Catalyzing the commons
Architects as Participants in Urban Commons Projects

Antje Steinmuller[a]

Resumo

Este artigo examina o papel catalisador dos arquitetos como participantes em dois projetos sobre comuns urbanos. Analisa-se a relação dos arquitetos, dos cidadãos e dos municípios na evolução de processos participativos que levaram ao recente ressurgimento dos comuns e equaciona-se as implicações desta participação em projetos sobre comuns urbanos e sobre a *expertise* em arquitetura. Especificamente, propõe-se o uso de termos como 'hardware', 'software', 'orgware', e 'brandware' para abordar a arena expandida de tarefas que os arquitetos têm de enfrentar sempre que participam neste tipo de projetos.

Palavras-Chave
Participação, Comuns Urbanos, Experiência Arquitetónica, Urbanismo Participativo

Abstract

This paper examines the catalytic role of architects as participants in two urban commons projects. It reviews the relationship of architects, citizens and municipalities in the evolution of participatory processes leading up to the recent resurgence of the commons, and considers the implications that this participation in commons projects has on the definition of architectural expertise. Specifically, it proposes the use of the interrelated terms 'hardware', 'software', 'orgware', and 'brandware' to approach the expanded arena of design tasks confronting architects who aim to contribute to this type of projects.

Keywords
Participation, Urban commons, Architectural expertise, Participatory urbanism

Introduction

The form and role of public space in urban environments has been transforming in recent years (Gandelsonas *et al.*, 2012). Public funding sources have all but dried up in many cities as a consequence of the financial crisis; public private partnerships in the development of downtown outdoor spaces have led to an increasingly tangible privatization of urban space; and different types of migration patterns to, from, and within cities make urban space as a space of social encounter subject to new populations and different needs. Inevitably, these developments have also led to different processes for the production of public space, in which altered roles and relationships of citizens, architects, and local government bodies have emerged. Recent years have seen a resurgence of citizen-initiated urban commons projects as an immediate and often opportunistic response to shared local needs. This paper examines the changing role architects — both practitioners and architecture students — take on in the resulting landscape of spaces and stakeholders.

Citizen participation in the production of urban space, first the subject of debate as a consequence of citizen revolts against the tabula rasa urban regeneration projects of the 1960s, has since taken on a range of manifestations. Since the 1990s, bottom-up and often temporary urban interventions have provided a forum for direct citizen engagement with urban spatial resources. Most recently, hybrid processes have been pioneered in which bottom-up interim use by citizens operates in dialog with long-term planning processes. Situated between the poles of government-led and citizen-initiated efforts, the role of the architect/designer has been shifting and expanding in response to these experiments. The research presented in this article begins with a review of the constellation of initiators, stakeholders, and funding mechanisms that form the context for the designer/architect in the evolution of participatory processes. Positioning urban commons projects and their specific issues and needs in this lineage, the main body of the paper provides a detailed description of two urban commons projects and highlights

[a] Assistant Professor. California College of the Arts. Email: asteinmuller@cca.edu

the specific role that architects (and in this case, architecture students) have taken. The research makes the case that the involvement of architects in urban commons projects constitutes an inversion of the more typical constellations within participatory processes, in which citizens provide intermittent feedback at select points of planning or design. In community-led urban commons projects, it is instead the architect who is consulted intermittently as a catalytic participant in citizen-led production of urban space. The paper also puts forward a framework for addressing the complexity of such projects for the design task, and highlights emerging areas of expertise that expand beyond conventional disciplinary understandings of architecture.

Participation's Many Forms

Beyond the implementation of early citizen planning commissions in the Unites States in the 1920s, citizen participation in design or planning processes became the subject of intense public debate in the 1960s, when large-scale urban renewal projects displaced established urban communities. Jane Jacob's critique of New York City's plans for renewal portrayed citizens not only as key contributors to the vibrancy and safety of urban neighborhoods, but ultimately laid the groundwork for positioning citizens as local experts whose participation in decision-making was vital (Jacobs, 1961). Architects and designers began to view themselves as advocates of citizen groups (Davidoff, 1965) that were excluded from the large-scale redevelopment projects threatening to destroy their communities. To enable architecture and planning as a more inclusive and participatory processes, Community Design Centers (CDCs) emerged, through which architects provided citizen groups with design assistance. While the work of the early CDCs has its roots in political resistance to top-down planning projects, over time, CDCs have increasingly reoriented their work towards local community initiatives. They remain committed to grassroots involvement in the planning and design of urban space (Heyden, 2008).

