

# EDITORS' NOTE

Welcome to Current 04 and the theme of  
"Sustainable & Generative Societies; Social Learning & Social Innovation"

In this issue we feature articles written by internationally recognized design researchers and educators, Liz Sanders of MakeTools and Ohio State University, Ezio Manzini from the Politecnico di Milano, and Ron Burnett of Emily Carr.

Liz Sanders illustrates how design is social now. She states: "the conversation is about design for experience, for service, and design for transformation". Through identifying and mapping the creative potential of collective agency we transform and in so doing lay the groundwork for sustainable actions.

Manzini, helps us as design thinkers and makers to see how slow, local, open and connected (SLOC) can become a scenario that lifts off the page to become wisdom about sustainable and generative societies.

Ron Burnett asks us to look at design through the lens of the anthropologist in a paper that addresses the concept of audiences in art and design. He observes "designers are now crossing the boundaries into the ways in which people organize their lives (design thinking, design process), and the many ways in which design thinking is applied to businesses and to innovation.

Louise St. Pierre of Emily Carr and Mari Nurminen of Powertech Labs reflect on a 3-year collaboration between the university's ecoTANK studio series and Powertech Labs, a subsidiary of BC Hydro wherein the outcomes are as much about social innovation as they are about technical and economic aims.

In the paper titled Designing Cookbooks for Tablets: Eat Street, Celeste Martin, also of Emily Carr, describes the evolution of an interactive eBook for a broadcast television show that airs on the Food Network. Social learning features prominently in the human-centred design approach.

We are also including interviews with the new Emily Carr research directors Kate Armstrong and Jonathan Aitken. Armstrong is the Director of the Social and Interactive Media Centre and Aitken is the Director of the Health Design Lab. Armstrong introduces us to "Disruptive Technologies in Business and Design Culture" as applied research that is reflexive in nature while Aitken describes social innovation and social learning in the intersections between the design and healthcare sectors.

Student praxis papers offer a range of project opportunities and challenges that are SLOC relevant. The article by Beayue Louie examines how participatory design strategies can serve as effective tools when working with multiple design constraints. Louie articulates how Emily Carr University of Art + Design students were asked to collaborate with children with special learning needs to create a textile-based product from reclaimed fabric that endorsed sustainability among both the users and the designers; an example of cosmopolitan localism.

Jean Chisholm's article focuses on the importance of co-creation in the developmental and end stages of project development for Bulletin, an interactive digital space on Vancouver's local music scene. The resulting project is a user-centered web space that enables interaction between event planners, artists, and audience members.

As part of the Design for Democracy movement, Sarah Wilson writes about collaboration between Emily Carr faculty and students, and Elections BC. The focus of the paper is the process of creating an advertising campaign to increase youth voter participation in the upcoming 2013 British Columbia provincial election

"Sustainer" is the embodiment of a design partnership between Andreas Eiken and Kieran Wallace. Another local to global initiative in sustainability, the design team examines the feasibility of a "to-go" reusable food container much like the systems at play for carrying a bottle for water.

Current 04 is a tour of praxis-based, applied research as voiced by the practitioners featured in the issue. The publication is an exposition on the current state of design research and in particular, those thoughts and ideas around newly emerging spaces of design practice that are resilient and which promote generativity.

*Deborah Schackleton  
Celeste Martin  
Glen Lowry*

**ADDENDUM** Our past issue, Current 03, received several international design awards for both the print and iPad app publication from the University and College Designers Association (UCDA), Creativity International Awards, and Adobe Design Achievement Awards.



# CONTENTS

## I ANTHROPOLOGY & SYSTEMS

04 **RON BURNETT**  
Anthropology & Design

07 **SARAH WILSON**  
Designing the Youth Vote

## II SUSTAINABILITY

10 **EZIO MANZINI**  
Resilient Systems and Sustainable Qualities

15 **LOUISE ST. PIERRE & MARI NURMINEN**  
Patterning Dialogues: How Structured Iteration Supports Change

## III CO-CREATION

19 **LIZ SANDERS**  
New Spaces, Places and Materials for Co-Designing Sustainable Futures

23 **BEAYUE LOUIE**  
Co-creating Spaces: The Tag Project

## IV INTERACTIVITY

41 **CELESTE MARTIN**  
Eat St. Case Study: Designing Interactive Cookbooks

26 **JEAN CHISHOLM**  
Bulletin: An Interactive Project

30 **ANDREAS EIKEN & KIERAN WALLACE**  
Sustainer: Re-imagining Food Packaging

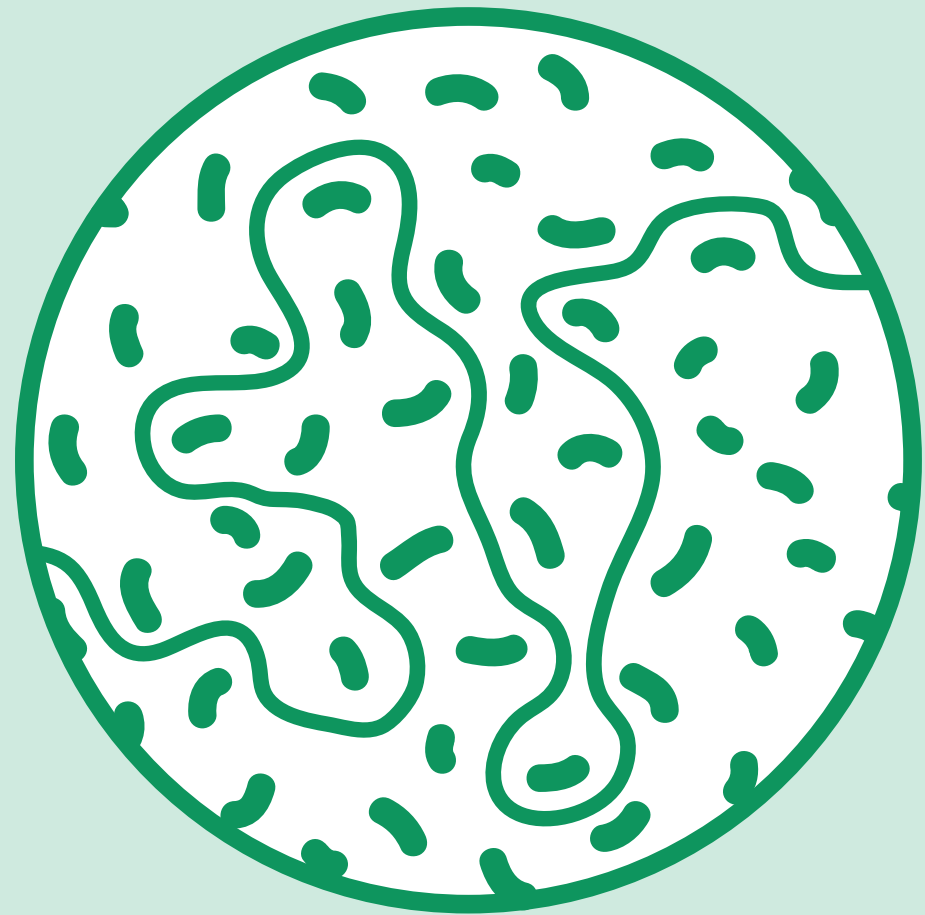
## V SOCIABILITY

34 **MARIA LANTIN**  
Joining Research, Art & Design

35 **KATE ARMSTRONG**  
Disruptive Technologies In Business & Design Culture (*interview*)

38 **JONATHAN AITKEN**  
Health Design (*interview*)

46 **CONTRIBUTORS & ACKNOWLEDGMENTS**



# ANTHROPOLOGY & DESIGN

by RON BURNETT

*“An increasingly common approach to graphic design research involves the application of user-centred design (UCD) methods. The focus of a UCD methodology is to understand and accommodate the needs of users and audience members as a means for improving the designed artifact.” [1]*

Design practice is centred on audience(s). It matters little whether the audience is hypothetical, real or imagined, there is always someone for whom designs are created. This is often used as the fundamental distinction between design and art practices. The practice of creating art on the other hand, is seen as personal and evolving out of processes that don't have an overt goal in mind. Yet, there are audiences for art, perhaps best exemplified by the fact that every major city in the world has an identifiable museum. And, do artists try and understand their audiences and cater to their needs? Let's leave that question open for the time being.

The challenge of course is how do we understand audience, client and user?—Or, in the digital design world, the agent, interactor or participant? Another way of approaching audience is to create one, just as Apple did with the iPad and the iPod. Notice that irrespective of historical circumstances, projections or perceived needs, the term audience remains abstract. This is because it is virtually impossible to

draw a straight line between for example, creating a logo and anticipating the response of groups of people to it—or, developing a product and knowing how clients or users will react to it. This is why designers often develop many alternative strategies to their designs and also work iteratively on various prototypes; all with the goal of creating something that will be closer to the perceived needs of the user.

In anthropology, efforts to understand both contemporary cultures and ancient ones are circumscribed by the challenges of observation, analysis and fieldwork. Prior to the revolution in anthropological thought provoked by George Marcus and Michael Fischer [4] in the 1980's, there was endless debate among anthropologists about the relationship between observation and subjectivity. Put another way, to what extent does your own cultural, class and ethnic background influence what you see and what you observe? It is clear that your own personal history, desires and orientation will have a big impact on the conclusions that you draw from the observations you make. [5] The challenge therefore is to try

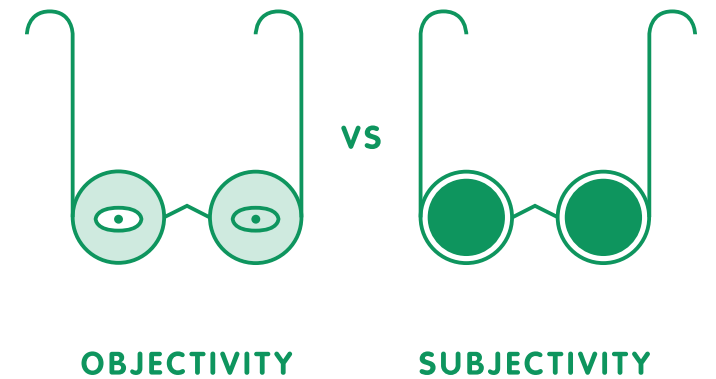
and articulate what you know and examine how that may influence your assumptions about other people. It means that fieldwork is essential only if you bring to it a self-reflexive awareness of the contingent nature of the experiences you may have with complete strangers.

Designers are well aware of these obstacles and have developed many different strategies to deal with them. One of the most important is testing designs with users and trying to learn about utility, reaction and aesthetic response. But, how far does the process of learning about response go? To what extent are designers able to test their assumptions about their audiences? These issues are even more complex if as is often the case, designers are now crossing the boundaries into the ways in which people organize their lives (design thinking, design process), and the many ways in which design thinking is applied to businesses and to innovation.

*“Professional design is now operating within an expanded and increasingly complex field. Some design professionals take solving complex social issues as their domain, often but not always working in close collaboration with specialists in public services from healthcare to those working with disadvantaged families to policing. Other designers and their ways of working are welcomed into business schools to teach the next generation of managers and leaders. Concepts and language that used to be associated with designers now enter other specialist areas: policymakers are told that public services should be more user-centered (Parker and Heapy 2006); businesses engage with customers by offering new meanings for things (Verganti 2009); the US Army is considering the role of design in warfare (School of Advanced Military Studies n.d.). Professional design, in particular design as practiced within the studio-based tradition of many art schools, is taking a new place on the world stage.” [3]*

So much of the knowledge that we share in any given society is tacit. So many of the assumptions we make about ourselves and about others are unconscious. It is easy to say that designers should uncover their cultural bias. [6] But, which methods are best suited to the task? Janet Murray suggests bringing multiple stakeholders into the discussion of the design process “and elicit their different perspectives and needs.” [3]

“**DESIGNERS PLAY INCREASINGLY IMPORTANT ROLES, LESS AS MAKERS OF FORMS AND MORE AS CULTURAL INTERMEDIARIES.**”



**UNDERSTANDING PERCEPTIONS** Our culture, class and ethnic background makes our research subjective, rather than objective. Designers must be aware of the cultural lens they wear, and how it can impact their observations.

Here precisely is one of the key intersections of design and anthropology both as disciplines and as practices. Ethnographers have always tried to “elicit” responses from their subjects. It became clear to many anthropologists in the 1980's that the context, circumstances and pressure for response often overwhelmed not only the truth, but the capacity of individuals to actually surface their insights and concerns. This was in part the reason that Marcus and Fischer began to talk about language and representation. To say that a product is comfortable or useful is to use a particular language of description or analysis that may not reflect deeper or more complex concerns.

Many products come and go in the marketplace and most are unsuccessful. We are surrounded by an infinite number of media, logos and brands. Most are not successful. Focus groups, test audiences and surveys are in constant use. Facebook gathers data on users, as does Google. The data gathering is now so large that designers are being asked to develop visualizations of the information. All of this activity is centred on better understanding human behaviour. All of it is intended to bring some degree of coherence to the struggle to match human desires and proclivities with images or products or artifacts. “When design thinking emerged more than a decade ago, it offered a response to the ebbs and flows of a global, mediated economy of signs and artifacts; in this context, professional designers play increasingly important roles, less as makers of forms and more as cultural intermediaries (Julier 2008) or as the “glue” in multidisciplinary teams (Kelley and Van Patter 2005). They are interpreters of changes in culture who then create new kinds of cultural form.” [3]

Anthropologists have played the role of cultural intermediaries ever since the discipline gained respectability in the 1920's. It was in the 1960's and 1970's that anthropologists began to seriously question not only their practices in the field, but also their assumptions about culture. In some important respects the term culture is both too diffuse and too broad to mean much.

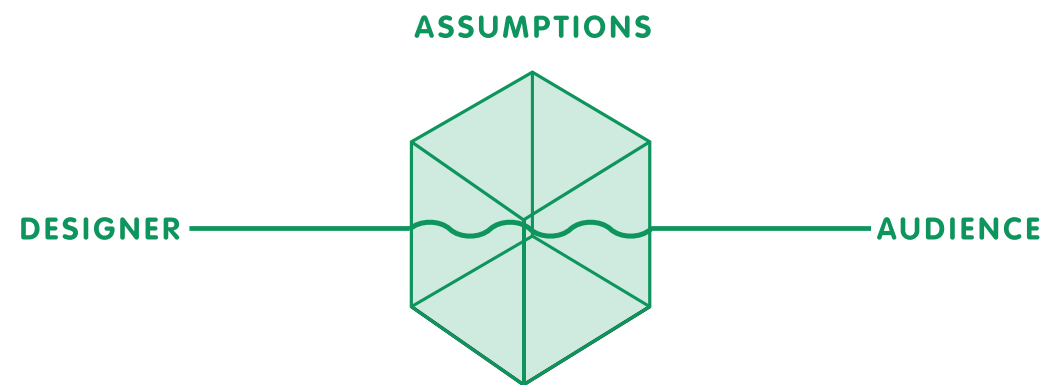
Often, we read backwards from human activities into cultural meanings in order to explain behaviour. And, we try to examine the symbolic framework behind those meanings. But, as much as cultures are systems, the way people behave, act and respond to culture cannot be reduced to their behaviour—to the ways in which they act and respond to the cultural and social demands of the day.

There isn't space in this article to look at the powerful influence of behavioural thinking on design and designers. More often than not, what people do need not be tightly connected to what they say and what they say may have little connection to what they do. Similarly, designers tend to read their artifacts, as expressions of intention when what they should be looking at are the differences between their intentions and what they have produced. There are no perfect points of symmetry here just as there are no simple strategies available to understand human motivation and human choice. No amount of data collection will narrow the complexity of human subjects, their motivations and their conflicted understanding of the cultures they inhabit.

I began this short piece with a tease. Do artists try and understand their audiences and cater to their needs? Or do artists simply act on their desires and create artifacts without reference to the market or the

viewer? Is this the dividing line between artists and designers? I think not. Notwithstanding the ambiguities of the term audience, everyone involved in creative practices is "speaking" to an 'other,' to someone else and they are hoping to be understood and appreciated. While design is often seen as more utilitarian, what could be more practical than applying creative insights into the creation of objects that are ultimately intended for some sort of consumption?

There is a much more important reason to bring up this false dichotomy between the practical and the artistic. Designers, like anthropologists, cannot operate under the illusion that they understand their audiences any better than artists, who often don't know whether they will have an audience at all. It does not matter how many times designers create and generate alternative strategies and scenarios for hypothetical users. The connections between artifacts, subjects and creative practices are thankfully indirect and non-linear if not asymmetrical. The challenge for designers is to accept, if not celebrate, complexity. As Roger Keesing, one of the great anthropologists of the 20th century said, "Feedback mechanisms in cultural systems may thus operate both negatively (toward self-correction and equilibrium) and positively (toward disequilibrium and directional change)." [2]



**NAVIGATING ASSUMPTIONS** When designers are able to recognize their own assumptions and those of the audience, they can maneuver through this problem space.

## REFERENCES

[1] Fraher, R. and Martinson, B. Process and Pedagogy in Undergraduate Graphic Design Education. *The Design Journal*, 14, 4 (2011). 390-412. [2] Keesing, R. Theories of Culture. *Annual Review of Anthropology*, 3 (1974). 76. [3] Kimbell, L. Rethinking Design Thinking: Part I. *Design and Culture*, 3, 3 (2011). 286-287. [4] Marcus, G. and Fischer, M. *Writing Culture: The Poetics and Politics of Ethnography*. University of California Press, Los Angeles, 1986. Their work and the work of many others changed anthropology as a discipline. I am thinking of the work of Edmund Carpenter, James Clifford, Jean Comaroff, Vincent Crapazano, Michel De Certeau, Johannes Fabian, Clifford Geertz, George Marcus and Michael Fischer, Paul Rabinow and Ben-Ami Scharfstein. See Edmund Carpenter, *They Became What They Beheld* (New York: Dutton, 1970); James Clifford (1988); Jean Comaroff, *Body of Power, Spirit of Resistance: The Culture and History of a South African People* (Chicago: University of Chicago Press, 1985); Vincent Crapazano, *Tuhami: Portrait of a Moroccan* (Chicago: University of Chicago Press, 1980); Michel De Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984); Johannes Fabian, *Time and the Other: How Anthropology Makes its Object* (New York: Columbia University Press, 1983); Clifford Geertz, *The Interpretation of Cultures* (New York: Basic Books, 1973); George Marcus and Michael Fischer, *Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences* (Chicago: University of Chicago Press, 1986); Paul Rabinow,

*Reflections on Fieldwork in Morocco* (Berkeley: University of California Press, 1977); and Ben-Ami Scharfstein, *The Dilemma of Context* (New York: New York University Press, 1989). [5] In 1992, Marcus gave the Provost's lecture at Rice University where he worked. He reflected on the tumultuous changes in anthropological thought. Here is an extract from that speech. "The core of this crisis had to do with both language and authority in the conduct of those disciplines that produce current knowledge about society and culture. First, there was the bedrock sense that the concepts developed in various disciplines to describe, assimilate and domesticate reality were no longer adequate. The language of culture, class, sets of binary distinctions such as modern vs. traditional, individual vs. society etc.—while these might have been critiqued piecemeal at different times in the past in various disciplines—now seemed en masse to no longer capture the magnitude or quality of changes occurring in the contemporary world. There was a sense, differently expressed in different disciplines, of the need for a major overhaul of ways of thinking and writing, and ultimately of questions asked. This was far from a cosmetic or partial self-critique and it has led to a variety of productive and not so productive debates about different models of work and different objects of study in fields ranging from economics, to history, law, architecture, art, and philosophy." [6] As Janet Murray has done in her recent book, *Inventing the Medium: Principles of Interaction Design as a Cultural Practice*, MIT Press, Cambridge. 2012.



# DESIGNING THE YOUTH VOTE

by SARAH WILSON

## KEYWORDS

election, British Columbia, democracy, design, advertisement, campaign, youth

## ABSTRACT

The focus of this paper is the process of creating an advertisement campaign to increase youth voter participation in the upcoming 2013 British Columbia provincial election under the leadership of Professor Chris Hethrington. The voter campaign is created through a partnership between Elections BC and Emily Carr University of Art and Design. Through collaboration with students in different design disciplines we broke the problem down into 4 different avenues to successfully address the physical and psychological obstacles to youth participation. In this paper we consider youth voters as those between the ages of 18–26. The goal of this project is to create a multi-platform design and social media advertisement campaign.

According to Thomas Darwin, "[o]ur capabilities are tested by the fact that many (if not most) of the situations we encounter as communities present us with "wicked" problems. The most salient feature of wicked problems from the standpoint of design is that they defy our typical approach to problem solving." [3] The issue of increasing youth voter participation can definitely be considered a "wicked" problem. There are many facets within the issue that needed to be addressed. Attitudes and ideas around voting have changed with every generation; a feeling of civic duty motivates previous generations, while political issues and ease of voting motivate today's youth voters. Our group was given one major constraint: because Elections BC is a non-partisan agency we were not able to use social, political or environmental issues as a platform for our campaign.

