

In Action: Urban Design Pedagogy for Co-Production

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How are we learning to collaborate and co-design with community stakeholders when traditional real-world engagement processes are not in sync with the requirements of semester schedules or could burden the communities we try to serve? What are the emerging techniques and pedagogical mechanisms that we can test and explore to allow for a learning environment that facilitates for urban design in action?

Working with the Trust for Public Land (TPL) and a fictional Community School Yard project in East Cleveland, the presented research is based on the long legacy of TPL's program that pioneered a new model for environmental leadership and community stewardship. Since 1996, the program transformed over 200 formerly paved schoolyards into community schoolyards in New York City alone. Today, TPL works across the nation and the model points at a future where community schoolyards could become standard practice, addressing the open space equity gap of our cities, and serving as excellent precedents for co-production and alliance building.

This paper reflects on a seminar that implemented game mechanisms to introduce students to co-production strategies while designing a public space network with adjacent neighborhood communities.

The paper introduces precedents and theories that investigate participatory design methods and shows how roleplays can help to stage real-world dynamics. The discussion includes design strategies that put the integration of game mechanisms at the project's core and concludes with a reflection on a pedagogical framework exploring an emerging field around game scenarios, simulation games, and storytelling as an essential part of our disciplinary canon.

INTRODUCTION

How are we, as designers, learning to collaborate and co-design with community stakeholders when traditional real-world engagement processes are neither in sync with the requirements of semester schedules nor with institutional restrictions and could burden communities that we want to serve? Are there emerging techniques and pedagogical mechanisms that could allow for a learning environment that facilitates urban design pedagogy and community engagement in action?

As urban design disciplines attempt to address social and environmental injustices, community engagement—often facilitated by receiving design inputs from future users—is shifting toward co-design processes that allow stakeholders to actively contribute to design decisions. Learning from best practice and precedents, this paper features an experimental approach to urban design pedagogy in which students were tasked with developing a participatory design strategy for a community schoolyard project in East Cleveland and with testing these strategies through roleplays staged as a first community outreach workshop with unpredictable dynamics.

The paper is structured as follows: 1) an introduction of the general learning outcomes and pedagogical framework; 2) examples of preceding projects that facilitated co-design through game mechanisms; 3) an overview of the Trust for Public Land's Community Schoolyard Project; 4) a description of the integrated roleplays; and 5) a first attempt to draw conclusions, including a reflection of the students' work.

1. URBAN STRATEGIES ADDRESSING SOCIAL JUSTICE AND ENVIRONMENTAL RESILIENCE

The work conducted stemmed from a graduate seminar offered to students specializing in architecture, urban planning, and landscape architecture with an urban design concentration, as well as urban design graduate students. Funded by a recent curriculum development grant, this class addressed questions of social justice and environmental resilience. The seminar introduced operative urban strategies linked to formal spatial typologies, time-based processes, and collaborative urban interactions. Content was collaboratively produced through lectures that introduced students to a wide range of urban



Figure 1. Image caption: NYC IS 366 Community Schoolyard 2017. Image credit: Studio Hip

design operations extracted from case study cities, precedents, and readings. Through two assignments, students addressed a specific design challenge—typically, a public space typology that focused on the design process. Moving from operational site analysis to action plan development, the students expanded their communication vocabulary, which included a variety of mapping techniques, design visualizations, and storytelling. The goal was to learn to communicate with a variety of stakeholders, including non-designers who were less familiar with the abstractions of plans and sections. Tailored toward an interdisciplinary student body, the class integrated elements of design thinking, as urban environments are shaped by a variety of actions, forces, and design strategies that occur at multiple scales and through many disciplines.

An important learning outcome was to introduce engagement strategies as “equitable collaboration.” The historical context highlights the importance of enacting trauma-informed co-design practices through collaboration processes that support equity and inclusion. The syllabus of spring 2023 was based on a partnership with the Trust of Public Land (TPL), who provided a fictional but realistic collaboration setting, in which students learned what it means to listen to community members and develop design strategies that operate between top-down and bottom-up.

2. GAMES AND CO-PRODUCTION IN URBAN DESIGN

The use of game strategies to understand and engage with the urban environment is not a recent development. As described by Strouhal, games, specifically well-illustrated board games that allow travel through time and space, have been used since the late seventeenth century. A marker in the history of pedagogical games was Elizabeth Magie’s *The Landlord’s Game*, patented in 1904. Framed as an easy-to-understand demonstration of land grabbing and speculation mechanisms showing how rents enrich property owners and impoverish tenants, this pedagogical tool was originally developed to help the public understand

these mechanisms. Magie’s project was republished by Parker Brothers under a new patent in 1935 as *Monopoly*.