Beyond the mere engagement in dialog with urban government bodies, Jacob's notion of participation included the space for citizens to act and innovate directly independently (Cozzolino, 2015). Through small local actions like the organization of a free bus service within a New York City neighborhood, Jacobs traced the impact of citizen initiative on the larger system of the city (Jacobs, 1969). Around the same time, the noticeable failures of the Modern Movement brought forth an increased interest in recalibrating the power relationships between architects and citizens in Europe. Architects like Lucien Kroll and N. John Habraken developed a form of participatory architecture, understood as a built framework designed by architects, within which interior walls and exterior envelopes could be added by inhabitants, and could adapt to individual users' needs (Habraken, 1972).

Eventually, citizen participation became an integral part of local governments planning processes. While it initially implied a redistribution of power - between government, citizens, and by default, architects - in practice, it proved to be time consuming and often without effect. In addition, planners and architects often perceived citizen engagement in community meetings as an interference with professional knowledge. At times, it became a forum for citizens with special interests rather than representative of a full spectrum of community members. Not surprisingly, the form and degree of participation became the subject of debate and contention, most pointedly exposed by Arnstein's Ladder of Citizen Participation (Arnstein, 1969). Arnstein's typologies divided the gradient of power distribution between municipality and citizens into eight categories, from empty placating rituals (non-participation) to truly delegated control over decision-making (citizen power). More recent views of community participation have been more modest and pragmatic, focusing on information exchange, conflict resolution, and supplemental engagement in design and planning (Sanoff, 2000). The appropriate form of citizen participation was found to depend on the project and its specific local conditions, which should determine who participates, when in the process, and what the specific goals of the citizen participation are. Yet, participatory processes evolved, showing consensus amongst scholars of community design and planning on citizen participation as an educational tool that enriches processes and results for all involved (Glass, 1979; Smith, 1973; Sanoff, 2000).

As funding for CDCs from federal programs slowly dried up in the 1970s and 80s in the United States, their initial idealistic motivation gave way to more pragmatic and increasingly entrepreneurial models (Comerio, 1984). Architects at Asian Neighborhood Design, a CDC in San Francisco, developed and built furnishings for Single Room Occupancy dwellings as a means of generating income for the organization, gradual-

ly shifting the focus of their work from political to practical, and from process to product. While this shift can be seen as a decline in professional concern towards political and social justice, it simultaneously is testament to a change in attitude, from the mostly reactive stance of early CDCs vis-a-vis municipal planning projects, towards a more active if not pro-active role in supporting community goals. At the same time, this reorientation also signified a shift away from the focus on large-scale reform towards small-scale local action. CDCs began to see the potentials of individual, smaller actions to be cumulative with the potential to trigger larger-scale change.

While the CDCs were founded on architectural expertise in close collaboration with local communities, a more direct form of citizen participation in shaping urban environments emerged in the following decades. In the absence of clear property ownership in East Berlin after the fall of the wall, citizens initiated interim use of underused urban sites and buildings. In this emerging bottom-up urbanism, participation took the form of opportunistic spatial interventions without the involvement of architects. In the resulting projects, these spontaneous architectures became a tool to moderate between top-down planning knowledge and everyday practice (Heyden and Fetzer, 2004). Many of these projects began as informal interventions, but were often institutionalized over time. In most cases, architects and planners were not involved in the ensuing negotiations with city agencies and property owners to determine the duration and future of these bottom-up interventions. Yet in 2004, the Berlin Senate commissioned a study of vacant areas in the city that had been the subject of interim use through citizen initiative (Overmeyer, 2007), acknowledging —and ultimately formalizing— that bottom-up temporary as a targeted and integral part of long-term urban revitalization. If participation is a direct reflection of the political circumstances and context of power relationships (Heyden and Fetzer, 2004), the bottom-up projects of the past two decades are evidence of an increase in community-driven and community-controlled urban space, and of the growing acceptance and incorporation of direct citizen action in the production of urban space. This type of process can be described as informal, critical or conflictual participation - as a form of pro-active citizenship in which citizens bypass expert disciplines and power structures in order to spark political discussion and catalyze change by self-identifying and seizing opportunities for intervention (Miessen, 2010).