## CROSS DISCIPLINARY COLLABORATION

The foundation of Emily Carr University's Design for Democracy course is based on collaboration. The class consists of students majoring in interaction design, communication design, industrial design, and critical studies. In her text *ZIBA: Design and the FedEx project*, Megan Breslin speaks to the value of collaboration in design: "Design research and the idea of connecting with users has become an acknowledged, if underused, value. [...] Now the key to great products is widely thought to be collaboration among a diverse set of disciplines, which can include visual designers, programmers, industrial designers, architects, engineers, anthropologists, researchers, and sometimes even users themselves." [2] Collaboration between disciplines is a valuable part of the design process. The Design for Democracy course has been a valuable experience for students as it demonstrates the benefits of industry collaboration.

## WHERE DO WE START?

As a class, we reflected the age range we were targeting, and we consisted of both voters and non-voters. In essence, we were designing for ourselves. As a class, we first broke the problem down by media platforms: print, web, social media, video, and guerilla marketing. We discussed our individual strengths within each of the platform areas and divided ourselves into groups, with each group being assigned one of the platforms based on their experience. Youth voter participation is a large issue; we had broken up into groups based on our strengths, but now what?

MP Ranjan describes the creative process by saying that "[t]he process of design is the path of human intentions being pursued by the designer or user of design through the stages of exploration, composition, judgment and action. The stages are iterative and the designer revisits the previous stages to develop conviction and build support for the next move forward." As a class, we struggled with how to begin tackling such a large problem. Most people who take part in creative processes know that addressing such a large issue is never linear. Throughout this process, we jumped back and forth to previous and later solutions.

//

**AS A CLASS, WE REFLECTED THE AGE RANGE WE WERE TARGETING, AND WE CONSISTED OF BOTH VOTERS AND NON-VOTERS. IN ESSENCE, WE WERE DESIGNING FOR OURSELVES.**

//

An important part of the process was a meeting with representatives from Elections BC for a project briefing. We hoped the meeting would help us to visualize a clear direction for starting our process. In the meeting, Elections BC expressed three main issues that they needed addressed by the campaign: registration (getting voters to register before going to the polls), the flexibility of voting (explaining the convenience and ease of voting), and eligibility (informing recent immigrants and youth of their right to vote.)

After our meeting with Elections BC, we started collectively brainstorming the three issues that were mentioned in the meeting. We brainstormed the type of attitudes we felt would be most effective at reaching those who fell within the age range of 18–25. We did not want to build on the attitude “you don’t vote and you should,” which we felt would be too negative. We felt the attitude of “you want to vote? Let us show you how” would be more effective with the youth demographic. We initially considered the use of humor in order to break from the serious nature of materials that had been effective with older generations. Through researching other youth campaigns, we discovered that our age group of 18–25 does not respond well to the use of guilt to motivate action. The best way to reach youth is through humor.

#### CO-CREATION

In his article, *Design and Democracy*, Gui Bonsiepe speaks to the way design should “interpret the need of social groups” [1]. In the last few years, there has been a movement within the design community to connect the designer with the user through co-creation. We created a co-creation kit to gain insight into youth attitudes towards the voting process. The user created a collage of the obstacles in his everyday life that might impede him from taking part in the voting process. The co-creation session yielded valuable insight into the attitudes toward and the importance of voting within the everyday life of youth. We live in a fast paced world heavily reliant on technology; 18–25 year olds do almost everything online. Through the co-creation kit, we learned that convenience plays a huge role in whether or not youth voters make it out to the polls. Consequently, we narrowed the project scope to focus only on location and ease of voting.

#### ITERATIONS

During our meeting with Elections BC, they brought to our attention an interesting piece of information: in BC, when voting in a provincial election, voters are able to cast their vote at any polling station in BC. This was a jumping off point for our development of the idea of focusing on the convenience of location. Numerous iterations were created around the concept of “location”. One iteration was a bus poster mapping out the 99 bus route in correlation with the locations of polling stations (shown by green dots). Ideally, on election day someone riding the bus would be able to check the polling station closest to the stop they need to get off at. Another iteration focused on placing an image of a voting booth in public spaces around Vancouver with the tag line “it’s that easy”. The idea was to place the booths in busy public spaces to communicate the idea that polling stations are closer than you think.

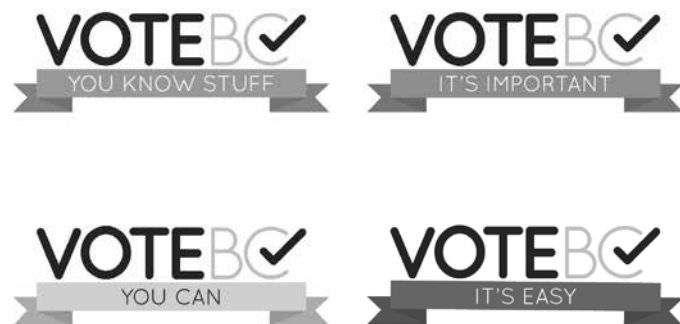
#### BRANDING

After viewing all the iterations, we came together as a class and decided that our scope was too limited; the idea of “location” did not successfully address all of the issues put forth by Elections BC. The main question we wanted to address was “why vote?” We collectively went back to brainstorming. We first had to figure out the questions we needed to ask to get the answers we wanted. We identified common attitudes about voting held by non-voters. The attitudes are as follows:

- Voting doesn’t affect me; I have no effect
- Voting takes too much time; I’m busy
- I don’t know enough about the political parties
- I don’t know if I am eligible; how would I register?

To be successful in motivating youth to vote, we needed to address these four attitudes. One student came up with the slogan “VoteBC” (with BC considered an abbreviation of “because” as well as British Columbia). We used the slogan “VoteBC” and narrowed down the four attitudes into 2–3 word subsections (see figure 1):

- Vote Because – It’s Important
- Vote Because – It’s Easy
- Vote Because – You Know Stuff
- Vote Because – You Can



**FIGURE 1.** Kieran Wallace and Megan White’s *VoteBC* branding strategy aims to motivate youth voters by addressing common attitudes and deterrents.



**FIGURE 2.** Sarah Wilson’s awareness campaign uses the common “lost” poster format to inform the public of groups who have lost their right to vote. These posters interact with the everyday life of commuters and remind them of their rights.

#### FINDINGS

As a class, we divided into four avenues to create mock ups of materials that fit into the categories of “It’s Important,” “It’s Easy,” “You Know Stuff” and “You Can.” Figure 2 shows a final mock up of a poster campaign based on lost and found posters posted around Vancouver, which addresses the category “It’s Important.” The poster is meant to slip into the everyday life of commuters on the streets of Vancouver, while remaining nonintrusive. We wanted the poster to side step the feeling of being sold a product or service, and encourage a feeling of awareness and discovery. The posters are anonymous and unbranded; we want the viewer to question who is behind the posters and take down the website link to find more information. Advertisements are most effective when the viewer feels that they had some part in the discovery of more information.

The poster states: “the following people have lost the right to vote,” then proceeds to list a number of occupations and family relations, such as brother or sister. After reading the list, the viewer discovers that the list covers absolutely everyone. The main goal of the poster is to make the viewer contemplate the consequences of the loss of the right to vote. The development of the youth voter participation campaign is still ongoing. As a class, we consolidated all of our rendered mock ups into a design tool kit to submit to Elections BC. Our findings will be passed on to

Taxi, a Vancouver advertising firm in charge of the Elections BC account. The course, *Design for Democracy*, was an experiment and a view into real industry practices. This course really challenged us as a group to implement the creative process that we have been taught so extensively at Emily Carr University. As a class, we experienced working with people with differing opinions and collaborating with different design majors. Our differences led us to create a large array of iterations and ideas that collectively formed a number of strong creative directions.

#### ACKNOWLEDGMENTS

Thank you to Elections BC for reaching out to Emily Carr University and giving us the opportunity to work with them on this project. Thank you to Chris Hethrington for encouraging our class through the creative process.

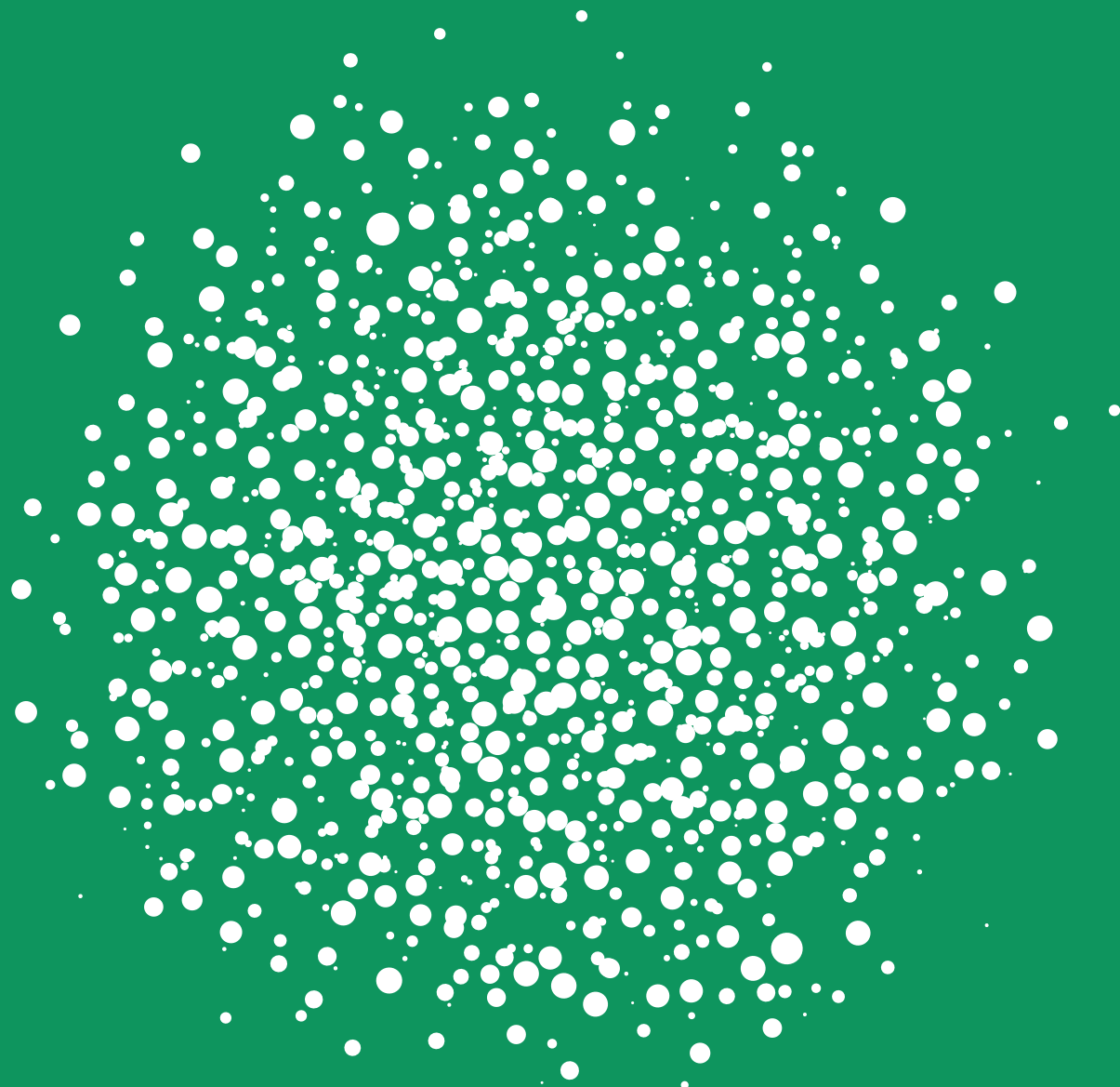
#### REFERENCES

- [1] Bonsiepe, G. Design and democracy. *Design Issues*, 22 (2). 27- 34. [2] Breslin, M. ZIBA: Design and the FedEx project. *Design Issues*, 24 (1). 41-54. [3] Darwin, T. From the town hall into the studio: Design, democracy, and community resilience. *The Journal of Design Strategies*, 4 (1). 29-33. [4] Ranjan, M.P. Hand-head-heart: ethics in design. *The Trellis*, 2 (5).

# RESILIENT SYSTEMS & SUSTAINABLE QUALITIES

SMALL, LOCAL, OPEN, CONNECTED: AN EMERGING SCENARIO

by EZIO MANZINI



For a long time, we have known that, whatever our future society will be, it will be a “risk society” [2]—a society likely to be affected by different kinds of traumatic events (from natural catastrophes, to war and terrorism, to financial and economic crisis). We have known for a long time, therefore, that the precondition for every possible sustainable society is its resilience—its capability of overcoming the risks it will be exposed to and the stresses and breakdowns that, inevitably, will take place [22]. Today, the implications of this risk society are no longer only projected. They are becoming evident worldwide in our daily life experiences; the notion of resilience is moving into the vocabulary of more and more people. It would be wise to accelerate its entrance into policy makers’ agendas and into the design community’s aims and practical actions.

## RESILIENT SYSTEMS

But how do we design a resilient socio-technical system? Let’s look to natural systems; their tolerance of breakdowns and their adaptation capacity (that is, their capability of sustaining over time) may give us direction. [6, 13] As a matter of fact, it is easy to observe that lasting natural systems result from a multiplicity of largely independent systems and are based on a variety of living strategies. In short, they are diverse and complex. These diversities and complexities are the basis of their resilience—that is, of their adaptability to changes in their contexts.

Given that, it should be reasonable to conceive and realize something similar for man-made systems. The socio-technical systems that, integrated with natural ones, constitute our living environment should be made of a variety of interconnected, but (largely) self-standing elements. This mesh of distributed systems, similarly to natural ones, would be intrinsically capable of adapting and lasting through time because even if one of its components breaks, given its multiplicity and diversity, the whole system doesn’t collapse. [9]

How far are we from this complex, and therefore resilient, man-made environment? In my view, this question has no single and simple answer; contemporary society demonstrates a contradictory dynamism that forces us, on this point as on many others, to describe what is happening as a double trend: the mainstream, unsustainable trend, enduring from the last century, and a new, emerging trend. In our case, we have the clash between the big dinosaurs of the XX Century, and the new, interconnected small creatures of the emerging new world.

Considering this metaphor, we can see that the mainstream processes of modernization, held over from the last century, are moving in the “wrong direction”, trying to kill (what remains of) traditional agriculture and craftsmanship and pushing toward global agro-industrial and industrial production. In other words, we can see powerful interests at work promoting large plants, hierarchical system architectures, and process simplifications and standardizations. These interests are therefore, consciously or not, using their power to reduce biodiversity and socio-technical diversity and, consequently, to increase the overall fragility of the system.

Luckily, at the same time, something else happened and is happening; new generations of distributed systems emerged and are emerging. This emergence is driven by different factors: the power of technological networks and a growing number of enthusiasts (who, wherever these distributed systems become possible, tend to adopt them enthusiastically). [3] This complex trend towards distributed systems can be described as having three main waves of innovation.

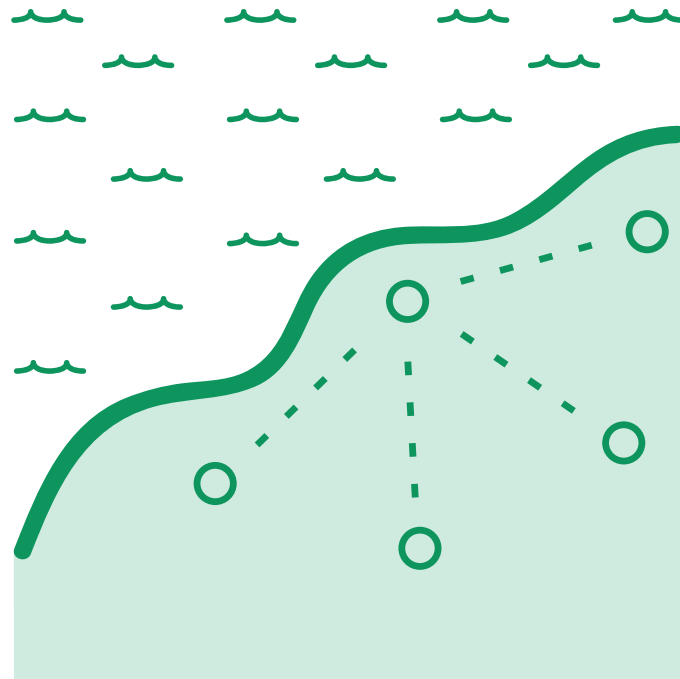
The first evolution occurred when the architecture of information systems shifted from the old hierarchical systems to new, networked structures (distributed intelligence). This change started with the diffusion of distributed intelligence and the radical changes in our systems of organization it made viable. The result is that rigid, vertical organizational models that were dominant in industrialized society are melting into fluid and horizontal ones as new distributed forms of knowledge and decision-making become more common. [23, 1] The success of this innovation is such that, today, networked architecture is considered an obvious “quasi-natural” state. But of course this is not the case; before laptops and the Internet, information systems, concurrent with the mainstream model at the time, were based on large mainframe computers and their consequently hierarchical (and therefore fragile) architecture.

The second wave of innovation has altered energy systems. These shifts are driven by a cluster of dynamic fields, including those producing small, highly efficient power plants, renewable energy plants and “smart” grids that intelligently connect them (distributed power generation). Today, these new but already viable solutions are challenging the (still) mainstream systems, which are based on large power plants and hierarchical (stupid and fragile) grids. Distributed power generation is one of the main components of the ongoing and powerful “green technology” trend. It is reasonable to think that energy systems will follow the trajectory of information systems, moving increasingly toward distributed system architectures. [18]

The third wave of innovations toward distributed systems challenges mainstream globalised production and consumption systems. These production systems include initiatives ranging from the rediscovery of traditional craftsmanship and local farming, to the search for hyper-light and lean production, to the hypothesis of networked production systems based on the potentialities of new forms of micro-factories such as fab labs (“small-scale workshop[s] offering personal digital fabrication”) [5] and by the makers movement (“[a] subculture ... representing a technology-based extension of DIY culture.”) [10] While this trend is still in its initial phase, the whole production and use system must be re-shaped following a new localization principle; products must be designed so that their production can be as near as possible to where they will be used (point of use production). This principle can be implemented by mixing traditional technology, craftsmanship and high-tech solutions.

These three waves of innovation have one factor in common: they refer to a globalisation aimed at using local resources and reducing distances between both production and use, and producers and users. A range of very different motivations has driven this result.

One of them is the search for efficiency in dealing with information, energy and production in the quest for lean production, with products specifically created not only for whoever needs them when he or she needs, but also in the same place (or at least, as near as possible to the place) where it will be used or consumed. The second strong motivation is the desire to use local and minimal resources. A third motivation is an interest in "quality of proximity": a perceived quality deriving from the direct experience of the place where a product comes from and of the people who produce it, as with the creation of new local food networks in which citizens and farmers are linked at the local level. [19, 20] Last but not least, there is a growing demand for self-sufficiency (in food, energy, water, and products), in order to promote community resilience to external threats and problems. [22, 7]



**STRENGTHENING SYSTEMS** By diversifying our living environments we can create more complex and resilient systems. Focusing on local resources and reducing distances between production and use can result in a stronger collection of communities.

#### SUSTAINABLE QUALITIES

Distributed systems are the result of complex, innovative processes in which technological components cannot be separated from social ones. While centralised systems can be developed without considering the social fabric in which they will be implemented, this imposition is impossible when the technological solution in question is a distributed one; the more a system is networked, the larger is its interface with society and the more the social side of innovation has to be considered. In other words, with regards to our discussion here, we can say that no resilient systems can exist without social innovation.

Considered all that, the good news is that social innovation is spreading worldwide. [16, 17] And that the emerging ways of living and producing these innovations generate are largely convergent with the trend toward resilient distributed systems. In fact, in its complexity and with all its contradictions, contemporary society is developing a growing number of interesting cases in which people have invented new and more sustainable ways of living. [15] We are increasingly seeing, for example,

groups of families sharing services to reduce economic and environmental costs, while also improving their neighborhoods; new forms of social interchange and mutual help, such as time banks; systems of mobility that present alternatives to individual ownership and use of cars, such as car sharing, car pooling, and the rediscovery of bicycles; and the development of productive activities based on local resources and skills that are linked to wider global networks (e.g., certain products typical of a specific place, or the fair and direct trade networks between producers and consumers established around the globe). Further examples touch on every area of daily life and are emerging all over the world. (To read more about them, see: DESIS.) [4]

Being localized, small, connected and open (to others' ideas, culture and physical presence), these promising social innovations actively contribute to the realization of resilient, distributed socio-technical systems. And vice versa: distributed socio-technical systems may become the enabling infrastructure of a society where these kinds of social innovations can flourish and spread. [12]

Behind each of these promising social innovations there are groups of people who have generated them—groups of creative and entrepreneurial people who invented, enhanced and managed innovative solutions, recombining what already exists without waiting for larger changes in the system (in the economy, in institutions, in large infrastructures). Creative communities that challenge traditional ways of doing things introduce behaviours that, often, present unprecedented capacities for bringing individual interests into line with social and environmental ones (for example, they often incidentally reinforce the social fabric). In doing so, these communities generate ideas about a more sustainable wellbeing—a wellbeing where greater value is given to a new set of qualities. [8]

People involved in these innovations compensate for their reduction in consumption of goods and space with an increase in something else that they consider more valuable. This "something else" is qualities of their physical and social environments that, for them, substitute for the unsustainable qualities that have been predominant in industrial societies until now. The most evident newly valued qualities are the recognition of complexity as a value; the search for dense, deep, and lasting relationships; the redefinition of work and collaboration as central human expressions; and the human scale of the socio-technical systems and its positive role in the definition of a democratic, human-centered, sustainable society. The qualities that these frameworks generate radically diverge from the ones that mainstream models have spread worldwide in the last century. For this reason, we can refer to them, as a whole, as "disruptive qualities"—qualities that clash with mainstream ways of thinking and doing.