In the 1960s and 1970s, Richard D. Duke started to integrate games into urban planning and university pedagogy. His book *Gaming: The Future’s Language* created a framework for how games can generate consensus in complex environments and is often considered the starting point for gamification strategies in our discipline. Another milestone was Henry Sanoff’s 1979 *Design Games*, which established games as an effective tool in participatory design. Since then, many studies have explored game mechanisms. More recently, Ben Stokes attributed the rise of gamified implementations to their capacity to connect strangers across age groups, backgrounds, and demographics. Games build communities and connect participants “across zip codes, support the ‘buy local’ economy, and build cohesion in the fight for equity.”¹

Routledge’s *Companion to Games in Architecture and Urban Planning* provides a systematic overview that introduces different applications of games. Games are tools that facilitate co-design processes, support pedagogy for better learning outcomes, and improve research projects. This paper is specifically interested in co-design games that foster collaboration among stakeholders. Four precedents were selected from a larger body of research produced by the class to serve as examples. These projects addressed critical challenges in the context of co-design and addressed how designers can do the following:

- Support non-designers across age groups to contribute to site analysis and preliminary site design strategies.
- Help non-designers and community members understand project constraints (budget, user conflicts, etc.).
- Foster discussion among participants not trained to read abstract drawings or those with language barriers.

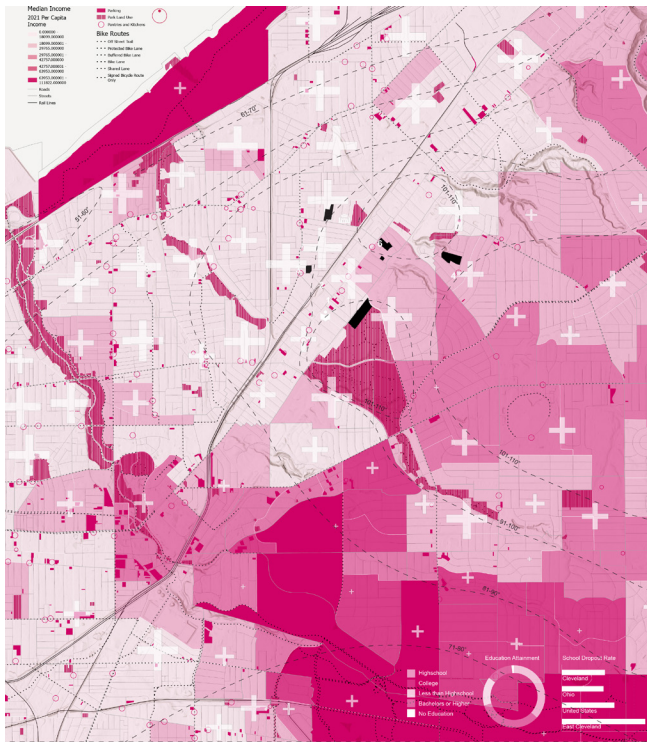


Figure 2. Image caption: Site Analysis, Image Credits: Chris Parschalk, Vishal Jayan, Zoque Wahid

- Initiate a collaborative process that does not depend on expert moderation.
- Introduce design values and objectives in an explorative and self-directed way.
- Nurture a process in which all participants have their own voices while building consensus.

2.1 Designing Neighborhoods Together: Neighborhood 3000 (Baupiloten)

Also referred to as Kotti 3000 as a reference to the original site Kottbusser Tor, Neighborhood 3000 is a low-threshold tool for reaching people who, because of insecurities, language, or cultural barriers, would not normally participate in collaborative planning processes. In the actual workshop, the players received a large three-dimensional map of the existing neighborhood, serving as a game board onto which they could affix suggested changes or improvements. These wishes were produced as pictogram stickers and assigned a certain point value (tree = 50, sports stadium = 500). During the engagement process, 3,000 points could be allocated. Comic strip-like versions of perfect living environments served as the basis for further planning and activities. The gameboard and instructions were provided in multiple languages to serve the multicultural neighborhood, and the pictogram stickers were crafted as design vocabulary from which participants could choose while creating hierarchies.