A number of projects that emerged from this form of participation began through citizen-initiated interim use that later developed into non-profit organizations or independent institutions whose presence activated and transformed the neighborhood context around them, ultimately with the approval of the respective municipality. The postindustrial area of Revaler Viereck in Berlin, relinquished by the German railway operator Deutsche Bahn AG in 1994, is an example of the way informal processes have gained a foothold in long-term planning. Following initial informal uses or the site as a nightclub, local citizens founded the non-profit organization RAW-Tempel e.V. in 1998 in order to gain permanent legal access to the Revaler Viereck site for various neighborhood uses. When the property owner decided to develop the site, the RAW-Tempel submitted of a citizen-developed proposal that included an "interim use catalog". The local government subsequently used this submission in their development of the land-use plan, and as part of the architectural competition brief issued for the site. Following an initial meeting between the developer and RAW-Tempel members, the municipality also implemented a communication forum for regular exchange with neighborhood citizens as a planning instrument. The Revaler Viereck, while still not developed, can be seen as an incidence in which the local municipality embraced ongoing citizen participation as part of long-term development — demonstrating an openness towards unplanned and changing uses that reflect local citizens' needs (Rostalski, 2007). It is one case study in which initially informal and radical participation led to a mutually beneficial dialogic process between citizens and municipal planning departments. Ultimately, the positive impact of projects like Revaler Viereck contributed to a rise of municipal interest in phased developments in which temporary use scenarios play an active and catalyzing role.

Many of today's larger urban developments, including the planning and implementation of public urban space, occupy timeframes that continuously change as the process evolves. Plans are met with opposition by various parties, environmental reviews reveal site contamination, or historical resources that require assessment are uncovered in the process. Traditional planning's focus on the end result leads to long periods in which the respective development sites lie fallow. In this context, a new discourse has developed around a more evolutionary planning process (Marshall, 2009) and interim use through active

citizen participation as an integral part of the process (Overmeyer, 2007). Pioneering projects like the Dynamic Masterplan for Berlin Tempelhof incentivized local community initiatives and encouraged entrepreneurial action through the so-called Pioneer Fields, in which different interventions initiated by citizens were tested over the course of three years with the intent to draw lessons for the longer-term development of the site. This allowed community members to contribute their expertise on the resources and needs of the neighborhood to the evolution of the larger project. Rather than building on initial informal citizen initiative as in the case of Revaler Viereck, the Tempelhof Dynamic Masterplan actively solicits such initiative as part of the planning process.

Urban Commons as Participatory Projects

Many of the projects that took their beginnings in citizen-initiated appropriation and interim use have been considered a form of urban commons. Commons, by nature, require active participation. They take the form of urban gardens and parks, improvised playgrounds, and small-scale agriculture. Commons are, in equal measure, a spatial resource that is initiated, shared, and maintained by a self-defined group of citizens (Harvey, 2012), and a process that builds local relationships and establishes mechanisms for use, maintenance, and basic conflict resolution (Ostrom, 1990; Linebaugh, 2014). The resulting spaces are collaboratively implemented in response to shared needs and desires, and self-managed by their users. Rather than being the outcome of long-term visions and planning or design expertise, these projects are often also characterized by open-source peer production (Bradley, 2015). The initial instructions for appropriating or 'hacking' urban space may come from architects, as in the case of the Rebar Group's open sources instructions for Park(ing) Day, a process of temporarily taking over city parking spaces and turning them into public parks for one day (Bradley, 2015; Rebar Group, 2009). Park(ing) Day exemplifies a situation in which architects help identify and leverage public spatial resources towards new types of collective urban spaces, yet citizens take initiative and action for each individual project themselves. Projects of this kind serve as examples of how architects become 'agents of progressive politics' through their collaboration with citizens, rather than through their status as individual authors of buildings (Schneider and Till, 2009). Following the success and popularity of such projects, there are now also examples in which municipal governments develop programs that incentivize citizen appropriation and management of city space as urban commons. Park(ing) Day evolved into the San Francisco Planning Department's Parklet Program, a program that incentivizes citizens to create a more permanent public park in the footprint of former parking spaces adjacent to their residence or business. Similarly, San Francisco's Living Alleys Program incentivizes citizens to develop their local alleyway into a neighborhood commons.