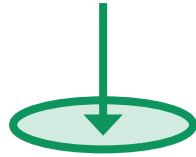
In this battle between cultural and behavioral models, several different social actors play a role. Among them designers (who are, or should be, the most influential players when the topic at stake is daily life experience and its quality) are doing their part, on both the sides of the front. In the past, they did a lot to promote the past century's unsustainable qualities. Today, many of them are continuing in this same old direction. But others are starting to play a different role (and a potentially very important one) in promoting the new, sustainable, disruptive qualities. This battle is still at its beginning. It is, and will be, a dramatic, fascinating confrontation.

“  
DISTRIBUTED SYSTEMS ARE  
THE RESULT OF COMPLEX,  
INNOVATIVE PROCESSES IN WHICH  
TECHNOLOGICAL COMPONENTS  
CANNOT BE SEPARATED FROM  
SOCIAL ONES.  
”

SMALL



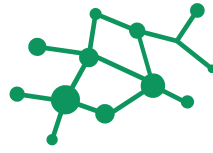
LOCAL



OPEN



CONNECTED



### EMERGING SCENARIO

Resilient systems and sustainable qualities are two elements of an emerging scenario characterized by four adjectives that appeared several times in the previous paragraphs: small, local, open, and connected. Considered together, these four adjectives outline the emerging scenario's main characteristics. Individually, they are comprehensible (since everybody can easily understand their meanings and implications) but, considered as a whole, they generate a totally new vision of how a sustainable, networked society could manifest. In my view, this SLOC Scenario (where SLOC stands for small, local, open, connected) could become a powerful social attractor, capable of triggering, catalysing and orienting a variety of social actors, innovative processes and design activities [9,10].

More precisely, the SLOC Scenario is neither a dream nor a forecast of what the future will be. It is a motivating vision of what the future could be if a large number of social actors move in the direction that it indicates as viable and desirable [12]. To be implemented, therefore, the SLOC Scenario requires a large number of converging design programs to focalize and develop an array of themes that, as a whole, outline a possible (and in my view necessary) design research program. These themes include collaborative solutions (systems of products, services, and communication capable of empowering people and communities to collaboratively solve everyday life problems); updated craftsmanship (the development of traditional and high-tech craftsmanship within the framework of the network society); territorial ecology (the sustainable valorisation of the physical and social resources of a given place or region); and sustainable qualities (the widening and deepening of emerging qualities that are driving people's choices toward more sustainable ways of being and doing).

### REFERENCES

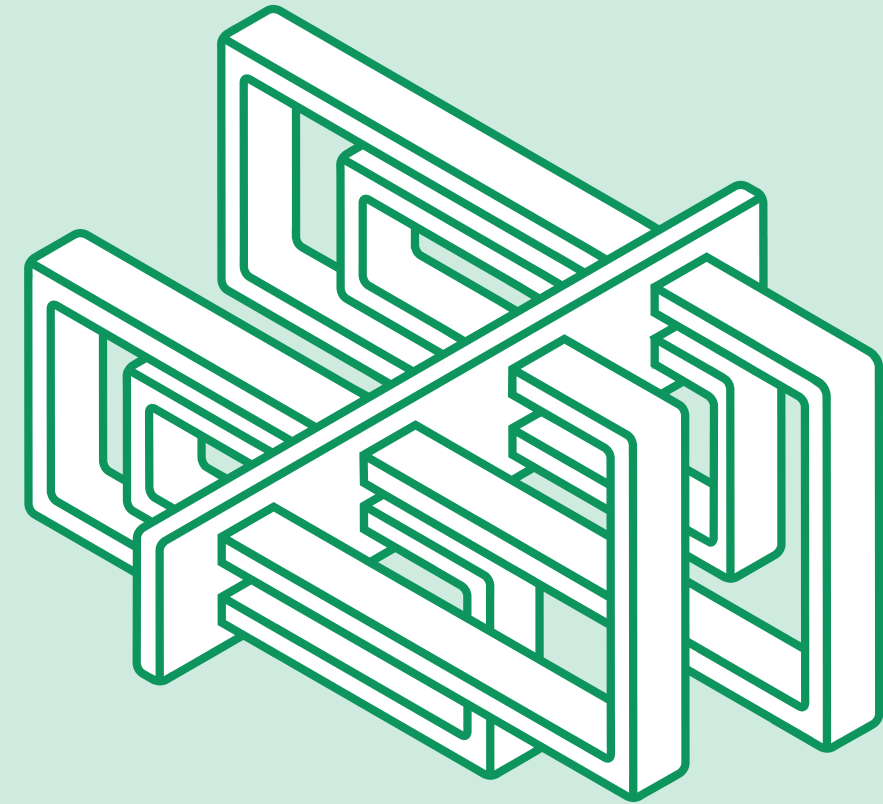
[1] Bauwens, M. Foundation for P2P Alternatives, Peer to Peer and Human Evolution, 2007. p2p.foundation.net [2] Beck, U. Risk Society. Polity Press, Cambridge, UK, 1992. [3] Biggs, C., Ryan, C. and Wisman, J. Distributed Systems: A design model for sustainable and resilient infrastructure. VEIL Distributed Systems Briefing Paper N3, University of Melbourne, Melbourne, 2010. [4] DESIS, 2012. <http://www.desis-network.org> [5] Fiksel, J. Designing Resilient, Sustainable Systems. Environmental Science and Technology, 37, 5330-9. [6] Hopkins, R. The Transition Handbook: from oil dependency to local resilience. GreenBooks, UK, 2009. [7] Jégou, F. and Manzini, E. Collaborative Services Social Innovation and design for sustainability. Polidesign. Milano, 2008. [8] Johansson, A., Kish, P. and Mirata, M. Distributed economies. A new engine for innovation. in the Journal of Cleaner Production, Elsevier, 2005. [9] Manzini, E. Small, Local, Open and Connected: Design Research Topics in the Age of Networks and Sustainability. Journal of Design Strategies, 4 (1). [10] Manzini, E. SLOC, The Emerging Scenario of Small, Local, Open and Connected. in Harding, S. ed., Grow Small Think Beautiful, Floris Books, Edinburgh, 2011. [11] Manzini, E. Error-Friendliness: How to Design Resilient Socio-Technical Systems. in Goofun, J. ed. Scarcity: Architecture in and Age of Depleting resources, Architectural design, 2012. [12] Manzini, E., Jégou, F.

To conclude, to make the SLOC Scenario meaningful, motivations and implications clearer (and to underline its novelty), let's take a step back in time. Some forty years ago, E.F. Schumacher wrote his famous book Small is Beautiful [19]. At the time, he made a choice in favour of the small and local on cultural and ethical grounds as a reaction to the prevailing trend toward the large scale, standardization and loss of sense of place he saw around him. Today, we follow Schumacher for these and other new and compelling reasons. But at the same time, we have to recognize that in these four decades things have deeply changed. What at Schumacher's time was only a utopia is today a concrete possibility.

Forty years ago, the "small" that Schumacher referred to was really small. In fact, it was so small, it had little chance of influencing things on a large scale. The same can be said for his concept of "local" – it was truly local as it was (quasi) isolated from other locals. In contrast, at the time, technological and economic ideas were largely driven by ideas of economy of scale and "the bigger the better". Prevailing trends discounted any possibility that the small could be beautiful if economy and effectiveness were taken in account.

Today, as we have seen, the context is extremely different. Today, the small can be influential on a large scale, as it acts as a node in a global network. The local can break its isolation by being open to the global flow of people, ideas and information. In other words, we can say that today, in the networked society, the small is no longer small and the local is no longer local. The small and the local, when they are open and connected, can therefore become a design guideline for creating resilient systems and sustainable qualities, and a positive feedback loop between these systems.

and Meroni, A. Design orienting scenarios: Generating new shared visions of sustainable product service systems. UNEP in Design for Sustainability, 2009. [13] Meroni A. Creative communities. People inventing sustainable ways of living, Polidesign, Milano, 2007. [14] Mulgan, J. Social innovation. What it is, why it matters, how it can be accelerated, Basingstoke Press, London, 2006. [15] Murray, R., Caulier-Grice, J. and Mulgan, G. The Open Book of Social Innovation, NESTA Innovating Public Services, London, 2010. [16] Pehnt et al. Micro Cogeneration: Towards Decentralized Energy Systems, Springer, Berlin, 2006. [17] Petrini, C. Slow Food Nation. Why our food should be good, clean and fair, Rizzoli, Milano, 2007. [18] Petrini, C. Terra Madre. Forging a new network of sustainable food communities, Chelsea Green Publishing Company, London, 2010. [19] Schumacher, E.F. Small is Beautiful, Economics as if People Mattered, Blond and Briggs, London, 1973. [20] Thackara, J. In the bubble, Designing in a complex world, The MIT Press, London, 2005. [21] von Hippel, E. The Democratization of Innovation, MIT Press, Cambridge, 2004. [22] Walker, B., and Salt, D. Resilience Thinking - Sustaining ecosystems and people in a changing world. Island Press, Washington, 2006.



# PATTERNING DIALOGUES

## HOW STRUCTURED ITERATION SUPPORTS CHANGE

by LOUISE ST. PIERRE & MARI NURMINEN

### DESIGN RESEARCHERS AT POWERTECH LABS

Sarah Bailey  
Kevan D'Agostino  
James Hallam  
Cléa Lautrey  
Amanda Leppi  
Nayeli Santos

### ADDITIONAL FACULTY

ecoTANK core studio 2013:  
Helene Day Fraser and Sarah Hay

### FUNDING

Natural Sciences and Engineering  
Research Council of Canada

A good conversation can change everything. As this three-year partnership between Powertech Labs and Emily Carr University demonstrates, good conversation can seed insights and change trajectories. In our case, iterative dialogue clarified business strategy, identified new markets, and deepened understanding about the technical and social systems surrounding the use of energy in British Columbia. It also helped us realize how important it is to connect with local communities when implementing sustainable change.

At the onset of the relationship, there were many unknowns. Powertech Labs, an engineering and testing company for the energy industry, had no prior exposure to design. Industrial designers at Emily Carr had little experience testing design methods for sustainability. Working together, we developed a structured dialogue that allowed for experimentation, reflection, and regular revision to our approaches.

There were three distinct phases over the three years. Each phase featured design research conducted during the summer term that provided a foundation for students who were working to develop ideas and concepts in the sustainable design studio course that was scheduled to follow (ecoTANK). The regular pacing of the phases allowed time for the learning on both sides to guide the relationship.



### PHASE 1: CLEANER TRANSPORTATION

The first phase is best understood as typical design collaboration. Our focus was on the transition to cleaner transportation solutions, particularly electric vehicles (EVs). Powertech Labs was interested in exploring new market opportunities in EV-related services, but as a company that normally worked directly with other businesses, they were not familiar with researching and working with consumer-driven markets.

The partnership with Emily Carr University was Powertech's first step towards including design as a part of their innovation process. In the summer of 2010, we placed two student design researchers inside Powertech Labs. They were given a framed set of research questions and two very specific tasks.

They were to function as design ambassadors to help Powertech Labs understand what industrial design could offer them. To this end, the design researchers used formal and informal methods to communicate ideas and make their progress visible. They posted design drawings and presentation panels in common spaces, engaged the employees in casual hallway conversations, invited these new colleagues to brainstorm with them, and prepared formal project presentations.

Parallel to this, they conducted preliminary design research to understand the social and cultural barriers impacting the adoption of EVs. They used many methods in this research-intensive summer including interviews, observations, scenario building, system analysis, inspiration gathering, and prototyping. In addition to end user and secondary research, they solicited input from engineers at Powertech Labs about current technical capabilities, infrastructure constraints, and challenges related to charging EVs.

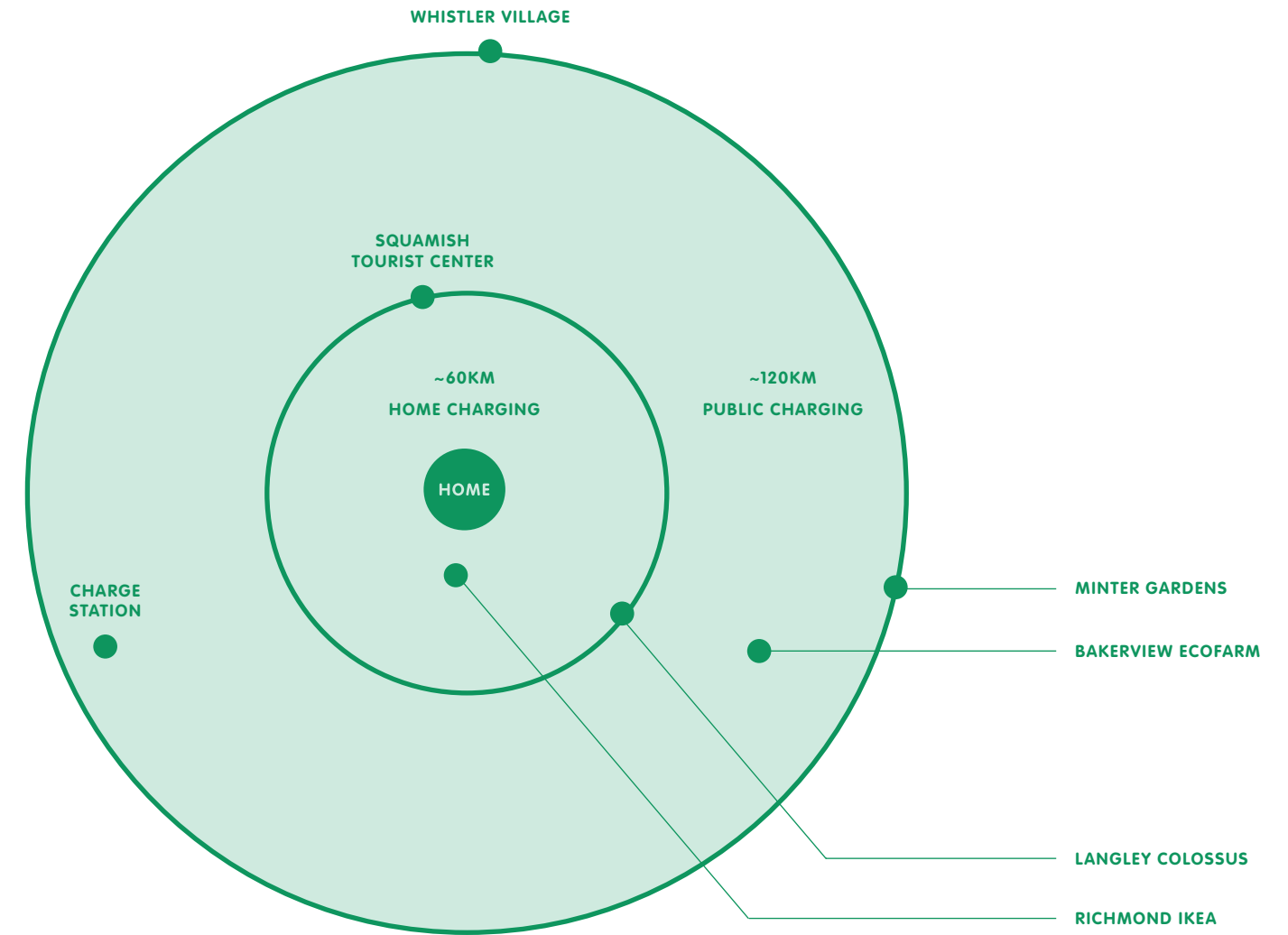
The findings of the research team helped Powertech Labs understand how end users perceived EV-related innovation. Several emotional and practical barriers to the shift from conventional gasoline powered vehicles were identified: the amount of time it took to charge a vehicle, the limited travel distance with one charge, and the generalized fear of new technology. Figure 1 shows a probable mental model for how an EV driver in Vancouver might plan a drive. This illustrates how different it is from planning a trip with a gasoline powered vehicle. Academic research describes how the disruptive nature of change [1, 3, 6] can

be mediated by engaging the public end-users when developing new solutions. Further, when discussing the standard barriers to the diffusion of innovation (figure 2), Rogers suggests that one way to overcome them is by aligning with the values, needs, and practices of our existing social system. [5]

In addition to the social system, EV charging solutions must integrate with the existing physical systems, such as the electrical grid. Considering how much EVs change the way we fuel our vehicles as well as the related business models, we learned how important it is to find right balance between system disruption and alignment with existing systems. For example, we experimented with building on familiar and well-accepted concepts by placing the chargers in parking lots and powering them from the electric grid. This did not divert us from sustainability related goals, as electricity is 90% hydroelectric in British Columbia. [2]

To initiate the second half of phase 1, the research team handed off their findings to students in the ecoTANK studio. This new group of students developed EV charging concepts. Book 30 was a mobile app that would help people coordinate the thirty minutes of charging time with nearby service opportunities such as haircutting, a massage, or grocery shopping. Rest and Recharge was a scheme to set up charging stations at rest stops across Canada that would allow families to enjoy unique aspects of a region while waiting for their car to charge. Other students focused on social and cultural norms. The Queue Report challenged the North American expectation for speed and efficiency, and suggested that we might design situations differently so that waiting might be reframed as an enjoyable activity.

At the end of the 2010 fall semester the students presented 12 different ideas to Powertech Lab executives and initiated a wide-ranging dialogue. This revealed new market opportunities and customer segments for the company to pursue. It also facilitated a shift from in thinking—from the installation of charging stations as an engineering task, to designing the user experience around charging. In many cases, this would have been hailed as a successful completion to the project, but our collaboration continued through two more iterations. This is where greater learning took place.



**FIGURE 1.** Getting drivers to re-think transportation lengths and routes was an important Powertech initiative. By placing electric vehicle charging stations in strategic points in and around Vancouver, new attitudes towards route planning and transportation can be created.

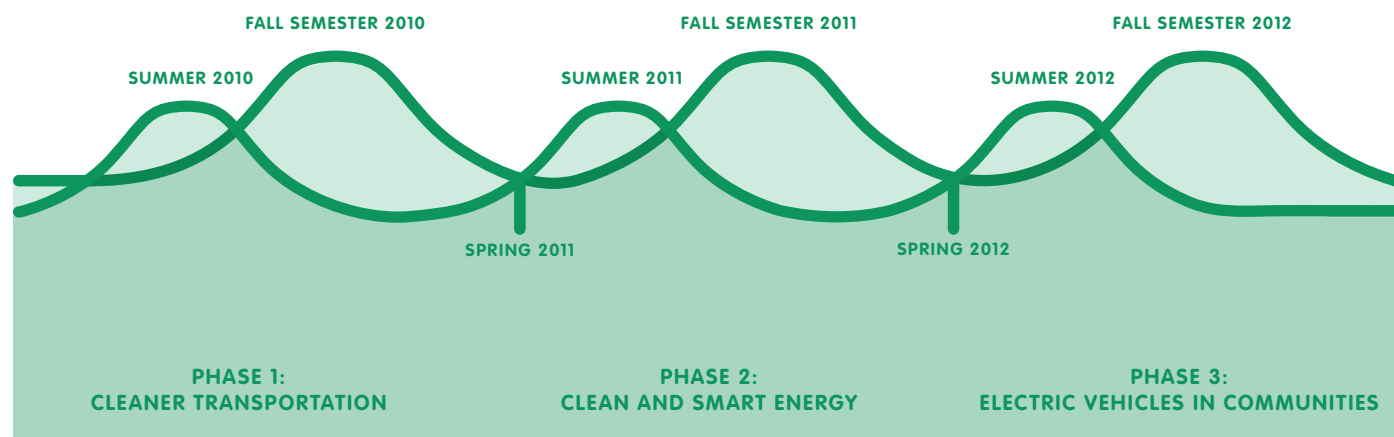
### PHASE 2: CLEAN AND SMART ENERGY

Encouraged by the new strategies developed for EV charging in phase 1, Powertech Labs requested exploration about a different topic the following year: energy consumption in the home. At the time, Powertech was doing a business analysis to see if they were going to enter the energy management market at the consumer level, and Emily Carr was interested in investigating how design could support energy reduction. Most available data shows that energy consumption is steadily increasing across North America. [7]

As with the previous phase, this was divided into two parts. In the summer of 2011, the design research team conducted probes and contextual interviews to understand power usage in the home. They learned about the electric power system and related technologies from Powertech Labs' engineers. The preliminary findings were presented to a new group of students in the fall ecoTANK studio, and these students developed proposals. Plug-E was a power socket that would respond with fearful

facial expressions if you were overloading it. Planet Chef was an online game that coordinated a cooking competition potluck that included criteria about the amount of power used during cooking. Students also looked at alternative energy sources to offset supply from the grid, so some projects harnessed solar energy to power small appliances, or collected kinetic energy that is generated in domestic activity.

