



# Pay It Forward Café

Buy a cup of coffee for someone you haven't met.

Pay It Forward Café  
Take one token for a free cup of coffee...  
because everyone needs a lift now and then.

Following Rules  
All users are requested to watch this video.

The Pay It Forward Café draws people into the space and gives them a reason to linger.

# Public Spaces and Potential Places

Eileen Campbell, Shawn Lani

It was a foggy morning in an open plaza near San Francisco’s Civic Center, and Randy Carter had already talked to two of the regular visitors to *Sound Commons*, a temporary Exploratorium installation featuring interactive and immersive sound exhibits. Civic Center, the troubled heart of San Francisco, has long been beset by homelessness, drug abuse, and a lack of basic amenities. Carter was a facilitator at the exhibition (fig. 1), and every day he encouraged people to stop, notice, and play, in a location where some spent long, miserable days and other people hurried through, avoiding all eye contact. “It’s about being a good listener,” Carter says, “because people at the Civic Center have a

lot of issues. I met several people there who were in recovery, who used to use [drugs] right there by the installation, and I’d ask them, ‘What’s going on? What drew you here?’ And they’d say, ‘I feel safe here.’”<sup>1</sup> Drawing on his decades in prison and his training as a trauma counselor, Carter was able to transform the Exploratorium’s simple exhibits with a compassionate ministry that helped build trust and create a safe place. We had always believed that inquiry-based learning could be transformational, but this? This was the kind of impact our museum could never dream of, and it was happening in the most unlikely of places, where it was needed the most.

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**Fig. 1.**

Facilitator Randy Carter greets a visitor to *Sound Commons*.

**T**he Exploratorium is an interactive science museum in San Francisco that provides people experiences with real phenomena and lets them explore in open-ended ways. Embedded in our philosophy is an underlying belief that people confident in their ability to investigate and follow their curiosity might expand that to the wider world, might feel agency to ask questions, understand situations, and act on what they learn. This belief has guided a pedagogical model we have evolved, refined, and studied for more than 50 years. For most of that time, we operated within the walls of our museum.

Twelve years ago, we took our first tentative steps into the outside world and began to suspect something both wonderful and frightening: that outdoor public spaces could be transformed into inclusive, community-centered places for learning and discourse. That was the wonderful part. The frightening part came as we realized that our programmatic and cultural tool set was far too limited, that our community ties were too shallow, and that the process of co-creating successful places would mean giving up much of the power we enjoyed as creative experts. We would have to rethink our partnership models, familiarize ourselves with unconventional museum audiences, work with city agencies, navigate community

planning meetings, and learn to maintain exhibits in difficult, 24/7 environments. But the potential of working in public spaces was too big to ignore.

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In response, a small team from within the Exploratorium formed a working group and called it the Studio for Public Places (SPS), in part to clearly differentiate our effort to partners (“I thought you were a science museum”), and in part to honor the community-centered placemaking group that most inspired us, the Project for Public Spaces (PPS), founded by urban planner Fred Kent in New York City almost 50 years earlier.

The SPS team, led by Shawn Lani (coauthor), was cofounded by its earliest working members, who offered a wide range of expertise and a deep dedication to our evolving, place-based community practice. Over the years, SPS has variously included project leads and managers, exhibit developers and builders, writers, graphic designers, content experts, visitor researchers, and web designers.

Since forming, SPS has built 16 idiosyncratic public-place installations throughout the San Francisco Bay Area, taking the form of mobile trailers, civic plazas, parklets (converted car parking spots), site interpretation in a national recreation area, and inner-city community gardens. We have created over 60 interactive, place-specific exhibits. Our diverse funding base includes multiple NSF grants, multiyear support from Science Sandbox, a county library system, local community business benefit districts, city parks departments, and even a few commercial developers.

The installations cover a range of topics – bay ecology, urban infrastructure, skateboarding, social sciences – but increasingly, our work leverages placemaking as a means for people to exercise their right to the city, igniting their sense of civic agency and bolstering their ability to understand and affect the world around them. Ultimately, we believe that informed,



**Fig. 2.**

“Listening Dishes” anchored *Pause* with a surprising acoustical effect that encouraged people to interact with others.

actively engaged residents lead to more resilient and supportive communities. Over time, our strategic partnerships and institutional ways of working will continue to evolve to better serve and learn from the infinitely inspirational communities around us.