2.2 Envisioning Learning Environments: Unsupervised School Vision Game (Baupiloten)

The School Vision Game offers stakeholders and municipalities an opportunity to determine their future school’s program without the instructions of professionals. In 100 minutes and 17 steps, the space requirements of future users and interest groups were explored and discussed with the administration. The starting point of the game activated the users’ experiential knowledge. Informal conversations about the school’s transformation were translated into a program map that visually highlighted activities and atmospheres. This methodology connects with future users on emotional, cognitive, and social levels. It creates equal communication, enables detachment from previous ideas, and avoids complicated explanations while ensuring inclusive participation. Utilizing pictograms as vocabulary to identify programs and call out spatial relationships further allows for a common language. Conflicts of interest become apparent, are negotiated, and are converted into synergy. This ready-made game does not require moderators. A second version of this strategy was developed so that kids could play the game with one adult who helps with the instructions.

2.3 Three Layers of Co-Production: The Farm Game (Archolab)

The Farm: Gaming Strategies for Empowering Marginalized Youth involves three connected game layers: the Taxonomy Game, Fieldworks Game, and Barn Game. In the Taxonomy Game, players documented the site through photographs and identified sites with common-place attributes. These sites became game cards, establishing a visual library that players traded by rolling the dice, triggering discussions around site assets. In the Fieldworks Game, a board representing the site was used to co-design a master plan. Design and strategy cards were played to guide site development. Players must connect their paths to one constructed by previous players, teaching players how to read a site plan (board), work through changing problems (action cards), and consider the dynamic landscapes produced by moving pathways and placing furniture (paths and elements). The Barn Game utilizes large-scale models and allows participants to place building components, facilitating a form-playing game. Imaginative roleplay was combined with a dollhouse model to record the ideas carried out by the players as they took on different roles and characters. Overall, the game generated designs through a collaborative process and allowed the architects to see the project through the lens of future users.

2.4 Understanding Sustainability: Spector (Marta Brkovic Dodig and Prue Chiles)

Spector builds on the metaphor of an inspector looking for evidence of sustainability. Spector was designed for 20 players aged 8 to 15. Each student could play individually or in teams, and the process was guided by a moderator (architect). The estimated playing time is up to three hours and consists of four steps:



Figure 3. Image caption: Roleplay Scenes. Image credit: M. El Khaff

suspect, inspect, discuss, and detect. During suspect, players were instructed to pick from 22 cards featuring sustainability topics (social, environmental, and economic). During inspect, players grabbed their cameras and documented their answers with photographs. Discuss opened the playing field for a board game. By throwing the dice, players moved across the board, and stations on the field asked players to discuss their photos taken on that topic. During detect, students placed the photos and comments on a provided school plan with post-it notes that indicated positive or negative attributes or a speech bubble with new ideas for improvement. Students played the game until all photos were revealed and all issues discussed. Spector is a pedagogical game, but its hybrid character supports multiple skills: self-analysis, collaboration and communication, negotiation, and workflow and concept design.

3. THE COMMUNITY SCHOOLYARDS PROJECT

Among the precedents offering guidelines for co-production processes, the Community Schoolyards Projects from the TPL stand out as an engagement project that operates nationwide today. Originally launched in 1996, the NYC Playgrounds Program pioneered a now well-tested model for environmental leadership and community stewardship that has since been implemented in other US cities. Asphalt schoolyards have been

transformed into community assets, placing over 4.2 million New Yorkers within a 10-minute walk of quality playgrounds and shared common spaces for the neighborhood. The program has resulted in more than 200 green community schoolyards across all five boroughs and a unique participatory co-design process involving students, school administrators, teachers, and community members. By leveraging the 90,000 underequipped and underutilized public-school sites across the country, the project has provided underserved communities with open spaces while improving schoolyards. In the future, green schoolyards could become standard practices, addressing the open space equity gap in US cities. Playing a vital role in climate change mitigation, these sites capture stormwater to reduce flooding, address urban heat island effects, improve air quality, allow for active learning in outdoor classrooms, and provide green spaces. The NYC Playgrounds Program alone captures over 23,454,000 gallons of storm water annually and has planted over 4000 trees. Similar programs have since been implemented in Philadelphia, Chicago, Boston, Atlanta, Newark, Oakland, and Tacoma. The most recently launched initiative is a collaboration with the Interior Department Bureau of Indian Education.