Once again, prototypes, models, videos and storyboards were brought to Powertech Labs for discussion. This had unexpected results. Through this conversation, Powertech gained enough understanding of behaviours and values around energy management at the consumer level to help them see clearly that this was not an attractive market. This exemplifies the value of exploratory questioning, followed by thoughtful reflection. Realizing what will not work is as important as gaining insights into what will work.



### PHASE 3: ELECTRIC VEHICLES IN COMMUNITIES

By 2012 the ground had shifted. Powertech Labs now employed the summer researchers as designers working alongside their first in-house designer. Design had become part of their business. The learning engendered through the first two phases, along with this new internal expertise, helps us to establish new objectives: Powertech now wanted to engage with communities to determine what EV charging stations could look and feel like in their neighborhoods, and to reveal engagement and social innovation opportunities at the community and municipal level.

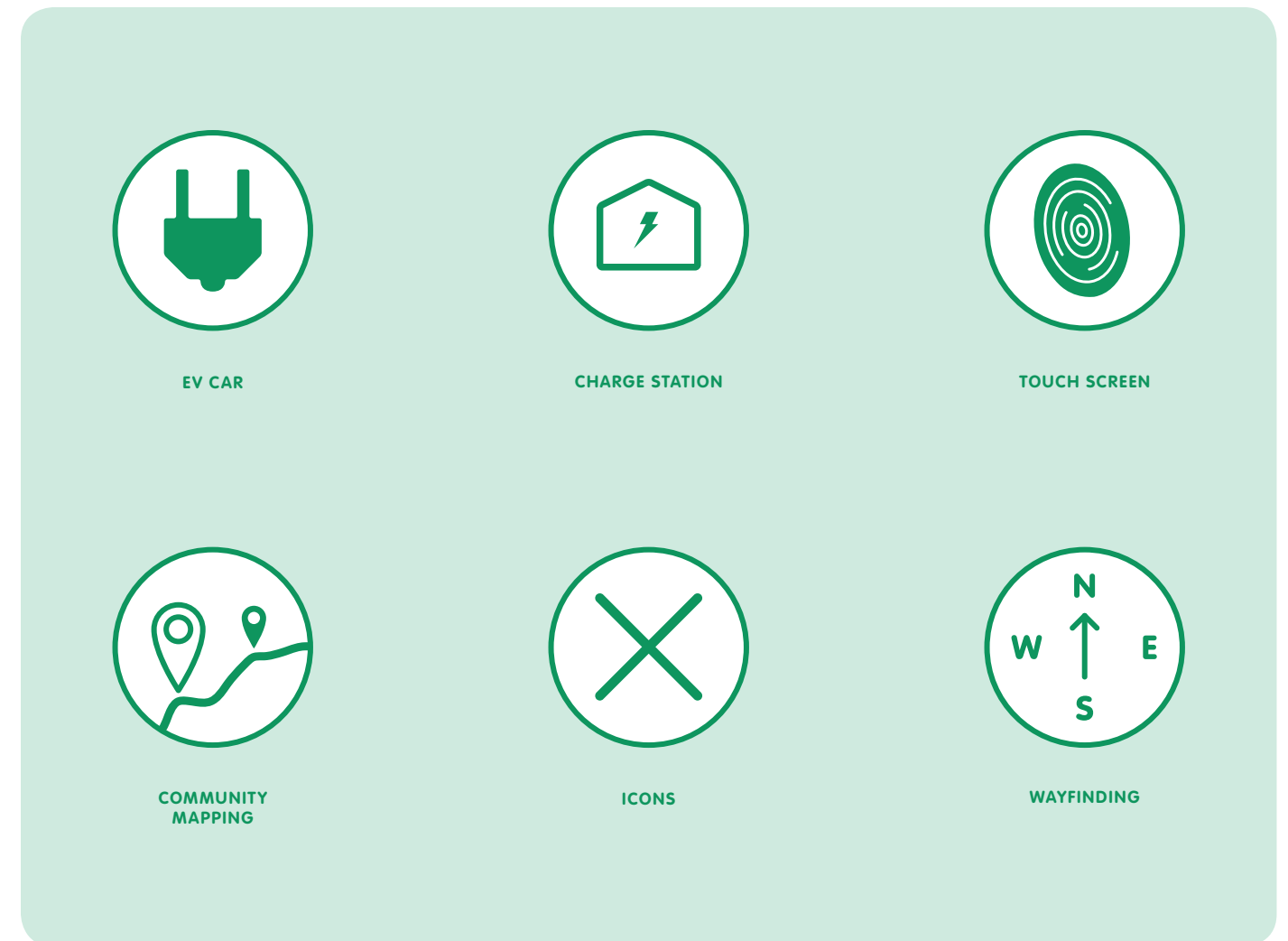
This shift to researching specific and locally grounded innovation enables what Ezio Manzini would call "quality of proximity." [4] The design proposals that resulted during the 2012 ecoTANK core studio provide examples of this. ElectriCity Culture Tours was a tour company that mapped sustainable initiatives and companies around Vancouver. Participating communities would implement EV charging stations combined with a tour hub that would supply access to local tours, EVs, and information. The EV Beacon integrated a charger with a projector that could display large images to create a point of reference, information, and interaction at that location. This would offer an incentive for cultural institutions to become early adopters of the EV charging infrastructure. Explore Local; Drive Change was a program to incentivize or "drive" change in communities. Using the Commercial Drive area of Vancouver as a case study, the project proposed to create incentives for EV use by connecting EV charging with opportunities to support local businesses.

The work done in phase three reaffirmed the importance of designing for local context, with local communities. These projects built on the knowledge gained in phase one, where it became clear that dealing with the social side of the innovation was as important as dealing with the technological side, and that sustainable design could not progress without social innovation.

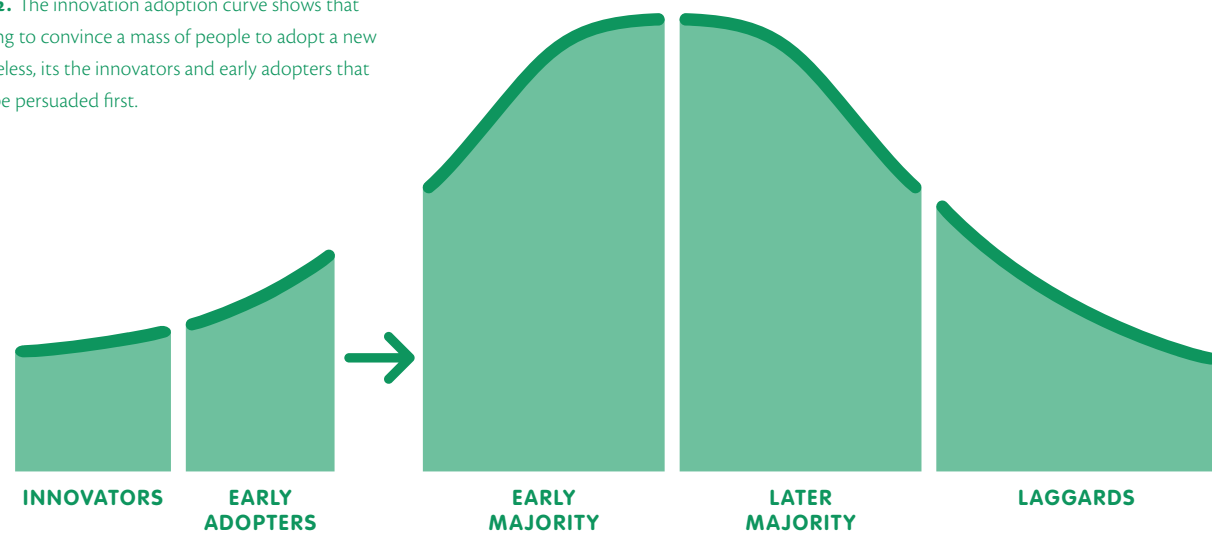


**EXPLORE LOCAL; DRIVE CHANGE (OPPOSITE PAGE)** The program aimed to connect EV charging stations with local Vancouver businesses. This was meant to incentivize EV use while also supporting the local community.

**ELECTRICITY CULTURE TOUR SYSTEM COMPONENTS** Tapping into Vancouver's strong tourism industry, Electricity would promote electric vehicles, sustainable community activities, and a "green" Vancouver to visitors.



**FIGURE 2.** The innovation adoption curve shows that attempting to convince a mass of people to adopt a new idea is useless, it's the innovators and early adopters that need to be persuaded first.



Geoffrey Moore, Crossing the Chasm: Marketing and Selling Disruptive Products to Mainstream Customers, 2002

### SUMMARY THOUGHTS

The essence of this collaboration is that multiple modes of conversation over a period of time allowed for effective reflection. Design research in phase one illustrated the scope of the challenges in shifting to EVs. In phase two, demonstration prototypes helped Powertech Labs visualize and discuss the boundaries of their core business. These conversations and reflections led to the phase three shift from a single user to local communities. This process resulted in actionable design solutions for Powertech Labs, and a deeper understanding of sustainable design.

The iterative approach to the project also allowed us to modify our collaborative strategy based on the company's state of readiness for design and community engagement. In the early project stages, the process was more structured, allowing Powertech Labs to become comfortable with a design approach to innovation. As the project moved to the second year and Powertech Labs became more familiar with design, we used generative approaches to explore more freely. In the third phase, Powertech Labs took more leadership in defining a research focus based in community engagement. The pacing and reflexive nature of the

process allowed Emily Carr to understand the mindset and receptiveness that the partner company had towards design and social innovation, and to adapt as those needs changed. It illustrates how conversations between companies, designers, and communities that include critical reflection and constant revision can help us discover a way to a sustainable future.

### REFERENCES

- [1] Christensen, C. and Raynor, M. (2003). The Innovator's Solution. Boston: Harvard Business School Press. [2] Rogers, E. (1995). Diffusion of Innovations (4th ed.). New York, NY: The Free Press. [3] Leonard, D. (1998). Wellspring of knowledge - building and sustaining the sources of innovation. Boston: Harvard Business School Press. [4] Veryzer, R. and Mozota, B. (2005). The impact of user-oriented design on new product development: An examination of fundamental relationships. The Journal of Product Innovation Management, 22, 128-143. [5] International Energy Agency, 2008, Worldwide Trends in Energy Use and Efficiency, Page 43, <http://hopi.iea.org:10000/search/search/C.view=default/results?q=usage+trends>, accessed January 28, 2013 [6] BC Hydro (2013). Generation System. [http://www.bchydro.com/energy\\_in\\_bc/our-system/generation.html](http://www.bchydro.com/energy_in_bc/our-system/generation.html). Accessed January 26, 2013

# NEW SPACES, PLACES & MATERIALS FOR CO-DESIGNING SUSTAINABLE FUTURES

by LIZ SANDERS



If we're to design sustainable futures, we'll need to do it collectively. How can we foster collective thinking and creativity? Unfortunately, we don't know much about the spaces, places and materials that can support and inspire collective creativity. It's time we learned.

## EVERYTHING IS SOCIAL NOW

Design has been growing in scope to embrace the larger social contexts of products and services. In the past, design was focused mainly on material concerns with the embodiment of design ideas in the form of products, environments or communication systems. But now the conversation is about design for experience, design for service, and design for transformation. Everyone wants to play in the social design spaces. Designers, students and educators talk about design for social good and design for social impact. People from the business community talk about social innovation. The art community is exploring social practice. Social practice can mean anything from art work about social issues, to provocative art installations, to community-based, participatory practices.

Who will be involved in the emerging social design spaces? What roles will designers play when everything is social? The answers to these questions will vary depending upon the mindsets of the people involved.

## THREE DISTINCT MINDSETS ABOUT SOCIAL DESIGN CAN BE SEEN IN PRACTICE

Social design spaces are proliferating rapidly and the landscape can be confusing. But some patterns can be seen. Designers have (at least) three mindsets to choose from:

- 1. DESIGN FOR PEOPLE:** Here designers are considered to be the experts in designing for others. The focus in practice is on the traditional forms and formats of objects, spaces and systems.
- 2. DESIGN WITH PEOPLE:** Here designers take on new roles. Because they invite end-users and other stakeholders into the design process as co-designers, designers become facilitators who help others to be creative. An advantage to this approach is that the co-designers will take pride in and ownership of the process, leading to sustainable results.
- 3. DESIGN FOR CHANGE:** Here designers turn to the applied social sciences and use probing, provoking, and other interventional means of getting people to change their behavior. For example, this approach is being explored in addressing healthcare situations such as obesity. But some people are concerned with this approach since it has the potential to infringe on personal rights.

In this short paper I'll talk mainly about design with people where designers learn to facilitate the creativity of others. In order to design with people we need to know more about how spaces, places and materials can contribute to creativity.

## CONTEXTS OF CREATIVITY: A FRAMEWORK

There are many competing theories about what creativity is and how it works. Contexts of Creativity [8] is not another theory about creativity. Instead, it is a framework for organizing what we know about creativity in order to help people facilitate the creativity of others. Figure 1 shows the layers of context that contribute to individual creativity. It shows that individual creativity is not only in the head (as once was thought)

but in the heart as well because creativity is affected by emotion. And creativity takes place in the body. It is evoked through activity and motion. [4] And the last layer shows that creativity is affected by the environment and the materials that are present.

Collective creativity is shown in Figure 2 as a group of diverse individuals connected in thought and action while working together on a very big idea (i.e., the green splat). Collective creativity uses all of the contexts of creativity (head, heart, body, places, spaces and materials) to support and scaffold the shared space of thoughts and ideas. When collective creativity is working well, everyone contributes simultaneously to the big picture that comes from the shared mind and body space. The co-construction of the big picture is essential for collective creativity and this is where the importance of the materials comes into play. The tools and materials must possess generative potential. [7] Communication design will soon undergo radical transformation as we learn more about creating such materials and tools to support and provoke creativity.

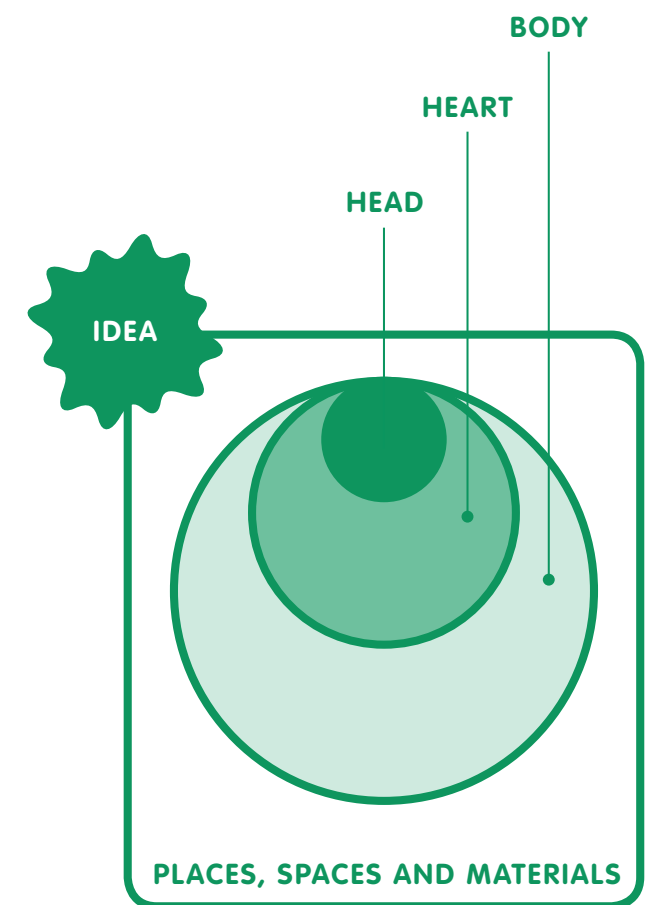


FIGURE 1. Individual creativity

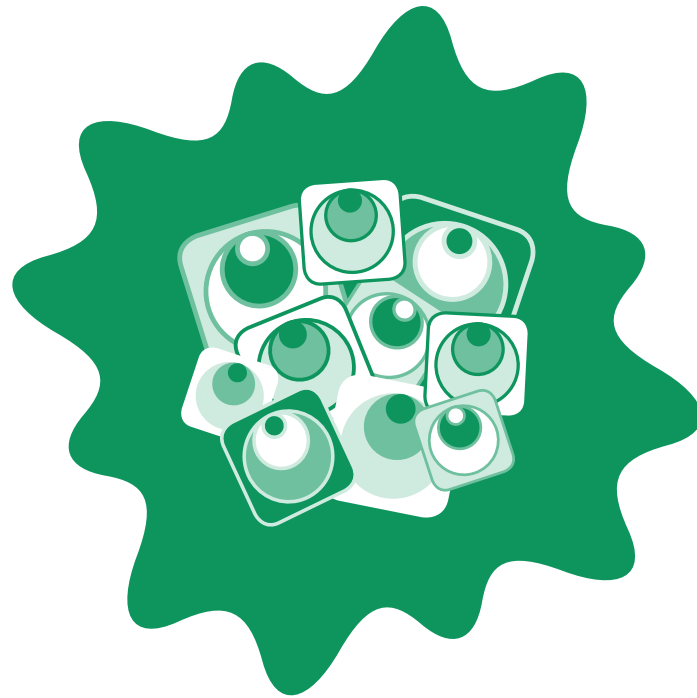


FIGURE 2. Collective creativity

INDIVIDUAL CREATIVITY	COLLECTIVE CREATIVITY	
[Large splat icon]	[Small splat icon]	THE SOCIO-CULTURE SPACE
[Medium splat icon]	[Small splat icon]	THE PHYSICAL ENVIRONMENT
[Small splat icon]	[Small splat icon]	THE SPACE OF TOOLS AND MATERIALS

FIGURE 3. How much we know about creativity

### HOW MUCH DO WE REALLY KNOW ABOUT CREATIVITY?

We know a lot about creativity in individuals but very little about creativity shared between people. [8] The matrix in Figure 3 distinguishes between individual and collective creativity across three levels of context that could affect the output of creativity: the socio-cultural space, the physical environment, and the space of tools and materials. The size of the splat indicates the amount of research in each of the cells. We know the most about individual creativity in the socio-cultural space, followed by individual creativity in the physical environment. The other four cells are largely unexplored. (But see Sanders [8] for more information on these four cells).

There is not much research at all on collective creativity. There is some, such as socio-technical environments to support “social creativity” in urban planning, collaborative learning, and collaborative software design. [3] But there’s not much more than that. And there’s not much research about the impact of tools and materials on creativity, although this is an area that I have explored in practice and described in a book called Convivial Toolbox. [7]

### SOURCE OF INSPIRATION: TRANSFORMATIONAL GROUP EXPERIENCES

Since we don’t have much to draw on from the published research on the impact of spaces, places and materials on creativity, it makes sense to look for other sources of inspiration.

Renee Levi [5] studied transformational group experiences and found, unexpectedly, that the “place or space in which magical moments in groups happened was identified by over half of the study’s participants as influencing their felt shift from a collection of individuals to a true

collective able to think and work together.” This finding was surprising to Levi in that she did not anticipate it, nor did she ask about it. She explored extraordinary group experiences further [5] and found the following qualities to be important.

- The place is distant from people’s daily lives.
- There are welcoming elements of the facility (e.g., long entrance roads, people to greet you).
- The main meeting room is the right size and shape.
- There are places for sitting and walking side by side.
- The space contains symbols (e.g., objects or materials) that can be called upon to evoke meaning.
- There are open interior spaces with both public and private spaces available within them.
- The windows offer views of nature.
- Natural materials have been used in construction.
- The space contains elements that remind people of home.
- The food is fresh and healthy.
- There are opportunities for people to explore and challenge themselves.

Levi’s research covered many other qualities of transformative spaces. The list above describes only the physical environmental attributes.

### ANOTHER SOURCE OF INSPIRATION: REGGIO EMILIA PRESCHOOL

Inspiration comes also from alternative approaches for the education of very young children: Waldorf, Reggio Emilia and Montessori. [2]The Reggio Emilia approach is explicit about the environments and materials needed to scaffold the child’s learning. In fact, Reggio Emilia practitioners refer to the environment and the materials available in it as the

“third teacher” (who is in addition to the two teachers who collaborate daily on each child’s learning journey).

The spaces, places and materials in a Reggio Emilia school are described as follows (adapted from Caldwell). [1]

- The front door welcomes you.
- Natural light flows into as many parts of the space as possible.
- The halls are much larger than normal, with places to stop and sit as you go.
- There are studio spaces in each classroom as well as spaces designated for small and large group activities.
- Provocation stations with carefully selected and arranged materials invite manipulation and exploration along a specific theme.
- Large inner windows connect the interior spaces.
- Wall-size outer windows provide views to the outside and doors to the outside can be found in every classroom.
- The walls are painted a neutral color so that you can see the children’s projects that are exhibited on the walls in the classrooms and the hallways.
- There is documentation about each project in the form of statements made by the children as they talked about their projects.
- A wide range of quality materials is available: tempura paint, watercolor, wire, weaving, collage, natural materials, cardboard/paper construction, and light, color and transparency at the light table.
- These materials are beautifully arranged and displayed in containers that sit on low shelves backed by mirrors.