Three projects have strongly moved our practice in this direction, and have taught us important lessons: *Pause on Market Street* (2014), *Buchanan Mall* (2015), and *Middle Ground* (2019).

### ***Pause on Market Street***

In 2013, San Francisco’s Planning Department contacted us for help with a new public space initiative called Living Innovation Zones (LIZ). The Mayor’s Office of Innovation had developed this concept as a way of supporting the much larger, decades-long Better Market Street project intended to rejuvenate San Francisco’s central avenue and cultural spine. The LIZ program was a way to prototype what a future San Francisco might look and feel like.

In discussions with the city’s planning staff, we explored the notion of innovation and asked, “What can we bring to the site to benefit the public and highlight San Francisco’s unique culture?” A successful public space generally offers four qualities, according to the Project for Public Spaces: “It should be accessible, it should be comfortable and have a good image, people should be able to engage in an array of activities, and it should be sociable.”<sup>2</sup> Creating such spaces is a practice PPS calls “placemaking,” which the organization defines as “a collaborative process by which we can shape our public realm in order to maximize shared value.” This vision of public spaces aligned with San Francisco’s hopes for Market Street. Our task, then, was to turn a cold, windy sidewalk from a thoroughfare into a space that would invite people to stop and share a moment with those around them. Lesson #1: This is not a museum audience. To draw them in, engage in placemaking to create comfortable spaces where people want to spend time.

To transform the sidewalk, we designed structures to subtly interrupt the flow of traffic and provide sheltered seating with good people-watching vantages. We added two exhibits to enliven the scene: “Listening Dishes,” originally created by artist Doug Hollis, features a pair of parabolic shapes placed 60 feet apart that, because of their acoustic properties, allow people to have conversations across that distance (fig. 2). “Musical Bench” plays music, but only when users complete an electrical circuit by touching both the bench and each other. Both are intuitive, open-ended experiences that require more than a single user, giving people a chance to discover and play together.

Throughout the quick, four-month planning process, the city was a close partner. Staff from the Planning Department set overall goals, provided feedback and critical conversations, and helped us shepherd design plans through the review and permitting process – a nontrivial endeavor,

even with Mayor Edward Lee's promise of a "bureaucracy-free zone." (It turned out to be a "bureaucracy-light zone." Still, that's a rare gift in this city.)

Lesson #2: Work with city officials and link your efforts to larger, in-process civic initiatives – position your educational placemaking as an impactful public benefit.

A study during the exhibition's run counted 20,000 pedestrians passing by daily – a number that dwarfs the Exploratorium's 2,000-person average daily attendance.<sup>3</sup> The seating was well used, and the exhibits, with their playful and somewhat enigmatic nature, acted as a bridge, giving strangers a common experience that allowed for connections across the usual social barriers. In addition, the project helped the city define what it wanted for future Living Innovation Zones: they should be "venues for innovation, connection, and play in public outdoor places central to people's everyday lives."<sup>4</sup>

### **Buchanan Mall**

Two years later, we were invited to participate in a project that would stretch our ideas about community work in profound ways. Buchanan Mall is a San Francisco city park that stretches across five blocks and is surrounded by public housing projects that are home to 7,000 people who

have low incomes. The park sits in the middle of the Western Addition, a predominantly African-American community. It was once a thriving place with rich cultural assets, including a jazz scene widely known as "the Harlem of the West." Then San Francisco's infamous 40-year "urban renewal" project gutted the neighborhood, wiping out homes and businesses and forcing out 4,729 households.

The result was generations of trauma. The park itself became the disputed territory of rival gangs, and for decades it was largely unused by other residents – until two local nonprofit groups stepped up and started the process of transforming Buchanan Mall. Green Streets is a social-benefit nonprofit founded by entrepreneur Tyrone Mullins, who grew up in the neighborhood. Together with Citizen Film, media producers who work for social change, they secured funds from ArtPlace America for a placemaking effort. They brought in the Exploratorium for our design and building expertise; we joined a vibrant team that also included the Trust for Public Land, San Francisco Recreation & Parks Department, and local cultural groups, such as the African American Arts and Cultural Center and the Ella Hill Hutch Center. The Buchanan Mall Design Task Force emerged from these partnerships and served as the locus of the effort.

