpose is to provide support and leadership while strengthening relationships with academic programs that provide developmental design excellence and practice based competencies to students through courses that are foundational to careers in Environmental Graphic Design.

**Joell Angel-Chumbley**, Kolar Design

**Gretchen Coss**, Gallagher & Associates

**Brenda Cowan**, Fashion Institute of Technology

**Oscar Fernández** (Committee Chair), School of Design, University of Cincinnati

**Miranda Hall**, La Roche College

**Kelly Kolar**, Kolar Design

**George Lim**, University of Colorado, College of Architecture & Planning

**Tim McNeil**, University of California at Davis

**David Middleton**, Kent State University

**Samantha Perkins**, Miami University, Ohio

**Justin Molloy**, SEGD Director of Education and Professional Development

**SEGDS Academic Programs are supported in part by contributions from the SEGD Board of Directors**

Amy Lukas, Infinite Scale

Jill Ayers, Design 360

Edwin Hofmann, Limited Brands

Mark VanderKlipp, Corbin Design

Patrick Angelel, CREO Industrial Arts

Sander Baumann, designworkplan

Steve Bayer, Daktronics

Richard Bencivengo, Lexington Design + Fabrication

Jennifer Bressler, Hunt Design

Peter Dixon, Prophet

Oscar Fernandez, Ex Officio, University of Cincinnati

Moira Gemmill, Ex Officio, V&A Museum

Cynthia Hall, Ex Officio, Studio SC

Graham Hanson, Graham Hanson Design

Lonny Israel, Skidmore, Owings & Merrill

Alan Jacobson, ex:it

John Lutz, Selbert Perkins Design

Wayne McCutcheon, Entro Communications

Bryan Meszaros, OpenEye

Stephen Minning, BrandCulture

Dan Moalli, Obscura Digital

Steven Stamper, fd2s

Gary Stemler, Archetype

Tucker Trotter, Dimensional Innovations

Julie Vogel, Kate Keating Associates

Leslie Wolke, Leslie Wolke Consulting

Alexandra Wood, Holmes Wood

Joe Zenas, Thinkwell
In 2007, the SEGD Academic Education Committee surveyed a broad range of environmental graphic design professionals, particularly principals of Environmental Graphic Design (EGD) firms, to identify the core competencies required of graduating environmental graphic designers. To complete the core competency review, extensive interviews were also conducted with college and university faculty in EGD programs. The academics and professionals who participated in the survey agreed that EGD students should work to achieve three overall goals: 1) a full understanding of the scope of environmental graphic design, 2) the ability to participate in the work of a design firm, and 3) the ability to take a leadership role in the design process.

The Core EGD Competencies were identified to guide university and college EGD programs in structuring their courses and programs. While no one course or program can satisfy all of the competencies, they do provide a framework when developing goals for student achievement.

The Core Competencies integrate two important concepts in EGD: 1) an understanding of the design process from initial concept through implementation and 2) an understanding of design intent, or the ability to translate design goals into a visual communication approach.

### Core EGD Competencies:

1. **General Knowledge**
   - Knowledge of Environmental Graphic Design
   - Understanding of the different areas of environmental graphic design and the design firms that work in the field
   - Knowledge of the history and methodologies in specific areas of environmental graphic design
   - Knowledge of current high-level work in the field
   - Understanding of how EGD relates to other design disciplines including graphic design, information design, architecture, and interior design

2. **Analysis and the Development of Design Concepts**
   - Verbal and Written Communication Skills Related to Concept Development
   - Ability to articulate a design concept through formal writing and verbal presentation
   - Ability to use terminology related to environmental graphic design project planning and implementation
   - Ability to develop design ideas from a formal analysis
   - Understanding of how to incorporate design ideas into a formal design process

3. **Design Development**
   - Use of Typography, Color, and Symbology
   - Ability to apply graphic analysis to design development including application of a consistent design palette of type, color, pattern, and materials
   - Ability to use terminology related to environmental graphic design project planning and implementation
   - Ability to develop design ideas from a formal analysis
   - Understanding of how to incorporate design ideas into a formal design process
Design Development

Legibility and Accessibility
- An understanding of how comprehensibility, legibility, usability, and accessibility relate to design in the environment

Drawing and/or Modeling in Three Dimensions (analog and digital)
- An understanding of how comprehensibility, legibility, usability, and accessibility relate to design in the environment
- Understanding of massing, structural integrity, and relationship to human scale
- Ability to draw dimensional design concepts in the design development stage
- Ability to produce models and utilize them for design development
- Ability to produce three-dimensional explorative drawings using computer software

Visual Communication

Documentation and Communication Skills
- Understanding of how different elements in a project make up a family sharing similar physical and functional traits
- Understanding of scale and how to document and model at different scales
- Understanding how documentation works throughout the design process, including plans, elevations, dimensional models, diagrammatic maps, and schedules
- Understanding of how different design drawings and details fit together to provide a clear picture of designer intent
- Understanding of how drawings and models are part of a larger communication process with the fabricator
- Understanding of how to describe materials and methodologies and how they are expected to perform

Presentation

Team Collaboration and Presentation Skills
- Ability to create formal presentations as part of a team
- Ability to collaborate with other students with complementary skills in architecture, industrial design, graphic design, or information design

Process Presentation Skills
- Understanding of presentation approaches and methodologies for reviewing an EGD process from concept to final implementation

Implementation

Process
- Understanding of the fabrication process including the relationship between the fabricator and designer

Specification
- Understanding the qualities of different materials and fabrication methods
- Ability to describe how and where materials, fabrication methods, and technologies will be employed