For photos of Reggio Emilia inspired environments and materials, see <http://pinterest.com/search/pins/?q=reggio+emilia+spaces>

### IMAGINE A FUTURE

What if we combined the qualities of Reggio Emilia preschool environments with the qualities of transformational group spaces to create spaces, places and materials for adults to engage collectively in creative thinking and making? These environments for co-designing will have a positive impact on people’s ability to address complex social issues and imagine future possibilities. They will be the new materializations of the social design spaces. If we learn to master the new spaces, places and materials for co-designing, we’ll see a future capable of supporting new levels of conviviality and cultural sustainability.

### REFERENCES

- [1] Cadwell, L.B. Bringing Reggio Emilia Home: An Innovative Approach to Early Childhood Education. Teachers College Press, New York, 1997. [2] Edwards, C.P. Three approaches from Europe: Waldorf, Montessori and Reggio Emilia. *Early Childhood Research and Practice*, 4 (1), 2002 [3] Fischer, G. Social creativity: Making all voices heard. in *Proceedings of the HCI International Conference (HCI)*, (Las Vegas, 2005). [4] Leung, A.K.-y., Kim, S., Polman, E., Ong, L.S., Qiu, L., Goncalo, J.A. and Sanchez-Burks, J. Embodied metaphors and creative “acts.” *Psychological Science*, 23(5). 502-509, 2012 [5] Levi, R. Group Magic: An Inquiry into Experiences of Collective Resonance. *Dissertation Abstracts International* (UMI No. ATT3098829), 2003. [6] Levi, R. The Powers of Place: An Inquiry into the Influence of Place, Space and Environment on Collective Transformation. 2008. Retrieved from [http://www.collectivewisdominitiative.org/papers/levi\\_place.pdf](http://www.collectivewisdominitiative.org/papers/levi_place.pdf) [7] Sanders, E.B.-N and Stappers, P.J. *Convivial Toolbox: Generative Research for the Front End of Design*. BIS Publishers, NL, 2012. [8] Sanders, E.B.-N. Creativity in strategic thinking. in Wolters, H.M.K., Grome, A. and Hinds, R. eds. *Enhancing the Army’s Strategic Thinking Capability: Insights to Assess, Develop, and Retain Strategic Thinkers*, Research Report for U.S. Army Research Institute for the Behavioral and Social Sciences, 2012.



# CO-CREATING SPACES: THE TAG PROJECT

by BEAYUE LOUIE

## KEYWORDS

co-design, design constraints, interactive textiles, children, learning disabilities, participatory design, sustainable thinking, systems

## ABSTRACT

This article examines how participatory design strategies can serve as an effective tool when working with multiple design constraints. Emily Carr University of Art and Design students were asked to collaborate with children with special learning needs to create a textile-based product from reclaimed fabric that endorsed sustainability among both the users and the designers.

Kenneth Gordon Maplewood School (KGMS) is an independent school that specializes in teaching children with dyslexia and learning disabilities. Owned and operated by The Society for the Education of Children with Specific Learning Disabilities, KGMS employs the Orton-Gillingham teaching method, which favours visual, auditory, tactile and kinesthetic cues. [2] In 2010, KGMS relocated from Burnaby, British Columbia to its present location in North Vancouver, BC.

Second-year design students from Emily Carr University, working in pairs, were asked to create an interactive textile-based artifact or system that would encourage sustainable practices within the KGMS community. Each team was matched with a group of three to four Division 6 students from KGMS, who would serve as co-creators on the project. The resulting design would be gifted to KGMS and its students for implementation in their school.

## DEFINING THE PROBLEM

Prior to this project, the majority of our design briefs have been directed towards theoretical users and allowed for “blue sky” ideation – designing without limits. In order to gain practical experience, we were challenged to apply our knowledge and skills to a set of complex, real-world issues that contained multiple non-negotiable parameters. Working with users with very specific needs and limitations, we were asked to use participatory design techniques to create a product that not only encouraged sustainable practices, but considered such practices in all facets of the production process as well.

The project was subjected to numerous constraints. Our product had to:

- be made from reclaimed Sheerfill II-HT fabric (a fiberglass and polytetrafluoroethylene composite) from Canada Place’s former roof, donated by Re-Fab Vancouver;
- use only textile manufacturing techniques;
- not exceed 2 square metres in size;
- be made of repetitive elements;
- emphasize dynamic relationships;
- be geared towards children, factoring in ergonomics, safety, functionality and durability;
- take into consideration the learning needs of the KGMS students.

## METHODOLOGY

**PRELIMINARY RESEARCH** In order to present sustainability to the students in tangible, accessible terms, we elected to focus on environmental issues that were common to our region. Given KGMS’ proximity to the Burrard Inlet, we narrowed the initial scope of our research to environmental issues related to water, such as consumption, conservation and marine debris.

**CULTURAL PROBE** Based on our research findings, we created a cultural probe for each KGMS student that consisted of a team-building puzzle, exploratory drawing and collage exercises, a scavenger hunt and an ideation activity involving common recyclable objects. These probes, which would provide glimpses into the everyday lives of our students, were intended to serve “as beacons for [our] imagination.” [1, 3]

After receiving the completed probes back, we discovered that while our KGMS group was aware of the environment, their knowledge was limited to abstract recycling practices typically associated with public advocacy campaigns. Furthermore, they expressed little interest in the subject of water, rendering our preliminary research moot. Rather than relegate our students to the role of mere users, we abandoned our initial concept in favour of creating a co-design space at this early front end of the design development process where the KGMS students would work with us in a more emancipatory role. [4, 5]

**CO-DESIGN SESSIONS** To encourage free-form dialogue that would reveal potential design opportunities, we organized two co-design sessions that alluded to sustainability as a by-product of each activity rather than the focus.

The first session consisted of:

- a student-led tour of KGMS;
- a figurine workshop where each student:
  - created a superpower character using found objects and scrap material; and
  - after classifying their character as a hero or villain, determined what their character would do if it was on a planet with no trees, plants or water;
- a round robin storyboarding exercise that was altered on site, based on the student’s interests, into a friend-or-foe workshop where each student created an accessory, companion or enemy for their original character out of modeling clay.

The second session consisted of a material and form exercise that bore similarities to our own design exploration with Sheerfill II-HT fabric. Using only the scrap textiles we provided, the KGMS students were asked to make something out of at least two pieces of fabric that were connected together without the use of adhesives or fasteners.

## FINDINGS

The topic of superheroes dominated our co-design sessions. Rather than attribute this to a child’s preoccupation with fighting and adventure, however, we considered the subject from our students’ perspectives. Society, in general, regards literacy as a threshold indicator of success in both education and one’s profession later in life. For a child with learning disabilities, difficulties with the normative education system and failure to meet expectations frequently results in feelings of inadequacy. Superpowers grant an individual the ability to affect change or exert influence over an environment they might otherwise be powerless in. Focusing on the notion of changing or influencing one’s environment, we examined the different ways the word “environment” could be interpreted. We were particularly drawn to the notion of the environment as a social realm, a physical space and an ecological system.

**SOCIAL REALM** Personal computers and cell phones have become such common staples in our lives that texting and other social media



IT WAS IMPERATIVE THAT THESE CHILDREN FELT LIKE THEY BELONGED TO THE SCHOOL AND THAT THE SCHOOL BELONGED TO THEM.



exchanges via electronic mediums have dominated, and in some cases replaced, face-to-face communication. These interactions are particularly popular among younger generations for their convenience, instant gratification, lack of emotional accountability and exhibitionistic platforms. We wanted to explore ways to move social media actions such as “liking” and “re-tweeting” from the virtual world to the physical one to facilitate more enduring connections.

**PHYSICAL SPACE** We typically think about a physical space in terms of its functional utility. Is it big enough? Does it fit our needs? Does it look okay? We often forget that each space, like a person, has a unique identity that has been shaped by its physical form, social interactions and history. While we often connect emotionally to a space’s identity, we typically only realize it when it ceases to exist. As we were working with Canada Place’s roof fabric, BC Place, another iconic Vancouver structure, came to mind as an interesting example of this phenomenon. Following the transformation of the stadium’s pillowed, inflatable dome into a crown-shaped, retractable roof, the building felt strange against the downtown skyline despite the fact that the operations and other infrastructure remained the same.

KGMS’ recent relocation may have resulted in a similar emotional disruption in the students’ academic life. For children with learning disabilities, such a change can be particularly upsetting as school may already serve as a source of anxiety. To help the students rebuild their sense of school community, we brainstormed ideas that would encourage them to connect not only to each other, but to their physical surroundings as well. It was imperative that these children felt like they belonged to the school and that the school belonged to them.

**AN ECOLOGICAL SYSTEM** In addition to promoting up cycling, we wanted to influence how the students related to the environment. We frequently regard ecology as an abstract thing rather than as living systems. The danger in this characterization is that it reduces the environment and its resources to passive commodities for us to trade and use. We cease holding ourselves accountable to it. To combat this practice, we explored ways in which the KGMS space could play a more active role in the students’ daily interactions, increasing their attachment to their environment.

## PROJECT CONCEPT AND DESIGN

Combining social media exchanges with the act of graffiti, we came upon the idea of using tangible symbols, similar in aesthetics to apps and icons, to create a social forum that enabled students to influence both their physical environment and each other in manners similar to how they would in the virtual domain. The Tag Project, which consisted of three-dimensional, reusable symbols that could be affixed

to an object or surface directly or with the aid of a clothespin, would allow KGMS students to lay claim to or create a dialogue about their surroundings without physically damaging or adversely affecting others' enjoyment of it. Students would use these symbols to "tag" or comment on an object or area. Other students could agree, disagree or alter these declarations by moving, adding to or subtracting from the original tag.



To promote The Tag Project as a cohesive kit for a single KGMS classroom, 60 tags and 60 wooden clothespins were packaged together in reusable, recyclable plastic containers repurposed from 4-litre milk jugs. The kit contained 6 multiples of each of the following tags:



BOOK



LEAF



PAINT BRUSH



HEART



SMILEY FACE



EXCLAMATION MARK



MEDAL



A PAIR OF SPEECH BUBBLES



LIGHT BULB



BLANK TAG  
allowed students to contribute their own icon to the project's vernacular

The tags featured positive or neutral symbols that were suggestive enough to express clear opinions when used in isolation, but ambiguous enough that their meanings changed when used in conjunction with other symbols. Negative symbols were omitted to prevent misuse or bullying.



**TAGGING SPACE** The fabric tags combine visual elements from graffiti and digital media, giving students an engaging way to mark their school environment and build dialogues with other students.

## CONCLUSION

The greatest difficulties in any design project originate from the limitations imposed on designers by the user, materials and production requirements. This project was no exception. Rather than stifle us, however, these constraints allowed us to grow, as we were required to exercise more creativity and make smarter choices with fewer resources and liberties.

In addition to the valuable knowledge gained through the experience, the Tag Project resulted in:

- an image-based conversation forum that complemented the KGMS students' learning style;
- an additional teaching and feedback tool that the KGMS faculty could use to initiate discussions;
- a design aesthetic that pays homage to local fabric roof structures such as BC Place and Canada Place, the source of the product's material;
- minimized waste production through the use of reclaimed materials in both the product and packaging;
- a quick, low cost and efficient manufacturing process that could be duplicated on a larger scale; and
- absent fixed equipment costs, a standalone classroom kit that could be produced for less than \$10 in labour and new materials.

By employing various participatory design methods early on in the process, we were able to transform the project constraints into key features that added value to our design with potentially "positive, long-range consequences." [4] We achieved this by according equal if not

greater value to the opinions of our co-creators throughout the design development process, rather than our own. By allowing the voices of the KGMS students to direct the project rather than merely inform it, we were compelled to design directly for their needs rather than our interpretation of their needs.

## ACKNOWLEDGMENTS

We would like to thank Ellena Lawrence for her contribution and Hélène Day Fraser for her expertise and support during this project. We would also like to thank the students and staff of KGMS for their valuable insights and enthusiasm.

## REFERENCES

- [1] Cadwell, L.B. Bringing Reggio Emilia Home: An Innovative Approach to Early Childhood Education. Teachers College Press, New York, 1997. [2] Edwards, C.P. Three approaches from Europe: Waldorf, Montessori and Reggio Emilia. Early Childhood Research and Practice, 4 (1). [3] Fischer, G. Social creativity: Making all voices heard. in Proceedings of the HCI International Conference (HCI), (Las Vegas, 2005). [4] Leung, A.K.-y., Kim, S., Polman, E., Ong, L.S., Qiu, L., Goncalo, J.A. and Sanchez-Burks, J. Embodied metaphors and creative "acts." Psychological Science, 23(5). 502-509. [5] Levi, R. Group Magic: An Inquiry into Experiences of Collective Resonance. Dissertation Abstracts International (UMI No. ATT3098829), 2003. [6] Levi, R. The Powers of Place: An Inquiry into the influence of Place, Space and Environment on Collective Transformation. 2008. Retrieved from [http://www.collectivewisdominitiative.org/papers/levi\\_place.pdf](http://www.collectivewisdominitiative.org/papers/levi_place.pdf) [7] Sanders, E.B.-N and Stappers, P.J. Convivial Toolbox: Generative Research for the Front End of Design. BIS Publishers, NL, 2012. [8] Sanders, E.B.-N. Creativity in strategic thinking. in Wolters, H.M.K., Grome, A. and Hinds, R. eds. Enhancing the Army's Strategic Thinking Capability: Insights to Assess, Develop, and Retain Strategic Thinkers, Research Report for U.S. Army Research Institute for the Behavioral and Social Sciences, 2012.



# EAT ST. CASE STUDY

## DESIGNING INTERACTIVE COOKBOOKS

by CELESTE MARTIN

The introduction of tablets and ereaders marked not only the displacement of some cooking texts from printed books to screens but also opened up new possibilities for their use. Bringing tablets into the kitchen to follow recipes directly from their screen became the norm as they afford a large screen that allows people to read from a distance as well as a compact design and touch-based technology which makes interactions more fluid than with a laptop. Cookbooks designed for tablets pose a unique set of challenges and opportunities that address not only traditional notions of what cookbooks are and how they are used, but also the expectations of this group of users in terms of sharing, social media, and the permeability of the book to the web.

The Eat St. ebook project was developed in partnership with Invoke Media, a Vancouver-based digital agency, and Emily Carr's Social and Interactive Media Centre under a Natural Sciences and Engineering Research Council of Canada Applied Research and Development grant. The goal of the project was to develop an e-cookbook for Food Network Canada's television show, Eat St., a show about food truck culture. The

project entailed creating and designing an interactive cookbook featuring a series of recipes from season three of the show.

Over the course of 12 weeks, I worked with two research assistants, who are both design students at Emily Carr, Amanda Wangen and Kieran Wallace, to research, explore and deepen our knowledge about the possibilities of digital publishing for the e-cookbook niche. Through several phases of research, online surveys, prototype building and user testing, we created a richly interactive digital publication, designed specifically for the Eat St. ecology and their audience while also addressing larger research questions about ebook design for cookbooks, such as modes of interaction in the kitchen space and the extension of the book through social media and the web.

### FRAMING THE PROJECT

The word ebook is loosely used to describe a wide range of digital text formats, from traditional static PDFs to standalone applications. Understanding the role of the proposed interactive cookbook within

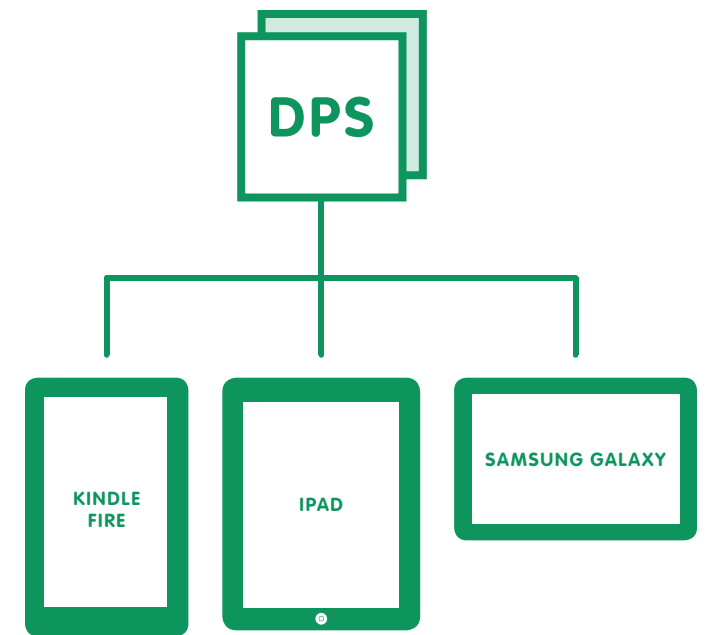
the Eat St. ecosystem was an important factor in determining the most appropriate platform. Eat St. includes a seasonal TV series, supported by a website and a mobile app for iPhone. Through brainstorming sessions with our stakeholders, we established that the ebook would provide a curated experience of recipes for every season of the show, offering users the chance to follow along in the making of featured street food and to learn more about each highlighted vendor. This season-based edition of Eat St. recipes complements both the website and existing app by retaining some of its "bookness," but with features that are interactive and permeable to the web, allowing users to share content.

### RESEARCHING EBOOK PLATFORMS

After examining a variety of ebook formats, our team determined that while PDFs and EPUB ebooks are widely supported by ereaders and tablets, they are also the most limited in terms of interactivity. While PDFs allow designers to craft a highly controlled visual experience, they lack adaptability to different screen sizes and general interactivity, rendering them a passive experience. The EPUB format offers live text, which adapts to screen size, is searchable, and can be annotated, and some level of interactivity such as support for video, audio, and image slides. It relinquishes much control over the visual narrative, however, in terms of page layout and font type and size.

Proprietary formats, such as iBooks' and Kindle's offer greater control over visual narrative and more interactive features but are limited in their cross platform adaptability, reducing the audience that can be reached with each one. All the aforementioned formats depend on ereader applications such as iBooks or Amazon's reader and can be restricted to the features each supports. Ebooks as stand-alone applications, such as those created with Adobe Digital Publishing Suite (DPS) or open formats such as Baker and Laker, typically offer rich interactivity and social media sharing. Yet, they are also more complex and costly to build when customized or if they require regular maintenance and updating.

Based on our extensive research on existing ebook platforms and our vision for the e-cookbook, we decided to create a stand-alone ebook app, using Adobe's DPS platform. This platform allowed us a high level of control over visual structure, rich interactivity based on native DPS features as well as HTML, and the possibility of subsequently expanding the project from iPad only to other devices such as iPhone, Kindle Fire and Android tablets.



**FIGURE 1.** The level of interactivity and customization Adobe's Digital Publishing Suite (DPS) is able to offer was a valuable component in the making of the Eat St. digital cookbook. DPS is only available on tablet devices, which limits the publication's reach, but user testing and analysis proved that the DPS platform would be the best format to release the digital cookbook.

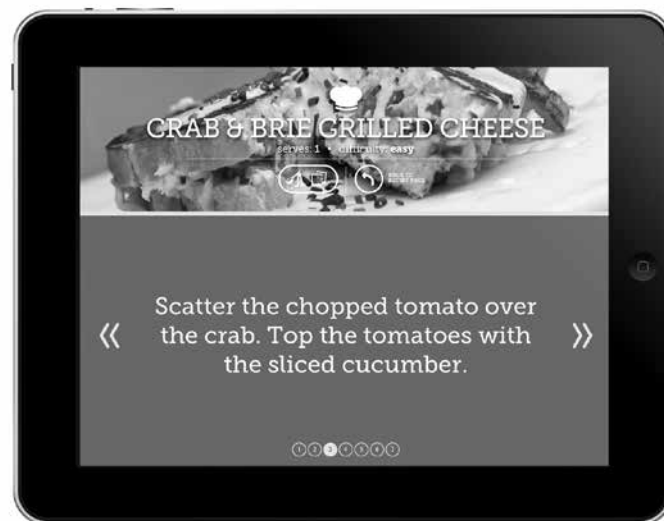
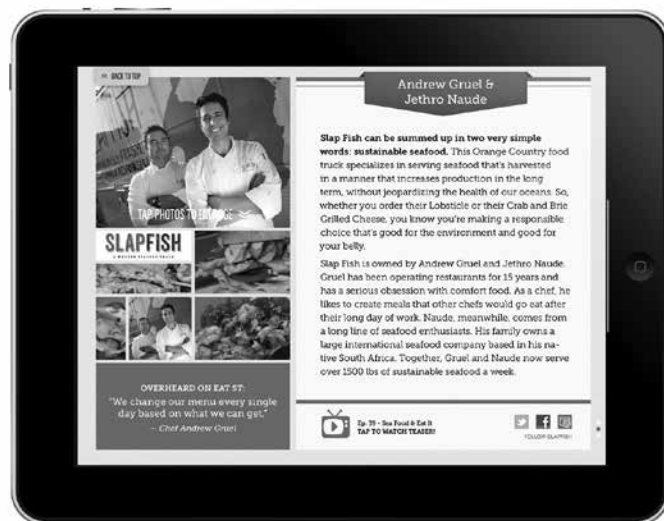
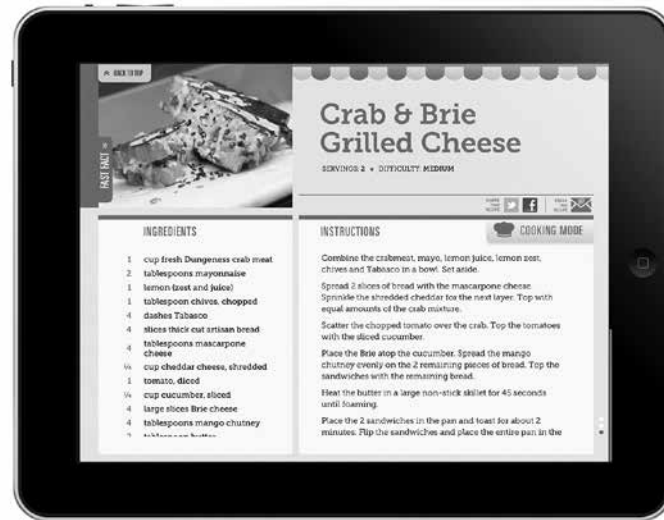
### LEARNING FROM THE EAT ST. AUDIENCE

Based on the data provided by Eat St. on their show's audience we developed a couple of representative personas (image for app: personas), and we designed and conducted a survey to better understand this audience's motivations and expectations, their relationship to cookbooks, their interest in trying recipes at home and their use of ereaders and tablets. Almost 50% of the 128 Eat St. respondents owned a tablet or ereader device, and out of this group, the vast majority had an iPad, followed by Kindle, Kobo and Nook ereaders. These results were consistent with current data on market shares for tablets and ereaders in Canada [1,2]. Key insights gained about this audience included that they are accustomed to bringing devices into the kitchen to make recipes they find online, that they value clarity and quality of information, and, surprisingly, that a significant number of them (32%) had already tried Eat St. recipes at home. This last fact validates the opportunity space for the cookbook, demonstrating a pre-existing interest of the audience in making the recipes at home.

