Public Utilities

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DRAWING INSTRUCTIONS

Public Utilities explores the civic and spatial potential of environmental notation. This installation, commissioned for an annual design festival, eschews the typical folly format in favor of a more tactical, distributed, and event-based intervention. The project mobilizes field marking robots, initially designed to mark sports fields, to create several site-specific, building-size drawings at a 1:1 scale that temporarily transform urban space with minimal resources orchestrated to maximum effect. Water-soluble, non-toxic, and temporary, it eschews waste often associated with temporary architecture.

The project extends an ongoing collaboration with an industry partner that manufactures semi-automated, GPS-guided field marking robots for striping turf sports fields (Fig. 9). Working closely with their engineers and programmers, we develop software tools that radically expand the drawing repertoire of the company's robotic systems. When interfacing with new technologies, we model the role of the architects as orchestrators of resources rather than tool makers. We don't create proprietary tools but methods for bringing existing technologies into new spatial use cases. Utilizing an "off-the-shelf" robot has several advantages, including the capacity to utilize a steadily expanding fleet of sports marking robots, which currently encompasses most of the United States and Europe. Consequently, we can test patterns in the American Midwest before traveling to Spain to paint with an identical striping robot owned by the local parks department.

Each robotic painting installation requires orchestrating the procurement and shipping of specific field marking paints, negotiating painting landscapes with local stakeholders, and precisely mapping robotic locomotion. *Public Utilities* celebrates these modest but critical acts of coordination, mapping, and movement with an immersive graphic installation of bright, colorful notation. The installation asks: Can we create architecture through drawing—not as instructions for building but as space itself?

Utility markings inspired the patterns of *Public Utilities*. Often applied in bright, fluorescent colors, these hallmarks of construction indicate boundaries and coordinate the actions of workers across trades. These bright inscriptions typically appear in visually cluttered urban environments and rarely receive attention from passersby. However, if closely examined, they disclose unseen material and immaterial matters that control urban environments and, by extension, civic life. They denote legal boundaries and utilities like power lines, gas, and communications.

Public Utilities dynamically transformed multiple public spaces in Logroño, Spain, the capital of the Rioja region, with bright, exaggerated notations inspired by the visual choreography fluorescent colors of utility marking patterns. It activated a large public square—Plaza Primero de Mayo (Fig. 2)—and two area schools, CEIP Duquesa de la Victoria and IES Batalla de Clavijo (Fig. 10), with supersized inscriptions suggesting new programs and use patterns. At Plaza Primero de Mayo, the installation crisscrosses the large public square with bright pathways that playfully respond to carnival structures semi-permanently installed on the site (Fig. 7)

LESS RESOURCES, MORE EFFECTS

The light and non-toxic marking process kept civic and educational spaces open throughout installation. The low-impact process also spared locals and students the typical air, light, and noise pollution that characterizes even the most temporary architecture. Consequently, visitors and residents became part of the drawing process, observing and inhabiting the enormous graphic pattern in a public performance choreographed by a drawing robot. Passersby followed the tiny robot as it added fresh layers during the week-long installation. These public instructions propose novel organizations and pathways superimposed at multiple scales—the body, the plaza, and the city. Young children embodied these actions, carefully navigating scooters through the tight chicanes of more minor markings (Fig. 1). At the same time, adults followed more prominent markings as they cut across the square between meetings. The bright and colorful inscriptions of *Public Utilities* suggest an architecture not of embodied objects but of the dynamic performance of spatial instructions. Unlike more embodied boundaries, however, the markings of *Public Utilities* are only suggestions - equally capable of engagement or disregard.

Figure 1. A young visitor navigates their razor scooter along a graphic pathway. Laurian Ghinitoiu.

Figure 2. Overhead view of the final installation. Laurian Ghinitoiu.

DIBUJANDO CON ROBOTS

A vital aspect of any civic installation is the public's engagement and opportunities for direct involvement. *Public Utilities* programming included several workshops with local schools, demonstrating the overlaps between technology and the arts and offering students the chance to contribute to their environment collectively. A manual for robotic painting (Fig. 3) introduced the forthcoming installation to students of all ages, with graphics and translated text explaining both the painting process and the geometric principles behind the robot's navigation systems. The book also included several exercises students could undertake to design robotic patterns. School children drew ideas for installations in each sports court using basic supplies like compasses and strings. Working closely with instructors, they developed collective patterns incorporating features from each student's drawings. The same robot used in the city's public square came to each school to install their collective drawings on their grounds. Today, these students activate a space of their own making at each recess (Fig. 10).