As part of these new hybrid models for the creation of urban commons, this paper reviews two specific urban commons projects - one in Madrid and one in Berlin - as case studies for a process that highlights a facet of the potential role architects can take on in the participatory process of citizen-led commons production. The two case studies have in common a collaboration between a specific community, non-profit organizations, and an architect/artist collective that initially provided help with identifying and leveraging an underused urban space and still consults the community. Both projects have arrangements with the respective municipalities and property owners of the territories they occupy. The respective property owners are aware of, and have agreed to the use of land, either through formal agreement (Berlin), or verbal agreement (Madrid). Finally, each project aim to operate both as recreational spatial resources, and informal outdoor cultural spaces for exchange and learning. Yet, over the course of their existence, both urban commons projects have struggled with the complexity of their economic needs and socio-cultural aspirations vis-a-vis the spatial conditions they occupy. The process outlined below describes how architects and designers take on the role of 'participant' in these ongoing urban commons projects — joining the projects for a brief and catalyzing moment in their evolution.

The Architect as Participant: Two Case Studies

An specific aspect of these urban commons projects' evolution was taken on by an interdisciplinary team of architecture and design students in the framework of a summer intensive design course under the leadership of the author and a

colleague, both professors at a California-based art and design college. This team of 'experts' was brought in as momentary participants in the long-term evolution of the commons. The following paragraphs detail the premise of the intervention, the individual circumstances of these two projects, as well as the nature of what was developed by the team of architects and designers as a catalyst for the next steps of the commons project.

To capture the complexity of factors inherent in urban commons, both case study interventions were based on the premise that the long-term evolution of a commons project needs more than a physical intervention in a space. As a guiding framework for the team of architects and designers, the two projects used the term 'hardware' to describe the physical parameters involved, and augmented this consideration of the physical realm with the terms 'software', 'orgware', and 'brandware'. The term 'software' has been used to describe Henri Lefebvre's observation that space is produced not as a physical construct, but collectively through processes of social interaction and local rhythms of use (Dijkstra *et al.*, 1995). In the context of the commons projects, the term 'software' was employed to capture considerations of use and activation of space. 'Orgware' (organization-ware) as the third parameter describes the organizational intelligence, rules, and structures that allow any plan to be realized (Dijkstra *et al*, 1995). In the case study projects, this term was used to describe mechanisms that help connect stakeholders, structure interactions and financial resources, and distribute responsibilities. The final parameter, 'brandware', has been used to describe issues of the public perception of a space, and the manipulation of this perception through marketing that brings information to a target audience (El Khafif, 2009). For the commons projects, this term was used to consider factors of knowledge and lived experience within a community, as well as ways in which the commons represent themselves to a broader public.

The parameters of 'hardware', 'software', 'orgware', and 'brandware' were understood as co-dependent and interlinked. While architects are conventionally involved in the development of physical spaces and their use, the parameters of 'orgware' and 'brandware' expand the conventional toolkit of architects. Yet, in the context of working with a community on an urban commons project, these case studies revealed that architects need to be involved in all of the parameters, in order to develop strong connections between them (Steinmuller, 2016).

Urban Activators in Madrid

The predominantly immigrant neighborhood of San Cristóbal on the outskirts of Madrid has been lacking in public space as an infrastructure for events, outdoor play, and space for youth activities. Basurama, a Madrid-based artist collective has been working as part of the community of San Cristóbal in the framework of their so-called Autobarrios (Self-Made Neighborhoods) project. Autobarrios uses the collective production of an urban condition or space as a tool for empowering the community. As part of this effort (and the 'orgware' for the space), Basurama connected the community to local resources and has assisted in building a network of economic and professional support. Initially, Basurama provided help in identifying a well-shaded site to be turned into an urban commons initiative. The urban commons site, now known as Puente de Colores (Image 1), is a large open space under a freeway overpass, divided by a street with frequent car traffic. The goal for the space is to become an outdoor cultural center for the community and a larger public, while serving informal local activities on a daily basis. When the California-based student team arrived, the site contained three sets of wooden platforms for seating that had been installed at an earlier date. Yet, the space was not used on a daily basis and its furnishings were falling into disrepair. Trash had accumulated.