### COOKBOOK CONCEPT: VISUAL NARRATIVE

Based on our understanding of the Eat St. audience and taking into consideration the variety of assets that already existed or could be developed, the team proposed three possible concept directions: a narrative based on cart locations, another based on recipe categories, and a final one focused on food cart owners' stories. After discussion with our stakeholders, we proceeded with the concept based on location, and framed the cookbook around a culinary road trip across North America and Britain as the main metaphor through which to tell a story about the recipes and food carts. The unique stories behind each vendor were used as a supporting theme throughout the cookbook.

“THE MORE A PRODUCT IS ABLE TO UNDERSTAND THE CONTEXT IN WHICH THE USER WILL INTERACT WITH IT, THE MORE MEANINGFUL THE EXPERIENCE WILL BE.”



**FIGURE 2.** The Eat St. Cookbook took advantage of both printed and digital conventions, utilizing the page to help readers manage the information and electronic forms of navigation. This mix helps to balance the various types of information and visual elements into a user-friendly app.

**COOKBOOK INTERACTIONS**

Cookbooks, both in print and ebook form, have specific characteristics. They typically include, beyond the recipes themselves, supporting features such as background information on the recipes, general cooking instructions, glossaries, and charts for measurement conversions. Eat St. followers revealed through our survey that they are already buying cookbooks for their devices, with a preference for cookbooks that are curated and organized around themes, and which include interactive features such as “cooking modes” for following recipes from the tablet screen while cooking.”

The Eat St. cookbook is articulated through an interactive map that allows users to access recipes based on location, while a secondary contents table allows users to search for vendors or recipe titles. Each recipe has distinct sections: a vendor section, with information about the food cart owner’s history; facts about the recipe; images of other dishes by the same vendor; a clip from the episode featuring the cart; and links to follow vendors on Twitter or Facebook. The recipe section allows users to see an overview of ingredient lists and cooking instructions, while also being able to access a large-scale cooking mode, which shows each individual step on the screen. Users can also share the recipe by email, post it to Facebook, or share it on Twitter; these social media and sharing features are part of the standard expectations of our users.

**PAGES AND SCROLLS**

As noted in early user-centred studies of ebook design, adherence to the paper book metaphor has a significant impact in the usability of ebooks [4]. The parsing of content into pages, as opposed to continuous scrolling, helps give readers a “sense of place” within the ebook and marks their progress in the book or section. Whereas the notion of pages will be contestable for some kinds of content, in the case of the Eat St. cookbook, pages are a crucial feature that not only parse content into manageable bits, but also aid the reader in generating a mental map of the kinds of content included for each recipe stack: page 1 of the stack introduces the recipe with a full image, page 2 features the food truck story, page 3 includes the full recipe with ingredients and instructions. An unobtrusive marker shows the location of each page in the stack.

**USER TESTING**

After several iterations of the ebook were tested rapidly, informally and early in the process by team members, we refined the concept and built an extensive prototype that included all navigation features and a selection of ten recipes with full interactivity in place. In order to assess user experience and gather qualitative insights from users’ responses to the ebook narrative, we conducted a formal user testing trial, approved by the University’s Research Ethics Board, with 10 representative-user participants.

Participants were asked to perform representative tasks that ranged from highly specific, directed but less specific, to open-ended explorations of the ebook. The trial was organized into four sections: the first asked introductory questions about participants’ familiarity with tablets and their cooking habits; the second asked participants to freely explore the ebook for five minutes to familiarize themselves with it, during which time they were encouraged use the think aloud technique to verbalize what they were doing and thinking; the

third asked participants to perform specific tasks consisting of reaching certain points in the cookbook using different navigation paths; and the final section asked a number of specific questions about the cookbook design, its interactive features, and participants’ overall perception of the ebook.

Our findings confirmed that the overall experience and navigation of the cookbook was intuitive, coherent and pleasurable, though some problem areas were identified for further refinement. These included:

- Multiple screen swipes required to access the table of contents or recipe map, which is consistent with literature on iPad usability [3]. “Back to Contents” buttons were implemented throughout to resolve this issue.
- Ambiguity of icons and text, and their possible performance as buttons. Native DPS buttons don’t provide direct visual feedback upon touch as do HTML based buttons.
- Use of image sequences (slides). Users were uncertain of whether to swipe or tap to move from image to image. We resolved this issue by setting both swipe and tap as options for the sliders.
- Small images as buttons for activating a larger view of the image were ignored. We included further visual and textual cues to make their function more apparent.
- Arrows indicating “previous” and “next” steps in sliders were considered buttons by all users, even though they weren’t set up as such. All arrows were converted to buttons.
- The use of DPS’s native scrollable frame for the table of contents was very ineffective and frustrating for users. We reconfigured the contents to multiple pages.
- Participants were unsure of whether to access recipes by tapping directly on the map or on the label that identified each region. Where multiple access points were available, all were converted to links.

**CONCLUSION**

The final Eat St. ebook incorporated revisions based on insights gained through user testing and was fully produced with 50 recipes from season three of the program. The overall narrative and visual structure presented a curated experience of street food as a culinary trip and addressed expectations of users both in terms of the ability to share content as well as interactive features that facilitate cooking from a tablet. A workflow for content generation and curation as well as production was included as part of the deliverables for the project. As a result, we provided Invoke Media with not only a ready-to-commercialize product, but also a workflow and template for future collections of recipes that can be extended to multiple platforms, allowing our industry partner to benefit from Emily Carr’s expertise in ebook design.

**REFERENCES**

[1] Blackberry, Apple, Kobo top brands in Canada’s mobile device market. Ipsos North America (2011). Press Release. <http://www.ipsos-na.com/news-polls/pressrelease.aspx?id=5399> [2] Conneally, T. Canadians prefer Blackberry, Kobo — Americans favor Android, Kindle. Beta News (2012). <http://betanews.com/2012/04/20/canadians-prefer-blackberry-kobo-americans-favor-android-kindle/> [3] Nielsen, J. iPad usability: Year One. Nielsen Norman Group (2011). <http://www.nngroup.com/articles/ipad-usability-year-one/> [4] Wilson, R., Landoni, M., and Gibb, F. A user-centred approach to e-book design. The Electronic Library 20, 4 (2002), 322-330.





# BULLETIN: AN INTERACTIVE PROJECT

by JEAN CHISHOLM

## KEYWORDS

interaction, design process, co-creation, culture, communication design, website, prototyping, storyboarding

## ABSTRACT

This paper focuses on the process of designing an interactive digital space. Aiming to facilitate growth and connection within the Vancouver local music scene, the resulting project is a user-centered web space named Bulletin that enables interaction between event planners, artists and audience members. The importance of co-creation in the developmental and end stages of this project is explored.

Over the course of one semester at Emily Carr University of Art and Design, our communication design class was asked to conceive, research, prepare, ideate, refine and implement an interactive project that could take the form of any screen-based interaction. Supervised by Tak Yukawa and Don Williams, this project pushed us to think about changing users' experiences in a way that would create positive repercussions in their community. My project, Bulletin, aimed to create interactions within Vancouver's local music scene and enable that scene to grow in digital and physical environments (Figure 1).

The need for co-creation at all stages of the design process is a welcome and necessary change in design. By working with users and embracing their creativity and input, designers can facilitate fulfilling and positive interactions. C.K. Prahalad and V. Ramaswmy proposed in 2004 that "the meaning of value and the process of value creation are rapidly shifting from a product- and firm-centric view to personalized consumer experiences. Informed, networked, empowered and active consumers are increasingly co-creating value with the firm." [6] By opening up design to all participants, designers encourage users to infuse the project with personal and community values, creating a richer, more defining experience.

As I developed my own interaction project, my design practice became more flexible and open to input, which was then reflected in my design's purposes and function. By embracing the creativity of my peers and the populous, my design transformed from a passive experience to an active experience.

## RESEARCH QUESTION

Focusing on local music culture, I wanted to explore the ways I could create an interactive experience that would help make the Vancouver music scene more accessible and vibrant. Despite Vancouver's reputation as one of the world's most livable cities, many feel that the city can be lonely, isolating and uninviting. [5] These feelings can extend to Vancouver's local music culture, which is full of outstanding bands and venues, but which can also feel insular and difficult to access. By having a space where local artists, venues and audience members can interact with one another, the music scene can become more accessible and Vancouver's unique culture can emerge and grow.

## METHODOLOGY

**EMBRACING THE FUZZY END** While my goals for this project remained consistent throughout the process, its form and function underwent many changes and evolutions. The first iteration was a standard event website that would highlight prices, so visitors would be able to find activities within their budget. This version of the project focused on the fact that Vancouver is one of



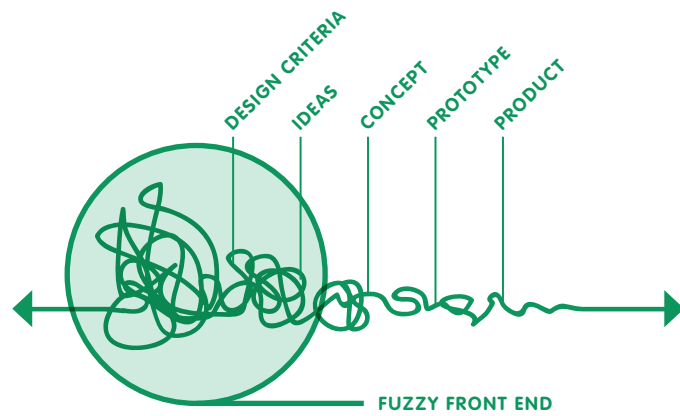
**FIGURE 1.** Bulletin merges the visual language of physical event boards and the digital properties of microblogging sites to create an interactive website that shares local music culture and fosters social interactions within and outside of the digital space.

Canada's most expensive cities, which can limit people's social activities and stifle new creative growth. Although this problem still plays a role in my project, I failed with this solution to truly explore the breadth of possible outcomes. By merely highlighting one function (searching by price) in an already established format, I limited myself and my project, which made further developing the concept into a community-changing, interactive experience initially very frustrating.

I had not yet embraced the "fuzzy end" of design—the beginning phases of Elizabeth Sanders and Pieter Stappers design process, illustrated in Figure 3. [6] This stage includes the "many activities that take place in order to inform and inspire the exploration of open-ended questions." [6] This front end is meant to be ambiguous and chaotic, with the final form of the deliverable often unknown. Because I had already tightly defined my problem (the high cost of living in Vancouver limits the cultural interactions people can have) and the form of its solution (a website

listing events by price), it was frustrating to go back into the design and ask: "How can I improve people's interactions with music in Vancouver?" "How can I make these interactions new, exciting and different?" "How can the artists and the audience grow from one another?" Only once I let go of the standard format of an events site was I able to go back and explore answers to these questions.

Opening up my design process to my peers was an important element in opening up my design's application. The classroom environment helped facilitate conversation-based research and brainstorming sessions, which became a very fulfilling way for me to ideate (Figure 2). By becoming less possessive of my ideas, I was able to let them grow in interesting new directions. Mirroring modern trends in design research, I tried to include more public participation in the informing, ideating and conceptualizing of my design. [6]



**FIGURE 2.** Sanders and Stappers “fuzzy front end” of co-designing, which illustrates the necessary ambiguous and chaotic beginning explorations of design.

**CHANGING THE EXPERIENCE** Moving through this fuzzy end, my reformed concept ended up embodying many of the same features of my design process: I opened up the platform to contributions, aimed to foster a creative environment, and let the users inform the final content of the space. The result is a website that highlights and encourages interactions between artists, events planners, and audiences. This format takes advantage of the commutative and expressive tools of the internet, while also placing the activity into a user’s own community. The site invites everyone to actively browse, discover and participate, both digitally and physically. Not just an online site, nor a digital mirror that only reflects real world events, this project is an interactive space that can help people understand and contribute to their culture.

By inviting users to shape the site with their own content, I’m drawing on Sanders and Stappers’ emphasis on co-creation and participatory design. They have noted that “over the last 10 years... people increasingly want a balance between passive consumption and the ability to actively choose what kinds of more creative experiences to engage in and how.” [6] For example, the Danish interactive iFloor project was designed to bring interaction back to the library, back being the key word. While “information technology may have dramatically improved our access to information... it has also taken something crucial away from the library experience—social interaction.” [2] The iFloor focused on how physical space could be used to bring this interaction back—an emphasis which I took as inspiration for my own project. I was interested in discovering a way to use the convenience and usability of the internet to bring interaction back into local culture. Both projects emphasize the role of the user in creating this meaningful experience. Urbanist Jane Jacobs stated that “cities have the capability of providing something for everyone, only because, and only when, they are created by everyone.” [3] Equally true for design, co-creative design products can transform our relationship to consumption and our environments. [6]

**FUNCTION** Choosing a website format opened up many interactive possibilities, but I also sought to counter the isolating nature of the internet. In a culture overwhelmed with communication opportunities, our “web of connections has grown broader but shallower.” [1] When used properly, however, these technologies can “lead to more integration, rather than more isolation.” [1] Many online communities have formed around microblogging formats like Tumblr, which enable open, informal, fast and spontaneous contributions and interactions. [4] I choose to utilize

a highly visual layout to encourage easy browsing, as well as a tagging system that would let the user sort through and customize the communities’ uploaded content. This lets the user move through the different “moodboards” of Vancouver’s music scene and gives them an immediate invitation to dig deeper. I also wanted to make distinctions between three types of content – events, artist content and audience content – so there would be an understanding of the relationship between these cultural elements. My hope is that by providing a microblogging space that users can upload to and that focuses on the users’ physical community, a greater connection to their culture will grow.

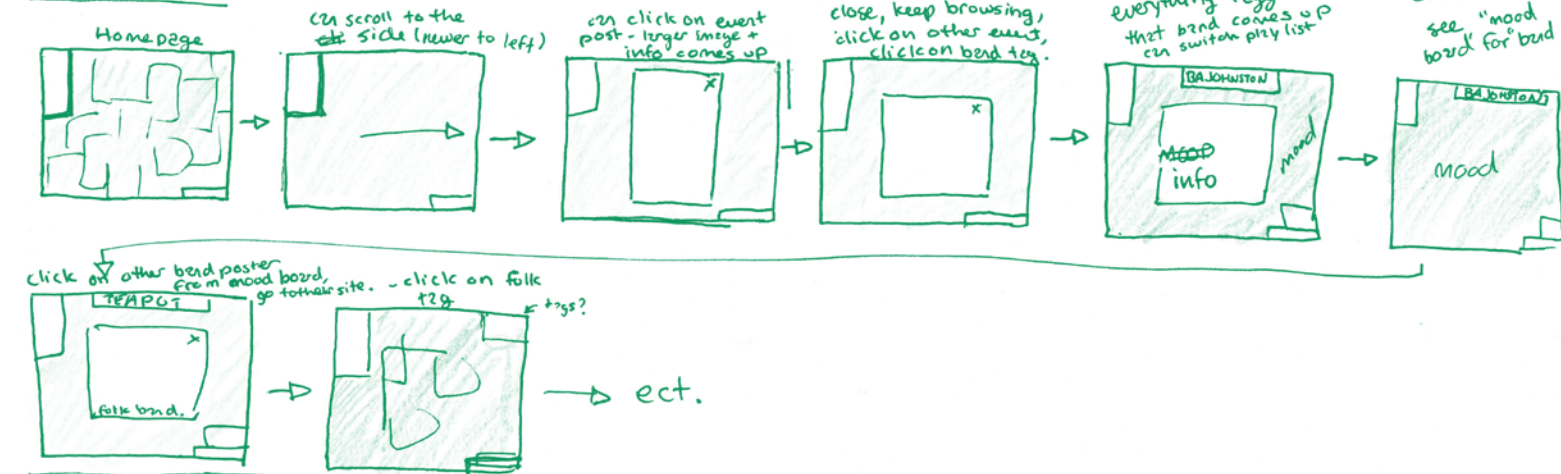
**PROTOTYPING** Storyboarding was an important tool in creating the page architecture of the site (Figure 4). Envisioning my own scenarios of what I would hope to encounter on the site and asking peers for their personalized situations helped me define the end goals of my site. By always ending or starting a scenario in a physical cultural space, like a local concert, I forced myself to think of the reasons and motivations a user would have to use my site. I then took those needs and designed my prototype to fulfill them. The resulting site lets the user browse deep into the Vancouver music scene and personalize their experience, while still being part of a larger community. Leveraging popular and established online tools like tags and profiles, the interactive prototype testing went smoothly because the format was designed to be intuitive.

**GETTING THAT LOOK** Throughout this process, I took inspiration from ways cultural was displayed in the environment around me. Inspired by posters, posts and boards, I wanted to recreate the spontaneous, democratic and visual quality of these public forums. I named my project Bulletin, and decided that the most of the visual content would come from user-uploaded images, photo albums, gifs, videos and playlists. The overall effect would be a like a street bulletin board: messy, organic and intriguing. The consistent elements of the site, logo, menu, background and information type treatments needed to be engaging enough to in-

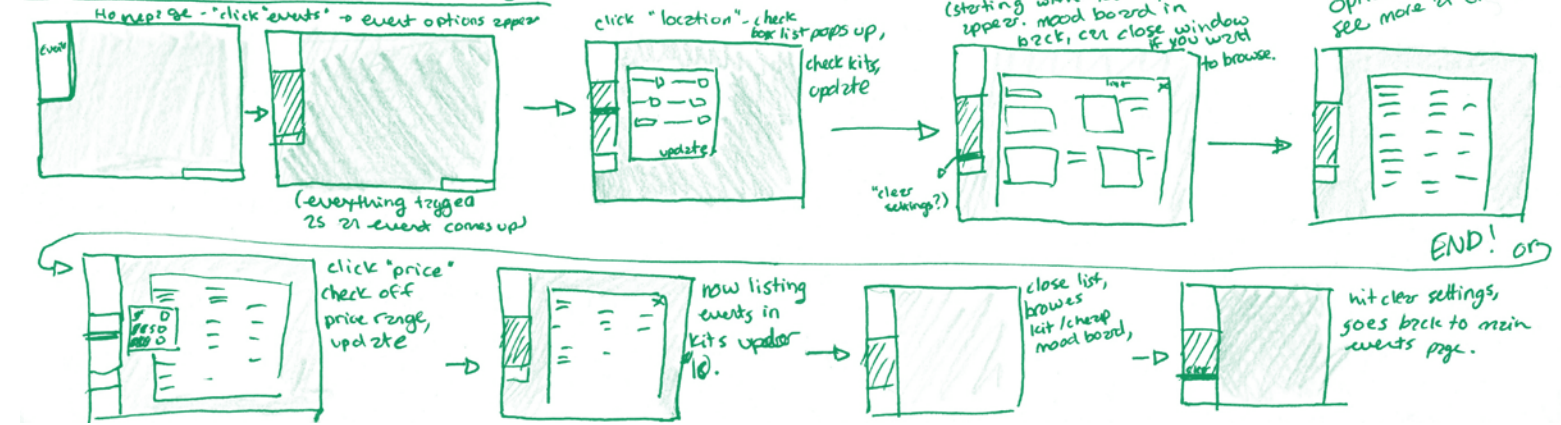


**FIGURE 3.** Using the classroom environment to ideate and collaborate with peers helped elevate the design work and move it in a more fulfilling direction.