LEAVING A MARK

Public Utilities was a temporary experiment—a delible overlay that transgressed the everyday functions of urban spaces. In the Spring of 2024, the Logroño City Council decided to prolong the installation's presence, which will remain in place indefinitely to "contribute to an improvement of public spaces." The extension of the project is a testament to the organizing team, who work tirelessly to ensure that each installation promotes further engagement and beautification of Logroño's urban fabric (Fig. 6).

Figure 3. *Dibujando con Robots*, an activity book for students.

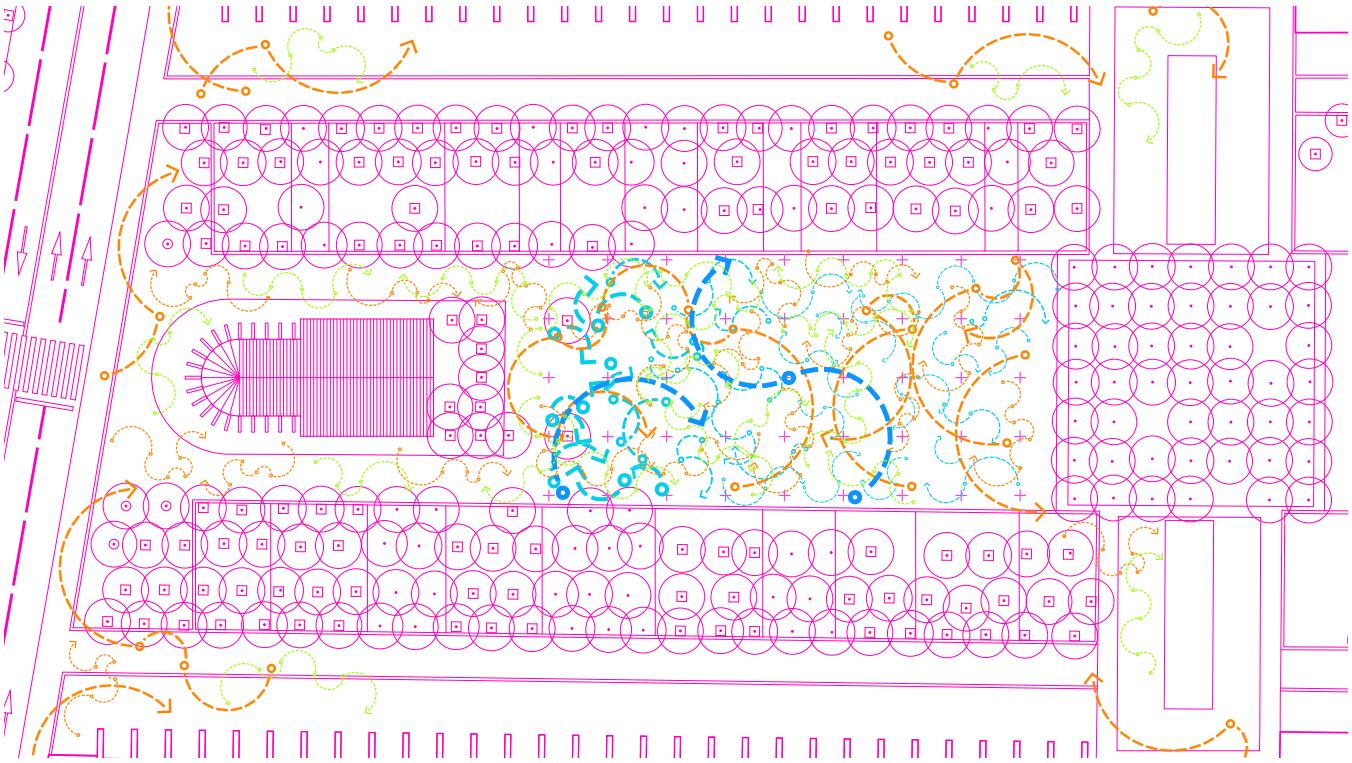

Figure 4. Proposed site plan for installation at Plaza Primero de Mayo.