The task for the summer course was the development and construction of a setting for an upcoming TEDx Madrid Salon event to be held at the commons, including a screen for projection, and a stage set. At the same time, the student team was asked to provide assistance with the longer-term needs of the community, namely

Image 1 – The San Cristóbal site in its original state (left), and in 2015 before the studio's intervention (right)
Source: Basurama (left), Lujac Desautel (right)

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providing infrastructure for small-scale learning environments and other activation of the space for everyday informal use. Respecting the urban commons project as citizen-led and evolutionary in nature, the summer course understood its task as a catalytic intervention that should support and trigger next steps in the use of the space, but also remain adaptable to new ideas.

The course that traveled from California to Madrid was set up as a cross-disciplinary collaboration between architecture students in their final years of a BArch or MArch program, and Design MBA as well as Sculpture students with interest in public space and community engagement. Local collaborators in Madrid included members of the community through Casa San Cristóbal (the local neighborhood organization and cultural center), Fundaçion Montemadrid (a center for culture and social exchange), and members of Basurama. Teamlabs (an educational company that generates platforms for social entrepreneurship) provided additional assistance with community outreach.

To facilitate the development of the 'hardware' in dialog with local citizens, tensile membrane structures were proposed as a construction method that can deal with short time frames for construction, financial constraints, and easy assembly and disassembly. Prior to traveling to Madrid, the instructors held a workshop in order to explore and document a range of options and possible directions for working with this construction method. The results of this workshop were sent to the community, providing a three-week feedback period before the student team arrived in San Cristóbal. This allowed for fast and productive discussions with the community upon arrival, and jump-started the collective decisions on a design direction to take. The students then formed three interdisciplinary teams, each of which worked at the intersection of two of the four parameters ('hardware', 'software', 'orgware', and 'brandware') that served as a way of addressing the complexity and longer-term requirements of a commons project. Working across more than one of the terms was a crucial tool in order to realize and develop the interdependence of the parameters in the development of the intervention.

Team 1 worked at the intersection of 'hardware' and 'software', developing four deployable and flexible interventions that could provide the setting for both the required long-term and short-term activities on the site. Since a fixed installation of the constructs was not an option for the community, the design focused on

easy set-up, flexible connections, and compact storage when the constructs were not in use (Image 3). The second team tackled 'software' and 'orgware', focusing on information gathering around additional uses for the site (defining additional requirements for the first team), and on finding and connecting local organizations with the site. This was done through interactive posters, interviews, and a questionnaire about activities and desires for the space under the bridge (Image 2, left). A permanent message board was also installed on site to support future exchange about the evolution of the site (Image 2, right). The third team used its focus on 'orgware' and 'brandware' to analyze the perception of the Puente de Colores space both inside the community of San Cristóbal, and in the broader public. Their research gathered and connected the information on the urban commons available in social media, news and blogs. The team organized a more centralized presence of the site through a logo and a Wikipedia page the linked the information scattered elsewhere. It also worked on communicating the developments on the site to locals and invited members of the community to participate in the ongoing activity.

Ultimately, kids from the community summer camp and local youth assisted in producing temporary signage to the space, and were taught new skills as they helped with construction of the tensile membrane interventions in the space.

Image 2 – Community input through poster and final message board
Source: Photos by author

Image 3 – Final physical constructs
Source: Photos by author

The resulting hardware for the space formed a successful infrastructure for the TEDx event (Image 3, left) as a stage backdrop with multiple spaces (Image 3, center), a projection screen and way-finding 'shells' as entrance to the seating space (Image 3, right). The physical constructs could be set up in 10 minutes, and a set of easy-to-follow image-based instructions were left with the community for future use (Image 4). The four different components lend themselves as settings for photography classes, children's reading groups, movie screenings, and small-scale learning environments on the site. The student teams also produced a document that outlined potential synergies in collaborating with additional local organizations, candidates for sponsorship, and suggestions for different set-ups of the physical constructs on the site for a variety of formal and informal uses. The bilingual Wikipedia page went live, and the story of the urban common and its TEDx event was picked up by a variety of online and print media, contributing to shaping awareness of the space in a broader public.