The Task Force was a group of neighborhood residents who met weekly with the other partners to plan the park they wanted. In a series of workshops, they set goals (safety, nature, a memorial), sketched and built models envisioning park elements, and debated design features. They came to the Exploratorium's shop to build prototype elements and, later, final structures for the park. The Task Force spanned generations, from elders – whose influence in the community was critical – to teens who, in the process, gained skills in both organizing and building.

Our team put in long hours on the Buchanan Mall project, including over 1,000 hours from dedicated Exploratorium volunteers – but without that commitment, we would not have gained the trust of the neighbors or understood their needs. Over the course of many meetings, ideas for the space flowed: lighting and benches. Planters for veggies and flowers. Color. Community voices. Photos of local loved ones who had passed. Concerns surfaced, too, and disagreements. How do we keep people from sleeping on the benches? How vandal-proof does it need to be? Lesson #3: The raw material for community placemaking exists in the cultural, historical, physical, and emotional landscape of a place. If you're listening, and always learning, you'll figure out what to do next.



**Fig. 3.**  
Buchanan Mall residents add their thoughts about what “I Live For...” to blackboards in the park.

The power balance shifts in such community-based projects, and we had to feel this out along the way. We had design-build expertise and knowledge about how to run a project as part of our institutional toolbox, but this was not *our* project. Our role was to help midwife this new being into existence – to support the Task Force as they did the hard work of creating a vision, getting community buy-in, and making decisions. Core partners Citizen Film, the Trust for Public Land, and San Francisco Recreation & Parks Department co-planned workshops, synthesized input, and presented ideas and options. Ultimately, we created structures, literal and figurative, for the community to build upon (fig. 3). The park now has planters for

gardening, “History Dome” benches where users can listen to audio stories of community members, and a place to record what’s important in their lives, along with historical photos, lighting, and colorful signage.

Since our formal role ended in 2015, the community has continued to focus attention on the park, securing funds from the City Supervisors for a \$25,000 design process that is now informing an upcoming \$5 million park renovation. Of course the challenges of Buchanan Mall persist, and the systemic racism that fueled the doomed redevelopment efforts will take decades to dismantle. One little park was not a cure-all. But it was a step.

The influential geographer David Harvey wrote, “The freedom to make and remake our cities and ourselves is...one of the most precious yet most neglected of our human rights.”<sup>5</sup> After the park opened, the Exploratorium offered a summer “explainer” training program for youth at Buchanan Mall (with support from Science Sandbox). Later, six Buchanan mall youth from the program dissected flowers and performed science demonstrations at the mall’s open-air Peace Festival. They were remaking their City. Lesson #4: Building a sense of civic agency, the belief that we all have the ability to understand and then affect our physical and social world, can be the most important and long-lasting impact. Aim for it.



**Fig. 5.** “There’s what people see – and then there’s the unseen story.” This exhibit let users add their own stories about being misjudged.



**Fig. 6.** An Urban Alchemy facilitator (left) puts people in touch, showing them how to make music in the exhibition.

**Fig. 4.** *Middle Ground's* eye-catching yellow structures held exhibits and graphics and helped create a space for people to sit, play, and socialize.

## **Middle Ground**

Since 2011, with an exhibition at the museum called *The Science of Sharing*, the Exploratorium has created experiences that expand our traditional physics and biology topics into the social sciences. In 2017, the National Science Foundation gave us nearly \$2 million to marry this topic focus with our public space work and create an outdoors, urban exhibition.<sup>6</sup> At the time, our partners in the San Francisco Planning Department were engaged in an effort to activate the grounds near City Hall; as part of this Civic Center Commons plan,<sup>7</sup> they offered us a location for the exhibition, and we found a welcoming home on the front steps of the San Francisco Main Public Library – a prominent venue and a strong new partner.