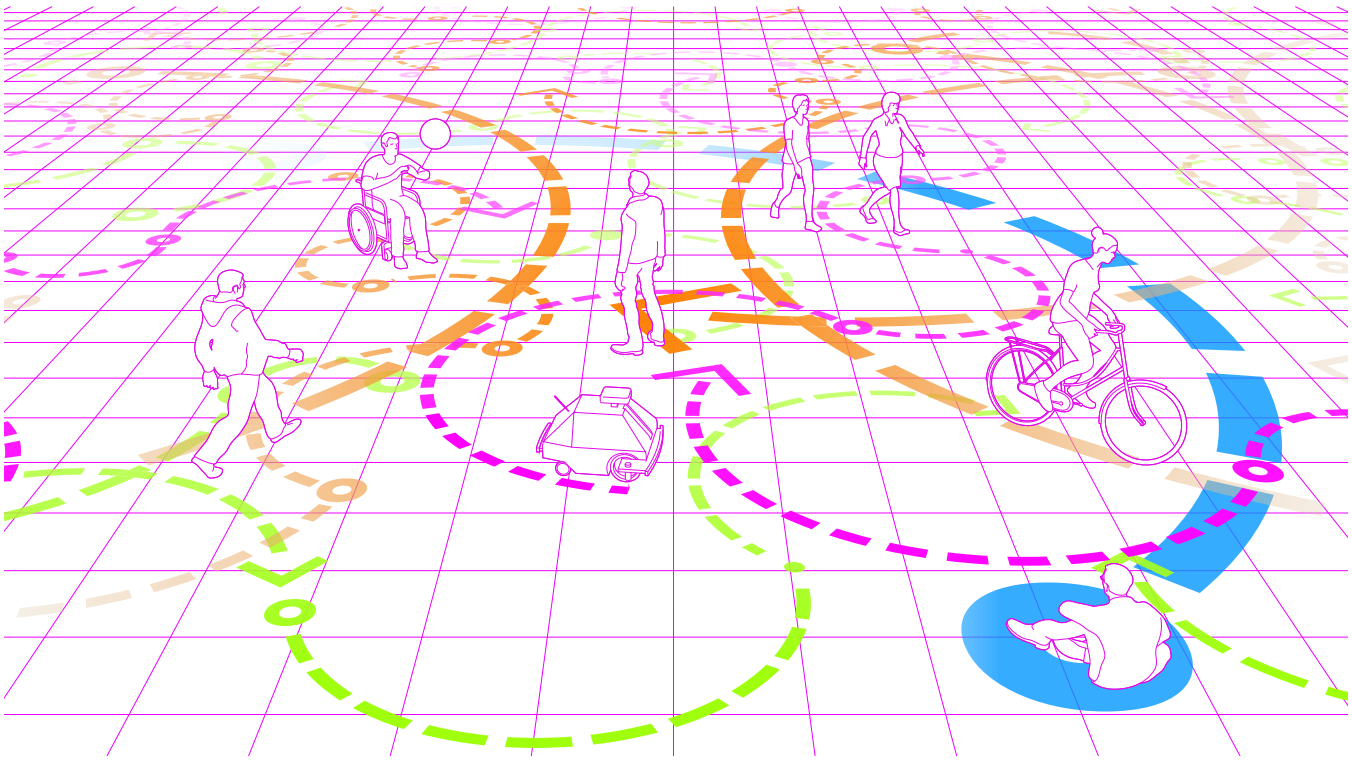

Figure 5. Conceptual perspective for installation at Plaza Primero de Mayo.

Figure 6. Overhead view of the final installation at Plaza Primero de Mayo. Laurian Ghinitoiu.

Figure 7. View of the installation from inside a carnival ride installed at Plaza Primero de Mayo. Laurian Ghinitoiu.

Figure 9. Painting robot during installation. Sara Cuerdo.

Figure 10. Students play on a collective drawing. Sara Cuerdo.