Danielle Denk, the director of the Community Schoolyards Program, described TPL's co-design process as a participatory one that can truly transform the system. Ultimately seeking

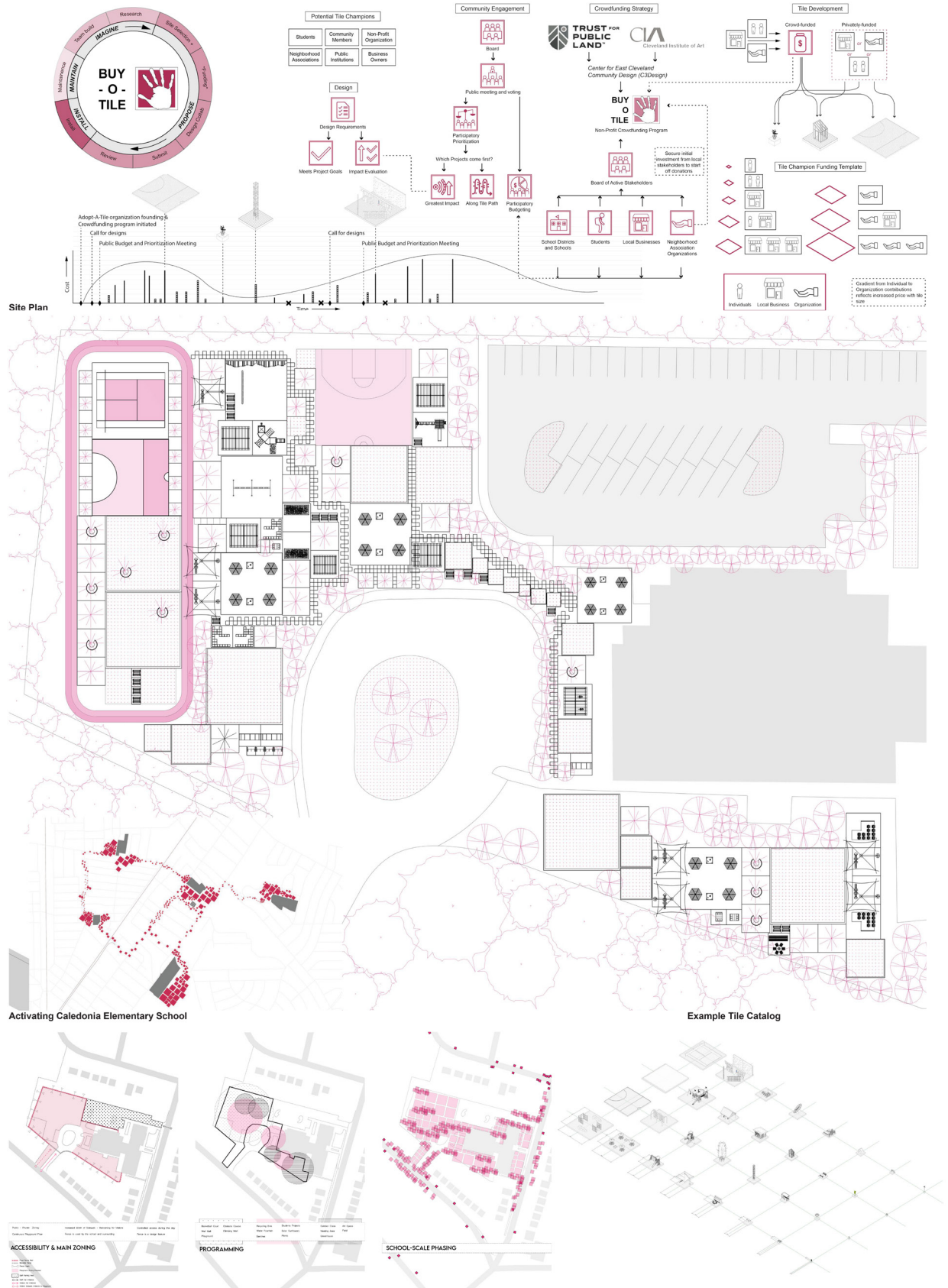


Figure 4. Image caption: Design Strategy BUY-O-TILE. Image credit: John Ward, Meredith Hoos, Shaima Abdullah Alharbi

a policy change to generate a funding stream, Denk argues that the program improves urban environments through its hybrid model. The transformed sites enhance learning performance and general health while strengthening the belief that climate change can be addressed through small-scale actions. Furthermore, the participatory model empowers students through positive experiences of helping with a project that supports climate action, which is essential for a generation that will feel the impact of our changing world.²