Within a four-block radius of the library and City Hall are numerous museums and theaters, a children's playground, high-tech company offices, and the Tenderloin neighborhood, home to one of the city's highest concentrations of both recent immigrants and residents living in poverty. The Civic Center area mirrors the extremes of the city's wealth and power gaps, with tech billionaires and political power brokers passing by a growing number of unhoused people and those with mental health and substance abuse issues. The library itself has taken on a social service role to assist those who spend time

here.<sup>8</sup> This urban crossroads, with its mixing of diverse sets of people, is a powerful setting for learning about social polarization and social dilemmas. Lesson #5: Study your place, and create something authentic to that context.

To learn the place, we spent time onsite observing and experiencing the social interactions that would inform our project. We conducted monthly formative testing sessions in the library's lobby, trying out exhibit prototypes with the intended audience. And we leaned heavily on the experience of our partners at Urban Alchemy (UA), a social service organization hired by the city to provide a calming presence in many of San Francisco's toughest neighborhoods, including Civic Center. These formerly incarcerated men and women draw on their special training and depth of life experience to make chaotic urban spaces safer and more humane for the people who inhabit them. They come to know the homeless, the workers, and the families who frequent an area, and they helped us understand the social dynamics of this complex public space.

In planning *Middle Ground*, we drew on all the elements of placemaking to create a comfortable spot where people would feel safe to mingle and experiment with the exhibits. In the finished installation, bright yellow structures stood out against the gray Civic Center architecture;

they flanked a plaza and spilled out onto the sidewalk to attract passersby (fig. 4). Tables and chairs encouraged visitors to sit, talk, and watch. "You should be able to get something free, like a cup of coffee," said a partner at an early testing session. So we added the Pay It Forward Café, where visitors could get a cup for free, or pay for someone else's (intro image).

Guided by the social scientist on our planning team, we took seriously our commitment to present cutting-edge science in *Middle Ground*. The 12 exhibits addressed a range of social science topics, from stereotyping and bias to cooperation, compliance, and generosity. One of the simplest experiences, "Unseen Stories," put a face on the effects of stereotyping. It invited people to fill out and post a card with the prompts: "Because I \_\_\_\_, people think \_\_\_\_. But actually, \_\_\_\_" (fig. 5). The resulting stories were a concrete testament to how hurtful and limiting others' assumptions can be. "Making it in America," an electronic interactive based on research about social mobility, had people guess the percentage of Americans who manage to move from a low economic status to the wealthiest ranks. It turns out that most of us wildly overestimate such class mobility. "Don't Push This Button" dared people to break a rule, a provocation that let us touch on how people comply, or don't, with authority.



Other exhibits weren't based overtly on research, but aimed to create revealing social circumstances. "Share a Joke" provided a collection of jokes (in three languages!) and hints on engaging others to listen. "Hands-on Music" required three or more people to hold hands to play music. Onsite facilitators encouraged whoever was in the area to join in this joyous activity, bringing strangers together with laughter and dancing (fig. 6, p. 36). Lesson #6: People everywhere want to learn, play, and connect, so give them meaningful experiences that resonate with their sense of self and place.

Surrounded by human interactions both in the exhibition and around it, visitors proved ready to engage with our social science topics (fig. 7). The experiences encouraged – and even required – social interaction with strangers. They induced self-reflection and conversation. In a summative study created by the Garibay Group, two-thirds of visitors felt as if they had learned something about themselves and others at the exhibition, and said it had made them think about how they act with other people. Overall, 80 percent of visitors gave it the highest "very good" rating, while the remaining ranked it as "good," in large part for being intellectually engaging. More intriguingly, over 80 percent showed clear evidence of metacognition (thinking

about one's own thinking), while another 80 percent said the installation brought out feelings of compassion for others.<sup>9</sup> In our own observations, it felt as if the deepest learning occurred when people reached outside their usual behaviors, engaged with others, and saw strangers not as "other" but as part of an extended "we."

Key to the welcoming environment at *Middle Ground* were the facilitators from Urban Alchemy, who were present during most of the installation's open hours. The facilitators invited people in, encouraged them to use the exhibits, and kept an eye on the space so that all users felt comfortable and safe. With their backgrounds in trauma and their experience in managing fraught situations, the UA staffers were strong stewards who communicated empathy, compassion, and respect to all comers. In a controlled study of the effect of their presence, we found that visitors were more engaged, learned more, and felt more connected to other people when facilitators were onsite.<sup>10</sup> By creating a convivial, inclusive space, their presence brought about a fundamental shift in the social and emotional landscape. Lesson #7: Public space facilitators with local knowledge and inclusive, compassionate approaches can massively improve the visitor experience.