Mechanism for the Production of Collective Space in Berlin:

The Berlin neighborhood of Neukoelln has been shaped by the culture of Turkish immigrants who

Image 4 – Excerpts from the assembly instructions
Source: Drawings by Jonathan Weichung Joong

Image 5 – *Die Gaertnerei* garden site
Source: Drawings by Jonathan Weichung Joong

migrated to the city in the 1960s. Most recently, a large influx of refugees has arrived in the city from African and Middle Eastern countries, with the adjacent old Tempelhof Airport serving as temporary housing. The larger neighborhood is home to a number of organizations that support the refugees in finding housing and jobs, but many are faced with long waiting periods until their status becomes clear. The artist/architect collective Raumlabor together with a local educational non-profit organization assisted a group of recent refugees in this state of limbo in finding and developing a collective space in the neighborhood that serves as a daily destination and gathering space for refugees, many of whom are eager to fill their time productively. Known as Die Gaertnerei (the gardening space), this commons space is located on the grounds of a former cemetery and stone mason workshop under the runway lights in the approach to the old Tempelhof Airport (Image 5). The urban commons took the shape of a community garden and refugee school, offering gardening instruction as well as language lessons and training for navigating the German bureaucracy. The space is also intended to host regular events that facilitate casual encounters between refugees and people in the larger neighborhood. The site of the project currently contains a partially planted garden divided by a wooden walkway that is too high off the ground to easily cross (Image 5, right), and a kitchen, workshop, and seminar space in the old stone mason building. Both garden and building are hidden from the surrounding streets by a tall wall and other one-story structures. At the time the California team arrived, the project was supported by a government grant, but this funding was about to run out.

The task for the student team was to address the lack of connections with the surrounding neighborhood that affected both the physical spaces inside the commons territory, and the ability of this community to better connect socially with people in the area. Another request was to consider the uncertain financial future of the space. As in the project in Madrid, the challenge was to conceive of a small and immediate intervention that could have a catalytic effect on the next steps in the life of the commons. To address the needs of the project comprehensively, the student team for this summer course was also set up as a cross-disciplinary collaboration between architecture students, Design MBA students, and students from the Interior and Product Design programs. Local collaborators in Berlin included members of the refugee commu-
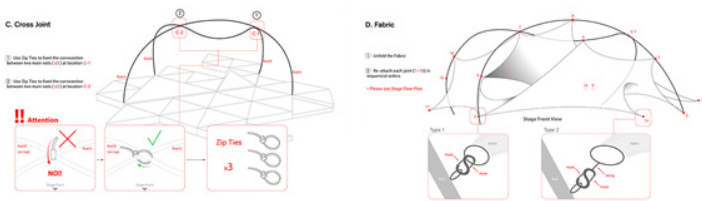
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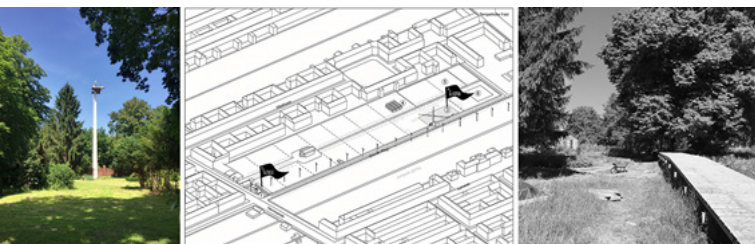
nity, the artist/architect collective Raumlabor, and members of the education non-profit Schlesische 27.