Co-design fosters stewardship, facilitates knowledge, empowers everyone involved, and allows projects to occur simultaneously, as the implementation process is less dependent on professional designers and instead distributed among multiple actors. This shifts decision-making power and seeding ownership. Students—approximately a group of 10 to 14—learn about green infrastructure, heat island effects, and water quality, visiting precedents to understand the implications of environmental injustices. Back in the classroom, students use a kit-of-part approach tested through multiple prototypes. While each project is based on the local site and its climate conditions, some elements are part of all community schoolyards: trees, planters, lawns, permeable surfaces, basketball courts, seating areas, green classroom facilities, butterfly gardens, murals, floor paintings, running tracks, and trails. These elements are placed through a physical plan at scale or—for older students—in a digital environment to develop a site plan. Participants discuss potential user conflicts, add new program components depending on site context and needs, and discuss budgetary constraints. Through this process, multiple plans are generated and edited by a landscape designer. Then, the community votes and provides final feedback. In addition, signature elements, such as mural paintings, are produced in art classes. Over the last 30 years, this process has allowed children to share their vision with decision-makers. According to Denk, this empowerment has implications for their careers as students become ambassadors who represent their communities and the environment.

While the implemented projects are excellent successful examples of co-design processes, their relatively slow implementation conflicts with the nationwide scale of the projects' ambitions. In addition, previous years' iterations of the projects focused on student involvement and less on community engagement. To address these issues, the seminar developed an academic but realistic setting for six sites near each other in East Cleveland (OH). This unique layout entertained the possibility of generating a larger public space and sharing jointly operated resources among multiple sites with the communities.

East Cleveland, a former suburb of Cleveland that is similarly suffering from decline, is its own municipality and is one of the poorest places in Ohio. A history of redlining and blockbusting, white flight, deindustrialization, and mortgage crises are challenging communities. Compared to other neighborhoods, East Cleveland's has been devastated by more than 50% depopulation

since the 1970s, causing a loss of income tax.³ TPL is currently launching a new initiative to transform six public schoolyards, and the seminar engaged with this real-world project through a fictional design study:

- Examining TPL's best-practice precedents, students analyzed the co-design process, design elements, and programs, which were translated into a design kit. This phase was supported by a lecture by Danielle Denk.
- Tapping into game strategies and other digital tools, the students were asked to experiment with novel forms of co-production.
- A roleplay was integrated to facilitate students' understanding of the dynamics of a co-design process.
- Students then developed a public space project that integrated co-design processes extracted from precedents and lessons learned from the roleplay.

4. ROLEPLAY AS PEDAGOGY

After the site and precedent analysis and during the design concept phase, students engaged in roleplay that exposed them to the dynamics of community workshops. In the staged scene, the design team organized a first workshop in which they presented the idea of a neighborhood common with potential benefits for various stakeholders. The workshop took place around a table. The scene involved the following fictional characters: Tristan Miller, representative of TPL; Kory Alvarez, principal of the school; Jessie Johnson, Grade 9 student; and Kerry Williams, resident of East Cleveland. The actors were tasked with displaying the dynamics of user conflicts, opposing needs and desires, and questions of future maintenance and responsibilities. The designers (students) then entered the room and started the workshop by introducing themselves and their conceptual designs. Within several minutes, it became evident that community members easily misunderstood ideas, had their own partly diverging expectations, and could contribute more productively to the discussion when they had physical models or artifacts at hand that allowed them to engage directly with the site or the potential program. A moderator took notes, and peers in the course observed the dynamics of the two 15-minute workshop scenes.

The roleplay was based on the instructor's brief and guided by a theater group that helped with the set-up, summarized observations, and debriefed the scene. Students experienced firsthand possible real-world challenges, acquiring an understanding of what it means to talk to stakeholders unfamiliar with professional jargon, insights into potential user conflicts and space requirements, and the discovery that community stakeholders specifically have tremendous knowledge of the site and its history. During the debriefing, it became evident that the students had read about community engagement processes many times but could never have imagined what this would feel

like. Being exposed to “real people” (the actors) who knew the neighborhood because they were born there and who will help implement and maintain the project allowed students to understand that their specific ideas for a neighborhood common are soulless unless their project can integrate community input and contributions.