**Fig. 7.** The interactive "Pulling Your Weight" provides insight into how we cooperate – and it gives people something fun to do together.

## **It's About the People**

*Middle Ground* closed down nine months after opening, its run cut short by COVID-19, but in that time it became a much-used and beloved part of the civic landscape. The exhibition's content centered on the science of human social interactions, but most often visitors simply said, "It's about us" – which echoes what we've learned in the course of our work in the city's public spaces. This exhibition could not have succeeded without the human connections we've formed with a wide range of partners. The relationships of trust started slowly, but over time we found ourselves in regular conversations with the San Francisco City Planning Department, the Mayor's Office of Innovation, the Recreation & Parks Department, and many community partners and advocates. Each project deepened these connections and expanded our network.

We've learned the importance of listening to our audiences, and to the communities surrounding our sites. Creating experiences for this diverse group, we had to widen our focus beyond exhibits and science learning to consider what people in these spaces really need – physically and emotionally, as well as intellectually. If our potential visitors said, "I need a place to sit down," or "I need a cup of coffee," or even "I need a



moment of kindness,” we learned to incorporate that into our planning and our mission. We became acutely aware, too, of our responsibility to the wider community: to be good neighbors and to make positive contributions to the life of the city.

As our work began focusing more and more on people, with their real-world issues and needs, we found that our efforts became increasingly relevant to those hard-to-reach audiences. We’ve discovered that if we consider our guests as whole persons, and our sites as whole communities that also have needs, our installations, indeed our entire institution, can become an integral and beloved part of the civic fabric that holds cities together. ■

1 Randy Carter, personal communication with authors, 2017.

2 “What Makes a Successful Place?” Project for Public Spaces, accessed March 30, 2021, [www.pps.org/article/grplacefeat](http://www.pps.org/article/grplacefeat).

3 MKThink, “A Better Market Street Initiative – Living Innovation Zone,” 2013, [http://groundplaysf.org/wp-content/uploads/2013\\_LIZ\\_Yerba\\_Buena\\_Lane\\_Pilot\\_Eval\\_MKThink.pdf](http://groundplaysf.org/wp-content/uploads/2013_LIZ_Yerba_Buena_Lane_Pilot_Eval_MKThink.pdf).

4 Krista Canellakis, Paul Chasan, and Cassie Hoerich, “Living Innovation Zone Guide,” a City of San Francisco publication (2017), <https://sfplanning.org/resource/living-innovation-zone-liz-manual>.

5 David Harvey, “The Right to the City,” *New Left Review* (September/October 2008).

6 National Science Foundation grant DRL #1713638, “Street Smarts: Experiments in Urban Social Science,” [www.nsf.gov/awardsearch/showAward?AWD\\_ID=1713638](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1713638).

7 See “What is the Civic Center Initiative?” at [www.civiccenterinitiative.org/about](http://www.civiccenterinitiative.org/about).

8 John N. Berry III, “2018 Gale/LJ Library of the Year: San Francisco Public Library,” *Library Journal*, June 5, 2018, [www.libraryjournal.com/?detailStory=2018-galelj-library-year-san-francisco-public-library](http://www.libraryjournal.com/?detailStory=2018-galelj-library-year-san-francisco-public-library).

9 Garibay Group, “Middle Ground: Reconsidering Ourselves and Others – Summative Evaluation,” unpublished report, June 2021.

10 Hsin-Yi Chien and Josh Gutwill, “Creating Middle Ground: Transforming Urban Outdoor Spaces with Social Science Exhibits and Facilitation about Biases,” conference session, annual meeting of the Association of Science-Technology Centers, October 2020, [www.exploratorium.edu/sites/default/files/pdfs/Middle%20Ground%20ASTC%20Presentation.pdf](http://www.exploratorium.edu/sites/default/files/pdfs/Middle%20Ground%20ASTC%20Presentation.pdf).