In dialog with members of the community, the team developed physical interventions for the garden space, a mobile piece of architecture to better connect with the neighborhood, and a strategy for generating income through small-scale sale of garden products. As in the other case study project, students worked in three cross-disciplinary teams that focused their work on the intersection of two of the terms 'hardware', 'software', 'orgware', and 'brandware'. Team 1 (hardware/software) focused on the internal disconnect within the garden itself and developed a set of platforms that allowed easy crossing of the existing walkway as well as a place to gather in the shade (Image 6). The platforms facilitate use of the garden, and foster exchange and interaction among those working there. Team 2 (software/orgware) focused on the connections with the neighborhood, imagining ways in which cultural exchange could happen informally while also increasing the visibility of the Gaertnerei space through activities outside its physical boundaries. The result was a mobile kiosk that provided a place to serve mint tea (grown in the garden), sell products of the garden, and hold small gatherings around recipes and different food cultures that foster dialog between refugees and local residents (Image 7). As a kind of 'instant urban space', the kiosk could be wheeled to the adjacent Tempelhof Airfield and places in the neighborhood, and otherwise attract attention as part of the front yard of the stone mason building. The third group (orgware/brandware) developed a business model for the financial sustainability of the commons, based on the kiosk and a set of products from the garden. Together with the assessment of the goals and strategic methods for the survival of the commons, the team developed a logo and simple packaging for honey, mint, and tea (Image 8). Together, these interventions became the ingredients for future events and actions without anticipating a specific final result.

Conclusion: The Architect's Participation and an Expanded Field of Expertise

Traditional planning processes for urban projects have been controlled by property owners and municipalities in dialog with architects and designers. Citizen participation was implemented

Image 6 – *Platforms in the garden*
Source: Photos by author

Image 7 – *Mobile kiosk - concept and final form*
Source: Photos by Raumlabor, digital model by Jigao Wu

Image 8 – Business plan excerpt and products
Source: Collaborative student work

in the form of intermittent meetings, designed to disseminate information about the project, and to gather feedback. In the best scenarios, this citizen feedback would then inform subsequent decisions in the planning and implementation of the project. Urban commons are by their very nature participatory processes. They are initiated, controlled, and managed by citizen groups based on local needs and resources. Commons models in recent years have pioneered a process in which architects, and sometimes municipalities, aid communities in identifying spatial resources and in navigating the initial process of space appropriation. The case studies in this research identify an additional role for architects in urban commons projects - one that can be described as an inversion of the traditional participatory process. Rather than controlling the design and implementation of a final outcome, architects and designers become themselves intermittent participants of the evolution of the commons,

providing input to the community based on their specific disciplinary knowledge. The community itself guides the longer-term process as 'citizen-experts' of the commons.

This role in urban commons projects brings with it an extension of architectural expertise beyond the common definition of the discipline. First, any intervention in commons projects needs to be seen as catalytic in nature. It has to be seen as a device rather than an finite object in order to operate as a kind of source code for the community to use and adapt to their evolving needs. This entails considerations of flexibility and adaptability over time, as well as inherent possibilities for different scenarios and events in time. The integration of multiple use conditions (software), changing constellations and interactions of local actors (orgware), and the implications for the perception of the commons (brandware) have to become integral elements to the design input if it is to have a productive impact on the commons over time. As such, these areas of consideration mandate an expansion of the traditional expertise of architects, and impose new tasks on architecture education. Furthermore, the results from the work in these case studies point to the need to work collaboratively across disciplines. The 'site' for design in commons projects is no longer limited to physical conditions, but includes input on an evolving process in which architects participate as facilitators, contributing interconnected spatial, social, and economic considerations. The multi-disciplinary team work in the case studies provided a highly productive platform for learning and exchange, and for the integration of different disciplinary expertise across the parameters addressed by the respective design interventions. The type of project-based, collaborative learning in real-life situations has been successful as an educational tool to help architecture students leverage their disciplinary agency productively while learning from collaborators with different expertise — modeling an attitude of creative initiative and resourcefulness for their future professional life.

As the two commons projects in Madrid and Berlin continue to evolve, additional research is needed to assess the productivity of this 'intermittent participation' of architects over time. Issues like the degree of exchange with the local community, the duration of the collaboration between the team of designers and local citizens, and the need for support during the use of the outcomes of the interventions are critical factors in the success of short-term catalytic interventions by architects. In the two case studies described in this paper, the time frame and scope of the collaboration was framed by the academic constraints of a summer travel studio. An ideal duration and framework for such collaborations would need to be studied in a context unconstraint by of the academic calendar. In addition, longer-term studies will be needed to document and assess the success catalytic interventions over time. At the point of writing this article, the interventions in Madrid and Berlin continue to benefit the activities of the commons, catalyzing both known and unanticipated events under the bridge in Madrid, and in the streets surrounding the garden in Berlin-Neukoelln.

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