**casual browser:**



**look for event in kits tonight:**



**FIGURE 4.** Storyboarding a users experiences help determine necessary pages and way-finding tools, and also determined the key pages and uses of the website.

vite users to explore, but also neutral enough so that the user’s content could remain the main focus. The bold logo typeface establishes the brand, and can stand out or fade into the background when needed. The tri-colour bar system differentiates between the types of content, and adds a punchiness to the brand that works to highlight posts without overpowering them.

**FINDINGS**

By thinking about the user experience and incorporating co-creators when possible, my design process became more active and open, which transformed my design project from a passive experience to an interactive experience. I found this change and growth very fulfilling, and I will try to utilize this method even more in future projects. While I was able to build on my design through discussions, storyboarding and prototyping with peers and potential users, I would use co-creation kits to help formulate the look and layout of the product in the future.

**CONCLUSION**

Communication design is at a very exciting crossroads, and understanding that interactive projects like this can potentially “arrest the escalating problems of the man-made world” and transform our unsustainable way of life into one that can “reconfigure our most basic understanding of human consciousness and how to live harmoniously in a healthy and sustainable ecosphere” is very stimulating [6]. Asking us to design not just a website or an app, but a website or app that can help transform

the world into a better place added an exciting element of responsibility to the project. It forced us to think about the environment we have and the environment we want, and challenged us in inspiring ways as designers and citizens. Re-appropriating Jane Jacob’s earlier mentioned sentiments on cities, design has the capability of providing something for everyone only when it is created by everyone. Embracing co-creation in design can help this practice make lasting positive changes for our global community.

**ACKNOWLEDGMENTS**

I would like to thank my classmates for being such a source of inspiration to me, and Deb Shackleton for providing guidance and support.

**REFERENCES**

[1] Marche, S. Is Facebook making us lonely? The Atlantic Magazine (2012). Retrieved from: <http://www.theatlantic.com/magazine/archive/2012/05/is-facebook-making-us-lonely/308930/>. [2] Koskinen, I., Zimmerman, J., Binder, T., Redstrom, J., Wensveen, S. Design Research Through Practice: From the Lab, Field, and Showroom, Morgan Kaufmann, 2011. [3] Greenwald, R. The lifecycle of a ‘cool’ neighborhood. The Atlantic Cities (2012). Retrieved from: <http://www.theatlanticcities.com/arts-and-lifestyle/2012/09/lifecycle-cool-neighborhood/3280/>. [4] Marquart, E. Microblog sensation: The growing popularity of Tumblr. 3PM: Journal of Digital Research & Publishing, 2010. 70-73. [5] Poll paints Vancouver as less than friendly or inclusive. The Huffington Post (2012). Retrieved from: [http://www.huffingtonpost.ca/2012/06/18/poll-paints-vancouver-as-\\_n\\_1607678.html](http://www.huffingtonpost.ca/2012/06/18/poll-paints-vancouver-as-_n_1607678.html). [6] Sanders, E.B.N. and Stappers, P.J. Co-Creation and the new landscapes of design. in Sanders, E.B.N. and Stappers, P.J. ed. Co-Creation and the New Landscapes of Design, 2008, 1-6.



# SUSTAINER: DESIGNING SUSTAINABLE SYSTEMS

by KIERAN WALLACE & ANDREAS EIKEN

## KEYWORDS

mobile application, to-go, food, eating, container, meta-products, interaction design, gamification, service system

## ABSTRACT

This paper discusses the research and design of 'Sustainer,' a reminder-based, behaviour-change mobile application (app) paired with a re-usable container meant to help reduce waste caused by disposable to-go food containers. The project is the collaboration of Communication Design student Kieran Wallace and Industrial Design student Andreas Eiken of Emily Carr University of Art and Design. Together they developed a behaviour change service that encourages users to bring their reusable food containers with them when they are eating on the go. There is a large opportunity space within the zero waste initiative in the city of Vancouver. Packaging represents approximately one third of municipal waste in the United States. In tackling the zero waste initiative it meant that the project had to go through many iterations requiring primary and secondary research, video sketching, and an introduction to the idea of 'the internet of things,' or meta products. The project's outcomes exemplify the three r's of reduce, reuse and recycle.

The City of Vancouver in British Columbia is attempting to be the greenest international city by 2020. One of the many goals is to "reduce solid waste going to the landfill or incinerator by 50%." [1] According to the U.S. Environmental Protection Agency in 2010 roughly 250 million tons of trash entered landfills in the United States alone. [3] There have been a number of local projects that serve as precedents for this problem space including the 'Tiffin Project' of Vancouver and 'Go Box' a similar system founded in Portland, Oregon. The design intention for Sustainer was to make eating on the go easier by providing the user with a container and the support to maintain usage of it. The container and app would come bundled in one package at a set fee. The user would purchase the container and activate the app by entering a unique download code into a smartphone.

## BARRIERS/OPPORTUNITY

There are several barriers to eating on the go with a personal container. Forgetting the container is the first issue. The research question asked: can a food container become part of the everyday things we carry like keys, a water bottle, or our phones? A second barrier is the issue of leakage. A trust issue exists with current containers and their ability to create a perfect, hermetic seal. It is generally understood that we all carry things in our bags that are far too valuable such as a smartphone or tablet to risk a tomato soup spill. The third issue with reusable food containers is their difficulty in transportation. Many of the current container designs do not accommodate a majority of different bag forms. The opportunity lies in resolving these three major issues through developing a system in which a container has a close relationship with a phone, something we carry with us everywhere. This system will in turn encourage sustainability within the context of eating, particularly on-the-go.

## INITIAL PRELIMINARY RESEARCH

The preliminary research for this project consisted of several phases. Various user-centred approaches were used in exploring the inquiry. A service safari was conducted in order to create user journey maps to develop a sense of how a member of the public might interact while taking their food to go. A number of expert interviews were conducted as well. Participants came from diverse fields such as city government, business, sustainability, and the restaurant industry. During the initial stages of design research for the project it was realized that the Student Union at Emily Carr University had a great example of a to-go solution. Their 'Mug Wall' is a centralized wall where mugs are hung and made accessible to share among the students. It has been in operation for over a year. We approached the Union to see if they could use the mug wall as a testing ground for the sustainer concept. There was one key problem in the way the mug wall was set up; it was too centralized, offering only one location for drop-off and pick-up. From the 200 mugs the union purchased in the fall of 2012, only about 40 remained on the wall after over a month of use. The research around the mug wall attempted to increase the return rate of mugs to inform a shared



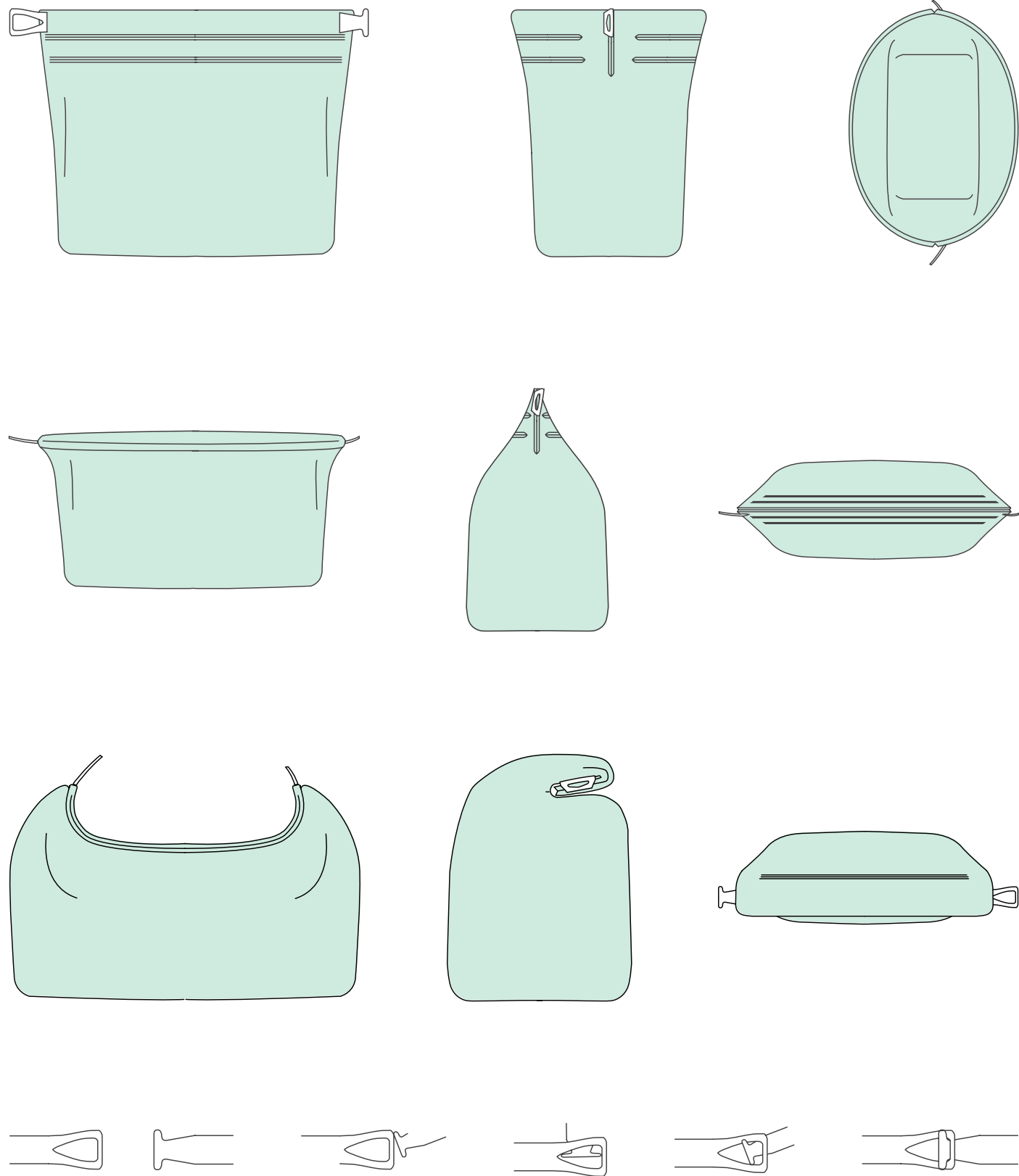
**THE SUSTAINER** is a container and digital application system, which work together to create more sustainable habits regarding food storage and transportation.

food container concept. After consulting with the student union about their system, and talking to people that use the mug wall, it was decided to install five collection points around the university. After consolidating the information gathered from interviews, statistical research, and precedent studies it was apparent that the most efficient solution for Sustainer was to put the onus on the user and develop a support system for them to maintain useage of their own container.

## SYSTEM DESIGN WITH VIDEO SKETCHING

Video sketching is a simple and quick method of rapid prototyping displaying accurate context along with different scenarios of how a user might interact with a product and/or system. Communicating a rich interaction between a user, a product, and a smartphone proved to be

more difficult than anticipated. Maps, diagrams and other two-dimensional communication methods were deployed to try and communicate to instructors, friends and the public how the Sustainer system worked. After getting feedback it was realized that these methods were not getting the ideas across effectively. Video sketching then became the most obvious way to better understand the interactions users would have with the product. This form of rapid prototyping and visualization was fundamental to getting a handle on what elements of the system had holes and which elements seemed flushed out. Video sketching was helpful in showing the context along with how the user would ideally interact with the product and system. It was also extremely versatile as it could easily be shown on a computer, tablet or even phone for quick feedback.



**HOW THE SUSTAINER WORKS** Inspired by the hermetic fold top found in kayak bags, the Sustainer container is designed to address key user concerns about size, portability and leakage.



**THE MUG WALL** at Emily Carr provided a great example of a reusable dishware system, and the need for a less centralized return location was discovered and addressed. A strong support system is required for lasting habitual changes to occur.

**BEHAVIOUR CHANGE THROUGH INTERACTION (VIDEO)**

While developing the main intervention point of the app, we looked at three possible options. First, when the user is at home; this is where we keep all of our belongings and where we spend the most time. Testing was done around receiving a reminder when the user leaves their home. The prompt would be a simple reminder telling them to bring their container. It was observed that when in a transition mode like leaving the house, the user was less susceptible to reminders and less likely to stop and follow through. The second intervention point was at the workplace. The issue here is that the chances of the user not having their container is much higher. This poses a problem when structuring the entire system around reminders. The third option was to intervene at the restaurant itself. The decision was made to focus on the restaurant as the primary time for Sustainer to intervene. When going to a restaurant, it was noted that users tended to be in a mindset of choice-making. When entering a restaurant the user has decided what restaurant eat from and what food to eat. As such why can't we also choose how to make that particular meal more sustainable?

One of the exciting features that enables the Sustainer app to work in this area of intervention is a technology often referred to as 'geofencing.' Geofencing uses GPS (Global Positioning Systems) and other location based technologies to set up a digital boundary around a physical location. In the context of the Sustainer app, the user would geofence frequented restaurants so that the app would recognize when they entered the restaurant and send a prompt. Many precedent mobile applications were studied including Nike Plus, The Jawbone Up, Fitbit, and several others. These 'meta products' helped to inform the interaction the user would have with Sustainer.

**THE INTERNET OF THINGS**

During the early stages of iteration for the application, information was gathered from the book Meta Products. [2] This book was instrumental in defining the interaction the user would have with their phone and the container and ultimately find the link the two shared. The book speaks to the idea of the Internet of things, where this vast digital network is translated from our screens into the products we love and use every day. This opens a whole new world for interaction, graphic, and industrial designers. A great precedent of this is Nike Plus, a system in which the user inserts a special tracking chip into their shoe, and allows access to real-time feedback about their run via their smartphone. The app also acts as a social platform where the user can post their run times, routes, and more to Twitter or Facebook. Once the general framework for the Sustainer app was laid out as well as the general physical dimensions and attributes of the container, the most challenging iterative process came when trying to push the link between the mobile application and container; they were great stand-alone products, but they lacked a relational dynamic.

**THE INTERSECTION OF DIGITAL AND PHYSICAL INTERACTION**

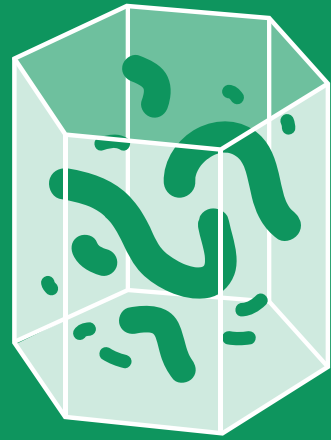
The goal was to change the initial notion of 'app plus container' into 'app equals container'. The first efforts towards this was the integration of a 'smart' element into an accessory for Sustainer. Either a fork or a strap were considered and would have become 'smart' by the implementation of RFID (radio frequency identification) technology. We decided to instead challenge this notion of literal smart smart technology and develop the link through a visual and tactile relationship. This direction would also avoid accessories becoming lost or damaged. The approach was to make the physical features and movements of the container be directly mirrored in the interactions of the app. This way the app and container became linked via their use and experience, not through an embedded chip. If someone interacts with the app on their phone, they should be able to pick up the container and intuitively use it as well.

**CONCLUSION**

Design is an ever-evolving profession; with new technologies and hardware constantly being updated and released, it is the role of the designer to use these evolving technologies to stimulate how users use and interact with their products. There is a level of responsibility by the designer in this sense. The products that are successful will introduce different behaviors throughout culture. Multidisciplinary collaboration and iterative prototyping were instrumental to the finding of an effective solution.

**REFERENCES**

- [1] City of Vancouver, Greenest City: 2020 Action Plan, 2012. Retrieved from: <http://vancouver.ca/files/cov/Greenest-city-action-plan.pdf>.
- [2] Córdoba, R.S., Hazenberg, W. and Huisman, M. Meta Products: Meaningful Design for Our Connected World. BIS, Amsterdam, 2011.
- [3] Franklin Associates. Characterization of Municipal Solid Waste in The United States: 1998 Update. U.S. Environmental Protection Agency Municipal and Industrial Solid Waste Division, 1999.



# JOINING RESEARCH, ART & DESIGN

by MARIA LANTIN

In the last ten years the word Research has become an increasing part of our vocabulary. Wielding the word like a talisman, we seek to reframe what we do to join with what have been largely science and humanities groups in the conversation of knowledge and artifact production. It can feel like cozying up to an elephant. How does an old word like research even begin to soften to incorporate new models of knowledge production? Methodologies, dissemination, evaluation processes and metrics - these all need to wedge themselves in. And what of our context? We are small and the teaching load is higher than regular Universities. It's an ambitious goal to make ourselves visible beside large comprehensive universities. But it's clear that we have increased the visibility of great work in art and design. The tri-council has integrated art and design in their new frameworks and the GRAND Network Centre of Excellence recently joined forces with the Canada Council to recreate a version of the New Media Initiative NSERC/CC grant which was discontinued in 2009. However, the context of funding in Canada has also shifted significantly towards partnerships and industry-funded projects with commercialization potential. In the background there is the anxious hum of job creation, skills training, growth, and innovation. In fact, research is sometimes put in opposition to the practical. I see the changing landscape of government funding as an opportunity for art and design universities. We offer fresh ideas and methodologies that can directly speak to the needs of our communities and environment. Socially engaged art practices are catalysts for innovation. Design is a unified approach to solving very complex problems for long-term sustainable and stable systems. More than ever new ways of being are essential to health on all levels.

We are entering an already established community of research and are blending ways of speaking about knowledge production. By joining a conversation we will change what we do, how we do it, and how we talk about it. In building a culture of research that includes art and design, I see the most pressing needs as communicating our successes, teaching each other how to frame the value of our chosen research programs, and advocating for a more balanced research and teaching mix. We also need to look for collaboration opportunities with other fields of research. The positioning of art and design research is stronger when looked at from an integrated approach to problem solving. We stay small to retain a unique approach. We partner to have a bigger impact.

Looking to the future, it may be that the word research will phase out as pivotal to the conversation to knowledge production and mobilization. Its meaning does seem to lag behind a social model that increasingly includes groups outside universities and big institutions, and dissemination that focuses on results and techniques rather than methodology. We seem to be in a perpetual liminal space as the voices get more numerous. This is wonderfully fertile ground.



## HEALTH DESIGN

interview with **JONATHAN AITKEN** (Director of Health Design Lab at Emily Carr)

**DEBORAH SHACKLETON:** This afternoon, we're here with Jonathan Aiken, who is the Director for the Health Design Lab at Emily Carr University of Art and Design. My name is Deborah Shackleton and I'm one of the editors for the University's research journal Current. So this afternoon we are going to have an opportunity to hear Jonathan's ideas and themes for the HD Lab at Emily Carr. Can you describe for us the history and the mandate of the Health Design Lab?

**JONATHAN AITKEN:** Health design has been a big part of Emily Carr for many years. The GF Strong Rehabilitation Center, BC Children's Hospital, Vancouver Coastal Health—all have been partners and part of the design community for some time. Rob Inkster, the previous director of research at Emily Carr, started an initiative in collaboration with Ron Burnett, the University president, around building a framework or identity developing projects under the health design banner. Essentially what we're doing is collecting projects and bringing them into one space so that we can talk about them as a group. My mandate is to provide students and faculty with really interesting complex social problems so that they can practice design research methodologies that are participatory and human centered in nature, to really get at the core of things that need to be changed in health design.

**Because Emily Carr is new in developing a research culture, what is the role of Health Design in relationship to the overall University mandate?**

I think the role of the health design lab is to show how design can be involved in socially important problems and to give faculty and students a practical outlet that could potentially make a difference. I think it also shows the health community how important design can be in changing behaviors, in changing attitudes, in changing systems, in changing the way they effectively work within the health care system. More and more as we are pulling partners in, they have become positively overwhelmed by the role that design can play. This is new to them and I think we're making great strides in showing how an art and design school can be relevant to the health care community.

**What are some of the topics or issues that you as the director encounter on an ongoing basis and what are your long term plans for working with clients?**

In terms of topics, I look for partners who have potential for being ongoing long-term partners. So a new partner for Emily Carr this year is

Providence Health Care. They were interested in the idea of partnering with an art and design school but unclear as to how we might proceed with them. Quickly an industrial design project came open: designing an ambulatory cart that might fit as part of their proposed building in a new flexible-space, architectural solution. So that was an easy fit, but I also thought it would be interesting to consider how communication design might play a role in this evolving narrative as well. It was a matter of showing the partner how design might factor in helping them build a story, a narrative, and how that might change for different constituencies from the internal health care profession to the external public community. I was able to take the one project and spin it into two.

Once a partner has been with Emily Carr for more than a year or two, then it's a more collaborative space. So then I work with the partner to look at problems that are meaningful to them—this can't be a theoretical problem but something that they're actually encountering and they need to solve. What I look for in terms of selecting that problem is something that has some complexity to it, so that our students and faculty really have something difficult to encounter, and that forces them to use participatory human centered design methodology.

In the long term I'm looking for partners who can commit to being part of an ongoing relationship so that I can get out of the space where projects last from between a few weeks to a few months to projects that might span several years.

**Before the cameras were on we were talking a bit about the perception of health design that people have that you are designing health as opposed to being a designer or design team that can actually offer something to the sector. What kind of strategies are you looking at to change that perception.**

What I'm trying to do is say, yes, health is the content and the vehicle, but really it's about design and it's about a way of applying creativity to really complicated problems. Healthcare happens to have a wealth of complicated problems so it's a great vehicle for teaching students about how to tackle a really complicated, difficult problem and how to apply co-creation research methodologies to resolving that problem. The strategy for changing people is building success stories and successful outcomes. Helping students to realize their designs toward some kind of successful outcome for the partner, and building that into a story, makes students and faculty see the value of the process.