5. DESIGN ACTIONS AND LESSONS LEARNED

Ehene ma dolorer cipsam, evelibus mo offic te verest For the remainder of the semester, students worked on co-design processes that yielded convincing projects for sites in East Cleveland. Borrowing from projects like Neighborhood 3000 and the Farm Game and methods by Anke Schmidt, who uses storytelling as a design research tool to address social and participatory issues, students combined well-formed design strategies with narratives produced by the community and other stakeholders. As design activism specialist Doina Petrescu argued, losing control is a difficult task to learn.

Below, three student projects show how roleplay encouraged design strategies that pay attention to process and integrated collaborative game mechanisms.

5.1 Flip-the-Block!

Defined through the framework of a larger neighborhood common entitled the Meltway, “Flip-the-Block!” is a three-phase boardgame that allowed students, school administrators, and community members to define site-specific program components of six schoolyards. Organized by a grid that structures the sites at scale, students played Phase 1 by taking rounds to select and position predefined and open program blocks for the site’s layout. These blocks represent activities (basketball court, seating area) and are chosen from the program menu retrieved from the TPL. The developed scenarios are then presented to the school’s administration and the neighborhood in two following workshops. Programs are defined by rules (adjacencies, budget value, and requirements such as minimal footprint of green infrastructure), and majority votes finalize the process. The chosen scenario is then delivered to the design team for final editing and visualization.

5.2 Legacy Yards

Based on the findings of the site analysis that resulted in the discovery of a series of local writers, artists, entrepreneurs, and politicians from East Cleveland, “Legacy Yards” invests in the history of the neighborhood as a means of place making. Discussions during the roleplay emphasized that the neighborhood’s legacy is not only a part of the past but also the future through cultural activities, events, and new narratives. The design strategy consisted of spatial components (described as infrastructure to support, trigger, and remake narratives of public spaces) and narratives communicating a place’s lost memory (provided by workshop participants through postcards and

neighborhood walks). This approach identified important places in the neighborhood as anchor sites. These sites, in combination with the postcards from the past (memory) and of the future



Figure 5. Image caption: Final Review Flip the Block! (Chris Parschalk, Vishal Jayan, Zoque Wahid). Image credit: M. El Khafif

(desires), defined the layout and activities of the common space connecting the six schoolyards.

5.3 Millionaires Connection BUY-O-TILE

Initiated through a funding strategy carried out by a non-profit organization, “BUY-O-TILE” taps into the philanthropic potential of East Cleveland as formerly one of the richest neighborhoods in Ohio. Financed through crowdsourced funding, private donations, and institutional support, the project is spatially structured through a mosaic of program tiles that generate the site layouts. Building on TPL’s kit-of-parts approach, the scheme expanded the catalogue of program options (tiles of the public space mosaic from 1 sq. ft. to 1600 sq. ft.) and fosters a bottom-up design emerging through stewardship, program definition, and aggregation. It is framed through top-down constraints provided by the designers to navigate planning regulations and potential user conflicts. As such, the project offers a middle ground to co-design a public space through the process of imagination, proposition, acquisition, installation, and maintenance.

5.4 First Findings

Game mechanisms are suited to support participatory design processes. As Vaajakallio argued, “design games are tools for co-design that purposefully emphasize play-qualities such as playful

mindset and structure, which are supported by tangible game materials and rules. Instead of being a well-defined method, it is an expression that highlights the exploratory, imaginative, dialogical, and empathic aspects of co-design.”⁴ Roleplay is particularly convincing as a vehicle for testing and experiencing a real-life situation. The following findings are understood as the first takeaways:

- Game mechanisms do not replace spatial design but support their development. The project’s objectives are rooted in the site context, the program, and stakeholders, but to co-produce, the process benefits from game mechanisms (e.g., roleplaying and turn-taking) to trigger future users’ imagination as a source of ideas and knowledge.
- As the roleplay was intentionally incorporated at the beginning of the design process, students experienced firsthand their own design actions. Hence, the roleplay facilitated an early understanding that co-production is a highly integrated process.
- Designers need to understand where participants can best contribute to the co-design process. Based on precedents, research, and roleplay, students integrated future users to collaboratively determine the future program, to help with site setting, and to generate common actions for public spaces.
- Physical artifacts create an (infra)structure for the co-design process. This feedback was provided by the actors, and students understood that their design artifacts are not top-down components but helpful elements for collaboration.
- Roleplay was the first step in testing the co-design process and was repeated two weeks after the students extracted game strategies from precedents. This was a major turning point in the design process, and most students chose an alternative format to present their final project (e.g., a staged scene or a game that reviewers had to play).

ENDNOTES

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