Practice-based research figures prominently in terms of the methodologies that you're bringing to the University under this umbrella of the Health Design Lab. What kind of inputs, if I was going to work with you, would I need to bring to the relationship and what might I expect in terms of outputs, what would be the range there?

What we ask partners to bring is enthusiasm and participation. The best partners come with a really interesting problem that they're passionate about. Vancouver Coastal Health has been a terrific supporter for several years; they engage with problems enthusiastically and openly, and look to Emily Carr as an agent of change. In one recent project, they asked us to look at the problem space of improving lift use compliance in Residential Care facilities to reduce workplace injuries. In another, they looked to us to provide insight into communication problems between oncoming and offgoing nursing shifts. In both cases, the problems are well defined, but the causes are complex and difficult to ascertain. As well, they bring us people, often up to 20 to 30 participants for several sessions. In a project we're working on now, they called me and asked "what's the maximum number of people we can send?" And that's a brand new problem for me because usually all we can get is 10 or 15 people. They had to cap it at 30 because they had more people than that wanting to take part.

That sounds very exciting and full in terms of a partnership. What is different or similar to your understanding of design thinking and the thinking that the partner brings to the collaboration.

By bringing the partner and the designer into the same shared space not only does the designer gain a much richer understanding of that problem space; it also provides the end users or the participants, the people who will be engaging with the solution, a role in forming that solution.

So now we've become designers of strategy and process, enabling these participants to become designers themselves. It ends up with a much richer, more rounded solution to a problem. We bring multiple perspectives to that problem, giving them a range of things to think about that they never would've encountered on their own. A great example of that was the hand hygiene project where the partner came to us looking to simply boost compliance rates for hand sterilization from visitors to hospital. They had tried to resolve this problem with posters and sanitation dispensers positioned at as many locations as they could, but they plateaued. So our students came up with a range of different solutions, one of them a really simple device, which for every click of a hand dispenser gave a funny blooping noise, put an image of a hand on a large monitor and then that hand became part of a larger graphic. People were lining up to do this! That kind of thinking is not something that a hospital can do, it's not their expertise, but we can as designers.

What are the challenges? Can you think of some areas in which you've had to do some tough learning in regard to the role of the lab in the university?

A big challenge is the increasing digitization of the space. Virtually any system design that we come up with ends up with some kind of digital application, an app for an iPhone, a tablet, or computer system, all of them horrendously expensive and incredibly difficult to implement. Implementation is certainly one of the first problems: how do we take the results of our ideas and put them together in a functioning outcome for the partner? A second problem is the issue of privacy around medical records. We're at a space now where I do believe in five years we will all have direct control of our medical information, but at the moment we don't, we have indirect control of it and nobody talks to each other. We're trying to design for that space a few years out even though we

**THE AMBULATORY CART (OPPOSITE PAGE)** Through a partnership between Emily Carr and Providence Health Care, industrial design students Jeremy Calhoun and Daryl Agawin designed and prototyped a more flexible ambulatory cart.

**STAY SAFE** Emily Carr was approached by Vancouver Coastal Health to help improve lift use in Residential Care facilities to avoid workplace injuries. Communication design students Daisy Aylott, Craig Fleisch and Lan Yan came together to create this visual information system.



WE'RE LOOKING AT A BROADER VIEW OF WHAT DESIGN CAN BRING.

can't implement them now without huge changes to the laws, the structure, the way hospitals talk to labs, and fundamentally who controls that information is in flux. The third one is capacity, and that's a problem being a small art and design school in a large community. The projects that are coming in are fascinating; I'm quickly running out of places and people for them, so I have to be selective about which ones to bring in.

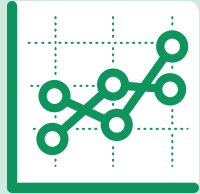
And as director for this virtual laboratory, what are the themes or issues that the lab will likely encounter in the next couple of years?

J: The direction that I'd like to take is into a more transdisciplinary understanding of how design can relate to a large complex problem. Traditionally when you talk of designing for health, we're typically talking products or assistive devices, objects that can help a person physically, and that will continue to be a big part of what health design is. But more importantly, we're looking at a broader view of what design can bring, which means that some outcomes may be communication design, interaction design, industrial design and almost always a blend of all three. Systems design plays an important part; we can't start instituting any kind of change without changing things at a structural level. A project last year was about this really interesting space where nurses coming on shift don't overlap with nurses going off shift, they communicate on the fly and impromptu, and there's no structure for it. They came to us looking for how we could facilitate that exchange of information. Many of the projects ended up being apps for an iPad where crucial information would float to the top so that things they needed to be most aware of were front and center, while other students looked at it from an educational point of view, recommending changing the way this is taught at nursing school as a change to the curriculum.

Emily Carr is moving towards a new campus on Great Northern Way. Can you project into that space and imagine the Health Design Lab what you see?

Absolutely, I would love to have space. In this location, we're always fighting for space. It would be wonderful to have even a studio space where people can come and go and share ideas and work together. It would also be really interesting to have some kind of flexible prototyping space where we could mock up a room and then test how an ambulatory cart might come in and out of that room and what special considerations there are. And I've heard that from partners as well, architectural partners, healthcare partners—they would love to be able to test out some of these ideas in real space.

Interviewed by Deborah Schackleton



# DISRUPTIVE TECHNOLOGIES IN BUSINESS & DESIGN CULTURE

interview with **KATE ARMSTRONG** (Director of SIM Center Lab at Emily Carr)

**DEBORAH SHACKLETON:** We're here with Kate Armstrong who is the director of the SIM Center at Emily Carr. I'll start off by asking you Kate, what is the SIM Center?

**KATE ARMSTRONG:** SIM stands for Social & Interactive Media. The center is devoted to looking at and facilitating applied research projects in the area of social and interactive media. Essentially I am interested in the internet, and in looking at the different ways that the internet restructures aspects of contemporary culture and life. It's a broad umbrella but the focus is on forging partnerships between industry partners and Emily Carr faculty and students.

**So then how does the center operate in terms of university culture and industry culture? In my own experience, sometimes they are not speaking the same language so how do you navigate that space?**

I think that one of the opportunities for the center, in terms of function, is to facilitate those conversations and the differences that are evident there, and to find a way to match the interests of faculty and the needs of companies. Sometimes companies have something they want to think through or examine in a way that isn't possible in the framework of their everyday operations. So it's an opportunity to take those situations and match the companies with the really creative people at Emily Carr. People here have amazing ideas and can sometimes help companies innovate by applying those ideas in the context of business culture.

**How is the reception of art and design in business culture?**

I think that increasingly, people recognize that design is fundamental to the success of business. Design and art drive innovation, and innovation is a necessity. So it's part of the conversation for sure. Having said that, I think that every situation is different. So there's an ongoing challenge to both create value and communicate that value and articulate what those opportunities might be.

**In terms of the center, if someone were to come along and say, well, what are its core strengths? How would you frame that?**

I think in the past, there has been a focus on electronic publishing and e-books, and that continues to be a really interesting area, but at the same time I am also thinking about new directions. For me, the internet is the predominant condition of contemporary culture, and it produces

new frameworks for understanding everything from human relationships, to how we use space and share resources.

**Can you talk a bit about a couple of examples of projects where you have overcome some of the challenges and you've got this synergy happening between the academic and the business cultures?**

There's a really fantastic and exciting project right now that we're working on with the Mozilla Foundation. Mozilla is built the Firefox browser. As an organization they're devoted to advancing dialogue about transparency and privacy on the internet, and on promoting the open web. Amber Frid-Jimenez is an Associate Professor at Emily Carr in the Faculty of Design and Dynamic Media and she is working with a team of Emily Carr students and developers from Mozilla. Their project is to redesign Collusion, which is a plug-in for Firefox. Collusion shows how your data, when you're browsing the internet, is being tracked and sold to advertisers. Their objective in this research project is to explore different ways to communicate the meaning of the data so that people have a greater understanding of how they're being tracked when they browse the internet and what that means for their privacy.

**So as one person who is being tracked, I would see visualizations of this and see patterns and themes that occur so that data would seem almost like I can touch it and feel it?**

Absolutely. They're in a stage now where they've produced three approaches to this visualization. There's a new blog post at simcenter.ca, which describes the project in more detail. But they are working through how to display this information for user groups who have different objectives and different levels of familiarity with issues of privacy on the web.

**If I was a potential client how would we start that process? I have a problem or I have an area that is small but it has bothered me for a really long time and I'm a technology company. So what happens when I come to Emily Carr to the SIM center?**

There's a variety of different things that can happen. Maybe a company already knows what kind of problem they want to solve and they need to get outside their relentless cycle of production in order to solve it, so they engage us as a way to expand their capacity for innovation. We can put together a small, faculty-led team that can develop these ideas. Or

the process can be driven by faculty, relating to the interests and directions that somebody is working through in their own work and practice, and we can work together to find an industry partner. And there's also an opportunity to work in the context of curriculum, so that larger groups of students can work through and articulate design approaches relating to a problem that a company has. All of the projects are very different, so I think it always begins with a conversation.

**So your projects, in terms of timelines, probably are more longitudinal than vertical. Would that be fair that they are looking at months and year time-lines as opposed to six weeks?**

They could be short. It could really vary. There are a lot of things that are possible.

**In terms of thinking about the province and how its been growing and evolving in relationship to the tech center here and so on and the businesses that say, in health, that are technology based diagnostic firms, that kind of thing. So if you think about this practice based research where do you see it being disseminated?**

I think that there are a variety of outcomes that can happen in the course of this research and it's really specific to the exact project. In the past there have been events and publications, exhibitions, product re-designs, data visualizations, a variety of outputs. And I think that in dissemination there's a role for publication that I want to explore further and expand a little bit. We also run a blog that has on-going

updates about the projects that we are involved with. In terms of the larger sector I think it's kind of funny, because social and interactive media on one hand brings to mind interactive media companies, and on the other hand there is a social layer in almost everything. The influence of the internet is so wide and variable that there are opportunities to partner with a lot of companies you might not immediately think of in the context of social/interactive media but that involve those elements. For the most part we work with small and medium sizes that are BC based. But beyond that it's hard to really characterize.

**So if you were looking back at the SIM center 5 years from now, what do you see? Emily Carr is looking towards Great Northern Way campus and so on. What do you envision? Do you see it as a hub? Or what shape do you imagine it to be?**

I like the vision of it as a hub. I'd like to increase the visibility of the center, and to expand its influence, and I'd like to see it become more deeply engaged with the interests of faculty. I'd like to find a way for those conversations to be deeper and for them to move across different disciplines within the Emily Carr community. I'd really like to see the SIM Centre be a place where the innovative and disruptive capabilities of the internet are explored and expanded, because I think that's an important element of culture and that Emily Carr should be a part of that.

*Interviewed by Deborah Schackleton*

**BUSINESS** • • • • •



• • • • • **CULTURE**

**The SIM Center aims to connect industry with art and design culture through collaborations with Emily Carr faculty and students. By working together, the goals of each sector can reach a more fulfilling and innovative solution.**

# CONTRIBUTORS

**JONATHAN AITKEN** is the Director of the Health Design Lab, Assistant Dean of Design, and Communication Design faculty at Emily Carr University of Art and Design. The Health Design Lab is an emergent research centre that applies design thinking to Health Care, bringing human-centred design research methodologies to complex problems. Aitken's education in Communication and Industrial Design help him bring an interdisciplinary focus to his work. Aitken is particularly interested in how participatory design methodologies can facilitate design research into large, complex problems.

**KATE ARMSTRONG** is the Director of the Social + Interactive Media (SIM) Centre at Emily Carr. Armstrong has over 10 years experience in the culture sector with a focus on intersections between art and technology. As an artist, writer and independent curator she has produced or participated in exhibitions, events, performances and publications in contemporary and media art for local and international festivals and galleries in cities including Istanbul, Vilnius, Grande Prairie, Skopje, Vancouver, and New York. She is a co-founder of the Goethe Satellite Vancouver, chairs the Board of Directors of the Western Front, and is the author of 8 books and works of electronic literature.

**RON BURNETT** RCA has been the President of Emily Carr University of Art + Design for 16 years. In 2010 he received the "Chevalier de l'ordre des Art et des Lettres" a knighthood from the French Government in recognition of 40 years of work in culture. In 2005, he published *How Images Think*, MIT Press. Former Director of the Graduate Program in Communications at McGill University, Designer in Residence at the New Media Innovation Centre, Adjunct Professor in the Graduate Film Program at York University, author of 150 published articles and book chapters, Educator of the Year in Canada and recipient of the Queen's Jubilee Diamond Medal for service to Canada in 2012. Dr. Burnett was Chair of Knowledge Network for four years. Dr. Burnett is one of the founders of Film Studies in Canada. Previous books published by Dr. Burnett, include, *Cultures of Vision* and *Explorations in Film Theory*.

**GRANT GREGSON** is the Coordinator of Emily Carr University's Teaching and Learning Centre providing research and training initiatives supporting faculty and staff with learning and incorporating new technologies for use in the classroom, online environments, research projects and web publishing. The TLC facilitates the learning, development and delivery of education curriculum through online technology-enhanced methods with faculty input supporting scholarly approaches to pedagogy.

**MARIA LANTIN** is the Director of Research at Emily Carr University and the Director of the Stereoscopic 3D Centre. For many years she has been joining her love of Computing Science with her belief in the innovative potential of the arts. A circuitous route led her from obtaining her PhD in Computing Science at Simon Fraser University to leading the Visual-

ization Lab at the Banff New Media Institute, to developing the Intersections Digital Studios (IDS) at Emily Carr. She has had the joy of bringing to life many artist projects involving digital technology, and continues this practice at Emily Carr with collaborative and industry-partnered research.

**GLEN LOWRY** has PhD in Literary Studies and has published widely on contemporary Canadian Literature and Culture—literature, photography, film, and television. Recent work investigates new forms of cultural expression and social contexts, particularly around questions of globalization and urbanization. Lowry's work focuses on new media platforms that link scholars, artists, and audiences across cultural and geographical distances: e.g, Maraya project, connecting urban waterfronts in Vancouver and Dubai. From 2002-11, Lowry edited cultural journal *West Coast Line*. *Pacific Avenue* (2009), his collection of poems, looks at image-based memory and geography. Lowry regularly shares ideas, images, lectures, and commentary on his blog: [www.glenlowry.com](http://www.glenlowry.com).

**EZIO MANZINI** has been working for more than two decades in the field of design for sustainability, with a special focus on social innovation. On this topic he started, and currently coordinates, DESIS: an international network promoting, world wide, design schools as agents of social change towards sustainability. Throughout his professional life Ezio Manzini has been professor of design at the Politecnico di Milano. Parallel to this, he collaborated with several international universities. Currently, he is Honorary Guest Professor at the Tongji University, in Shanghai, at the Jiangnan University, in Wuxi, at the COPPE-UF RJ, in Rio de Janeiro. The most recent awards granted to Manzini are the Sir Misha Black Medal, in UH and the Honorary Doctorate at the Aalto University, in Finland, the both in 2012.

**CELESTE MARTIN** is an Assistant Professor at Emily Carr. She has a background in communication design and specializes in typography. She has a B.F.A. and M.F.A. from the University of Iowa. Her creative work examines the forms of written language, the shapes of letters and their relationship to space. She is a researcher at Emily Carr's Social and Interactive Media Centre and her current design research focuses on the development of enhanced interactive eBooks.

**MARI NURMINEN** is Manager of Strategy and Operations at Powertech Labs, a subsidiary of BC Hydro. Her professional experience includes strategic planning and technology management in the private sector, and research and consulting for government think tanks. She holds B.Sc. and M.Sc. degrees in economics and business administration from Aalto University and MBA in technology management from Simon Fraser University. She has also completed the International Design Business Management (IDBM) program at Aalto University.

**LIZ SANDERS** joined the Design Department at The Ohio State University as an Associate Professor in 2011 after having worked as a design research consultant in industry since 1981. She has practiced participatory design research within and between all the design disciplines. Her research today focuses on generative design research, collective creativity and transdisciplinarity. Liz is also the founder of MakeTools where she works at the front end of the changes taking place today in design. Her goal is to bring participatory, human-centered design thinking and co-creation practices to the challenges we face for the future. Liz has a Ph.D. in Experimental and Quantitative Psychology and a B.A. in both Psychology and Anthropology.

**DEBORAH SHACKLETON** earned a BAA from Ryerson University and an MA from Royal Roads University. As an Associate Professor she teaches design research and methods at the undergraduate and graduate levels. Deborah's research interests include practice-based research and learning theory for human-centred designing which she brings to projects for Emily Carr's Health Design Lab. She is one of the founding editors of the award-winning *Current*, the university's design research journal, and is currently the Chair of the ECU Research Ethics Board. In 2010, she was awarded the Ian Wallace Teaching Award.

**LOUISE ST. PIERRE** has received multiple awards for her design work, and funding for a broad range of collaborative projects including the U.S. Environmental Protection Agency for exploratory curriculum on ecological product design. Her work has been published in *ID Magazine*, *Print Magazine*, *Innovation*, and *Communication Arts*. She researches and writes on sustainable design, product longevity, and human-centered design. St. Pierre is co-author of the internationally recognized curriculum, *Okala Ecological Design*, and the eco-design text: *Okala Practitioner*. Currently she is working on a chapter for *The Handbook of Sustainable Fashion* (Routledge)

**BONNE ZABOLOTNEY** is the Dean of Design + Dynamic Media at Emily Carr. She began her career as a communication designer in Vancouver in 1993. Her most notable work can be found in the philatelic section of Canada's National Archives, including her 1999 stamp design recognizing the formation of the Nunavut territory, along with five other stamp designs. She has worked with some of the largest arts groups in Vancouver including Vancouver Opera, Vancouver Recital Society, and Vancouver International Jazz Festival. Areas of learning and teaching include typography, design and material culture, consumerism, and the visual vernacular.

## ACKNOWLEDGEMENTS

This journal would not have been possible without the contributions of the following people:

*Current* is the product of many conversations, meetings, hours of writing, editing, and many reviews. We could not have realized this project without the support of Dr. Ron Burnett, Dr. Maria Lantin, Jonathan Aitken and Kate Armstrong of the Research Office; Bonne Zabolotney, Dean of the Faculty of Design and Dynamic Media; Grant Gregson, Coordinator of the Teaching + Learning Centre; Barry Patterson and Carley Hodgkinson of Communications; and Tara Wren, copy editor.

## DESN 324 SPRING 2013

Daisy Aylott, Tevis Bateman, Jean Chisholm, Chelsey Doyle, Samantha Matheson, Maria Rivera, Johannes Schut, Lea Schwartekopp, Yun-I Wang, Amanada Wangen, Megan White, Shiyao Yu, and Vivian Ziereisen.

## SOC 309 S001 FALL 2012

Caila Anderson, Ji Hyun Bae, Wesley Breden, Doohyun Choi, Minkyung Choi, Steven Enns, Scott Forsythe, Stacey Hagel, Shun-Yu Hung, Jeeln Kim, Ellena Lawrence, Hyemin, Lee, Hyun Seon Lee, Jiyeon Lee Min Young Lee, Kirk Loveland, Rachel Lucky, John MacLeod, Adrienne Macintosh, Caitlin McGinn, Seth Parker, Ja Young Pyeon, Brenna Randlett, Aida Rezaei, Karen Sung, Teresa Tan, Joel Tremblay, Robert Werner, Zoryana Yashtchuk, Lu Zhang

## SOC3 309 F002 FALL 2012

Jocelyn Aarnoutse, Deborah Avila, Leah Bachrach, Lu Chen, Jean Chisholm, Kevan D'Agostino, Katherine Dixon, Daniel Guisado, Carling Hind, Larry Ho, Yang Hong, Emanuel Ilagan, Young Koh, Zi Liang, Ruowen Liu, Beayue Louie, Yvonne Luo, Janine Merkl, Eunjung Min, Cohen Pedersen-Wood, Erica Phillips. Maria Rivera, Danica So, Andrew Tsang, Kathy Wang, Megan White, Lisa Wick, Cassandra Wilson, Sarah Wilson, Tony Wu, Wenbin Xia, Mingtong Xie

## ACKNOWLEDGMENT OF FINANCIAL SUPPORT

*Current* is grateful for the support of the Emily Carr President's Research Fund, the Faculty of Design and Dynamic Media through the office of the Dean, the Natural Sciences and Engineering Research Council (NSERC Seed Grant), and our advertisers.





Focus your talents

Master of Applied Arts  
Design, Visual Arts + Media



emily carr  
university of art + design

ecuad.ca



Carol Tsang, MAA candidate



## Hemlock is a sustainable resource.

We give a lot of consideration to the social and environmental impact of our business. From post consumer recycled paper to Zero, our carbon neutral print program, we're printing greener, better and smarter.

Find out how we can help you at [hemlock.com](http://hemlock.com) or 877.826.5677.

 **Hemlock**  
INTEGRITY. INNOVATION. IN PRINT.

